CHAPTER 4

Consultation and Coordination

Bills Creek Drive, Rapid River

"A major determinant of how well American forestry prepares for the 21st century will be cooperation in resources management. This means cooperation among federal, state, and private ownerships… and cooperation with new and different arrangements of people and organizations."

John R. McGuire
Forest Service Chief (1972-1979)

Preparers and Contributors

Completing the final EIS and the 2006 Forest Plan required the support of every employee on the Hiawatha National Forest. In addition, the Interdisciplinary Team received much guidance and support from the Hiawatha's Forest Leadership Team and from the staff at the USDA Forest Service Regional Office throughout this process. The following individuals, federal, state and local agencies and tribes contributed their expertise during the development of this EIS.

Interdisciplinary Team

Sam Adams, *Forest GIS Coordinator*

***Education*:** M.A. in Geography, University of Washington-Seattle; B.S. in Geography, Illinois State University-Normal

***Experience*:** USDA Forest Service employee since 2002. Additional experience includes positions as a GIS Analyst for Idaho Power Company and the Colville Confederated Tribes (1994-2003).

Chuck Bassett, *Forest Fisheries Biologist*

Education: M.S. in Fisheries Management, Michigan State University; B.S. in Fisheries Management, MSU

Experience: USDA FS employee since 1978 as: Fisheries Technician; Fisheries Biologist; Forest Fisheries Biologist

John Franzen, *Archeologist/Heritage Resources Program Leader*

Education: M.A. in Anthropology, Idaho State University; B.A. in Anthropology, Michigan State University

Experience: USDA FS employee since 1980 as: Cultural Resource Specialist; Archeologist/Heritage Program Leader

James Gries, *Forest Soils Scientist*

Education: M.S. in Forest Ecology, University of Wisconsin-Madison; B.S. in Natural Resources and Environmental Science, Purdue University

Experience: USDA FS employee since 2005 as a Forest Soils Scientist. Additional experience as: Biologist/Soil Scientist, U.S. Army Corps of Engineers (6 years); Project Scientist, Law Engineering and Environmental Services, Inc. (4 years)

Eric Henderson, *Planning Analyst*

Education: M.S. in Forestry, University of Minnesota; B.B.A. in Business Administration, University of Iowa

Experience: USDA FS employee since 2003 as a Planning Analyst

Charles Anthony Lapicola, *Forest Transportation Planner*

Education: B.S. in Biology and Chemistry, University of Wisconsin-Whitewater

Experience: USDA FS employee since 1978 as: Aide to the Forest Transportation Planner; Assistant Forest Transportation Planner; Zone Engineer; Forest Transportation Planner

Lee Ann Loupe, *Planning, Public & Legislative Affairs, Wild & Scenic Rivers*

Education: B.S. in Forest Management Science, Colorado State University

Experience: USDA FS employee since 1981 as: Forestry Technician (Snow Ranger and Fire Suppression); Forester (Crew Boss, Fuels Treatment, Forestry Skills Instructor); Forester (NEPA, Sale Design and Layout, Sale Administration); Lands, Mineral and Special Uses Forester; Assistant Ranger for Recreation, Lands, Special Uses, Minerals, Wilderness, Wild and Scenic River, Heritage Resources and Law Enforcement; Wild and Scenic River Coordinator; Public and Legislative Affairs Officer

David Maercklein, *Forest Planner*

Education: B.S. in Forestry, University of Wisconsin-Madison

Experience: USDA FS employee since 1979 as: Silviculturist (reforestation, timber stand improvement, harvest prescriptions); Timber Sale Planner; Forest NEPA Coordinator; Ranger District Timber Sale Planning Staff; Forest Planner. Three years as a Peace Corps Volunteer working in afforestation and vegetation mapping

Don Mikel, *Fire Ecologist*

Education: B.S. in Forest Management, Purdue University; B.S. in Psychology, Purdue University; Region 9 Silvicultural Certification

Experience: USDA Forest Service employee 1978 as: Forester; Silviculturist; Assistant District Ranger (timber management); Assistant District Ranger (other resources); Silviculturist; Recreation Program Manager, Fire Ecologist

Anne E. Okonek, *Assistant District Ranger, Recreation, Rapid River/ Manistique Ranger District*

Education: M.S. in Resource Economics, Michigan State University; B.S. in Forest Management, University of Wisconsin-Stevens Point.

Experience: USDA Forest Service employee since 1980 as: Forester; Assistant District Ranger, Recreation

Barbara A. F. Ott, *Social Scientist*

Education: M.S. in Management, Colorado State University; B.A. in Business Administration, Chadron State College

Experience: USDA FS employee since 1977 as: Accounting Technician; Support Services Supervisor; Social Scientist. Other experience: researching and developing a rural economic development plan; chairperson of Community Action Team

Jean Perkins, *Forest Silviculturist*

Education: B.S. in Forest Management, University of Wisconsin-Stevens Point

Experience: USDA FS employee since 1981 in Regions 6 and 9 as: Silvexam Forester; Presale Forester; Assistant District Silviculturist; Reforestation and TSI Forester; Acting Assistant Ranger (timber, wildlife, fisheries); District NEPA Coordinator; Assistant District Ranger (silviculture); Acting District Ranger; Acting Assistant District Ranger (recreation and other resources); Forest Silviculturist

Kirk Piehler, *Forest Wildlife Biologist*

Education: M.S. in Wildlife Management, West Virginia University; B.S. in Wildlife Resources, WVU

Experience: USDA FS employee since 2004. Additional experience as: District Wildlife Biologist, U.S. Army Corps of Engineers, (6 years); Wildlife Biologist, West Virginia Department of Natural Resources, (2 years)

Ted Schiltz, *Assistant Forest Planner*

Education: B.S. in Forestry, Michigan Technological University

Experience: USDA FS employee since 1983 as: Engineering Technician; Environmental Coordinator; Assistant Forest Planner

Janet L. Schultz, *Forest Plant Ecologist, NNIS and RNA Coordinator*

Education: M.S. in Ecology, Central Michigan University; B.S. in Biology, Carroll College

Experience: USDA FS employee since 1989 as: Forest Plant Ecologist; Non-Native Invasive Species Coordinator; Research Natural Area Coordinator. Worked as a Forest Service Biologist (1975-81)

Ruth Sutton, *Writer-Editor*

Education: B.A. in Journalism, University of North Dakota

Experience: USDA FS employee since 2002. Additional experience includes positions in public relations, marketing, administration and sales management at the Anchorage Daily News and Lansing Community Newspapers (14 years); Network Communications Specialist, VA New England HCS, (2 years)

Special Thanks

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Sue Alexander, *Forest HR Liaison*

Dick Anderson, *Assistant Ranger, Munising Ranger District*

Tim Baker, *Silviculturist, Munising R.D.*

Steve Bateman, *Forest NEPA Specialist (retired)*

Lynn Bisson, *Forest Information Technology Specialist*

Rebecca Cain, *GIS Specialist, Munising Ranger District*

Justin Carrick, *Recreation Technician, Sault Ste. Marie Ranger District*

Mary Clement, *Civil engineering Technician, Rapid River/Manistique Ranger Districts*

Matt Cole, *Wildlife Biologist, Munising Ranger District*

Janel Crooks, *Recreation Planner, Munising Ranger District*

Janet Ekstrum, *Wildlife Biologist, Rapid River/Manistique Ranger Districts*

Cheri Ford, *Tribal Government Liaison*

Ken Guillard, *Engineering Technician, St. Ignace Ranger District*

Joe Hart, *Lands Forester and Realty Specialist, St. Ignace Ranger District (retired)*

Don Howlett, *Partership & Rural Community Manager*

Lyn Hyslop, *NEPA Specialist, St. Ignace Ranger District*

Donna Iraneta, *Forest Database Manager*

Mark Jaunzems, *Botanist, St. Ignace Ranger District*

Paula Johnston, *Recreation Program Team Leader, St. Ignace/Sault Ste. Marie Ranger Districts*

Wally Jurinen, *Recreation Technician, Munising Ranger District*

Rick Kell, *Forest Engineer*

Tom Kurtz, *Wildlife Biologist, Sault Ste. Marie Ranger District (retired)*

Dennis Landwehr, *Former Forest Soil Scientist*

Deborah LeBlanc, *Botanist, Munising Ranger District*

Beth LeClair, *Former Acting Forest Supervisor*

Jon Luepke, *Recreation Technician, Munising Ranger District*

Brenda Madden, *Recreation Technician, Rapid River/Manistique Ranger District*

Mary Maercklein, *NEPA Coordinator, Rapid River/Manistique Ranger District*

Paul Makela, *former Forest Wildlife Biologist*

Scott Maki, *GIS Coordinator, Rapid River/Manistique Ranger Districts*

Regina Miron, *Senior Community Service Employment Program, Munising R.D.*

Bill Noreus, *Forestry Technician Rapid River/Manistique Ranger Districts*

Randall Parr, *Recreation Trails Technician, Rapid River/Manistique Ranger Districts*

Linda Peterson, *Hydrology Technician, Rapid River/Manistique R.D.*

Jenni Piggot, *GIS Specialist, St. Ignace Ranger District*

Duane Puro, *Forest Timber Sales Manager*

W. Toby Rhue, *Former Forest Recreation Staff Officer*

Jaime Roshak, *Automation Clerk*

Allen Saberniak, *Former Forest Silviculturist*

Martha Sjogren, *Forester, St. Ignace R.D.*

Steve Sjogren, *Wildlife Biologist, St. Ignace Ranger District*

Linda Swartz, *Botanist, St. Ignace R.D.*

Ruth Ann Trudell, *Former Forest Hydrologist*

Patty VerWiebe, *Recreation Technician, Sault Ste. Marie Ranger District*

Karen Waalen, *GIS Specialist, Sault Ste. Marie Ranger District*

Robert Walker, *District Ranger, Rapid River/Manistique Districts (retired)*

Chris Yee, *Former Wildlife Biologist, Munising Ranger District*

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USDA Forest Service, North Central Research Station. Dave Cleland, Research/NFS Liaison and staff

Hiawatha Leadership Team

Thomas A. Schmidt, *Forest Supervisor*

William Bowman, *Engineering, Lands and Minerals Team Leader*

Teresa Chase, *District Ranger, Munising Ranger District*

Stevan Christiansen, *District Ranger, St. Ignace/Sault Ste. Marie Ranger Districts*

Piper Desy, *Administrative Officer*

Michael Lanasa, *Ecosystems Team Leader*

Lee Ann Loupe, *Forest Issues Management & Legislative Affairs*

David Maercklein, *Forest Planner*

Martie Schramm, *Deputy District Ranger, St. Ignace/Sault Ste. Marie R.D.*

David Silvieus, *District Ranger, Rapid River/Manistique Districts*

Ralph Winkler, *Fire and Aviation Staff Officer*

Cooperating Agencies

USDI Fish and Wildlife Service

USDI National Park Service

Tribal

American Indian tribes were contacted regarding Forest Plan revision.

CHAPTER 5
Final EIS Distribution

Canoeing on the Indian River. Manistique RD. 7/1962

"Without natural resources life itself is impossible…Upon them we depend for every material necessity, comfort, convenience and protection in our lives. Without abundant resources, prosperity is out of reach."

Gifford Pinchot
1st Chief of the Forest Service (1905-1910)

Distribution of the Final EIS

The following elected officials, tribal governments, federal, state and local agencies, local governments, organizations and businesses and individuals will receive copies of the final EIS, 2006 Forest Plan, Appendices, Record of Decision and/or the Executive Summary. In addition, some organizations and individuals have requested e-mail notification when the documents are posted on the Internet.

Printed copies and CDs of all the documents are available at all Hiawatha National Forest Ranger Districts and at the Forest Supervisor's office. These documents have been posted on the Hiawatha's website: http://www.fs.fed.us/r9/hiawatha/revision/rev_welcome.html.

Elected Federal Officials

Senator Carl Levin
Senator Debbie Stabenow
Congressman Dave Camp
Congressman John Conyers Jr.
Congressman John D. Dingell
Congressman Vernon J. Ehlers
Congressman Peter Hoekstra
Congressman Dale E. Kildee
Congresswoman Carolyn C. Kilpatrick
Congressman Joseph Knollenberg
Congressman Sander M. Levin
Congressman Thaddeus G. Mc Cotter
Congresswoman Candice S. Miller
Congressman Mike Rogers
Congressman Joe Schwarz
Congressman Bart Stupak
Congressman Fred Upton

Elected State Officials

Governor Jennifer Granholm
State Senator Jason Allen
State Senator Michael Prusi
State Representative Stephen Adamini
State Representative Rich Brown
State Representative Tom Casperson
State Representative Gary McDowell

Lake States Tribes

Bad River Band of Lake Superior Chippewa Indians
Bay Mills Indian Community
Chippewa Ottawa Resource Authority
Fond du Lac Chippewa Tribe
Grand Traverse Band of Ottawa and Chippewa Indians
Great Lakes Indian Fish and Wildlife Commission
Hannahville Indian Community
Inter-Tribal Council of Michigan
Keweenaw Bay Indian Community
Lac Courte Oreilles Band of Lake Superior Chippewa Indians
Lac du Flambeau Band of Lake Superior Chippewa Indians
Lac Vieux Desert Band of Lake Superior Chippewa Indians
Little River Band of Ottawa Indians
Little Traverse Bay Band of Odawa Indians
Mille Lacs Band of Chippewa Indians
Red Cliff Band of Lake Superior Chippewa Indians
St. Croix Chippewa Indians of Wisconsin
Sault Ste. Marie Tribe of Chippewa Indians
Sokoagon Chippewa Community, Mole Lake Chippewa Tribe

Federal Agencies

Advisory Council on Historic Preservation
Federal Aviation Administration, Great Lakes Reg.
Federal Highway Administration
National Oceanic and Atmospheric Administration
Pictured Rocks National Lakeshore
Rural Utilities Service
Seney Wildlife Refuge
U.S. Army Corp of Engineers, Great Lakes and Ohio Division
U.S. Coast Guard, Marine Environmental and Protection Division
U.S. Department of Energy
U.S. Department of the Interior
U.S. Environmental Protection Agency
USDA Animal and Plant Health Inspection Service
USDA National Agricultural Library
USDA Natural Resources Conservation Service
USDI Bureau of Indian Affairs
USDI Bureau of Land Management
USDI Fish and Wildlife Service
USDI National Park Service

State Agencies

Michigan Department of Natural Resources
Michigan Department of Environmental Quality
Michigan Department of Agriculture
Michigan Department of Transportation
Michigan Natural Resources Commission

Local Governments

Alger County Board of Commissioners
Alger County Planning & Zoning
Alger County Road Commission
AuTrain Township Supervisor
Baldwin Township Supervisor
Bay de Noc Township Supervisor

Bay Mills Township Supervisor
Brevort Township Supervisor
Bruce Township Supervisor
Burt Township Supervisor
Cheboygan County Commissioners
Chippewa County Commissioners
Chippewa Township Supervisor
City of Escanaba
City of Manistique
City of Marquette
City of Munising
City of Sault Ste. Marie
City of St. Ignace
Clark Township Supervisor
Dafter Township Supervisor
Delta Conservation District
Delta County Board of Commissioners
Delta County Road Commission
Doyle Township Supervisor
Eastern U.P. Regional Planning & Development
Ensign Township Supervisor
Garden Township Supervisor
Grand Island Township Supervisor
Hiawatha Township Supervisor
Hulbert Township Supervisor
Inwood Township Supervisor
Kinross Township Supervisor
Limestone Township Supervisor
Luce County Board of Commissioners
Mackinac County Commissioners
Mackinaw Township Clerk
Manistique Township Supervisor
Marquette County Board of Commissioners
Marquette County Conservation District
Masonville Township Supervisor
Mathias Township Supervisor
Moran Township Supervisor
Munising Chamber of Commerce
Munising Township Supervisor
Nahma Township Supervisor
Onota Township Supervisor
Rock River Township Supervisor
Rudyard Township Supervisor
Schoolcraft County Board of Commissioners
Schoolcraft County Chamber of Commerce
Schoolcraft County Road Commission
Schoolcraft Soil and Water Conservation District
Schoolcraft Soil and Water Conservation District
Soo Township Supervisor
St. Ignace Township Supervisor
Superior Township Supervisor
Thompson Township Supervisor
Village of Newberry
Whitefish Township Supervisor

Libraries

Bay De Noc Community College Library
Bay Mills Community College Library
Bayliss Public Library
Big Bay De Noc School Library
Brevort Township Community Library
Clark Township Library
Curtis Library
Detour Area School And Public Library
Drummond Island Library
Engadine Library
Escanaba High School Library
Escanaba Public Library
Gladstone School & Public Library
Gwinn High School Library
Ishpeming Carnegie Public Library
Manistique School & Public Library
Marquette Senior High School Library
McMillan Township Library
Michigan Technological University Library
Mid-Peninsula High School Library
Munising School Public Library
Negaunee Public Library
Northern Michigan University Library
Peter White Library
Rapid River Public Schools Library
Richmond Township Library
Rudyard School Public Library
Sault Ste Marie High School Library
St Ignace Public Library
Superior Central High School Library
Superiorland Library Cooperative
Tahquamenon Area Library
Whitefish Township Community Library

Businesses & Organizations

Alger County Sno-Riders
Alger-Marquette Soil Conservation District
American Rivers
Besse Forest Products, Inc.
Blueribbon Coalition
Chippewa Snow Chasers
Cycle Conservation Club of Michigan
Defenders of Wildlife
Grand Island Association
Great Lakes Gas Transmission Company
Habitat Education Center
Heartwood Forest Watch
Hydrolake Leasing and Service Company
International Snowmobile Manufacturers Association
Lake States Federal Timber Purchasers Committee
Legendary Civilian Jeepers
Michigan Association of Timbermen
Michigan Sharp-Tailed Grouse Association
Michigan Snowmobile Association

Michigan United Conservation Clubs
National Wild Turkey Federation
New Page Corp.
North Country Trail Association
Northwoods Wilderness Recovery
Outdoors Forever
Potlatch Corporation
Schoolcraft County Snowmobile Assn
Seney Snowmobile Association
Sierra Club
Sierra Club Mackinac (Michigan) Chapter
Smithers Scientific Services
SORVA of Alger County
SORVA of Schoolcraft County
Straits Area Sportsmen's Club
The Nature Conservancy
The Ruffed Grouse Society, Laona
Timber Products Company
Timber Products Michigan
U.P. Sandstormers Motorcycle & ORV Club
Upper Peninsula Power Company
Wildlife Unlimited of Delta County

Individuals who received final EIS documents

David Agren
Dave & Judy Allen
John Allen
Richard Asplund
Karen Bahman
Pam & Tim Baker
Alan Balcam
John & Mary Barnett
Len Baron
Thomas M. Bartell
Don Basye
W.A. Belding
Lyle Berro
H. Constance Bonbrest
David Borgeson
Robert Bowers
Geoff Brereton
Douglas Bucholtz
Lyle & Diane Buffum
Kurt & Pam Butler
Rob Cadmus
Mary Campbell
Tim & Janet Carmichael
Ned Caveney
Don Challed
David & Judy Chappell
Rex Cole
Louis M. Colegrove
Lewis Cook
Doug Cornett
Martin Cottle
Kendall R. Courtright
John Cox
Karen Craig
Jim Crouch
Daniel Damptz
Lorne Davey
Gary Dawson
Craig De Vries
Marinus Debruine
Charles DeVito
Michael Dinkel
Mark Donham
Jim Duke
Patrick Egan
George Eros
Dave Ewert
Lyle & Beckie Faulkner
Joel Flory
Tim Flynn
Chris Fries
Tony Furlich
Leigh C. Gallus
Charlie Geerlings
Jeff Gordon
Grigor Gordon
Loren & Pat Graham
Robert Groleau
David Grzenkowicz
Kimberly Hall
Carl & Laurie Harm
Lee Hawk
Ronald R. Haynes
Howard Hedstrom
Dale Heidbrier
Daniel Heingartner
Don Henson
Denise Herron
Herman D. Hormel
Christine Jourdain
Floyd Jousma
Lowell M. Kage
Thomas Keenan
Maurice & Donna Kenel
Robert C. Kerr
Edward Klim
Tim Kobasic
William Kositzky
Steven Kuepper
Marc LaBeau
Andrew Laird
Lee Lazenby
Mike Leahy
Doug Lee
Larry Leefers
Larry Leveque
Dale Lewis
Richard Liberty
Gary Lucchetti
Daniel Madalinski
Jeffrey A Magowan
William D. Manson
John & Sarah Martin
Edith Maynard
Neil McCloskey
Michael J. McElligatt
John & Jane McGuirk
Bob McHugh
Glen Meisel
Keith Meyer
Carl & Diane Meyer
David Miehlke
Stephen Milks
Rock Miron
Glenn Moll
Timothy R. Mousel
John Muehlhausen
Bill Norton
Les Nyland
Bob Papp
Kendall R. Paulson
Thomas & Joyce Penman
Valerie Pomazanko
Judy Prahl
Louis Praznik
Mike Pryal
Pete Quinn
Merlin Ransom
John Rebers
Tobin Rees
Russ Reister
Jerry Renk
John Ries
Chris E. Ritter
Marvin Roberson
Larry Robinson
Dorothy L. Roseberry
Edward Rumer
Janet Runyan
Jon L. Saari
Mary Sarber
John Schnorr
Joe Schott
Thomas Schut
Ronald E. Scott
Larry Shields
Nancy Shiffler
Alan K. Shirkey Jr.
Casimir Sitko
David F. Slater
Kelvin Smyth
Brad Stermer
Warren Suchovsky
Dean & Cynthia Swanson
Randy Swaty
Candace A. Swetkis
David R. Tackman
Jack Thomas
Christine Vandervoort
Zachary Vansickle
Frank Jeff Verito
Richard Vetter
Joseph E. Vogt
Stuart Volkers
Gregg & Deborah Wahl
Bruce Wallace
Carol E. Ward
Sam Washington
John F. West
Bill & Janet Whippen
Bruce Whitmarsh
Michael Wieczorek
Ronald J. Williams
Anne Woiwode
John & Linda Wright
David J. Zaber
Gary Zimmer
Gary Zoellner

CHAPTER 6

Glossary of Forest Service Terms

"Wahsaycee" Camp Director Ruth Tease hut at Timber Trail Chicago Girl Scout Camp
Hiawatha National Forest, 1934

"What does ecosystem management mean? It means thinking on a larger scale than we're used to. It means sustaining the forest resources over very long periods of time. And from that will flow many goods and services, not just timber."

Jack Ward Thomas
Forest Service Chief 1993-1996

Glossary of Forest Service Terminology

The variety of technical terms and inevitable acronyms used in the planning process can make for some confusing reading and even more confusing conversations. The following collection of definitions and descriptions should clarify some of the terminology used in the planning documents. The descriptions and definitions are in alphabetical order.

ACCESS: The opportunity to approach, enter and make use of public or private land.

- **BACK-IN ACCESS:** Sites where vehicles carrying or towing a boat have to back into the water to unload. Back-in ramps are native vegetation, sand, gravel or concrete and generally include a single-lane ramp. Parking is provided.
- **CARRY-IN ACCESS:** Either a footpath or a canoe/boat slide is present. Parking may be available.
- **NO ACCESS:** No visible access for watercraft exists.

ACCESSIBILITY: Refers to striving to be in compliance with the Americans with Disabilities Act (ADA), section 504.

AIR QUALITY: The composition of air with respect to quantities of pollution therein. Used most frequently in connection with the standards of maximum acceptable pollution concentrations. Air quality classes (I, II or III) are designations for the level of protection given to geographic areas of the country. This classification denotes the increment above which deterioration of air quality would be regarded as significant and consequently not allowed.

- **Class I** allows the least deterioration. National parks, monuments and wildernesses larger than 5,000 acres in size are designated as Class I areas.
- **Class II** is much less restrictive than Class I. The Hiawatha National Forest has been designated as a Class II area.
- **Class III** is the least restrictive.

ALLOWABLE SALE QUANTITY (ASQ): The quantity of timber that may be sold from the suited lands identified in the Forest Plan for a specified time period. For the Hiawatha National Forest, the time period is 10 years. The ASQ is usually expressed on an annual basis as the "average annual allowable sale quantity." The quantity is a ceiling. It is not a future sales level projection or a target, and it does not reflect all of the factors that may influence future sale levels.

ALL TERRAIN VEHICLE (ATV): A type of off-highway vehicle that travels on three or more low-pressure tires; has handle-bar steering; is less than or equal to 50 inches in width; and has a seat designed to be straddled by the operator (FSH 2309.18 zero code).

ANALYSIS OF THE MANAGEMENT SITUATION (AMS): Using the resource assessments and the Forest Plan as background, the AMS:

- Documents existing Forest Plan direction for a particular resource concern;
- Speculates on the expected results should the existing direction continue;
- Evaluates the kinds of problems which may occur should the existing direction continue;
- Discusses whether these problems need to be resolved;
- Determines the potential to resolve them in a Plan revision. If the Plan revision can resolve the problems, the AMS proposes a range of values where a possible solution may occur.

ARTERIAL ROADS: Roads that provide service to large land areas and usually connect with public highways or other forest arterial roads to form an integrated network of primary travel routes. The location and standard often are determined by a demand for maximum mobility and travel efficiency rather than specific resource management service. It is usually developed and operated for long-term land and resource management purposes and continual service.

ATTAINMENT AREA: A geographic area in which levels of a criteria air pollutant meet the health-based primary standard (national ambient air quality standard) for the pollutant. An area may have on acceptable level for one criteria air pollutant, but may have unacceptable levels for others. Thus, an area could be both attainment and non-attainment at the same time. Attainment areas are defined using federal pollutant limits set by the Environmental Protection Agency (EPA).

BENCHMARK: A set of estimates used to establish standards to compare alternatives. Benchmarks include the minimum level, maximum timber harvest and maximum present net value (PNV).

BIOLOGICAL DIVERSITY: The variety of life forms and processes within an area. Included in the consideration of diversity are the complexities of genetic variation, the number and distribution of species, and the ways in which the variety of biologic communities interact and function.

BOAT SLIDE: A constructed surface to slide a boat along to access a lake or stream.

CANDIDATE RESEARCH NATURAL AREA (cRNA): An area which has the potential for designation as a Research Natural Area, but needs formal evaluation.

CANOE TRAIL: A identified/designated water route used by canoes and kayaks**.** The route may be on a stream, a river or on a lake.

CARRYING CAPACITY: In terms of recreation use, physical carrying capacity is the maximum amount of use that can take place without unacceptable ecological change, soil compaction, erosion, water pollution, littering and destruction of vegetation. Social carrying capacity is the maximum amount of use that can occur without unacceptable conflict and interface among visitors.

CDS (Combined Data System): Forest Service database system that contains information about stands in the Forest.

COMMERCIAL FOREST LAND: Forest land that is producing or is capable of producing crops of industrial wood and:

- Has not been withdrawn by Congress, the Secretary of Agriculture or the Chief of the Forest Service;
- Existing technology and knowledge is available to ensure timber production without irreversible damage to soils productivity or watershed conditions;
- Existing technology and knowledge as reflected in current research and experience, provides reasonable assurance that adequate restocking can be attained within 5 years after final harvesting.

COMMON VARIETY MINERALS: Generally common building materials including sand, stone and gravel.

CONNECTIVITY: Condition in which the spatial arrangement of land covertypes allows organisms and ecological processes (such as disturbance) to move across the landscape.

COUNCIL ON ENVIRONMENTAL QUALITY (CEQ): An Executive Office of the President whose members are appointed by the President. CEQ recommends national policies to promote the improvement of the quality of the environment.

COARSE WOODY DEBRIS: Stumps and fallen trunks and limbs of more than six-inch diameter at the large end.

CROSS-COUNTRY TRAVEL: The use of OHVs, horses, mountain bikes and snowmobiles, etc. off designated trails, roads or routes.

CULVERTS (Major): A culvert that provides an opening of more than 35 square feet (3.3 m^2) in a single or multiple installation. It may consist of a single round pipe, pipe arch, open or closed-bottom box, bottomless arch, or multiple installation of these structures placed adjacent or contiguous as a unit.

CULVERTS (Minor): Any culvert not classified as a major culvert.

DECISION CRITERIA: The primary rules or standards for evaluating alternatives and selecting a preferred alternative.

DEFERRED MAINTENANCE: Maintenance that was not performed when it should have been or when it was scheduled and which, therefore, was put off or delayed for a future period.

DESIGNATED: To reference or identify an area, facility, road, trail or travelway identified for specific use or uses by means of Forest Order, signing, recreation map, law, policy or regulation.

DESIGNATED ROAD, TRAIL OR AREA: A National Forest System road, trail, or an area on NFS lands that is designated for motor vehicle use pursuant to 212.51 on a motor vehicle use map.

DESIRED CONDITION: *See Goal/Desired Condition*.

DESIRED NON-NATIVE SPECIES: Species of plants or animals that are not indigenous to an area, but are wanted for their contribution to high social, economic or cultural value.

DEVELOPMENT LEVELS (RECREATION): A formally established criterion which prescribes the intensity of development (site modification) of an area. The recreation development levels used on the Hiawatha National Forest are:

- **Level 1:** Almost no site modification. Rustic or rudimentary improvements are designed for protection of the site rather than the comfort of the users. Use of synthetic materials is excluded. Minimum controls are subtle. There is no obvious regimentation of users. Spacing is informal and extended to minimize contacts between users. Primary access is usually over primitive roads.
- **Level 2:** Minimal site modification. Rustic or rudimentary improvements are designed primarily for protection of the site rather than the comfort of the users. Use of synthetic materials is avoided. Minimum controls are subtle. There is little obvious regimentation of users. Spacing is informal and extended to minimize contacts between users. Motorized access may be provided or permitted. Primary access is over primitive roads. Interpretive services is informal, almost subliminal.
- **Level 3:** Moderate site modification. Facilities are designed equally for protection of the site and for comfort of the users. Contemporary/ rustic design of improvements is usually based on use of native materials. Inconspicuous vehicular traffic controls are usually provided. Roads may be hard-surfaced and trails formalized. Development density is about 3 family units per acre. Primary access may be over high standard roads. Interpretive services is informal, but generally direct.
- **Level 4:** Rural setting with heavily modified sites. Some facilities are designed strictly for the comfort and convenience of users. Luxury facilities are not provided. Facility design may incorporate synthetic materials. Extensive use is made of artificial surfacing of roads or trails. Vehicular traffic control is usually obvious. Primary access is usually over paved roads. Development density is 3 to 5 family units per acre. Plant materials are usually native. Interpretive services are often formal or structured.
- **Level 5:** Urban setting with extensive site modification. Facilities are mostly designed for the comfort and convenience of the users and usually include flush toilets and may include showers, bathhouses, laundry facilities and electrical hook-ups. Synthetic materials are commonly used. Extensive use is made of formal walks or surfaced trails. Regimentation of users is obvious. Access is usually by high-speed highways. Development density is 5 or more family units per acre. Plant materials may be foreign to the environment. Formal interpretive services are usually available. Designs are formalized and architecture may be contemporary. Mowed lawns and clipped shrubs are not unusual.

DEVELOPED RECREATION ACTIVITIES: Outdoor recreation activities that occur in a relatively small but defined area where concentrations of users are evident such as picnic areas, campgrounds, trail heads and ski areas.

DEVELOPED RECREATION SITES: Improvements or facilities that provide recreation opportunities in a particular area. Facilities might include roads, parking lots, picnic tables, toilets, drinking water, ski lifts and buildings.

DIAMETER AT BREAST HEIGHT (DBH): The diameter of the stem of a tree measured at breast height (4.5 feet from the ground).

DISPERSED CAMPSITE (also, known as a primitive campsite or rustic campsite)**:** A campsite that is approximately 600-750 square feet in size. Development of a dispersed site may range from no site improvements to minimal improvements designed to protect the natural resources of the site or area.

DISPERSED RECREATION ACTIVITIES: Recreation that does not occur in a developed recreation site, such as hunting, backpacking, OHV trail riding and scenic driving. Dispersed recreation activities may require facilities for safeguarding visitors and protecting resources.

ECOLOGICAL LANDTYPES (ELTs): A framework that allows natural resource managers to identify, describe and map units of land with similar physical and biological characteristics at scales suitable for natural resources planning and management. (See Appendix I in the FEIS).

ECOSYSTEM: A community of living plants and animals interacting with each other and with their physical environment. A geographic area where it is meaningful to address the interrelationships with human social systems, sources of energy and the ecological processes that shape changes over time.

ECOSYSTEM RESTORATION: The process of reestablishing, to the extent possible, the structure, function and composition of ecosystems.

ELEMENT OCCURRENCE: Population of a species or an example of a natural community or natural feature occurring at a specific, ecologically appropriate location.

ENDANGERED SPECIES: Official designation by U.S. Fish &Wildlife Service applied to any species that is in danger of extinction throughout all or a significant portion of its range.

EPHEMERAL PONDS: Ponds that occur as the direct result of rainfall or snowmelt.

EPHEMERAL STREAMS: Streams that flow only as the direct result of rainfall or snowmelt. They have no permanent flow.

EVEN-AGED MANAGEMENT: The application of a combination of actions that results in the creation of stands in which trees of essentially the same age grow together. Regeneration in a particular stand is obtained during a short period at or near the time that a stand has reached the desired age or size for regeneration, and is harvested.

EXTIRPATED SPECIES: Species that formerly occurred regularly in an area but have disappeared and are not expected to recur without human assistance. This differs from extinct species which have disappeared entirely from the planet.

FAUNA: The animal life of an area.

FLORA: The plant life of an area.

FOREST INVENTORY AND ANALYSIS (FIA): The FIA Program collects, analyzes, and reports information on the status and trends of America's forests: how much forest exists, where it exists, who owns it, and how it is changing, as well as how the trees and other forest vegetation are growing and how much has died or has been removed in recent years.

FOREST PLAN: The Land and Resource Management Plan is a document that guides all natural resource management activity and establishes management standards and guidelines for a national forest, embodying the provisions of the National Forest Management Act of 1976.

FOREST PLAN REVISION: A formal modification of a forest plan to address changes in the natural, social and economic environment; new information about resources on and off national forests; and new scientific knowledge which shed new light on the assumptions of the existing plan, and make the predicted impacts of the existing plan less accurate and/or acceptable. Federal planning regulations require the Forest Service to revise a forest plan every 10-15 years.

FOREST ROAD: A hard-surfaced travelway, gravel or dirt road, fire lane, abandoned railroad right-of-way, logging road, or a way capable of travel by a four-wheeled vehicle.

FOREST TRANSPORTATION ATLAS: A display of the system of roads, trails and airfields of an administrative unit.

FOREST TRANSPORTATION FACILITY: A forest road or trail or an airfield that is displayed in a forest transportation atlas, including bridges, culverts, parking lots, marine access facilities, safety devices, and other improvements appurtenant to the forest transportation system.

FOUR-WHEEL DRIVE VEHICLE (4WD): A full-sized vehicle with four-wheel drive, which is registered with the state and is legal to operate on public highways. Any sport utility vehicle would fall in this class, although a 4WD may be a modified vehicle intended primarily for off-highway use.

FRAGMENTATION: Breaking up of contiguous areas into progressively smaller patches of increasing degrees of isolation from each other.

FS VEG (Field Sample Vegetation)**:** Forest Service database system that is replacing CDS. It contains plot information about forest stands.

FUTURE USE DETERMINATION: A facility evaluation of whether the use of a facility and/or its improvements should be continued; whether the facility or improvements should be made available for use by others, and if so, under what condition.

GAME SPECIES: Those wildlife species that are commonly hunted, trapped or fished.

GEOGRAPHICAL INFORMATION SYSTEMS (GIS): Computerized method used for inventory and analysis, which can overlay large volumes of spatial data to identify how features interrelate.

GOAL/DESIRED CONDITION: A statement that describes a desired condition to be achieved some time in the future (36 CFR 219.3). Goals address forest priorities and issues. They are broad and general in scope with no specific timeframe, and can be developed for the entire forest or for specific management areas. In either case, they set the context for management direction by providing a broad, user-friendly snapshot of what the forest or management area will look like when goals, objectives, standards and guidelines have been met.

GUIDELINE: Permissions and limitations that should be implemented in most situations. Deviation from a guideline does not require a forest plan amendment, but the rationale must be disclosed in the project decision documents.

HABITAT: The environment in which an organism (plant or animal) lives.

HARVEST METHODS:

- **Clearcut**: A regeneration cut where all merchantable trees in the stand are cut.
- **Improvement:** An intermediate cut to develop uneven-age structure in an even-aged or two-storied stand. The objective is to develop uneven-aged stands from even-aged stands.
- **Patch Clearcut**: A regeneration cut of all merchantable trees on areas from one-fifth of an acre to 10 acres. Patches are areas too small to be delineated as separated stands.
- **Removal Cut**: An intermediate cut to remove the overstory from an area regenerated by the shelterwood or seed tree method. The cutting activity should be used where the remaining overstory is to be removed in only one cut.
- **Seed Tree**: A regeneration cut to obtain natural regeneration by seeding from leave trees. The seed cut retains enough trees to provide about half or more shade on the ground.
- **Selection**: An uneven-aged regeneration cutting method where the objective is to maintain a multi-aged structure by removing some trees in all size classes either singly, in small groups or in strips.
- **Shelterwood**: A regeneration cut to obtain natural regeneration by seeding from leave trees and by providing shade from leave trees.
- **Strip Clearcut**: A regeneration cut of strips through the stand with widths not more than twice the general stand height.
- **Thinning:** An intermediate cut designed to enhance the growth and quality of the remaining trees.

HYDROLOGIC UNIT CODE (HUC): The United States is divided and subdivided into successively smaller hydrologic units which are classified into four levels: regions, sub-regions, accounting units and cataloging units. The hydrologic units are arranged within each other, from the smallest (cataloging units) to the largest (regions). Each hydrologic unit is identified by a unique hydrologic unit code (HUC) consisting of two to eight digits based on the four levels of classification in the hydrologic unit system.

The **first level** of classification divides the nation into 21 major geographic areas or regions. The Hiawatha is located in Region 4 - the Great Lakes Region: The drainage within the United States that ultimately discharges into (a) the Great Lakes system, including the lake surfaces, bays, and islands; and (b) the St. Lawrence River to the Riviere Richelieu drainage boundary.

The **second level** of classification divides the 21 regions into 222 sub-regions. A sub-region includes the area drained by a river system, a reach of a river and its tributaries in that reach, a closed basin(s), or a group of streams forming a coastal drainage area.

The **third level** subdivides many of the sub-regions into accounting units. These 352 hydrologic accounting units nest within or are equivalent to the sub-regions.

The **fourth level** of classification is the cataloging unit, the smallest element in the hierarchy of hydrologic units. (Efforts are underway to add further levels of subdivisions.) A cataloging unit is a geographic area representing part of all of a surface drainage basin, a combination of drainage basins, or a distinct hydrologic feature. These units subdivide the sub-regions and accounting units into smaller areas. There are 2,150 Cataloging Units (sometimes called watersheds) in the nation.

The **fifth level** HUC are watershed between 40,000 to 250,000 acres.

The **sixth level** HUC are watersheds between 10,000 to 40,000 acres.

INHOLDING: Non-federally owned lands or interest in lands located within the boundaries of a National Forest System Unit.

INTERIOR FOREST: An area of late successional or old growth forest that is large enough and of an appropriate shape to provide conditions that minimize predation, parasitism, and microclimate fluctuations associated with forest edges. Interior forest conditions provide habitat for a diversity of wildlife and plant species.

JET SKI: See personal watercraft (PWC).

KARST: Geological landforms most often characterized by caves, underground streams, steep valleys and sink holes.

LAND EXCHANGE: A discretionary, voluntary transition involving mutual transfer of land or interest in land between the Secretary of Agriculture acting through the Forest Service and a non-federal entity, for the conveyance of federal land and acquisition of non-federal land.

LAND TYPE ASSOCIATION (LTA): An ecological unit that describes areas of common ecosystem characteristics and generally (but not always) numbering in the thousands of acres. LTAs are defined by similarities in general topography, geomorphic process, geology, soil and potential plant community patterns.

LANDSCAPE PATTERN: The spatial arrangement of forest patches composed of different species or successional stages. It may also be applied to patches of different land uses, such as residential, commercial or agricultural. A landscape is a heterogeneous land area composed of a cluster of interacting ecosystems that is repeated in similar form throughout.

LARGE WOODY DEBRIS: Large pieces of wood in stream channels or on the ground, includes logs, pieces of logs and large chucks of wood; provides streambed stability and/or habitat complexity. Also called coarse woody debris or down woody debris.

LEASABLE MINERALS: These include deposits of zinc, copper, gold, coal, sulfur phosphates, oil shale, sodium potassium, oil and natural gas.

LEAVE NO TRACE: A program that promotes and inspires responsible outdoor recreation through education and research.

LONG-TERM SUSTAINED YIELD (LTSY) CAPACITY: The highest uniform wood yield from lands being managed for timber production that may be sustained under the goals and objectives of forest plans.

MAINTENANCE LEVELS (Roads): Each Forest System road is to be maintained to a level commensurate with the planned function and use of the road. The intended level of maintenance to be received by each road is termed the Objective Maintenance Level (OML), which are divided into five levels of maintenance intensity. OML-1 is the lowest level and OML-5 is the highest level.

- **ML-1:** Intermittent service roads during the time they are closed to vehicular traffic. Basic custodial maintenance is performed to keep damage to adjacent resources to an acceptable level and to perpetuate the road to facilitate future management activities.
- **ML-2:** Roads open for public uses or permitted by high clearance vehicles. Passenger car traffic is not a priority.
- **ML-3:** Roads open and maintained for travel by a prudent driver in a standard passenger car. User comfort and convenience are not considered priorities.
- **ML-4:** Roads that provide a moderate degree of user comfort and convenience at moderate travel speeds. Some roads may be paved and/or dust-abated.
- **ML-5:** Roads that provide a high degree of user comfort and convenience. These roads are normally paved.

MANAGEMENT AREAS: A specific geographic location on the forest where specific management direction will be applied. The Hiawatha is divided into 21 potential management areas.

MANAGEMENT INDICATOR SPECIES (MIS): Species or habitats identified in the planning process that are used to monitor the effects of management activities on populations of wildlife and fish species, including those species that are ecologically, socially or economically important.

MAST PRODUCING TREES: Trees that provide nutrition in the form of fruit and nuts.

MITIGATION: Action taken for the purpose of eliminating, reducing or minimizing non-desirable impacts of management activities on the environment.

MONITORING: The process of collecting information to evaluate whether the objective and anticipated or assumed results of a management plan are being realized, or if implementation is proceeding as planned.

MOTORCYCLE: A two or three-wheeled motor vehicle, which has a gasoline engine with more than 50 cubic centimeters (cc) piston displacement and two brake horsepower and a top speed over 30 miles per hour. A motorized two or three-wheeled vehicle which meets or exceeds these specifications is classified as a motorcycle even if it has a working pedaling system.

MOTOR VEHICLE: Any vehicle which is self-propelled, other than: 1) a vehicle operated on rails; and 2) any wheelchair or mobility device, including one that is battery-powered, that is designed solely for use by a mobility-impaired person for locomotion, and that is suitable for use in an indoor pedestrian area.

MOTOR VEHICLE USE MAP: A map reflecting designated roads, trails and areas on an administrative unit or a Ranger District of the National Forest System.

MULTI-PASSENGER (UTILITY) ATV (MATV): Any motorized , off-highway vehicle 80 inches or less in width, having a dry weight of 1200 pounds or less that travels on 4 or more low pressure tires with multiple seating for up to 4 persons, and a 700 cc or less engine, as designed and sold by the manufacturer.

NATIONAL FOREST VISIT: The entry of one person upon a national forest to participate in recreation activities for an unspecified period of time. A national forest visit can be composed of multiple site visits.

NATIONAL FOREST VISITOR USE MONITORING (NVUM): A program designed to provide estimates of recreation and other visitor use on national forests.

NATIONAL TRAIL CLASS: A chronological classification of trail development on a scale ranging from Trail Class 1 to Trail Class 5. Each class is defined in terms of applicable tread and traffic flow, obstacles, constructed feature and trail elements, signs, typical recreation environment and experience:

- **Trail Class 1**: Minimal/undeveloped trail
- **Trail Class 2:** Simple/minor developed trail
- **Trail Class 3:** Developed/improved trail
- **Trail Class 4:** Highly developed trail
- **Trail Class 5:** Fully Developed trail

NATIVE SPECIES: With respect to a particular ecosystem, a species that historically occurs in that ecosystem. Native species do not include species introduced by humans.

NON-NATIVE INVASIVE SPECIES (NNIS): Any species that occupy an ecosystem outside its historical range. Invasive species are any non-native species whose introduction does or is likely to cause economic or environmental harm or harm to human health. Invasive species are those species that spread from their original native habitat to one that is not their native habitat. NNIS explode in population because they are not in their original ecosystem where they were kept in check by many factors, such as parasites and predation. These species are frequently aggressive and difficult to manage. NNIS differ from noxious weeds in that NNIS can be animals or plants and they are strictly non-native species.

NOTICE OF INTENT (NOI): A formal statement by the Forest Service informing the public of its intent to revise the existing Land and Resource Management Plan. The NOI is published in the *Federal Register*.

NOXIOUS WEED: Any plant or plant product that can directly or indirectly injure or cause damage to crops (including nursery stock or plant products), livestock, poultry or other interests of agriculture, irrigation, navigation, the natural resources of the United States, the public health or the environment.

OBJECTIVE: A concise, time-specific statement of measurable planned results that respond to pre-established goals (36 CFR 219.3). Objectives are more specific and tangible than goals. Objectives are measurable, but they are not standards. They are budget-dependent and subject to forces beyond agency control.

OBLITERATION: The act of eliminating the functional characteristics of a travelway and re-establishing natural resource production capability. The intent is to make the corridor unusable as a road or a trail and stabilize it against soil loss.

OFF-HIGHWAY VEHICLE (OHV): Any motor vehicle designed for or capable of cross-country travel on or immediately over land, water, sand, snow, ice, marsh, swampland, or other natural terrain. Unless otherwise authorized on the Forest's Motor Vehicle Use Map, OHV use on the Hiawatha is restricted to ATVs, multi-passenger ATVs (MATV) and motorcycles.

OFF-HIGHWAY VEHICLE (OHV) AREA: A discrete, specifically delineated space that is designated for OHV use that is smaller, and in most cases much smaller, than a Ranger District.

OFF-ROAD VEHICLE (ORV) – any motorized vehicle designed for or capable of crossing cross-country travel on or immediately over land, water, sand, snow, ice, marsh, swampland, or other natural terrain (Travel Management Rule)

OLD GROWTH FOREST: Ecosystems where natural biological processes predominate and are characterized by older larger trees, native species, and minimal human disturbance. Old growth structural diversity includes multi-layered canopies, canopy gaps, tip-up mounds and an accumulation of dead woody material. Old growth tracts vary from small isolated forested areas to larger landscape complexes that may include ecologically important non-forested openings, younger patches produced by natural disturbances, wetlands and water bodies.

OPENINGS:

- **PERMANENT UPLAND OPENING**: A specific area where shrubs, forbs, grasses and/or sedges predominate and which is maintained in the open state either naturally or through active maintenance. A permanent opening would include maintained openings, small barrens communities, frost pockets and other natural openings.
- **TEMPORARY OPENING:** An area of grass/forbs and shrubs usually resulting from timber harvest that will be replaced by tree saplings over a period of a few years.

OUTSTANDINGLY REMARKABLE VALUES (ORV): River-related resource values that are rare, unique or exemplary, and are significant at a regional or national level. Usually associated with rivers that are part of the National Wild and Scenic Rivers program.

OVER SNOW VEHICLE: A motor vehicle that is designed for use over snow and that runs on a track or tracks and/or a ski or skis, while in use over snow.

PERSONAL WATERCRAFT (PWC): PWCs are commonly referred to as "jet skis," "air boats," etc. A PWC is an inboard boat that is less than 16 feet in length and powered by either a 2-stroke or 4-stroke engine. The engine drives a jet pump that pressurizes water to propel and steer the craft. With regard to management on the Hiawatha NF, "PWC" also includes amphibious machines (water to land and back) and hovercraft.

PESTS: Insects, diseases or animals that interfere with objectives for managing the forest.

PLANNING HORIZON: In the planning process, the overall time period that spans all activities covered in the analysis or plan, and all future conditions and effects of proposed actions that would influence the planning decisions.

PLANNING PERIOD: The time period before the Plan is reviewed for revision — 10 to 15 years. Management direction pertains to this timeframe.

PREFERRED ALTERNATIVE: The alternative favored for implementation by the Forest Service. It is selected by the deciding official as the best way to manage the forest. The decision is based on relative merits including physical, biological and economic considerations and agency statutory missions. The selected alternative then becomes the basis for the draft Forest Plan.

PRESENT NET VALUE (PNV): The measure of the economic value of a project when costs and revenues occur in different time periods. Future revenues and costs are "discounted" to the present by an interest rate that reflects the changing value of a dollar over time. PNV is used to compare project alternatives that have different cost and revenue flows.

PROBLEM STATEMENT: A concise summary of the management concerns for a particular resource area, as identified in the Analysis of the Management Situation (AMS). The problem statement identifies the specific concerns and a range of possible solutions. The Plan Revision establishes goals and objectives to resolve the problem statements; Plan Revision alternatives and the standards and guidelines identify the means to resolve the problem statements.

RARE II (ROADLESS AREA REVIEW AND EVALUATION): The national inventory of roadless and undeveloped areas within the national forests and grasslands which was completed in 1979.

RECREATION FACILITY: Any building, structure, trailhead, campground, parking area, Picnic ground, fishing pier or boat launch constructed and/or managed for the purpose of providing recreational use.

RECREATION RESIDENCE: House or cabin permitted on NFS land for recreational use of the owner, but not as a primary residence.

RECREATION OPPORTUNITY SPECTRUM (ROS): A formal Forest Service process designed to delineate, define and integrate outdoor recreation opportunities in land and resource management planning. ROS classes are used to describe all recreation opportunity areas – from natural, undisturbed and undeveloped to heavily used, modified and developed. ROS designations describe the kind of recreation experience one may have in a given part of the national forest. Classifications include:

- **PRIMITIVE (P):** An essentially unmodified natural environment of fairly large size. Interaction between users is very low and evidence of other users is minimal. The area is managed to be essentially free from evidence of human-induced restrictions and controls. Motorized use within the area is not permitted.
- **SEMI-PRIMITIVE MOTORIZED (SPM):** A predominantly natural or natural-appearing environment of moderate to large size. Concentration of users is low, but there is often evidence of other users. The area is managed in such a way that minimum on-site controls and restrictions may be present, but would be subtle. Use of local, primitive, or collector roads with predominantly natural surfaces and trails suitable for motorbikes is permitted.
- **SEMI-PRIMITIVE NON-MOTORIZED (SPNM):** A predominantly natural or natural-appearing environment of moderate to large size. Interaction between users is low, but there is often evidence of other users. The area is managed in such a way that minimum on-site controls and restrictions may be present, but would be subtle. Motorized recreation use is not permitted, but local roads used for other resource management may be present on a limited basis. Use of such roads is restricted to minimize impacts on recreational experience opportunities.
- **ROADED NATURAL (RN):** Predominantly natural-appearing environment with moderate evidence of the sights and sounds of humans. Such evidence usually harmonizes with the natural environment. Interactions between users may be moderate to high, with evidence of other users prevalent. Resource modification and utilization practices are evident, but harmonize with the natural environment. Conventional motorized use is allowed and incorporated into construction standards and design of facilities.
- **RURAL (R):** An area that is characterized by a natural environment, which has been substantially modified by development of structures, vegetative manipulation or pastoral agricultural development. Resource modification and utilization practices may be used to enhance specific recreation activities and maintain vegetative cover and soil. Sights and sounds of humans are readily evident, and the interaction between users is often moderate to high. A considerable number of facilities are designed for use by a large number of people. Facilities are often provided for special activities. Moderate user densities are present away from developed sites. Facilities for intensified motorized use and parking are available.
- **URBAN (U):** The area is characterized by a substantially urbanized environment, although the background may have natural-appearing elements. Renewable resource modification and utilization practices are often used to enhance specific recreation activities. Vegetation cover is often exotic and manicured. Sights and sounds of humans are predominant on site. Large numbers of users can be expected, both on site and in nearby areas. Facilities for highly intensified motor use and parking are available with forms of mass transit often available to carry people throughout the site.

RECREATION VISITOR DAY (RVD): A recreation use measurement defined as one 12-hour visit for the purpose of a selected activity on the Forest. It may consist of one person for 12 hours, two people for 6 hours, or any combination that totals 12 hours.

RESEARCH NATURAL AREA (RNA): Areas which are permanently protected and maintained in a natural condition and which include:

- Unique ecosystems or ecological features
- Habitat for rare or sensitive species of plants and animals
- High-quality examples of common ecosystems

The national network of RNAs helps to protect genetic, species, ecosystem and landscape level biological diversity. RNAs that represent natural condition, common ecosystems, serve as a baseline or reference areas which can be compared with similar ecosystems undergoing silvicultural or other management prescriptions.

RESOURCE ASSESSMENT: A compilation of background material on the status of a particular resource area on a local, regional and national

scale. The resource assessment describes the present condition of a particular resource, and speculates on the future condition of the resource based on current and expected trends.

RIPARIAN AREAS: Riparian areas include aquatic ecosystems, riparian ecosystems and wetlands. They are three-dimensional:

- **Longitudinal** (extending up and down streams and along the shores)
- **Lateral** (to the estimated boundary of land with direct land-water interactions)
- **Vertical** (from below the water table to above the canopy of mature site-potential trees)

RIPARIAN ECOSYSTEMS: Areas that are adjacent to aquatic ecosystems and extend away from the bank or shore to include lands with direct land-water interactions. Interactions may affect abiotic and biotic structure, function and composition. As a minimum, this will include all lands that are adjacent to surface water and which have hydric soils or distinctive vegetative communities that require free or unbound water.

RIPARIAN CORRIDORS: A site-specific area with boundaries established to define limits of management activities, and associated standards and guidelines, within riparian areas. Size and placement of riparian corridors will be determined by management objectives for riparian areas and may not include all of the riparian area.

ROAD: A motor vehicle travelway over 50 inches wide, unless designated and managed as a trail. A road may be classified, unclassified or temporary (36 CFR 212.1).

CLASSIFIED ROADS: Roads wholly or partially within or adjacent to National Forest System lands that are determined to be needed for long-term motor vehicle access. It includes state roads, county roads, privately-owned roads, NFS roads and other roads authorized by the Forest Service (36 CFR 212.1).

- **FOREST ROAD:** As defined in Title 23, Section 101 of the United States Code (23 USC 101), any road, wholly or partly within, or adjacent to and serving the NFS and which is necessary for the protection, administration and utilization of the National Forest System and the use and development of its resources.
- **NATIONAL FOREST SYSTEM ROAD:** A classified forest road under Forest Service jurisdiction. The term "National Forest System roads" is synonymous with the term "forest development roads" as used in 23 USC 205.
- **PUBLIC ROAD:** Any road or street under the jurisdiction of, and maintained by, a public authority and open to public travel (23 USC 101(a)).
- **PRIVATE ROAD:** A road under private ownership authorized by an easement to a private party or a road that provides access pursuant to a reserved or private right.
- **UNCLASSIFIED ROADS:** Roads on NFS lands that are not managed as part of the forest transportation system. It includes unplanned roads, abandoned travelways, off-road vehicle tracks that have not been designed and managed as a trail; and roads that were once under permit or other authorization and were not decommissioned upon the termination of the authorization (36 CFR 212.1).
- **TEMPORARY ROADS**: Roads authorized by contract, permit, lease, other written authorization or emergency operation not intended to be part of the forest transportation system and not necessary for long-term resource management (36 CFR 212.1) . Length is generally less than ½ mile.

ROAD CLOSURE: Process of closing a road to public vehicle traffic. Closures are used on system roads (roads intended for future use) to limit or prohibit particular types of travel.

ROAD CONSTRUCTION: Activity that results in the addition of forest classified or temporary road miles (36 CFR 212.1).

ROAD DECOMMISSIONING: Activities that result in the stabilization and restoration of unneeded roads to a more natural state.

ROAD DENSITY: Measure of the degree to which the length of road miles occupies a given land area. For example, one mile/square mile is one mile of road within a given square mile.

ROAD OBLITERATION: Process of removing a road from the landscape. Obliterations are used on system and temporary roads which are to be removed from service (decommissioned). It can include removing evidence of any access points; removing any structures from the roadbed (such as culverts, bridges, signs, guardrails, etc.) and restoring wetlands and riparian areas.

ROAD RECONSTRUCTION: Activity that results in improvement or realignment of an existing classified road as defined below:

- **ROAD IMPROVEMENT:** Activity that results in an increase of an existing road's traffic service level, expands its capacity or changes its original design function.
- **ROAD REALIGNMENT:** Activity that results in a new location of an existing road or portions of an existing road and treatment of the old roadway.

ROUTE/TRAVEL ROUTE: Used to specify a travelway for hiking, snowshoeing, dog sledding, horses, bikes, canoes, snowmobiles, OHVs, etc. "Trail" is used when there is a specifically constructed travelway for an assigned use/uses. "Route" is used when the travelway uses existing means such as rivers (for canoes), or OML 2-5 forest development roads and trails, in combination, for hiking, dog-sledding, horses, bikes, snowmobiles, OHVs, etc.

RUSTIC FACILITY: Facility designed to blend with the surroundings and prevent resource damage. Usually providing minimal necessary amenities and a minimum level of design complexity and may be rustic in appearance.

RUTTING: Depressions in the soil surface caused by animal, foot or mechanical traffic that alter the soil structure causing reduced infiltration of air and water into the soil.

SAWTIMBER: Any tree capable of yielding logs of a size and quality suitable for lumber production.

SENSITIVE SPECIES: Plant and animal species designated by a Regional Forester for which population viability is a concern.

SERAL STAGE: The stage of succession of a plant community that is transitional. If left alone, the seral stage will give way to another plant community that represents a further stage of succession (climax).

SIMPLE FACILITY: See Rustic Facility.

SIZE CLASS:

- **Size class 0**: Open lands
- **Size class 1:** Less than 4.5 feet in height
- **Size class 2:** From 4.5 feet to 4.9" diameter at breast height (DBH)
- **Size class 3:** From 5" to 8.9" DBH
- **Size class 4:** From 9" to 17.9" DBH
- **Size class 5:** Greater than 18" DBH

SKIDDING: Hauling logs by sliding from stump to a collection point.

SLASH: The residue left on the ground after timber cutting, a storm, fire or other event. Slash includes unused logs, uprooted stumps, broken or uprooted stems, branches, bark, etc.

SNAG: A standing dead tree.

SNOWMOBILE: A motor vehicle that is designed exclusively for use over snow that runs on tracks or skis.

SOIL COMPACTION: A physical change in soil properties that results in a decrease in porosity and an increase in soil-bulk density and strength.

SOIL PRODUCTIVITY: The capacity of a soil to produce a specific crop. Productivity depends on adequate moisture and soil nutrients, as well as favorable climate.

SOIL QUALITY: The inherent capacity of a specific soil, as determined by its inherent physical, chemical and biological characteristics, to perform its biologic, hydrologic and ecological functions (FSH 2509.18, 2002).

SPECIAL FOREST PRODUCTS: Goods and products resulting from use of the forest. These may include timber, firewood, plants, berries and forage.

SPECIAL USE PERMIT: An authorization that provides permission, without conveying an interest in land, to occupy and use National Forest System lands or facilities for specific purposes. Special Use Permits are both revocable and terminable**.**

SPECIES AT RISK: Federally-listed threatened, endangered, candidate or proposed species and other species for which loss of viability, including reduction in distribution or abundance, is a concern within the plan area. Other species at risk may include sensitive species and state-listed species.

SPECIES OF CONCERN: Species mentioned by the public for which they have some concern about the species' population or status. These species may or may not be of viability concern (threatened, endangered or sensitive), but other issues have been raised with respect to them.

SPECIES VIABILITY: A viable species consists of self-sustaining and interacting populations that are well-distributed through the species' range.

SPECTRUM: Computer software developed by the Forest Service's Ecosystem Management staff, in cooperation with the Rocky Mountain Forest and Range Experiment Station. The model optimizes management area prescriptions and allocation and schedules activities and outputs. It chooses among alternative solutions, given a set of constraints and an objective such as maximizing income or timber volume. The model evolved from the FORPLAN optimization model that was used in the initial round of forest planning.

STAND: A contiguous group of trees that occupies a specific area and is similar in species, age and condition.

STANDARD: Mandatory permissions and limitations needed to achieve the goals and objectives of the Plan. They are applicable to all foreseeable management situations; deviation from them requires an amendment to the Plan.

STOCKING LEVEL: The number of trees in an area compared to the desirable number of trees for best results, such as maximum wood production.

STREAM GEOMORPHOLOGY: The study of water and earth forces that form stream channels, drainage patterns, floodplains and explain erosion, transportation and deposition of sediments moved by water.

SUB SURFACE RIGHTS (MINERAL RIGHTS): Ownership of or right to use resources and improvements under the surface of the land.

SUCCESSION: A series of dynamic changes by which organisms succeed one another through plant community (seral) stages leading to a potential natural community or climax. In the forest plan revision process, these are generally referred to as early, mid and late successional stages. Stages are transitory in nature, and describe a plant community from its earliest growth condition to a condition of full maturity.

SUCCESSIONAL STAGE: A stage of plant community development as it moves from bare ground to climax. In the plan revision process, these generally relate to seral and size classes.

SUITABILITY: The appropriateness of applying certain resource management practices and uses to a particular area of land, as determined by an analysis of economic and environmental consequences and the alternative uses foregone. A unit of land may be suitable for a variety or individual or combined management practices.

SUITED FOREST LAND: Land to be managed for timber production on a regulated basis.

SURFACE RIGHTS: Ownership of the land surface only; right to use the surface of the land.

SUSTAINABLE: The ability of an ecosystem to maintain ecological processes and functions, biological diversity and productivity over time.

SUSTAINED YIELD: The achievement and maintenance in perpetuity of a high-level annual or regular periodic output of the various renewable resources of the NFS without impairment of the productivity or the land. Sustained yield refers to the orderly, planned and recurrent harvest of living trees and is calculated considering only those acres deemed suitable.

THREATENED SPECIES: Official designation by USFWS applied to any species which is likely to become endangered throughout all or a significant portion of its range within the foreseeable future.

TIMBERLAND: Forest land that is producing or capable of producing, in excess of 20 cubic feet per acre per year of industrial wood crops under natural conditions.

TIMBER PRODUCTION: The purposeful growing, tending, harvesting and regeneration of regulated crops of trees for cutting into logs, bolts, small roundwood or chips for industrial or consumer use. For purposes of forest planning, timber production does not include fuelwood or harvests from unsuitable lands (FSM 1900).

TOTAL ROAD/TRAIL DENSITY: The measure of all roads/trails per unit area, whether open or closed to identify uses.

TRAIL: Any constructed corridor on the land intended exclusively as a pathway for travel by foot, stock (i.e. horseback) or trail vehicles - such as bicycles, snowmobiles and OHVs. A route 50 inches or less in width or a route over 50 inches wide that is identified and managed as a trail.

TRAIL MANAGEMENT OBJECTIVES (TMO): Objectives that guide the management of each trail and tier off of Forest Plan direction. These objectives account for trail uses, user preferences, settings, protection of resources and other management needs.

TRAFFIC SERVICE LEVEL (TSL): A classification system developed by the Forest Service to describe a road's significant traffic characteristics and operating conditions. These levels are identified as a result of transportation planning activities and include the traffic characteristics that are significant in the selection of design criteria and describe the operating conditions for the road. These characteristics are described in FSH 7709.56, Chapter 4.

TRAVEL MANAGEMENT ATLAS: An atlas that consists of a forest transportation atlas and a motor vehicle use map or maps.

UNEVEN-AGED MANAGEMENT: The application of a combination of actions needed to simultaneously maintain continuous forest cover, recurring regeneration of desirable species, and the orderly growth and development of trees through a range of diameter or age classes. This can be applied to a specific stand of trees or an entire ecosystem.

UNSUITED FOREST LAND: Forest land not managed for timber production because:

- Congress, the Secretary of Agriculture or the Chief of the Forest Service has withdrawn it from suitability;
- It is not producing or is capable of producing crops of industrial wood;
- Technology is not available to prevent irreversible damage to soils productivity or watershed conditions;
- There is no reasonable assurance based on existing technology and knowledge, that it is possible to restock lands within 5 years after final harvest, as reflected in current research and experience;
- There is presently a lack of adequate information about responses to timber management activities;
- Timber management is inconsistent with or not cost-efficient in meeting the management requirements and multiple-use objectives stated in the Forest Plan.

NFMA allows timber harvest on lands designated as unsuited for other reasons such as salvage or to protect or meet other multiple use objectives and values. (36 CFR 219.27 (c) (1)).

USER DEVELOPED: An access pathway or structure developed by users or through use and is not part of the Forest management system nor maintained by the Forest Service.

UTILITY CORRIDOR: A tract of land of varying width forming a passageway through which various commodities such as oil, gas and electricity are transported.

VIEWSHED: Total visible area from a single observer position (e.g. an overlook), or the total visible area from multiple observer positions (e.g. a corridor). Viewsheds are accumulated seen-areas from highways, trails, campgrounds, towns, cities or other viewer locations.

VISUAL QUALITY OBJECTIVES: This is also known as "scenic integrity objectives" and is a measure of the degree to which a landscape is visually perceived to be complete. The ratings are:

- **PRESERVATION (P):** Management activities where only ecological changes take place. Only very low visual impact recreation facilities are allowed.
- **RETENTION (R):** Management activities are not visually evident. Activities may only repeat form, line, color or texture should be accomplished during management activities or immediately thereafter. Enhancement and rehabilitation projects are given highest priority for implement in retention foreground.
- **PARTIAL RETENTION (PR):** Management activities remain visually subordinate to the characteristic landscape. Reductions in contrast to line, form, color or texture should be accomplished within the first year or as soon as possible after project completion. Partial retention areas are second in priority for implementation of enhancement and rehabilitation projects.
- **MODIFICATION (M):** Management activities may dominate the original characteristic landscape. These activities must borrow from naturally established form, line, color and texture to appear natural or compatible to the natural surroundings. Few visual enhancement or rehabilitation projects will be planned in modification areas.
- **MAXIMUM MODIFICATION (MM):** Management activities of vegetation and landform alterations which may dominate the characteristic landscape. However, when viewed as background, the visual characteristics must be those of natural occurrences within the surrounding area or character type. When viewed as foreground or middleground, they may not appear to completely borrow from naturally established form, line, color or texture. Alterations may also be out of scale or contain detail which is incongruent with natural occurrences as seen in foreground or middleground.
- **REHABILITATION:** A short-term classification used to restore landscapes to a desired visual quality objective.

WATERCRAFT:

- **MOTORIZED WATERCRAFT:** Boats and canoes powered by internal combustion motors, includes personal watercraft (PWC).
- **NON-MOTORIZED WATERCRAFT:** Boats, canoes and kayaks without internal combustion motors but may have an electric trolling motor.
- **PERSONAL WATERCRAFT (PWC):** PWCs are commonly referred to as "jet skis," "air boats," etc. A PWC is an inboard boat that is less than 16 feet in length and is powered by either a 2-stroke or 4-stroke engine. The engine drives a jet pump that pressurizes water to propel and steer the craft With regard to management, on the Hiawatha National Forest, "PWC" also includes amphibious machines (water to land and back), and hovercraft.

WHEELCHAIR OR MOBILITY DEVICE: A device, including one that is battery-powered, that is designed solely for use by a mobility-impaired person for locomotion, and that is suitable for use in an indoor pedestrian area. A person whose disability requires use of a wheelchair or mobility device may use a wheelchair or mobility device that meets this definition anywhere foot travel is permitted. (Forest Service Manual 2353.05 and ADA Title V Section 507c).

"**Designed solely for use by a mobility-impaired person,**" means that the original design and manufacture of the wheelchair was only for the purpose of mobility for a person who has a disability. This does not include after-market retrofit of a motorized unit to make it useable by a person who has a disability. "Suitable for indoor pedestrian use" means useable inside a home, mall, courthouse, etc.

WILDERNESS: The National Wilderness Preservation Act of 1964 defines wilderness as an area of undeveloped federal land designated by Congress that has the following characteristics:

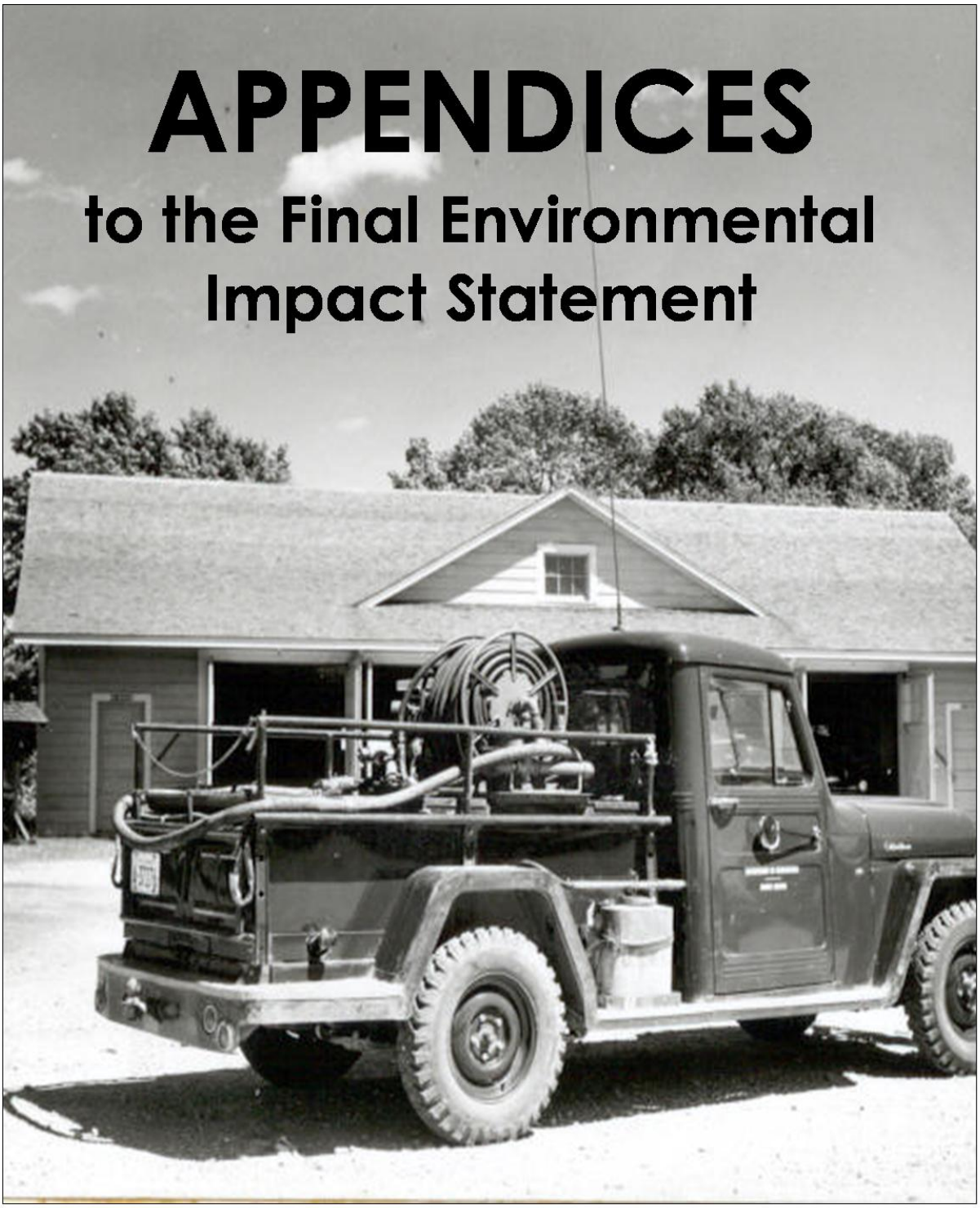
1. It is affected primarily by the forces of nature, where people are visitors who do not remain. It may contain ecological, geological or other features of scientific, educational, scenic or historical value.
2. It possesses outstanding opportunities for solitude or a primitive and unconfined type of recreation.
3. It is an area large enough so that continued use will not change its unspoiled natural condition.

WINDTHROW: Trees uprooted by wind.

WOODY DEBRIS: Dead, natural woody material greater than 10 cm in diameter and longer than one meter, usually composed of boles and large branches. Various terms, such as large woody debris (LWD), coarse woody debris (CWD), and large organic debris (LOD), have been used to describe this material.

APPENDICES

to the Final Environmental Impact Statement



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APPENDIX A

Description of the Analysis Process

Overview of the SPECTRUM Model

SPECTRUM is a vegetation management model developed by the Forest Service Ecosystem Management staff in cooperation with the Rocky Mountain Experiment Station to assist in plan revision alternative evaluation. It was designed to fulfill the requirements outlined in the 1982 National Forest System Land and Resource Management Planning Act (36 CFR), most importantly Section 219.12(f)(8): "Each alternative shall represent to the extent practicable the most cost efficient combination of management prescriptions examined that can meet the objectives established in each alternative."

SPECTRUM is a derivative of the FORPLAN model used for analysis in the Hiawatha's 1986 Forest Plan. It assumes that relationships between outputs and the landbase are linear (for example, twice the number of similar acres yields twice the timber volume). A management objective is specified (for example, maximize net revenues from harvesting activity) as well as any constraints that may affect that objective (for example, limit cedar regeneration to 40 acres or less during any given year).

SPECTRUM 's matrix generator portion translates the management objective, constraints and assumptions about the landbase into a matrix of numbers that can be solved with a linear programming (LP) package. The LP package determines a system of management actions that optimizes the management objective. SPECTRUM's report writer portion then translates the LP output into reports, such as costs, revenues, landscape condition and long-term sustained yield capacity.

The Hiawatha National Forest used the engine-only version of SPECTRUM that was last revised 7/23/2004. The model was used to determine management strategies for benchmark analysis and alternative comparison. Management strategies were determined for 100 years starting in 2004.

Modeling Process. The SPECTRUM model incorporated different assumptions and inputs specific to the Hiawatha National Forest. These assumptions were developed to address questions regarding habitat conditions over time, management activities to achieve certain objectives, and account for the impact of succession and natural disturbance on the landscape. These assumptions are outlined in detail below.

Planning Horizon and Time Scale. The planning horizon for the modeling exercise was 150 years, modeled as a series of 30 five-year time steps. However, the last 50 years of the planning horizon were included for long-term sustained yield calculation purposes and are not evaluated as detailed results from the model. Further explanation can be found in the "Forest-level Constraints" section below.

Analysis Areas. Similar acres of forest were aggregated into basic units called analysis areas and were the finest level of detail that the SPECTRUM model considered. Analysis areas were derived by using the ArcGIS software to overlay relevant geographic features on a map of the forest to divide it into small polygons. Attached to each polygon were attributes from each of the geographic layers used to create it, as well as an acreage area. The number of unique combinations of certain attributes defined the number of analysis areas used in analysis, and the summed acreage of all polygons with the same unique combination of attributes defined the size (in acres) of each analysis area.

Attributes used to define Analysis Areas

Stand Age. Each polygon's age was rounded to the nearest five years, based on current modeling year (2004) relative to Year of Origin.

Ecological Land Type (ELT). The Forest was divided into eight unique ELTs, which represent areas of land with distinct disturbance regimes, successional pathways and potential covertypes. A general

description of the ELTs used in analysis is provided below. Appendix I has a more detailed description.

10/20: Dry sandy sites with higher fire probability

30: Dry sandy sites with more organic matter than 10/20 and a lower fire probability

40/50/90: Moist soil sites that sustain northern hardwoods

60: Moderately drained soils maintaining a variety of coniferous species

70A: Acidic poorly drained mineral soils

70B: Basic poorly drained mineral soils

80A: Acidic very poorly drained soils with 12" or more organic layer

80B: Basic very poorly drained soils with 12" or more organic layer

Seral Class: Each polygon was assigned a seral class designation as a combination of seral stage and size class. Depending on the ELT, a polygon could potentially be given one of seven stage assignments:

- Open
- Aspen
- Jack Pine
- Kirtland's Warbler habitat potential (young jack pine combined with jack pine for discussion)
- Mid Seral
- Late Seral
- Late Seral with a single canopy (combined with late seral for discussion)

Each polygon was also given a size class within the seral stage. Depending on the seral stage, a polygon could be given one of six potential size classes, depending on the size of the dominant trees in the stand.

0: Non-stocked open site

1: Stocked; trees < 4.5 feet in height

2: Stocked; trees > 4.5 feet in height but less than five inches in diameter

3: Stocked; trees between five and nine inches in diameter

4: Stocked; trees between nine and eighteen inches in diameter

5: Stocked; trees greater than eighteen inches in diameter

To establish initial analysis areas, a stand's age (identified from the Combined Data System) was used to determine a size class. Seral class and size class were then combined to give each polygon a seral class designation such as "Aspen size 3" etc.

Suitability: Each polygon was given a suitability designation of either suited or not suited for timber production. Several factors were considered to designate a stand's suitability. See Appendix F for further discussion of suitability analysis.

After each polygon was classified according to each of these four layers, polygons with the same attributes were grouped together to form the analysis areas. The acreage of the polygons within each analysis area was summed to determine the acreage of the analysis area. At this point polygons lost their unique spatial identity.

Other Model Assumptions

Modeled Acres. The number of acres put into the model was less than the total number of acres on the Hiawatha National Forest. This was due to inaccuracies in either the spatial geographic features databases, inaccuracies in the stand-level database or anomalies in the landscape that had no provision made for them. For instance, a polygon defined as a jack pine type in the stand level database that was in ELT 40/50/90 was not given a seral class designation and was therefore not included in the analysis.

Analysis areas less than 2 acres in size were eliminated. Areas of permanent non-forest use such as roads and gravel pits were not defined for analysis. Finally, land that did not receive an ELT designation was not included in the modeled acres. There were roughly 45,000 acres of these "sliver" polygons excluded from analysis. The modeled land base was roughly 849,000acres for all alternatives, including both suited and unsuited land.

Suited and Unsuited Acres. An analysis area's suitability rating (suited or unsuited) affected how it was modeled. Both suited and unsuited acres were included in the model.

Suited acres were considered with regards to all of the processes discussed below. They had several management actions available

depending on their ELT and seral class affiliation. They were also modeled with the assumption that natural processes (succession and disturbance) would play a role during their life. Desired conditions and constraints were applied to suited acres exclusively.

Unsuited acres were included for the purpose of projecting their growth and change during the planning horizon. They were only subjected to the natural processes of succession and disturbance. At any point in the planning horizon, the state of these acres could be assessed and combined with the state of the suited acres to arrive at a forest-wide condition.

Management Actions are suites of potential treatment types for any analysis area, and the associated costs, revenues, timber yields and limitations or constraints. Each analysis area was assigned management actions according to its attributes. Seven treatment types were modeled that varied in intensity and purpose.

- **Grow Only:** Each analysis area had at minimum this option to allow SPECTRUM to choose to not treat an area. This was the only treatment type available to unsuited acres and acres in seral classes below merchantable age of harvest.
- **Prescribed Burn:** This was an option for open lands that allowed the model to retain open lands. These were also sometimes attached to other treatment options such as certain shelterwood treatments, but were not a stand-alone option for SPECTRUM .
- **Planting:** This was an option that allowed SPECTRUM to treat open sites and convert them to a growing stand. This treatment type generally included options to plant bare ground to any of the seral classes that existed on an acre's ELT affiliation.
- **Thinning:** This treatment type included those activities such as thin from above, thin from below, thin across diameters, and release. Depending on the specific treatment, a treated acre might remain as part of its initial seral class, or transfer to another seral class. Thins from below or above generally transferred the treated acre to a different seral class, while a thin across diameter generally kept the area in its initial seral class, but advanced its age (and correspondingly, average size). Releases were pre-commercial thins that generally transferred the treated area to a different seral class.
- **Selection or uneven-aged:** This treatment put the land in a scheduled periodic harvest system. The model generally had a choice of what period to start and at what interval to return to the stand for another treatment. But once the treatment schedule was selected, the area remained locked in that harvesting regime for the duration of the planning horizon, or until the vegetation changed significantly due to natural disturbance.
- **Shelterwood:** One or two stage shelterwood treatments were selected by SPECTRUM to achieve less intensive even-aged management objectives. The treated area was transferred a regeneration class upon the removal harvest of a two-stage shelterwood (usually 5 years after the first, or seed-tree, treatment) or as soon as it was treated for a one-stage shelterwood.
- **Clearcut:** Appropriate acres were given the even-aged treatment option of a clearcut. Included in this management option was regeneration, and any given stand might have several different clearcutting options available. For example, an aspen stand might have the option to clearcut and regenerate as aspen or clearcut and regenerate as jack pine.

There were about 400 management options modeled across all ELTs and seral classes. Detailed information about these options can be found in the planning record.

Unconventional Treatment Types. Due to the desired condition (goal) driven nature of the forest management problem formulation, it was necessary to develop management options that allowed the model to quickly move the forest from seral classes that were overabundant to classes that were at levels below their desired conditions.

These actions were generally specialized thinning options designed to alter the species mix of a stand. However, the actions were largely unconventional in nature, not regularly (if eve), applied historically to the forest. Nor were they often very cost-efficient, as they yielded slim profit margins or sometimes even losses, as evidenced by a relatively low profit

margin for the first decade. Therefore, these management actions were limited to existing stands and were often lost after 15-20 years into the planning horizon.

Minimum Treatment Age. Each ELT/seral stage combination was assigned a minimum age which it could be treated with an even-aged management action. The age was assigned to prevent treatment of the stand before it contained trees of merchantable size. This also satisfied Section 219.16(a)(1)(iii) of the Planning Rule which states that even-aged management practices should generally be scheduled after stands have reached culmination of mean annual increment. The list of Seral stage minimum treatment ages by ELT is shown in Table A-1.

Table A-1. Minimum rotation ages (in years) of Seral stages by ELT.

ELT	Stage			
	Aspen	Jack Pine	Mid	Late
10/20	50	50	50	60
30	45	40	80	80
40/50/90	45	N/A	80	80
60	45	40	50	55
70A	45	50	55	70
70B	45	N/A	70	75
80A	N/A	N/A	50	70
80B	N/A	N/A	60	80

Costs. Each treatment option had associated costs defined for it. Not all costs were associated with each treatment and the actual dollar amount of each cost varied depending on the ELT and seral class being treated. The following list is the menu of the costs and their base price available to each treatment option:

1. **Sale preparation**: base price $45 per MBF sold
2. **Natural regeneration**: base price $20 per acre
3. **Rollerchop:** base price $50 per acre
4. **Brackie:** base price $30 per acre
5. **Other treatment:** base price $75 per acre
6. **Planting:** base price: $200 per acre
7. **Release:** base price $30 per acre. This was included for treatments that required a release after a period of time such as a jack pine regeneration that requires a release 5 years after plating. This is not the same as the "Release" described above.
8. **Prune:** base price $30 per acre
9. **Prescribed Burn:** base price $85 or $90 per acre

A sample of the costs associated with treatment options is shown in Table A-2. The entire list of treatment options and associated costs is located in the planning record. Treatment Option 1 in Table A-2 shows the activities and costs associated with clearcutting an ELT 10/20 aspen stand 5"-9" in diameter (Stage 3) and regenerating as a mid-seral stand. Treatment Options 2 and 3 are shown to provide a comparison between clearcutting an ELT 10/20 Jack Pine stand 9"-18" in diameter and regenerating as jack pine at normal stocking levels (#2) and regenerating at higher density stocking levels suitable for Kirtland's warbler habitat.

Products and Prices. Nine timber product types were distinguished that the forest has historically produced and sold. FSH 2409.18 was referenced to determine the values of these products over time. Depending on the product, prices were derived by averaging the prices for the last 8 or 12 quarters, and some prices were according to the ELT from which the product originated (Pur0, 2004). Prices and products varied by ELT and seral stage.

Table A-3 displays per-MBF price by ELT, seral stage, and product. Not all seral stages yielded all products and so there are many missing values in the chart. An example interpretation of the table is to read from ELT 30 Late stage (row "X"). This stage could produce Hardwood pulp, Hardwood sawlogs, Pine pulp or Pine sawlogs. For each MBF of Hardwood pulp harvested, $22.12 in revenue was generated, and so forth. A key below the table explains the product codes.

Yields. Yields associated with treatment actions serve several purposes:

1. Determination of costs, revenues, and profitability of the treatment action
2. Determination of annual Allowable Sale Quantity (ASQ)
3. Determination of Long-Term Sustained Yield (LTSY)

Yields were determined by ELT and seral class for each treatment option available to the seral class. Yields were estimated using the Forest Vegetation Simulator (FVS) developed and maintained by the Forest Service's Forest Management Service Center located in Fort Collins, Colorado. The data used to run the FVS model came from the Forest Inventory and Analysis (FIA) survey plots conducted on Hiawatha National Forest lands between 1980 and 2005 (maintained by the North Central Research Station; St. Paul, MN).

FIA plots were then stratified according to their ELT and seral stage affiliation and run through FVS to produce yield tables. It is important for yields to accurately reflect on-the-ground management practices. Therefore, records from the Hiawatha National Forest's Timber Activity and Control System (TRACS) database from 1986 – 2002 were used to verify the outcomes from FVS runs. TRACS is the database that contains information about timber sales on National Forest lands. Information stored in the TRACS database includes year of sale, acreage of the sale, and the types and amounts of wood products sold.

The ELT on which sales occurred was determined as well as the corresponding seral class of the area that was sold and these numbers were averaged for each ELT and seral class. Generally, TRACS data was compared to FVS outcomes to verify that the FVS model was calibrated to Hiawatha National Forest lands correctly. However, in some cases where FIA data was insufficient, (i.e., there were too few plots on from a particular ELT/seral stage) TRACS data was used to develop yield tables.

Yields were then input into the SPECTRUM model in standard yield table formats. Age-based yield tables were used for clearcut actions, thinning actions, and shelterwood actions associated with regenerated stands. Time based yield tables were developed for Selection (uneven-age) management actions and existing stand shelterwood actions. The entire yield table file is located in the planning record.

Management Action Restrictions. Not all management actions were applicable to the entire seral class for which they were available. This is due to the amalgamation of cover types that comprise several of the seral classes, or the existing size and age structure variation that exists within each seral class.

Table A-2. Sample treatment options and associated activity costs.

10/20 Aspen Stage 3 Clearcut and regenerate as Mid Seral:	
Activity	**Cost**
Sale Prep	$45/MBF
Rollerchop	$100/Acre
Brackie	$30/Acre
Planting	$220/Acre
Release	$30/Acre
10/20 Jack Pine Stage 4 Clearcut and regenerate as Jack Pine	
Activity	**Cost**
Sale Prep	$40.50/MBF
Rollerchop	$125/Acre
Brackie	$20/Acre
10/20 Jack Pine Stage 4 Clearcut and regenerate at Kirtland warbler stocking levels	
Activity	**Cost**
Sale Prep	$40.50/MBF
Rollerchop	$125/Acre
Brackie	$30/Acre
Planting	$260/Acre

For instance, in ELT 30, some of the stands classified as a mid seral class may be red pine plantations, while other stands are pure oak and still others are mostly spruce and fir. Some stands may also have white pine and hemlock components, although it will not be the dominant species.

A management action might thin out the spruce and fir components of a stand comprised of spruce, fir, white pine and hemlock. This would reclassify the stand as a late seral stage stand.

This management action would not be applicable to a red pine plantation or an oak stand. Therefore, it was necessary to restrict this action to the percentage of ELT 30 mid stands that were of the spruce/fir/white pine/hemlock type. Nearly 100 of these constraints were applied forest-wide. Additionally, a constraint on cedar regeneration (no more than 400 acres per decade) was used to be consistent with current management direction.

Table A-3. Product Prices used for SPECTRUM Modeling.

ELT	Stage	ASPL	HWPL	HWSW	JPPL	JPSW	MCPL	MCSW	PNPL	PNSW
10/20	Aspen	$30.96		$60.74						
	Jack Pine				$86.89	$112.04				
	Late								$126.38	$212.96
	Mid						$46.45	$60.00		
30 X	Aspen	$34.76		$59.26						
	Jack Pine				$95.58	$112.04				
	Late		$22.12	$98.15					$124.80	$177.78
	Mid								$135.86	$240.74
60	Aspen	$34.76		$59.26						
	Jack Pine				$95.58	$112.04				
	Late		$26.07	$96.30			$69.19	$121.30		
	Mid						$46.29	$71.48	$126.38	$214.81
40/50/90	Aspen	$33.02		$56.30						
	Late		$25.51	$175.93						
	Mid						$47.27	$85.15	$138.07	$205.83
70A	Aspen	$29.42		$57.70						
	Jack Pine				$74.29	$87.08				
	Late						$64.08	$98.52		
	Mid						$45.02	$79.17		
70B	Aspen	$29.42		$57.70						
	Late		$24.01	$84.97			$65.28	$77.94		
	Mid						$48.78	$79.17		
80A	Late						$53.25	$75.00		
	Mid	$25.59		$43.33			$42.23	$75.00		
80B	Late						$59.29	$76.33		
	Mid	$25.45		$48.33			$42.23	$75.00		

Key: ASPL = Aspen Pulp**; HWPL** = Hardwood pulp**; HWSW** = Hardwood sawlog (includes Aspen sawlog) **JPPL** = Jack Pine pulp; **JPSW** = Jack Pine sawlog; **MCPL** = Mixed Conifer pulp; **MCSW** = Mixed Conifer sawlog **PNPL** = Pine pulp; **PNSW** = Pine sawlog

Natural Processes. Two weaknesses of the model constructed for analysis of the 1986 Forest Plan, were its lack of consideration for succession of untreated stands and the risk that a stand will be disturbed by a natural phenomenon. Therefore, these processes were incorporated into the SPECTRUM model.

Succession is the process which the overstory species of stands gradually die out and give way to the species in the understory, significantly altering the species mix and age structure of the stand. An example of the succession process involves an aspen stand with a young spruce and fir understory. Typically, the aspen trees will die due to disease, blowdown or otherwise at about 80 years old, leaving the understory of spruce and fir trees as the new overstory. Complex systems of succession were identified for each ELT and incorporated into the model. For a more detailed description of successional pathways within each ELT see Appendix I.

Disturbances. Vegetation on the Hiawatha National Forest is subject to natural disturbances that have a noticeable effect on the standing volume of a stand, its vegetative composition, and the size of its vegetation. The model incorporated the disturbances of fire (surface and stand replacement), wind, insects (such as gypsy moth and jack pine budworm), disease (such as scleroderris, oak decline and root and stem rots), and deer browse into the SPECTRUM model.

Members of an interdisciplinary team identified disturbances with a yearly probability of occurrence. But since the SPECTRUM model is a deterministic rather than stochastic model, these probabilities were modeled as absolute percentages of occurrence. Disturbances were identified for each seral class of each ELT. After the disturbance was determined to have occurred, the disturbed acres were reclassified as a seral class reflecting the correct composition and age. The disturbances and probabilities used in this exercise are in the planning record.

Desired Conditions were developed for each forest management area/ELT/seral class combination by an interdisciplinary team. They were developed as percentages and are found in Chapter 3 of the 2006 Forest Plan. Over 650 desired vegetation conditions, or goals, were identified and consist of a range of acceptable vegetation levels between a lower and an upper percentage. The desired conditions were incorporated as constraints necessary for the model to achieve.

Forest-level Constraints on management actions and vegetative conditions have been described. The model also incorporated several key forest-level constraints designed to fulfill requirements outlined in 36 CFR Section 219.16(a)(1): "For the base sale schedules, the planned sale for any future decade shall be equal to, or greater than, the planned sale for the preceding decade, provided that the planned sale is not greater than the long-term sustained-yield capacity consistent with the management objectives of the alternative." The constraints used to fulfill this requirement are described below.

- **Non-declining yield**: Since the model was formulated using 5-year time periods, the planned sale in a future 5-year time period was constrained to be greater than or equal to the sale volume in the time period immediately preceding it. This method fulfills the above requirements.
- **Long-term sustained yield:** Long-term sustained yield was determined by a method described by the USDA Forest Service Region 5 analyst, Klaus Barber (pers. comm., 2004). The modeled planning horizon was 150 years, with the last 50 years modeled for long-term sustained yield calculation. This was achieved by employing an efficiency objective function (see "Solution Process – Efficiency Objective Function") for the first 100 years of the planning horizon only while requiring non-declining yield for the entire 150 years.

  The assumption is, if the model can maintain at least the volume sold at year 100 for another 50 years that the long-term sustained yield is the volume sold at year 100. Since the non-declining yield constraint is in effect for all 150 years, including the first 100 years, the timber sale volume is never greater than the long-term sustained-yield capacity of the forest.

Solution Process. Model complexity due to the number of defined goals (over 650 – see "Desired Condition"), the number of disturbance and successional pathways and the number of treatment options necessitated model simplification. The forest was divided into, and solved by, sub-sections. Each subsection of the forest was solved with a two-step preemptive optimization methodology. Rardin (1998) gives a definition: "Preemptive...optimization performs multi-objective optimization by considering objectives one at a time. The most important is optimized; then the second most important is optimized subject to a requirement that the first achieve its optimal value; and so on."

The first objective, the time objective, of the Hiawatha NF is to determine feasible vegetation constraints that move the forest to desired condition in the least amount of time. The second objective is to manage the forest in a cost-efficient manner. This process is described in more detail below.

Resolution. The objective to determine vegetation constraints that achieve desired condition was achieved with a goal programming formulation (see Determination of Feasible Constraints). SPECTRUM was limited to 180 upper and lower goals, many fewer than the over 650 defined by the planning team. It was also determined to be inefficient for the C-WHIZ Linear Programming solver to solve a whole-forest model containing age, ELT, seral class and suitability resolution. Therefore, two simplifications were made to the model:

- Vegetation goals set by ELTs within each management area were aggregated and modeled at the ELT seral class level. This reduced the total number of goals from about 650 to about 120.
- The management strategy was solved at the sub-forest level – namely, each ELT was modeled independently. However, within each sub-forest model, the forest-level constraints of non-declining yield and long-term sustained-yield (see "Forest-level Constraints") were maintained.

Time Objective Optimization. The first step in the process was to develop feasible vegetation constraints, or the mix of vegetation conditions at different points in time that most rapidly move the forest from its current state into the desired state. This was accomplished using a goal programming formulation, similar to that described by Merzenich and Hemstrom (2000).

Goals are first specified as "values of the criteria functions in an optimization model that decision makers consider sufficient or satisfactory" (Rardin, 1998). Goals in this formulation were the minimum and maximum acceptable levels of different vegetation types (management area desired conditions). The next step is to optimize the objective, i.e. satisfy all goals as nearly as possible. The feasible constraint determination stage of the solution process has an objective that would read something like "find a management strategy that minimizes the total underachievement or overachievement of all goals."

By nature, if the solver finds a management strategy that would move the forest to within the vegetation desired conditions sooner than another option, it will choose the quicker management strategy. The model continues this process until it cannot find a better solution.

Constraint Processing. To move to the next step of the solution process, the results from the Determination of Feasible Constraints step must be processed. The amount of vegetation according to each goal at each time step of the planning horizon is evaluated and relaxed according to a relaxation heuristic. The relaxation heuristic was applied to give the model some flexibility to potentially achieve big gains with very slight relaxations in constraining absolute output levels. The relaxed amount was then set as a constraint in the next phase of the solution process.

The relaxation heuristic used was:

- If the acreage achieved was less than the minimum goal in a time period, the lower-level constraint was set at 98 percent of the output acreage level; the upper-level constraint was set at the maximum goal.
- If the acreage is greater than or equal to the minimum goal and less than or equal to the maximum goal, the lower level constraint was set at 1 acre less than the minimum goal and the upper level constraint was set at 1 acre more than the maximum goal. This was to accommodate for any rounding that may have occurred in outputs.
- If the acreage was greater than the maximum goal, the lower-level constraint was set at the lower goal and the upper-level constraint was set at 102 percent of the output acreage level.

This resulted in a total of about 3,600 lower-level and 3,600 upper-level constraints forest-wide (one constraint for each lower goal and one for each upper goal for each of 30 time periods).

Economic Objective Optimization. In compliance with 36 CFR Section 219.12(f)(8), a management strategy that achieves the desired condition in the most cost-efficient manner must be determined. One of two objectives was used to fulfill this rule, depending on the ELT:

1. **Maximize Present Net Value**: Find the management strategy that maximizes the discounted present net value of the chosen management actions. This was applied to Upland ELTs that are generally available to be managed at more intensive levels. These ELTs included the 10/20s, 30s, 40/50/90s and 60s.
2. **Minimize Cost**: Find the management strategy that minimizes the sum of the discounted costs of the chosen management actions. This objective function was applied to lowland ELTs where management is generally less intensive. These ELTs included the 70As, 70Bs, 80As, and 80Bs.

Each ELT was then run with its appropriate objective function and vegetation constraints. For all efficiency model scenarios, an annual discount rate of 4 percent was used to represent the value of activities today when compared to the future per FSM 1971.21. The resulting solution represents the most cost efficient way to most quickly meet the forest-wide desired condition.

Sensitivity Analysis

Several sensitivity analyses were conducted to evaluate the trade-offs between time optimality and economic optimality. This gives managers information about the trade-offs between managing for desired future conditions in the least amount of time vs. managing for economic returns. Sensitivity analysis was conducted for the Alternative 2 solution.

Three baseline runs were established to compare the sensitivity runs. The first baseline run is the solution to the Time Objective optimization run, where a goal programming formulation is used to determine the shortest amount of time required to attain and maintain desired future conditions. This run is referred to as 'TIME" in the sensitivity analysis.

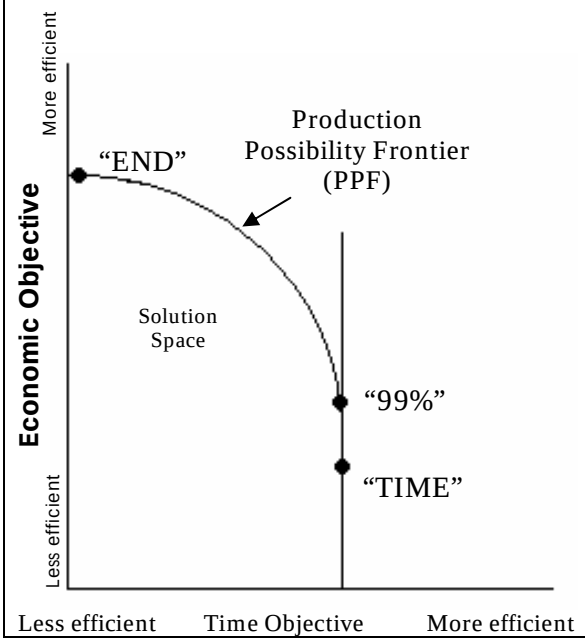
The second baseline run is the solution to the Economic Objective optimization run, referred to as the "99%" run in sensitivity analysis.

The third baseline run requires achievement of desired future conditions by year 95, but allows the model to vary widely from desired future conditions before year 95. This run is referred to as the "END" run. All of these runs had the same forest-wide constraints of non-declining even flow and the same suite of management options.

The solutions to the baseline runs define the boundary of what can be thought of as a Production Possibility Frontier (PPF) curve in economic theory (Figure A-1). The PPF represents the optimal amount of production given a certain mix of commodities. In this instance, the commodities are time efficiency and economic efficiency.

"TIME" is a point on the curve representing all optimal solutions to the first time objective (there are many of them). "99%" represents the most economically efficient point on the optimal time efficiency curve. "END" represents the point of highest economic efficiency that still reaches DFC by the end of the planning horizon. The sensitivity analyses explore the shape of the curve between "99%" and "END".

Figure A-1. The Production Possibilities Frontier between the Time and Economic objectives.



Comparison of Baseline Scenarios: Table A-3a compares the "TIME" and "99%" scenarios, showing increases in economic efficiency and timber output without loss in time efficiency. Time efficiency is measured in average acre deviation (Avg Dev) from desired condition through the first 100 years of the planning horizon. In Table A-3a, the "TIME" scenario averaged 64,187 acres outside of Desired Condition each year for the first 100 years, although this tends to start with a much greater amount of deviation and decrease throughout the planning horizon.

Economic efficiency is expressed in average annual undiscounted revenues for 100 years (millions of dollars) (Avg Rev). Timber volumes are expressed in annual thousand board foot outputs (Avg Timb). The other baseline run, "END", is compared to the "99%" run in the first sensitivity analysis scenario below.

Table A-3a. Comparison of output values from the time objective solution ("TIME") and the economic objective ("99%")

	TIME	99%	
METRIC	Level	Level	Change from TIME
Avg Dev (acres)	64187	64473	0.45%
Avg Rev ($MM/year)	5.4	7.1	31.58%
Avg Timb (MBF/year)	95100	107827	13.38%

Sensitivity analysis: Sensitivity analysis involved two different constraint relaxation techniques to evaluate the increases in economic efficiency that result from correspondingly small losses in time efficiency.

The first relaxation technique relaxed the binding vegetation constraints of the "99%" solution by 5% and 10%. Binding constraints are model requirements that, if relaxed, would increase the value of the solution. The 5% relaxation run is called "1-95%" and the 10% relaxation run is called "1-90%". The "END" scenario is also shown for comparison to show 100% constraint relaxation until year 95. All scenarios had the same year 95 constraint, and therefore converge at that point. Figure A-2 shows the total deviation from DFC through the planning horizon.

Economic value increases from this relaxation technique are correspondingly low. Table A-3b shows that the "1-95%" run shows a nearly 6% loss in time efficiency, with only a 2.4% increase in economic value. The "1-90% run shows a 10% loss in time efficiency, accompanied by a 4% increase in economic value. Even the extreme case, the "END" scenario, shows a relatively small increase in economic value (13%) with a large sacrifice to time efficiency (92%). Results show that this relaxation technique does not yield meaningful economic benefits by sacrificing time efficiency.

The second relaxation technique involved looking at the most economically expensive constraints from the 99% solution and relaxing them based on certain thresholds. Whereas the first relaxation technique relaxed any binding constraint, the second technique compared a 5% relaxation in all binding constraints ("2-95% - $0"), a 5% relaxation in binding constraints with an economic cost (shadow price) of $10 or more ("2-95% - $10"), and a 5% relaxation of constraints with an economic cost of $100 or more ("2-95% = $100). Economic cost (shadow price) is a marginal value representing the increase in economic value realized by a 1 acre relaxation in the constraint.

There is no discernable difference in the DFC deviation graphs of these functions as they are relatively close together. Therefore, that graph is not presented here. Table A-3c shows a tabular comparison between the runs. The second relaxation technique shows that relaxing binding constraints with economic costs greater than $100 causes the economic efficiency increase to be proportionally greater than the time efficiency loss (a 1.92% economic gain corresponding to a 1.56% time efficiency loss). However it is questionable whether a 2% economic gain is really a meaningful result.

Sensitivity Analysis Conclusions: The solutions to the relaxation techniques discussed represent points slightly below the PPF of Figure A-1. It is difficult to guarantee points exactly on the PPF curve due to the complexity of the problem. However, these points are close enough to the PPF to reasonably conclude that the shape of the curve is relatively flat to the left of the "99%" point (See Figure A-3 for a graph approximating the relative positions of the sensitivity runs with a theoretical PPF curve).

Stated otherwise, the "99%" solution maintains time efficiency in an economically efficient manner. Even large sacrifices to time efficiency do not correspondingly increase economic efficiency (as when the "END" scenario is compared to the "99%" solution, above). This analysis indicates that in general, management decisions that move the state of the forest to desired future conditions can be economically efficient.

Figure A-2: Deviations from desired future conditions through time; comparisons of the first relaxation technique

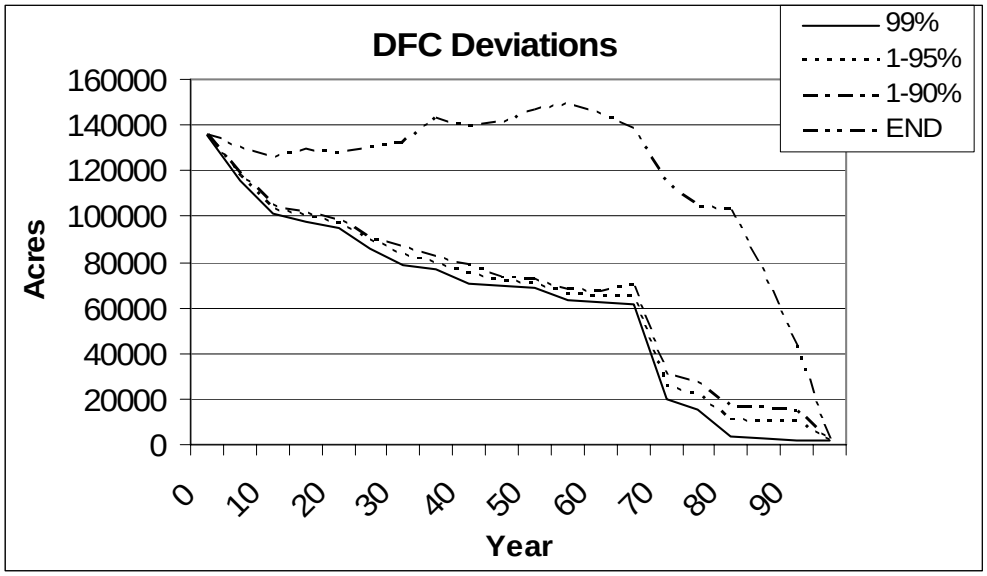


Figure A-3. Graph of relative positions of relaxation techniques and theoretical PPF curve

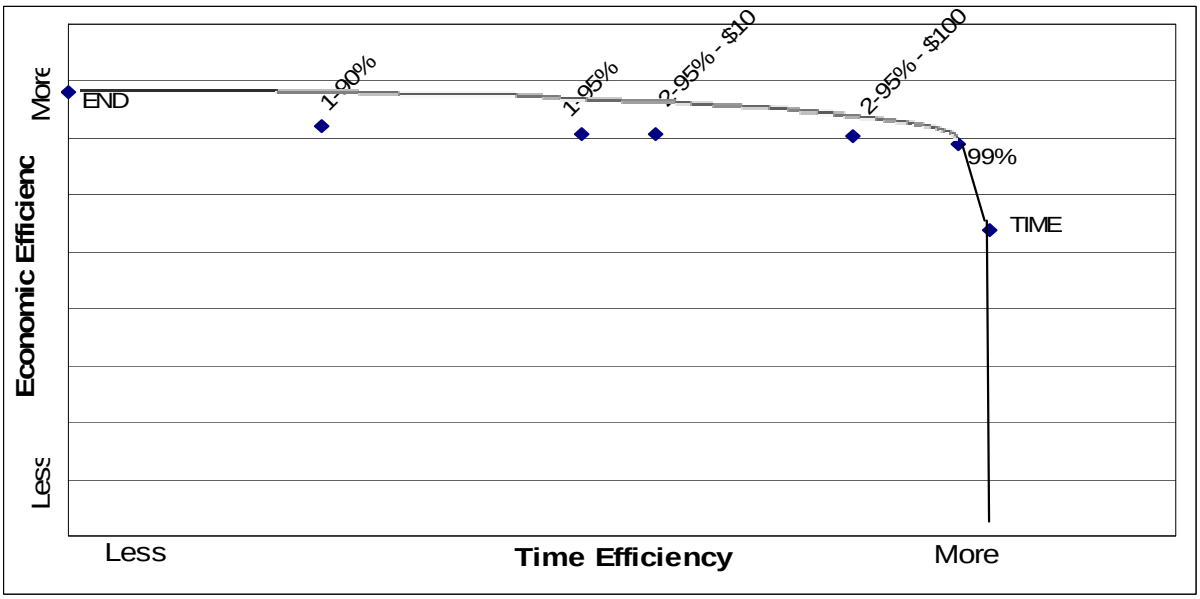


Table A-3b. Comparison of first relaxation technique results

METRIC	99%	1-95%		1-90%		END	
	Level	Level	Change from 99%	Level	Change from 99%	Level	Change from 99%
Avg Dev (acres)	64473	68210	5.80%	71060	10.22%	123842	92.08%
Avg Rev ($MM/year)	6.9	7.1	2.44%	7.2	4.24%	7.8	12.86%
930Avg Timb (MBF/year)	107140	107827	0.64%	108371	1.15%	108365	1.14%

Table A-3c. Second relaxation technique scenario comparison							
	99%	2-95% $100		2-95% $10		2-95% $0	
METRIC	Level	Level	Change from 99%	Level	Change from 99%	Level	Change from 99%
Avg Dev (acres)	64473	65479	1.56%	67452	4.62%	68210	5.80%
Avg Rev ($MM/year)	6.9	7.0	1.92%	7.1	2.29%	7.1	2.44%
Avg Timb (MBF/year)	107140	107545	0.38%	107724	0.55%	107827	0.64%

Benchmark Analysis

Benchmark analysis is conducted to assess potential outputs from the forest. Table A-4 lists value outputs from the three benchmark analyses. Present net value and annual timber volume are shown as points of comparison. For all present net value calculations, a 4 percent annual discount rate was applied.

Minimum Management Benchmark. Planning regulations require a minimum management benchmark scenario be evaluated. This benchmark represents only the costs and benefits associated with managing the forest at a minimum level of maintenance. Incidental outputs are permissible, but there are no timber outputs recognized in this alternative due to the absence of active timber management practices. The forest is left to grow and change according to the defined succession and disturbance occurrences. The SPECTRUM model was used to determine the timber outputs and associated costs and benefits of timber output. It was also used to determine the state of forest vegetation over time.

Objectives of the minimum management benchmark include:

1. Conserve soil and water resources
2. Prevent significant or permanent impairment of the productivity of the land
3. Prevent environmental damage to the land and resources of adjoining and/or downstream lands under other ownership
4. Protect critical habitat for threatened and endangered species
5. Protect heritage resources

Constraints. Analysis areas were limited to the "Grow Only" management action.

Process. The benchmark was solved using the maximize present net value objective. However, since each analysis area was limited to only one management action, the solution was hard-wired and could have been derived from any objective.

Results. There were no timber outputs derived from active management activities, and therefore no associated costs and benefits. The vegetation generally aged over time and moved toward the late seral condition, although disturbances still caused some of the land base to be maintained in younger conditions.

Maximum Biological Potential. This benchmark analysis is conducted to determine the maximum amount of timber that can be produced from forest lands. This analysis utilizes the maximum potential area of the forest that can be classified as suitable for timber production. Forest land not considered as suitable for timber production in this analysis, includes land that is non-forested, land that is defined as physically unsuitable for timber production (according to planning regulations) and land that has been administratively withdrawn from the suited land base (such as designated wilderness).

There were two steps in the solution process to determine the maximum biological potential of the forest. The first determined the maximum volume of timber that could be sustained on the forest. The second determined the most cost-efficient method of achieving the level of timber established by the first analysis.

Objectives. In addition to the objectives for the minimum management benchmark, this benchmark analysis represents the highest possible timber volume the forest can sustain over time.

Constraints. All potential management practices were available on all acres of suited land. Costs of management activities and benefits (revenues) from timber outputs from management activities were evaluated to determine economic efficiency. An annual discount rate of 4 percent was used.

Vegetation changes occurred on both managed and unmanaged land according to established successional rules and disturbance regimes. Minimum management requirements were incorporated as constraints as well as non-declining yield. Timber volumes resulting from the first step of the analysis were used as constraints in the second step of analysis.

Process. The maximum biological potential benchmark analysis was formulated as a two-step preemptive optimization formulation (see "Solution Process"). The first step used a maximize total timber volume objective. The resulting volumes produced in each decade were relaxed to 98% of their output levels and set as constraints in the second step. The second step used a maximize present net value objective with timber volumes to be achieved as constraints. Values from the second step are displayed and discussed.

Results. The maximum biological potential benchmark shows the greatest sustainable timber volume that can harvested each year. Table A-4 shows the projected potential timber volume the forest can produce for the next ten decades. The maximum biological potential benchmark projects the highest volume of the three benchmarks.

Table A-5 shows the projected profitability and value of the three benchmarks. The maximum biological potential benchmark produces the second-highest present net value for the next 100 years of management activities, and the second highest annual profit in nearly all decades. These values are less than the maximum PNV benchmark because some management activities chosen solely to produce volume may be cost-inefficient.

These activities would not be chosen in the maximum PNV benchmark causing profitability to increase but timber volume produced to decrease. It is also likely that some management activities, costly in the short-term, generate higher volumes of timber in the long-term. Since there is no time value on the timber volumes derived from the first step of the solution process, this benchmark is willing to incur greater costs in the short-term if there are long-term payoffs. The maximum PNV benchmark does consider the time value of money, so costly short-term activities would not be considered to the same extent.

Table A-4. Benchmark Monetary Returns.

Decade	Minimum Management	Maximum Biological Potential	Maximum PNV
	Net Revenue*		
1	0	38	40
2	0	59	66
3	0	64	66
4	0	57	61
5	0	40	42
6	0	37	39
7	0	42	43
8	0	43	43
9	0	47	45
10	0	47	43
	100 Yr PNV**		
	0	241	256

* Net Revenue is expressed in $Millions per year (undiscounted)
** Present Net Value (PNV) is expressed in $Millions (discounted at 4% annually)

Maximum Present Net Value (PNV). This benchmark determines the maximum economic return of the land measured in costs and benefits of timber production. This benchmark also serves as a sideboard for the amount of timber that can be produced from the forest with positive economic returns.

Objectives. This benchmark represents the highest value mix of market outputs on the Forest while maintaining a non-declining yield of timber products over time. It also kept the objectives of the minimum management benchmark.

Constraints. All potential management practices were available on all acres of suited land. Costs of management activities and benefits (revenues) from timber outputs from management activities were evaluated to determine economic efficiency. An annual discount rate of 4% was used. Vegetation changes occurred on both managed and unmanaged land according to established

successional rules and disturbance regimes. Minimum management requirements were incorporated as constraints as well as non-declining yield. Vegetation conditions and timber volume outcomes were not constrained.

Process. The maximum present net value benchmark had the objective to maximize PNV of timber management activities for the first 100 years of the planning horizon.

Results. Consistent with its objective, this benchmark generated the highest present net value of the benchmarks analyzed, shown in Table A-5, which also shows that for most periods, and particularly early periods, the maximum PNV benchmark had the highest per-year average profit. However, profits in Decades 9 and 10 dip below profits in maximum biological potential benchmark.

This is likely due to different management strategies early in the planning horizon that leave the forest in a different state in Decades 9 and 10. The maximum biological potential benchmark left it in a state that was more profitable in the future. Since profits are discounted by 4 percent annually, the effect of profits in later periods on present net value is much less in later periods than in earlier periods. This benchmark is more concerned with generating revenues in the earlier periods than in the later periods. Therefore, the opportunity to generate revenue in the distant future is usurped by the opportunity to generate revenue in the near future if it is necessary to choose between the two.

Table A-5 shows the projected potential timber volume the Forest can produce for the next 10 decades. The maximum PNV benchmark projects the second-highest volume of the three benchmarks. These values are less than the maximum biological potential benchmark because management activities that were chosen in the maximum biological potential benchmark may have had higher short-term costs, but yielded higher future timber volumes. The maximum PNV benchmark does not consider timber volume in its solution, and so these high cost/high volume management activities would be replaced with more cost efficient ones.

Table A-5. Volume comparison between Benchmarks by Decade. Volumes are expressed in million board feet per decade.

Decade	Minimum Management			Maximum Biological Potential			Maximum PNV		
	Pulp	Saw	Total	Pulp	Saw	Total	Pulp	Saw	Total
1	0	0	0	1,106	543	1,650	962	514	1,476
2	0	0	0	976	703	1,679	797	769	1,567
3	0	0	0	908	774	1,683	796	771	1,567
4	0	0	0	994	718	1,712	823	743	1,567
5	0	0	0	1,192	561	1,754	1,026	540	1,567
6	0	0	0	1,240	557	1,797	1,045	522	1,567
7	0	0	0	1,164	632	1,797	980	586	1,567
8	0	0	0	1,244	652	1,896	988	579	1,567
9	0	0	0	1,301	704	2,006	994	572	1,567
10	0	0	0	1,299	717	2,016	1,025	541	1,567

Plan Alternative Analysis

There were four alternative plan designs developed and analyzed in response to the direction given in 36 CFR Section 219.12(f). The design of the alternatives was established following the analysis of the management situation, the evaluation of public comments, along with several other factors. Alternative 1, or the "no action" alternative, is designed in accordance with 36 CFR Section 219.12(f)(8). Alternatives 2–4 were designed to respond to the range of management directions that were proposed. Special design considerations for each of the alternatives are discussed below.

Alternative 1 required translating the current management situation outlined in the 1986 Plan into a representation consistent with the

design developed to analyze Alternatives 2–4. Forest covertype group represented in the 1986 Plan was not recognized for this analysis; instead the concept of "seral class" was used as a surrogate. Management direction in the 1986 Plan was expressed in terms of forest covertype group and was translated into direction and quantified in terms of seral class. Specific management area direction in the 1986 Plan was translated into direction for ecological land types. Vegetation objectives from the 1986 Plan had to be expressed as goals. All other model formulation aspects were consistent with those described in the "Modeling Process" section.

Vegetation Classification. The 1986 Plan used forest covertype group to portray management direction. Since plan revision determined direction for seral classes and not forest covertype group, a method for representing 1986 Plan direction in terms of seral classes had to be developed. Forest covertype, identified in FSH 2409.21, was used as the basic unit for developing the forest covertype groups used in the 1986 Plan; forest cover type was also used as the basic unit for developing seral class. The 1986 cover type groups could then be equated to seral classes by determining the level of commonality between the two at the current time (2004).

Management Area Classification. The 1986 Plan details management direction at the management area (MA) level. Ecological land types were the basic land-based management units used in plan revision modeling. A GIS intersection between management areas defined by the 1986 Plan and the ELTs determined the relative abundance of ELTs within each MA. Direction outlined in each 1986 management area could then be proportionally assigned to its respective ELTs, depending on their abundance within each management area. Management direction determined for each section of the ELT in different management areas was then aggregated to get ELT management direction.

Management Direction. Vegetation management direction in the 1986 Forest Plan was expressed according to management area and covertype group. Translation of this management direction to the current use of ecological land type and seral class is discussed above. However, Plan revision formulated management objectives as goals rather than as hard constraints. Therefore, management objectives specified by the 1986 Plan were expressed as vegetation goals in the first step of the preemptive optimization programming solution process (see "Modeling Process – Solution Process"). Since the 1986 Plan did not specify the maximum amount of the objectives, only lower goals were used.

Solution Process. Alternative 1 was formulated as a two-step preemptive optimization program, consistent with the design of Alternatives 2–4. The first step expressed vegetation objectives as goals. Results from the first step were translated into constraints used in the second step.

Assuming the first decade of the 1986 Plan was from 1986 to 1996, the second decade would be from 1996 to 2006, and the forest should be at the end of the second decade of plan implementation. Allowable Sale Quantity (ASQ) for the second decade was 900 MMBF and 117 0 MMBF for the third decade. Figure 3-TS-1 (Timber Supply: Allowable Sale Quantity) in Chapter 3 of the Final EIS shows that actual volumes sold during the first decade are less than 70 MMBF annually (with the exception of 1991 and 1993). All of the volumes sold during the second decade (with a low in 1993 of about 11 MMBF) are less than the annual 90 MMBF projected by the Plan.

Due to differences in actual sell versus projected timber volume, the Forest's vegetation condition is likely different from what the 1986 Plan projected. Since projected ASQ is directly dependent on vegetation condition, ASQ was not constrained in this alternative (other than by the non-declining yield constraint) to allow for a re-evaluation of the forest in its actual 2004 condition instead of the condition projected by the 1986 Plan.

Consequently, Alternative 1 generated an ASQ of 996 MMBF for the first decade of the revised plan (the second decade of the 1986 plan). The increase is likely due to the forest having more standing volume than what the 1986 Plan had projected.

Alternatives 2-4 designs were consistent with that described in the "Modeling Process" section.

Table A-6. IMPLAN Sector Aggregation Used to Separate Forest-Related Industries

Tourism Support					
481	Food Services and drinking places	479	Hotel/Motels, including casino hotels	483	Automotive Repair and Maintenance
480	Other Accommodations				
Recreation Vehicle Support					
359	Motorcycle, Bicycle and Parts Manufacturing	401	Motor Vehicle and Parts Dealers	432	Automotive Equipment Rental and Leasing
	All Other Transportation Equipment				
Timber					
014	Logging	015	Forest Nurseries, Products & Timber	112	Sawmills
114	Reconstituted Wood Products Manufacturing	115	Veneer and Plywood Manufacturing	116	Engineered wood member & truss manufacturing
119	Other Millwork, including Flooring	120	Wood Container and Pallet Manufacturing	123	Miscellaneous Wood Products Manufacturing
125	Paper and Paperboard Mills	126	Paperboard Container Manufacturing	124	Pulp Mills
Mining					
019	Oil and Gas Extraction	020	Coal Mining	021	Iron Ore Mining
022	Copper, nickel, lead, & zinc mining	023	Gold, silver & other metal ore mining	024	Stone mining & quarrying
025	Sand, gravel, clay & refractory mining	027	Drilling Oil and Gas Wells	028	Support Activities for Oil and Gas Operations
029	Support Activities for Other Mining				

Economics

IMPLAN Model. Economic effects on local counties were estimated using an economic input-output software model developed with IMPLAN Professional 2.0. IMPLAN uses the latest available national input-output tables from the Bureau of Economic Analysis; secondary economic data at the county level from a variety of public sources, and proprietary procedures to develop an input-output model for a study area. The process and software were originally developed by the USDA Forest Service and are now the property of the Minnesota IMPLAN Group (MIG, Inc.). All IMPLAN models were developed using 2002 data, the most recent data available at the time. Models were initially constructed for each county in the analysis area. These models were used to develop descriptions of the economic environment within each county. The results of this analysis are summarized in the Social and Economic Sustainability section of Chapter 3 of the FEIS. Additional modeling was conducted where all affected counties were grouped together to describe both the overall economic environment and the estimated effects of the alternatives.

Counties included in the analysis area were selected based on a number of factors described in the Social and Economic Sustainability section of Chapter 3. Alger, Chippewa, Delta, Luce, Mackinac, Marquette and Schoolcraft counties were included in the Hiawatha National Forest IMPLAN model. Factors considered in determining the analysis area are described in more detail in the Social and Economic Assessment for the Michigan National Forests located in the project record. (Reference: Leefers, Larry, Karen Potter-Witter and Maureen McDonough. 2003. *Social and Economic Assessment for the Michigan National Forests.* Department of Forestry, Michigan State University. July 25, 2003.)

Economic Environment. The description of the economic environment examines the contribution that forest related industries make to industry output and employment within the analysis area. Specific IMPLAN sectors were selected as a proxy or representation of the forest resource-related industries of interest in forest planning. Table A-6 illustrates the selected sectors grouped by the forest resource-related industries they represent. The Tourism Support and Recreation Vehicle Support industry

information are not separate sectors, but are a combination of businesses that play a part in recreation and tourism activity around the Forest. It is important to note that these businesses also serve other needs not directly related to recreation and tourism, because they also serve individuals who are not engaging in these activities. The split between local and tourism related activity was not estimated, a fact that should be considered when reviewing the analysis.

The results of the contribution analysis are only a proxy of employment related to Hiawatha National Forest resources. Results would differ if other sectors were selected to represent forest resource-related activities. In the analysis presented, a consistent and conservative approach was taken to illustrate the relative importance of the Hiawatha activity within the analysis area.

Impact Analysis. Impact analysis describes what happens when a change in final sales (e.g., exports and consumer purchases) occurs for goods and services in the model area. Changes in final sales are the result of multiplying units of production (e.g., hundred cubic feet of timber harvest or National Forest visits) by sales per unit. Economic impacts were estimated using the best available production and sales data.

Impacts to local economies are measured in two ways: employment and labor income. Employment is expressed in jobs. A job can be seasonal or year-round, full-time or part-time. The number of jobs is computed by averaging monthly employment data from State sources over one year. The income measure used was labor income expressed in 2004 dollars. Labor income includes both employee compensation (pay plus benefits) and proprietors' income (e.g., profits by self-employed).

The analysis area model was used to determine the employment and income consequences through the economy of one-million-dollar changes for each kind of impact. The results are called response coefficients. Because input-output models are linear, multipliers or response coefficients need only be calculated once per model and then applied to the direct change in output.

Spreadsheets were used to calculate total effects by multiplying the response coefficients by estimated levels of dollar activity. A customized Excel workbook called FEAST (Forest Economic Analysis Spreadsheet Tool) was developed and used for this purpose. Details for FEAST are in the project record. Specifications for developing response coefficients and levels of dollar activity are stated below.

Recreation and Tourism
(Includes Fish & Wildlife Related Recreation)

Expenditure Data. Visitors to Michigan's National Forests often engage in a variety of activities. The National Visitor Use Monitoring (NVUM)[1] project was implemented to better understand the use, importance and satisfaction with National Forest System recreation opportunities. The Hiawatha participated in the NVUM project from January 1, to December 31, 2000. This was the first round of surveys, so many adjustments were identified during the course of its application to improve its ability to measure recreation use on the Forest.

An abnormally low snow year may have resulted in underestimating the average number of visitors participating in winter activities such as snowmobiling and cross-country skiing. Additionally, some known uses, such as horseback riding and downhill skiing were not identified. Subsequent surveys will be needed to verify the accuracy of the use data measured. However, the survey's results provide the only measure of actual use currently available. The unit of measure used was national forest visits, which is the entry of one person into a national forest to participate in recreation activities for an unspecified period of time.

Projections of recreation use growth were obtained from *Outdoor Recreation in American Life: A National Assessment of Demand and Supply Trends* by H. Ken Cordell, et al[2]. These trends were applied to current use levels as estimated though the NVUM survey to project average annual recreation use during the next planning

[1] USDA Forest Service. 2001. *National Visitor Use Monitoring Results: USDA Forest Service Region 9 Hiawatha National Forest*. August 2001.
[2] Cordell, H. Ken, Carter J. Betz, J. M. Bowker, Donald B. K. English, Shela H. Mou, John C. Bergstrom, R. Jeff Teasley, Michael A. Tarrant, and John Loomis. 1999. *Outdoor Recreation in American Life: A National Assessment of Demand and Supply Trends.* Sagamore Publishing.

period[3]. Because spending patterns for those participating in wildlife related recreation tends to differ from those participating in non-wildlife related recreation, it was necessary to split estimated use into these two categories. The total estimated visitation was divided based on the percentage of participation reported for each activity in the NVUM survey. The percentage of visitors who reported that their primary purpose was hunting, fishing or viewing wildlife was summed and applied to the estimated average number of national forest visits for the planning period to identify the number of wildlife related national forest visits.

The balance of use was considered non-wildlife related recreation use. Further classification of estimated national forest visits was needed to identify contributions of new money to the local economy. Both non-wildlife related recreation and wildlife related recreation totals were distributed between the following classifications, again based on the results of the NVUM survey: Non-Local Day, Non-Local Overnight National Forest, Non-Local Overnight off-forest, Local Day, Local Overnight National Forest and Local Overnight off-forest[4].

It was assumed that local users would likely spend their recreation dollars in the local area, even if the national forest opportunities were not present. Only non-local users were assumed to contribute new money into the local economy, therefore only non-local use levels were entered into FEAST.

Spending profiles were also obtained through the NVUM survey. Visitors were asked how much money their party had spent in several spending categories within 5o miles of the interview site. The spending categories utilized by NVUM were developed so as to easily bridge to the sectors in IMPLAN. Samples sizes at the forest level were not large enough to develop reliable spending profiles by forest, therefore national averages are used. Details regarding the development and use of the NVUM spending profiles are outlined in *Spending Profiles of National Forest Visitors* by Daniel J. Stynes and Eric M. White[5] located in the project record. The unit of measure for use is national forest visits. Recreation expenditure data is expressed in dollars per party. Conversion factors were applied within FEAST to convert national forest visits based on party size as reported in NVUM results. Details are contained in FEAST and is located in the project record.

■ ■ **Use of the Model.** One million dollars of expenditures for the categories of recreation discussed above (Non-Local Day, Non-Local Overnight National Forest and Non-Local Overnight off-forest) were input into the IMPLAN model. The results were incorporated into the FEAST workbook where they were multiplied by total expenditures for each category.

Timber. Timber volumes and revenues for the current situation are based on actual harvests and revenues for Fiscal Year 2004. Harvest volume estimates for each of the alternatives were obtained through SPECTRUM modeling based on vegetation management objectives. Revenues by alternative were estimated through SPECTRUM based on stumpage values for the products to be removed. Assumptions and processes used for SPECTRUM modeling were described earlier. The distribution of Forest products among wood processing sectors was estimated by forest timber staff. Details are available in FEAST, located in the project record.

■ ■ **Use of the Model.** One million dollars of exports were modeled through each timber-processing sector to determine a response coefficient. Timber volume from the national forest was multiplied by historical stumpage prices and multiplied by the response coefficient for Logging Camps to obtain the total economic impact. The distribution of national forest timber processors and model relationships between Logging Camps and other sectors were used to derive the export value for each timber sector. This value was then multiplied by the appropriate response coefficient to determine total economic impact for each sector. All results were then summed for

[3] Ott, Barbara A. F., Social Scientist, USDA Forest Service. 2004. *Recreation Demand and Supply*.
[4] Stynes, Daniel J. and Eric M. White. 2003. *Spending Profiles of National Forest Visitors.* Michigan State University, East Lansing, Michigan. October 2003.
[5] Ibid.

presentation in the FEIS. This process was repeated for each alternative.

Minerals. Estimates for the permitted removal of sand and gravel and dimension stone products from the national forest were based on an average of removals during the preceding three years. Prices per short ton were obtained from Richard Marshall, Minerals Economist for the USDA Forest Service[6]. Prices provided were in 2000 dollars and were converted to 2004 dollars by multiplying by a factor of 1.0661[7].

■ ■ **Use of the Model.** One million dollars of expenditures for the sand and gravel and dimension stone sectors were input into the IMPLAN model. The results were incorporated into the FEAST workbook where they were multiplied by total expenditures for each category.

Federal Expenditures and Employment. Budget estimates for the current situation are based on the actual 2004 budget. The Forest assumed full plan implementation under all alternatives to estimate total Forest expenditures. Total Forest obligations by budget object code for actual expenditures in FY 2002 were obtained from the National Finance Center through the agency's Inventory and Monitoring Institute to estimate how the budget would be spent. Details may be found in the project record. Forest Service employment was estimated based on historical staffing levels and projections of future staffing needs based on expected workloads and projected budgets under each alternative.

■ ■ **Use of the Model.** To obtain an estimate of total impacts from Forest Service spending, salary and non-salary portions of the impact were handled separately. Non-salary expenditures were determined by using the budget object code information noted above. This profile was input into the IMPLAN model for non-salary expenditures. Sales to the federal government were treated in the same manner as exports; money coming from outside the model area. Salary impacts result from Forest employees spending a portion of their salaries locally. IMPLAN includes a profile of personal consumption expenditures for several income categories. The average compensation for a Hiawatha National Forest employee is from $40,000 - $50,000. Only a portion of which is take home pay. Using the IMPLAN database information, FEAST calculates the economic impact of take home pay being spent in the area.

Revenue Sharing: 25 Percent Fund Payments. Historically, federal law has required that 25% of current or historical revenues be returned to the states and counties where the revenues were received. These payments may be used for a variety of purposes, including schools and roads. The Secure Rural Schools and Community Self-Determination Act of 2000 (SRSCS) provides a new formula for computing annual payments based on averaging a state's three highest payments between 1986 and 1999 to arrive at a compensation allotment or "full payment amount." Counties could choose to continue to receive payments under the 25 Percent Fund, or to receive the county's proportionate share of the state's full payment amount. This Act affects payments to the counties until 2006. Only Chippewa County, chose to receive payments under the SRSCS.

For the IMPLAN analysis, it was assumed that 25% of all national forest revenues would be returned to the local impact area, and that local governments would spend 75 percent of those funds on schools and 25 percent on roads. A profile of expenditures for each of these purposes was derived from the model itself. Details regarding the expenditures may be found in the project record.

■ ■ **Use of the Model**. The national expenditure profile for state/local government education (schools) and local model estimates of road construction (roads) are provided within IMPLAN. One million dollars of each profile was used to obtain an estimate and response coefficient for these Forest Service payments to impact area counties. The results were then incorporated into the

[6] Marshall, Richard C., Mineral Economist, USDA Forest Service. 2004. Email communication to Barbara Ott. October 5, 2004.
[7] USDA Forest Service, Inventory and Monitoring Institute. 2004. GDP Deflators. (http://www.fs.fed.us/institute/economic_center/financialdata2.html).

FEAST where they were multiplied by total expenditures. Sales to local government are treated in the same manner as exports.

Output Levels. Output levels are specified in the FEAST Excel workbook, which is located in the project record.

Table A-7. Market Clearing Price for Recreation Activities, 1990 RPA and 2004 Values

Activity	Market Clearing Price	
	1989 Value	2004 Value
Camping	$12.00	$16.47
Picnicking	$28.00	$38.44
Swimming	$12.00	$16.47
Hiking/Horseback Riding	$20.00	$27.46
Non-Motorized Water Travel	$10.00	$13.73
Mechanized Land Travel & Viewing Scenery	$10.00	$13.73
Mechanized Water Travel & Viewing Scenery	$13.00	$17.85
Winter Sports	$42.62	$58.51
Resorts	$17.54	$24.08
Wilderness	$20.94	$28.75
Other Recreation Activities (except Fish and Wildlife)	$61.43	$84.33
Hunting - Big Game	$45.05	$61.84
Hunting - Small Game	$34.00	$46.68
Hunting - Upland Game	$39.00	$53.54
Hunting - Waterfowl	$48.00	$65.89
Fishing	$76.20	$104.61
Non-Consumptive Wildlife	$43.60	$59.85

Economic and Financial Efficiency

Net Public Benefits. Net public benefits are the "overall long-term value, to the nation, of all outputs and positive effects (benefits) less all associated Forest inputs and negative effects (costs) whether they can be quantitatively valued or not.[8]" It represent the sum of the net value of priced outputs plus the net value of non-priced outputs. Present Net Value (PNV) is used as an indicator of financial and economic efficiency, and is defined as the value of discounted benefits (or revenues) minus discounted costs.

A PNV analysis includes all outputs, including timber and recreation, to which monetary values are assigned. The monetary values include both market and non-market values received by the public. All dollars are in constant dollars with no allowance for inflation.

In deriving PNV figures, costs are subtracted from benefits to yield a net value for a period of 100 years. "Future values" (i.e., benefits received in the future) were discounted at a rate of 4% to obtain a "present value." The PNV of each alternative is the discounted sum of all benefits minus the sum of all associated costs. PNV estimates, as required by NFMA (36 CFR 219), attempt to condense a large amount of information into a single value. This value must be used with caution. Quick-Silver was used to calculate financial and economic PNV. It is a software program for economic analysis of long-term, resource management that standardizes economic analyses by allowing the creation of projects containing one or more management alternatives for comparison.

Financial PNV is defined as how well the dollars invested in each alternative produce revenues to the agency. The financial value is a measure of the revenues actually received by the Forest Service for resource extraction, access, or use. Due to the nature of most recreation activities and the use of campground concessionaires, recreation tends to have low or no revenues collected by the Forest Service. Wood products generate fees as a result of harvest activities. Benefits for timber uses were based on revenue projections from SPECTRUM modeling.

Saleable minerals also generate revenues through permit fees. Benefits for saleable minerals were estimated based on historic revenues. Costs for Forest Service expenditures associated with the PNV analysis are taken from the budget estimates for implementation of each alternative. Forest Service budgets have been held constant over the planning horizon. Specific allocation differences between resource programs were made based on each alternative's emphasis. Details of cost and revenue estimates are located in the project record.

[8] 36 CFR 219.3

Economic PNV. Economic PNV is defined as how well the dollars invested in each alternative produce benefits to society. Region 9 of the Forest Service specifies the use of market clearing values (what the resource would be priced at if available in the private sector) to attempt to account for the values people hold for forest resources, even though they may not have to pay for them.

Market clearing prices for identified categories of recreation were developed for the 1990 Resources Planning Act Program. These values are provided in Table A-7. These 1989 values were updated to the present using an inflation factor of 1.3728[9]. The economic benefits for recreation uses detailed above are stated as a value per Recreation Visitor Day (RVD), which is defined as 12 hours of a given recreation activity. Current use figures for the Hiawatha National Forest were obtained from the NVUM survey conducted in 2000. The survey measured use as national forest visits with an average length of 23.3 hours.

The survey results were used as the basis for estimating use under each alternative. In order to utilized the values per RVD, the number national forest visits was first converted to RVDs by multiplying by a factor of 1.94 (23.3 divided by 12). Anticipated growth in use was estimated through application of growth indices developed by Cordell, et al[10] as detailed in the Recreation Demand and Supply analysis[11] located in the project record.

Acknowledgments

SPECTRUM Model Formulation:

Klaus Barber. Regional Analyst. USDA Forest Service Region 5. Vallejo, California.

Dave Maercklein. Forest Planner. Hiawatha National Forest, Escanaba, Michigan.

Bruce Meneghin. GIS Planning Analyst. USDA Forest Service Inventory and Monitoring Institute. Fort Collins, Colorado.

James Merzenich. Regional Analyst. USDA Forest Service Region 6, Portland, Oregon.

Jill Schomaker. Sr. Systems Analyst/Programmer, USDA Forest Service Inventory and Monitoring Institute. Fort Collins, Colorado.

SPECTRUM Model Inputs and Assumptions:

Dave Maercklein. Forest Planner. Hiawatha National Forest. Escanaba, Michigan.

Duane Puro. Timber Program Leader. Hiawatha National Forest. Escanaba, Michigan.

Al Saberniak. Forest Silviculturist. Hiawatha National Forest. Escanaba, Michigan.

Ted Schiltz. Assistant Forest Planner. Hiawatha National Forest. Escanaba, Michigan.

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[11] Ott, Barbara A. F., Social Scientist, USDA Forest Service. 2004. *Recreation Demand and Supply*.

APPENDIX B

Wild and Scenic Rivers Eligibility

Background

Congress enacted the Wild and Scenic Rivers Act (WSRA) in 1986 to preserve the free-flowing condition, water quality and outstandingly remarkable values (ORVs) of certain select rivers. The most important provision of the WSRA is protecting rivers from the harmful effects of water resources projects. To protect the free-flowing character, the Federal Energy Regulatory Commission (which licenses nonfederal hydropower projects) is not allowed to license construction of dams, water conduits, reservoirs, powerhouses, transmission lines, or other project works on or directly affecting wild and scenic rivers (WSR). Other federal agencies may not assist by loan, grant, license, or otherwise any water resources project that would have a direct and adverse effect on the values for which a river was designated.

The WSRA also directs that each river in the National Wild and Scenic Rivers System (National System) be administered in a manner to protect and enhance a river's outstandingly natural and cultural values. It allows existing uses of a river to continue and future uses to be considered, so long as existing or proposed use does not conflict with protecting river values. The WSRA also directs building partnerships among landowners, river users, tribal nations, and all levels of government.

Beyond the immediate protection afforded to the eight rivers in the enabling legislation, the WSRA establishes a process for building a legacy of protecting rivers. Rivers may be identified for study by an act of Congress under Section 5(a), or through federal agency-initiated study under Section 5(d)(1). By the end of 2002, Congress had authorized 138 rivers for study. Section 5(d)(1) directs federal agencies to consider the potential of WSRs in their planning processes, and its application has resulted in numerous individual river designations, and state and area-specific legislation. Both Sections 5(a) and 5(d)(1) studies require determinations to be made regarding a river's eligibility, classification and suitability. Eligibility and classification represent an inventory of existing conditions. Eligibility is an evaluation of whether a river is free-flowing and possesses one or more outstandingly remarkable values (ORVs). If found eligible, a river is analyzed as to its current level of development (water resources projects, shoreline development, and accessibility) and a recommendation is made that it be placed into one or more of three classes-wild, scenic or recreational.

The final procedural step —suitability, provides the basis for determining whether to recommend a river as part of the National System. A suitability analysis is designed to answer the following questions:

1. Should the river's free-flowing character, water quality and ORVs be protected or are one or more other uses important enough to warrant doing otherwise?
2. Will the river's free-flowing character, water quality and ORVs be protected through designation? Is it the best method for protecting the river corridor? In answering these questions, the benefits and impacts of WSR designation must be evaluated and alternative protection methods considered.
3. Is there a demonstrated commitment to protect the river by any nonfederal entities that may be partially responsible for implementing protective management?

Rivers authorized for study by Congress are protected under the WSRA; specifically, Sections 7(b)-prevents the harmful effects of water resources projects; 8(b)-withdraws public lands from disposition under public land laws; 9(b)-withdraws locatable minerals from appropriation under mining laws; and 12(a)-directs actions of other federal agencies to protect river values. These protections last through the study process, including a three-year period following transmittal of the final study report by the President to Congress.

The integrity of the identified classification must also be maintained during the protection period. The identification of a

river for study through the forest planning process does not trigger any protections under the WSRA. To manage the river for its potential inclusion into the National System, the forest plan should provide direction using other authorities to protect its free-flowing character, water quality, ORVs and preliminary or recommended classification.

Rivers are added to the National System by act of Congress or by the Secretary of the Interior. Secretarial designation requires that a river be a part of a state river protection system and the state governor to make application to the Secretary.

Hiawatha National Forest Wild & Scenic River Background

The Hiawatha's rivers studied for possible inclusion in the National Wild and Scenic Rivers System were those included in the Nationwide Rivers Inventory (NRI) maintained by the U.S. Department of Interior, dated January 1982. Eligibility analysis was documented in Appendix E of the Final EIS for the 1986 Hiawatha Forest Plan.

All the rivers listed on the NRI were considered and all were recommended for further study. All NRI rivers on the Hiawatha, regardless of recommendation, were protected due to their being included in the NRI inventory, by placement in MA 8.4 and through the standards and guidelines that were "formulated specifically to protect those values for the maximum potential classification of each reach, and to manage them accordingly with the requirements of wild and scenic river study segments.

At the time of approval, the 1986 Forest Plan outlined Management Area 8.4, which provided for protection and management of wild and scenic inventory river corridors. As prescribed, management practices that could affect wild, scenic or recreational river values were deferred until required river studies could be completed. Little or no vegetative treatments, developments or capital investments could occur. Existing conditions were to be maintained and influenced primarily by natural forces (LRMP, Amendment 5, 1987).

In 1989, the wild and scenic inventory rivers report prepared for Congress identified outstandingly remarkable values for each candidate river in accordance with the WSRA. This report built on the earlier eligibility analysis that was completed during development of the 1986 Forest Plan. The potential classification of each river was further refined. The Michigan Scenic Rivers Act of 1991 (P.L. 012-249, March 1992) dealt with all the candidate rivers in one of two ways:

1. Designation as: wild, scenic or recreational classified river or river segment
2. Designation as a Congressionally-mandated study river

This totaled about 169 miles of designated wild, scenic or recreational river segments and tributaries on the Whitefish (East, West and Mainstream), Sturgeon (Hiawatha), Indian, Carp and East Branch Tahquamenon Rivers, and about 155 miles of "suitability study" rivers on segments of the Whitefish, Sturgeon, Carp and Tahquamenon (East Branch and Mainstream) Rivers. All HNF rivers listed in the 1986 Plan (and NRI) were addressed in the Michigan Scenic Rivers Act of 1991.

WSR Eligibility Review as Part of Plan Revision

Two interdisciplinary teams (IDT) comprised of Hiawatha NF employees, were convened to address a number of items relative to revision of the Hiawatha National Forest Land and Resource Management Plan (Forest Plan). The inventory and review of these items was accomplished to meet the legal requirements of the National Forest Management Act, associated with the Forest Plan Revision effort.

The ID teams, among other tasks, were assigned to re-evaluate the streams and water courses on the Forest for free-flowing condition and outstandingly remarkable values on a regional or national basis, to determine their eligibility under wild and scenic river criteria. No additional rivers, streams or segments were identified for wild and scenic river eligibility. Pending suitability studies, the Forest Service will continue to protect the eligibility of the 5(a) rivers. See the Management Area (MA) maps for MA 8.4 (et al) for the location of the designated and study rivers.

APPENDIX C

Roadless Inventory and Wilderness Evaluation

Background

In 1972, the Forest Service initiated a review of National Forest System (NFS) lands that were unroaded and larger than 5,000 acres. This is sometimes referenced as the first Roadless Area Review and Evaluation (RARE I). The purpose of the review was to determine each area's suitability for inclusion in the National Wilderness Preservation System.

The second review process, RARE II, resulted in a nation-wide inventory of roadless areas (Final Environmental Impact Statement, Roadless Area Review and Evaluation, January 1979). RARE II was also an assessment of undeveloped land within national forests as potential wilderness study areas, as required by the Wilderness Act of 1964. No areas on the Hiawatha National Forest met the criteria for wilderness consideration under the 1964 Wilderness Act.

Changes to the requirements for consideration allowed other lands in the Eastern United States to meet criteria for wilderness consideration. This resulted in identifying additional lands under RARE II on the Hiawatha National Forest, including the Rock River Canyon area. The 1979 RARE II recommendation identified Carp River (Mackinac), Horseshoe Bay, Government Island and Round Island for wilderness study to Congress.

The Hiawatha National Forest's 1986 Forest Plan inventoried Forest lands for roadless area characteristics, and resulted in the analysis of eight inventoried roadless areas. Of these eight areas, Rock River Canyon, Big Island Lake, Carp River (Mackinac), Horseshoe Bay and Round Island were recommended in the Forest Plan for further study or inclusion as wilderness to Congress.

The 1986 Forest Plan prescribed that the Delirium and Government Island (RARE II) areas be managed under MA 6.3. This management area prescribes a semi-primitive non-motorized recreation setting, emphasizes non-game wildlife, with no timber harvest and permits road construction. It also prescribed the Fibre (RARE II) area be managed under MA 6.4, featuring a semi-primitive motorized recreation setting, with primary emphasis on wetland wildlife habitat improvement through vegetative manipulation.

The Michigan Wilderness Act of 1987 was passed by Congress and established six Wildernesses on the Hiawatha National Forest. These are: Rock River Canyon, Big Island Lake, Mackinac, Horseshoe Bay, Delirium and Round Island. Fibre and Government Island were not included in the Wilderness designation.

The Roadless Area Conservation Rule Final EIS was published in November 2000. In January 2001, the Final Roadless Area Conservation Rule (RACR) was published. The prohibitions in the RACR were designed to stay in effect from January 2001, onward into the future. Subsequent legal and administrative actions precluded the implementation of the RACR requirements. However, the RACR included the following management direction:

1. Prohibit new road construction and reconstruction in inventoried roadless areas on National Forest System lands, except:
   - To protect health and safety in cases of an imminent threat of flood, fire or other catastrophic event that, without intervention, would cause the loss of life or property;
   - To conduct environmental clean up required by federal law;
   - To allow for reserved or outstanding rights provided for by statute or treaty;
   - To prevent irreparable resource damage by an existing road;
   - To rectify existing hazardous road conditions;
   - Where a road is part of a Federal Aid Highway Project;

- Where a road is needed in conjunction with the continuation, extension, or renewal of a mineral lease on lands that are under lease, or for new leases issued immediately upon expiration of an existing lease.

2. Prohibit cutting, sale, or removal of timber in inventoried roadless areas, except:
   - For the cutting, sale or removal of generally small diameter trees which maintains or improves roadless characteristics and:
     i. To improve habitat for threatened, endangered, proposed or sensitive species or
     ii. To maintain or restore ecosystem composition and structure, such as reducing the risk of uncharacteristic wildfire effects.
   - When incidental to accomplishing a management activity not otherwise prohibited by this rule;
   - For personal or administrative use;
   - Where roadless characteristics have been substantially altered in a portion of an inventoried roadless area due to the construction of a classified road and subsequent timber harvest occurring after the area was designated an inventoried roadless area and prior to the publication date of this rule.

The RACR was scheduled to take effect on March 12, 2001. On June 7, 2001, the Chief of the Forest Service and the Secretary of Agriculture issued a letter concerning interim protection of inventoried roadless areas (RACR areas), stating that, "the Forest Service is committed to protecting and managing roadless areas as an important component of the National Forest System. The best way to achieve this objective is to ensure that we protect and sustain roadless values until the can be appropriately considered through forest planning." (Bosworth, 2001)

On May 5, 2005, the Department of Agriculture adopted a Final Rule for Inventoried Roadless Area Management that established a process for governors to propose locally-supported regulations for conserving inventoried roadless areas within their states. The Final Rule advocated strong state and federal cooperation in managing these areas to foster local involvement and support for how they are ultimately conserved. The Rule also called for the establishment of a national advisory committee to assist the Secretary with the implementation of the Rule. The USDA will accept state petitions until November 13, 2006.

The state of Michigan has not indicated a preference whether to pursue local regulations to conserve roadless areas on national forest lands. Hiawatha's two areas that could potentially be affected under a State effort are Government Island and Fibre RARE II areas.

The starting point for the Hiawatha's Forest Plan Revision Roadless Area Inventory, as required by 36 CFR 219.17 and FSM 1923 and FSH 1909.12 (chapter 7), was the two remaining RARE II areas from the 1986 Forest Plan. The revision process also inventoried the remainder of the Forest for other areas that meet the roadless criteria.

One of the RARE II areas (Government Island), no longer meets the roadless inventory criteria largely because of its location and the amount of use it receives. It is an island that is totally surrounded by private lands and located away from other national forest lands for administration purposes; the level of development in and around the area is fairly high; and the island receives heavy recreation use and impacts. Fibre, the other remaining former RARE II area, met the roadless inventory criteria and was evaluated for wilderness potential.

This Appendix describes the Forest Roadless Area Inventory process, and the evaluation of capability, availability and need for the Fibre area for wilderness study. In all alternatives, the lands within the Fibre and Government Island areas are classified as unsuited for timber production. Thus, vegetative treatments would likely not occur regardless of future wilderness study.

Government Island will be managed under MA 6.3 under all alternatives, which includes a semi-primitive non-motorized recreation setting, emphasizing dispersed recreation and non-game wildlife habitat, and restricted timber harvest and/or road construction.

The Fibre area under Alternative 1, would continue 1986 Plan management direction under MA 6.4, which emphasizes game and

non-game wildlife habitat, waterfowl and wetland habitats for wildlife, and a semi-primitive motorized recreation setting. In Alternative 3, Fibre would be managed under MA 1.2, which emphasizes aspen management, deer and grouse habitat, and dispersed recreation in a roaded natural recreation setting.

In Alternatives 2 (selected) and 4, the Fibre area would be managed under MA 8.3, which emphasizes wetland plant communities, secluded wildlife habitat, dispersed recreation, and a semi-primitive motorized recreation setting along existing roads, grading to semi-primitive non-motorized setting away from the main access road and exterior boundary roads.

Roadless Inventory and Wilderness Evaluation

Two interdisciplinary teams (IDT) comprised of Hiawatha National Forest employees met to address a number of items relative to revision of the Hiawatha's Land and Resource Management Plan (Forest Plan). The inventory and review of these items was accomplished to meet the legal requirements of the National Forest Management Act and other requirements associated with revision efforts. The ID teams, among other tasks, were assigned to:

- Complete a forest-wide Roadless Area Inventory;
- Complete an evaluation of any identified roadless inventory areas for potential wilderness characteristics.

This narrative documents the processes used to accomplish these tasks and the teams' findings.

Part 1 cites the references and requirements for the Roadless Area Inventory, and includes the findings from the ID Teams' analysis based on the established criteria. All areas inventoried during the RARE II (Roadless Area Review and Evaluation, 1979) that were not subsequently designated in the Michigan Wilderness Act of 1987, as well as all other national forest lands on the Hiawatha National Forest were inventoried.

Part 2 provides the rationale used for wilderness evaluation of the Inventoried Roadless Areas (areas that met the criteria for potential wilderness evaluation).

Part 3 provides analysis summary information from the Roadless Inventory.

Part 4 includes the narrative for Capability, Availability and Need for the Fibre area that was carried through the inventory and the evaluation process.

Part 5 provides a summary of the comparative Roadless Area Inventory that the Forest completed using a similar process as the Ottawa National Forest's (GIS analysis), as a comparison of processes and outcomes.

Part 6 provides a summary of the findings from additional review of Forest areas based on comments received to the Draft Environmental Impact Statement.

Part 1: The Roadless Inventory Process

The authority for studying and designating wilderness is contained in the Wilderness Act of 1964 and in the Eastern Wilderness Act of 1975 (FSM 1923.01). The authority for conducting a Roadless Area Inventory and Wilderness Evaluation as part of the Hiawatha National Forest's Forest Plan Revision is founded in the Forest and Rangeland Renewable Resources Planning Act of 1974 (Section 6 (f)(3)(A)).

The requirements for inventory and evaluation of roadless areas and wilderness study are found in the Code of Federal Regulations (36 CFR 219.17); in the Forest Service Manual 1923; and in the Forest Service Handbook 1909.12.

In August 1997, the Eastern Region Regional Forester issued a letter directing the Forests to follow the above regulation, manual and handbook direction for the inventory of roadless areas during Forest Plan Revision and wilderness evaluation for any inventoried areas meeting the roadless criteria. The letter also provided clarification for the consistent application of the afore-mentioned manual and handbook direction across Region 9 national forests.

Primary Criteria

Forest Service Handbook 1909.12 identifies three primary inventory criteria that an area must meet to be considered a "potential wilderness" (or roadless area):

1. It must contain 5,000 acres or more.
2. It may contain less than 5,000 acres if:
   - Due to physiographic conditions or vegetation, it is manageable in its natural condition.
   - It is a self-contained ecosystem (such as an island).
   - It is contiguous to existing wildernesses, primitive areas, administration-endorsed wilderness, or roadless areas in other federal ownership, regardless of size.
   - It does not contain improved roads that are maintained for travel by standard passenger-type vehicles, except as permitted in areas east of the 100th meridian. (In which case, the areas contain no more than ½ mile of improved road for each 1,000 acres and the road is under Forest Service jurisdiction.)
3. For areas east of the 100th meridian, the Forest Service Handbook notes the following criteria for roadless areas:
   - The land is regaining a natural, untrammeled appearance.
   - Improvements existing in the area are being effected by the forces of nature rather than humans, and they are disappearing or are muted.
   - The area has existing or attainable National Forest System ownership patterns, both surface and subsurface, that could ensure perpetuation of identified wilderness values.
   - The location of the area is conducive to the perpetuation of wilderness values (consider the relationship of the area to sources of noise, air and water pollution; as well as unsightly conditions; and the amount and pattern of federal ownership).
   - The area contains no more than a half-mile of improved road for each 1,000 acres and the road is under Forest Service jurisdiction.
   - No more than 15 percent of the area is in non-native, planted vegetation.
   - Twenty percent or less of the area has been harvested within the past 10 years.
   - The area contains only a few dwellings on private lands and the location of these dwellings and their access insulate their effects on the natural conditions of federal lands.

Interpretation

The Regional Forester, in his August 1997 letter to the Region 9 (R9) forests, provided interpretation of the FSH 1909.12 for application to the Eastern Region. Included in this interpretation, is direction to "re-inventory" RARE II areas (as identified in the Nation-wide EIS of January 1979) to determine if they still qualify for inclusion in the inventory. In addition, the Regional Forester's letter provided clarification for criteria listed in the FSH, including:

1. Identifying "core areas of solitude" which meet the "semi-primitive" criteria described in the 1986 Forest Service Recreation Opportunity Spectrum (ROS) Guidebook. Such core areas should contain at least 2,500 acres as a coarse screen (unless they are contiguous to an existing wilderness).
2. Non-native, planted vegetation includes wildlife openings, seeded roads, non-native tree plantations, etc.
3. To determine how much of an area has been harvested, use regeneration cuts under even-aged management systems only, including seed-tree, shelterwood or clearcuts. Thinnings or uneven-aged harvests (individual or group selection) are not counted as harvest.
4. Boundaries for potential roadless areas should follow natural or relatively permanent human-made features, including:
   a. Natural features such as live streams, well-defined ridges or drainages.

b. Human-made features such as roads, trails, dams, powerlines, pipelines, bridges, property lines, and state or Forest boundaries.

c. Boundaries should not cross powerlines, state/county roads or major access roads.

d. Narrow, elongated, gerrymandered areas are not suitable; the boundary should provide an easily-managed area.

e. Cherry-stemming boundaries around roads into or through roadless areas is not appropriate.

f. Roadless areas can contain less than 70 percent federal ownership, but only if it is realistic to manage the federal lands as Wilderness, independent of the private land.

g. Locate boundaries to avoid conflict with important existing or potential public uses outside the boundary, which could result in non-conforming demands on the area if it were to become a Wilderness.

5. Normally, roads under state, county, township, or other ownership are not included in a roadless area, since the Forest Service does not have authority to regulate use on those roads.

6. In addition to the improvements permitted in roadless areas, the Regional Forester identified improvements which were not permitted in a roadless area, including:

   a. Significant current mineral activity.

   b. Areas with prospecting with mechanical earth-moving equipment.

   c. Significant developed recreation sites judged difficult to obliterate and to rehabilitate.

   d. Active railroads and railroad beds that have cuts and fills, old trestles, abutments and cinder surfacing.

   e. Pipelines, transmission lines and utility corridors.

   f. High standard trails with surfaces, difficult to rehabilitate to primitive standards (including paved and surfaced trails).

Improved Roads

Forest Service Handbook 1909.12, Chapter 7.11(b)(5) states that "Roadless Areas east of the 100th meridian "shall have no more than a half mile of improved road for each 1,000 acres, and the road is under Forest Service jurisdiction."

In August 1997, the Regional Office provided two definitions of an improved road. The first states, "An improved road is any constructed or existing feature or facility created on the land for the purpose of travel by passenger vehicles (four-wheeled, 2-wheel drive) which are legally allowed to operate on forest roads or on public roads and highways, and vehicles are greater than 50 inches in width. Said facility will have an area for vehicles to travel on and will incorporate some manner for the disposal of surface runoff"(Bill Rees, Regional Office Engineering, 3/26/97).

The definition of an improved road used by Region 8 states, "An improved road has a definable, constructed cross-section, is properly drained, may or may not be surfaced and is useable by most vehicle types. Some roads may be usable by high clearance vehicles. It is also stable for the predominant traffic during the normal use season. All roads assigned a maintenance level of 3, 4 or 5 in the Forest Development Transportation Plan are improved roads maintained for travel by standard passenger cars. Maintenance level 1 (roads closed to vehicle use for one year or longer) and maintenance level 2 (roads maintained for high clearance vehicles such as pickups, 4x4s, etc.) are improved roads if they meet the above description."

For the Roadless Area Inventory on the Michigan National Forests, the roads in the Forest's inventoried transportation plan and GIS databases were used in the analysis. These are considered system roads on the Forest and have been inventoried and classified in the roads database layer (GIS).

Maintenance level 3-5 roads (including state and county roads), pipelines, powerlines, large utility corridors (power, oil, natural gas), railroads, and designated motorized trails and routes, were used in the GIS query to initially identify potential areas that might meet roadless criteria.

The Forest included maintenance level 1 and 2 roads in the initial query. The rationale for this includes:

- The GIS query was a starting point, and further interdisciplinary team evaluation was used to determine if the inventoried areas met the roadless criteria.
- All maintenance level 2 roads on the Forest were designated as motorized routes for OHVs and snowmobiles.
- Because of the variability of road conditions across the Forest(s) and the status of closures on roads, the question of road status was addressed in the inventory/ review by the interdisciplinary team rather than in the GIS query.
- Maintenance level 1 roads were included because many of the roads on the Forest are not gated or closed and are actively used by the public to access the Forest.
- Other than in very wet areas, many of the roads on the Forest are accessible to 2-wheel drive, passenger vehicles and/or trucks. Because of the sandy soils and flat terrain, drainage is readily available through simple road maintenance. Frequently, passenger vans and station wagons are used to access Forest roads and tour the Forest on a majority of the level 2 roads and on some level 1 roads.
- A large number of ML 1 (many of which were not closed or the closures have been breeched) and ML 2 roads were constructed with fill, culverts and maintain a natural drainage over the road prism, due to the sandy nature of soils.

Recreation Opportunity Spectrum

Recreation Opportunity Spectrum (ROS) on the Hiawatha National Forest is an allocation by management area. ROS objectives were used in the inventory as additional information about certain areas and their planned management in the 1986 Forest Plan, and was not used as a qualifying criteria for roadless inventory characteristics.

In the Forest Plan, ROS is assigned as a desired condition to move toward, through management activities and Forest Plan implementation. In some cases, it represents current conditions on the ground, and in other cases it is a desired condition for recreation opportunities and settings. Three components (physical, social and managerial settings) are analyzed to establish ROS. The characteristics of each affect the kind of experience the recreationist most probably realizes from using the area. The components are:

- Criteria for Physical setting includes: remoteness, size and evidence of humans.
- Criteria for Social setting includes: user density.
- Criteria for Managerial setting includes: managerial regimentation and noticeability.

The 1986 ROS Guidebook notes that, "although some designated Wildernesses are composed largely of the Primitive type of recreation opportunity, many designated Wildernesses also include semi-primitive or roaded-natural opportunities." The following clarifications from the Regional Forester's letter of August 1997 were used in the roadless inventory. Also noted is how these criteria were applied for the Hiawatha National Forest Roadless Area Inventory.

Contiguous

When evaluating a possible expansion of an existing wilderness or wilderness study area, consider those National Forest System lands that adjoin the designated area, but with no major barriers separating the two areas. There should be no improved road, railroad or utility corridor separating the existing area from the expansion area. Any proposed addition to an existing wilderness or wilderness study area (WSA) must be logically connected to that wilderness or WSA.

■ ■ **Application:** In the initial inventory effort, no areas on the Hiawatha were identified contiguous to wilderness, because roads, pipelines and other land ownership generally serve as the boundaries to the Forest's Wildernesses. A decision was made in the Sugar Shack Project to close a portion of Forest Road 2293 north of the Rock River Canyon Wilderness (RRCW) and to manage it as a non-motorized trail. This decision created a small area of approximately 300-400 acres of land that could be considered contiguous to the RRCW for inventory.

An ID team inventoried the area and concluded that while this area provided some adjacent lands for consideration, it did not provide a reasoned opportunity for further consideration based on:

- The boundary of the area, while definable, would not be conducive to managing the area for roadless and/or wilderness perpetuation and enhancement because it is too narrow and elongated.
- The area does not enhance wilderness values for the RRCW.
- The limited number of acres that the area contains and the obvious presence and effects of roads surrounding the area do not provide opportunities for solitude or an untrammeled lands.

Minerals

In general, the presence of outstanding or reserved mineral rights, in and of itself, would not preclude an area from the Roadless Area Inventory.

■ ■ **Application:** The majority of the Forest is subject to split ownership between the surface and mineral rights (about 65%). Except for those limited acres of the Forest that were public domain in origin, the majority of the Forest mineral ownership is held by the state of Michigan and in some instances, other ownership. The mineral fraction and ownership status across Hiawatha's lands is confusing, to say the least. Except for known mineral quarries or pits, mineral right ownership was a not used as a limiting factor in the ID teams' inventory efforts.

Non-Native Planted Vegetation

No more than 15 percent of the area is in non-native, planted vegetation. Non-native planted vegetation includes wildlife openings, seeded roads, non-native tree plantations, etc.

■ ■ **Application:** A number of wildlife openings have been created on the Forest. Some of these are temporary and small, while over the past few years, larger areas of open lands have been created to mimic natural openings and disturbance regimes, as well as to support open land species. The IDT used the data and information available through vegetative treatment records, orthophoto quads, and on-the-ground knowledge to identify these areas during the inventory process.

Non-native invasive species occur on the Forest; however documentation of these areas is not sufficient to have influenced the teams' inventory. During the inventory process, areas with known problems were discussed. In addition, due to the reforestation practices during the CCC era, stands of red pine and jack pine exist on the Forest that are of an "off-site" genetic seed source. These were not considered "non-native" during the inventory because the species are native to the Forest.

Harvested Areas

The word "harvest" refers to regeneration cuts under even-aged management systems. This includes seed-tree, shelterwood, or clearcuts. Thinning or uneven-aged harvests (individual tree treatments or group selection) would not be counted as harvest...in the Eastern Region, if 20 percent or less of the area has been harvested (an even-aged regeneration harvest as described above) within the past 10 years, then the area could qualify for the Roadless Area Inventory.

■ ■ **Application:** The IDT applied these standards to the inventory areas. Stand treatment records, on-the-ground knowledge and experience, and orthophoto quads were used to identify the types and dates of treatment. Areas where thinning and/or individual tree selection and group selection harvests occurred, were not precluded in the inventory.

Solitude or Primitive and Unconfined Recreation (perpetuation of wilderness values)

FSH 1909.12 (7.11b-3) requires that, "the area has existing or attainable National Forest System ownership patterns, both surface and subsurface, that could ensure perpetuation of identified wilderness values." The 1964 Wilderness Act defines a number of wilderness values, among these "outstanding opportunities for solitude" is important.

To help quantify the idea of solitude, the 1986 ROS Guidebook identifies that semi-primitive recreation areas have high to moderate, "probability of experiencing isolation from the sights and sounds of humans, independence, and closeness to nature, tranquility, and self-reliance...in an environment that offers challenge and risk." To meet Roadless Area Inventory criteria, a "core" of the roadless area must be manageable for conditions that would be classified as primitive or semi-primitive non-motorized of at least 2,500 acres.

According to R-9 direction, "the 2,500 acre 'core' size is not an absolute minimum or acreage requirement. It is a guide. For each area, one needs to look closely at topography, influences of water bodies, proximity to type and use of roads, population centers and other sights and sounds of human activity to determine if solitude and primitive and unconfined recreation could be experienced."

■ ■ **Application:** The IDT used a GIS query-generated map that identified potential roadless areas that were greater than 2,500 acres in size. No buffers were created around existing roads, and the 2,500 acre figure was used as a "coarse screen" (gross acreage) starting point for the teams to initiate the inventory. During the review, lands that were 2,500 acres and greater (gross unbuffered acreage), as well as areas that were less than 2,500 acres that might provide roadless characteristics were looked at. The boundaries of the Forest's Wildernesses largely consist of roads, pipelines, private property, one of the Great Lakes, or the Forest boundary.

While reviewing the Forest's potential roadless areas, the teams considered the criteria for experiencing isolation from the sights and sounds of humans, independence, closeness to nature, tranquility, and self-reliance...in an environment that offers challenge and risk in their findings. The teams also looked at topography, water body influences, wetlands and swamps, proximity to type and use of roads, population centers and other sights and sounds of human activity to determine if solitude and primitive and unconfined recreation could be experienced.

The teams used their professional experience and knowledge of the areas, and compared these areas with the Forest's Wildernesses, to arrive at their findings for the perpetuation of wilderness values, as well as wildlife, recreation, visual and other ecological values.

In addition to the GIS query, and other map and data layers, the IDT used on-the-ground knowledge and experience, as well as public involvement and comments from project-level analyses, to identify any areas less than 2,500 acres in size that might meet roadless criteria for the East. After documenting the findings and rationale for the review, the teams were satisfied that they had reviewed all the areas on the Forest with potential for providing roadless area characteristics.

Additional Criteria

In addition to the criteria addressed above, the roadless inventory for Roadless Areas in the East includes other criteria. The following narrative addresses the application of these criteria and in the Hiawatha National Forest's inventory.

Land is regaining a natural, untrammeled appearance. The ID teams established an understanding of what constitutes untrammeled or naturally-appearing. In general, they related these criteria to an environment where the sights and sounds of nature predominate the impacts and sounds of development. Untrammeled could include signs of past treatments or management activities; however, these would be relatively unnoticed by the untrained eye and/or the signs of previous management would show evidence of reverting to naturally-appearing landscape conditions.

■ ■ **Application:** The ID teams relied heavily on field knowledge and experience to assess this factor. Staffing on the teams consisted of experienced and knowledgeable persons and/or consultation with sources who were familiar with the areas. Additionally, orthophoto quads were used to identify a level of "naturalness" from a birds-eye view and to identify previous treatments, roads, powerlines, and other improvements and/or activities that helped to determine the level of "naturalness" of an area.

Improvements existing in the area are being affected by the forces of nature rather than humans and are disappearing or muted. Similar to the above criteria, the teams established an understanding of what constitutes affectation by forces of nature rather than humans, and are disappearing. This could include structures or improvements that are no longer in use and/or are being reclaimed by the forces of natural elements (e.g. weather, age, vegetatively overgrown, etc.). The improvements would be relatively unnoticed or appear in obvious non-use and aged condition by recreationists. In addition, their appearance would not dominate the landscape or viewing area.

■ ■ **Application:** The ID teams again relied heavily on field knowledge and experience to assess this factor. Staffing of the teams consisted of experienced and knowledgeable persons, and consultation with other sources who were familiar with the areas. In addition, topography and orthophoto quads, and databases were used to identify improvements and/or activities that helped determine the level of decline.

The area contains only a few dwellings on private lands and the location of these dwellings and their access needs insulate their effects on the natural conditions of NFS land. This criteria involves the number, location, proximity and ownership patterns of improvements and dwellings within and adjacent to potential roadless areas. The level and amount of access needs both currently and projected future access are a consideration. The affect of the dwellings upon potential roadless areas would not affect the use and enjoyment of the area by projecting visual, audible, and physical barriers to the use and enjoyment of the lands, nor would they affect the appearance of a "natural condition" on national forest lands.

■ ■ **Application:** The teams used personal knowledge and familiarity with the areas to identify dwellings on private lands, as well as the topographic and landownership map GIS layers. They examined the configuration of private lands in relationship to the areas, and considered the relative level of development and the number of improvements on the private lands. In addition, the teams considered the magnitude of development (e.g. year-round residential structures, camps, hunting lands, etc.) as well as adjacent landownership. For example, some of the identified areas were adjacent to large blocks of private ownership or State Forest lands. The teams considered development of the lands both within and adjacent to the areas and the ongoing practices on those lands, access needs, and/or ownership pattern to identify any potential barriers.

The area contains no more than a half mile of improved road for each 1,000 acres and the road is under Forest Service jurisdiction. This criteria applies a road density factor based on the determinations outlined above regarding improved roads and acreage. The criteria establishes a measure of "naturalness" or threshold of roaded disturbance within roadless inventory areas.

■ ■ **Application:** The teams used a GIS query-generated map as a coarse filter to initiate the inventory. For the areas that were generated in this mapping effort, a road density calculation was also generated in GIS for each area. Land areas that were 2,500 acres and greater, as well as core areas that were less than 2,500 acres, were reviewed in accordance with the protocols. The road density calculations were used to analyze the areas and to respond to the questions in the documentation. The teams looked at all the areas in the inventory, and used the road density calculations as a measure of review, subject to personal and professional knowledge and experience.

Description of Steps in the Hiawatha National Forest Roadless Area Inventory: GIS Exercise (Geographic Information System-Result in the identification of 86 potential areas). Using GIS and the Forest Transportation Inventory Layer, a Forest map was developed showing all Forest system, state and county roads and highlighting areas that provided a contiguous block of 2,500 (gross unbuffered acres) of National Forest or more. All ML 1-5 roads were queried. In addition, existing Wildernesses and RARE II areas were identified. The Forest also incorporated public comments and involvement from previous project analyses,

Forest Plan implementation, and comments to the NOI to assist in identifying areas that might contain roadless characteristics.

The Forest did not use a buffer in its GIS query, and instead, inventoried every "polygon" identified in the query through the ID teams' process. The teams looked at topography, water body influences, proximity to type and use of roads, population centers and other sights and sounds of human activity to determine if solitude and primitive and unconfined recreation could be experienced. The teams also verified in the query if anomalies occurred in the consideration of ML 1 and 2 roads that would preclude consideration of an area for roadless characteristics.

The Forest's initial GIS query used the database to identify areas of roadless potential. A GIS query, based on the Forest boundary, landownership, and the Forest GIS roads database, was done to create a map of polygons across the Forest. The query was used to identify areas of 2,500 acres or greater (coarse screen) that contained no roads (e.g. that were entirely roadless). This query produced no polygons (outside of existing Wildernesses) that met this criteria. In effect, the entire Forest is largely encompassed by roads that intersect and bisect, creating polygons of less than 2,500 acres.

A second GIS query used the same parameters as above with the exception that instead of identifying areas that had no roads, the query identified polygons of the Forest that are greater than 2,500 acres (coarse screen) with no "through" roads (e.g. roads that ended within a polygon and did not bisect another road or travel way, or "dangle roads"). The other query parameters consisted of:

- The areas needed to be within the proclamation boundary of the Forest.
- All system ML 1-5 roads, and state and county roads were included for the initial coarse screen.
- The Forest utility corridors GIS layer was used to assist in defining polygons and to evaluate potential roadless areas.
- Large areas of private land blocks were eliminated (e.g. substantially less than 70% federal ownership).
- A GIS map identified the polygons for the ID teams to inventory and review.

The query identified 86 polygons of generally 2,500 acres (gross acres) or greater with no through roads and excluded large in-holdings of private lands. These polygons and other areas across the Forest that were less than 2,500 acres, but may contain roadless inventory characteristics, required more detailed review by the ID teams. Of the 86 potential roadless areas, the West Unit had about 47 polygons that were 2,500 acres or greater. The East Unit had about 39 polygons that were 2,500 acres or greater. Numbers were assigned to the polygons as identifiers. The Forest completed an inventory of all 86 polygons using the roadless inventory criteria.

Incorporation of Other GIS Layers and Forest Data and Interdisciplinary Team (ID Team) Inventory. Two interdisciplinary teams were established, one for the Forest's East Unit and one for the West, with some members serving on both teams. In addition to the GIS queries identified previously, the following data sources were used for the inventory:

- The CDS database for stand treatments and composition.
- Professional knowledge and experience.
- Management area data and information.
- Orthophotos and topographic quadrangle map GIS layers.
- Forest Recreation Opportunity Spectrum GIS layer.
- Hiawatha National Forest 1986 Land and Resource Management Plan and FEIS.
- GIS-generated road density calculations per 1,000 acres for each inventory area.
- Landownership GIS layers.
- Forest Service Manual and Handbook direction.
- Data and information from ongoing project level analyses.

The ID teams inventoried Forest lands based on the existing condition, relative to the presence of roads. The teams were not to consider and inventory opportunities for possible management actions, such as closing roads and/or eliminating motorized use, to create potential roadless areas.

The teams evaluated all the polygons using professional knowledge and experience, aerial photos, GIS and other databases, and interdisciplinary evaluation to inventory the polygons to address each criterion, as previously noted. They worked through the identified areas and documented their findings. The order of progression that the teams followed is listed below. This order ensured that the areas were inventoried in a logical and progressive manner.

- Lands (polygons) near existing Wildernesses.
- Polygons within ROS classifications of semi-primitive non-motorized.
- Polygons within ROS classification of semi-primitive motorized.
- Lands acquired since development of the 1986 Forest Plan.
- Polygons with road density calculations below 0.5 miles per 1,000 acres.
- Lands less than 2,500 acres within semi-primitive ROS settings.
- Polygons within ROS settings of roaded natural and/or rural.
- Other lands less than 2,500 acres (based on a map review, professional knowledge and experience, public comment, and previous project comments concerning potential roadless or wilderness areas on the Forest).

The Forest has no areas of primitive ROS objectives. All six Forest Wildernesses are managed as semi-primitive non-motorized (SPNM), with a desired condition to move toward Primitive ROS if possible. The IDT inventoried all the areas on the Forest that had potential for roadless characteristics. The teams also verified in the query if anomalies occurred in the consideration of ML 1 and 2 roads that would preclude consideration of an area for roadless characteristics.

Forest Supervisor and Leadership Team (FLT) Review of the Criteria and Their Application through Inventory. The Forest Leadership Team reviewed the process used, the maps, and the inventory results from the Forest's Roadless Area Inventory. The Forest Supervisor and FLT concurred with the findings and recommendations of the ID teams. Based on these findings, only the Fibre (RARE II) area met the criteria for Roadless in the forest-wide inventory. The Forest evaluated the Fibre area for its suitability for potential wilderness recommendation during Forest Plan Revision.

Part 2: Wilderness Evaluation of Identified Roadless Areas

The ID teams then evaluated those areas that met all the Roadless Area Criteria (from Task #1). The teams documented the findings and rationale, using the Wilderness Evaluation Criteria.

Primary Criteria (Incorporated by Reference)**.** FSH 1909.12, Chapter 7: Wilderness Evaluation (Effective 8/3/1992)

Evaluation Process. Forest areas qualify for further evaluation if, in addition to meeting the statutory definition of wilderness, they meet all the roadless inventory criteria. There was one area from the Roadless Area Inventory that the teams identified for further evaluation. This was the Fibre former RARE II inventory area. In addition, the teams reviewed and revised the narrative in the 1986 Forest Plan FEIS, Appendix C for the Fibre Area to reflect any changes in known information for the area.

Part 3: Availability, Capability and Need-Fibre Area

Fibre Area — Polygon #67. Hiawatha National Forest. The Fibre area is located in Chippewa County, Michigan (T.44N. R.3W.; T.44N., R.4W., and T.45N., R.4W.), about 7 miles west of the village of Rudyard. The city of St. Ignace is 25 air miles to the south. Fibre is part of the Sault Ste. Marie Ranger District.

The area is bounded on the north by Forest Road 3137; on the south by Forest Road 3338 and private lands; on the east by Forest Road 3131; and on the west by Forest Road 3339. Forest Roads 3137 and 3338 are single-lane sand roads; Forest Road 3339 is a 1-½ lane gravel road, and Forest Road 3131 is a 2-lane paved road. County Road H-40, is a surfaced road running east to west and lies 1-1/2 miles to the south of the area.

The Fibre area is currently managed under a semi-primitive motorized ROS (recreation

opportunity spectrum) objective and is located within MA 6.4 emphasizing wildlife habitat management. It was not identified in the initial roadless inventory conducted subsequent to passing the Wilderness Act in 1964 (sometimes referred to as RARE I). The RARE II inventory (1979) inventoried the Fibre area for roadless characteristics and recommended it as "non-wilderness."

The Fibre area was again inventoried for roadless characteristics and evaluated for potential wilderness recommendation in the Hiawatha National Forest Land and Resource Management Plan (Forest Plan) in 1986. Again, the area was not recommended for further study or for potential wilderness designation. Subsequent to the signing of the Forest Plan, the Michigan Wilderness Act was passed in 1987. In the Act, six of the Forest's eight inventoried roadless areas became Wilderness. Fibre and Government Island were not designated as Wilderness.

The land bears the marks of glacial lakes and signs of logging activities from the 1800s and early 1900s. It is characteristically wet and has flat terrain broken by occasional dry sand ridges. Elevations vary from 590 to 890 feet. Access is limited due to surface water and poorly drained soil.

Capability. The western-most mile of the Fibre area is red pine plantation. Harvesting has occurred within the plantation, some as recently as 2000, and several two-track roads exist. The accesses appear to be regularly used and easily passable by 4-wheel drive vehicles. Northern hardwoods dominate the upland portions of the remainder of the Fibre area, with small inclusions of fir, aspen and birch.

About 30 percent of the Fibre area is dry upland. The remaining 70 percent has a "ridge-swale" character. Sand ridges from an ancient lakeshore are almost like islands in this large wetland area. The wetland includes areas of open water and marsh grass meadows, as well as bog — moist, uneven ground with little standing water. The vegetation is brushy, and consists mainly of cherry, willow and dogwood. The dense shrub growth is primarily due to the 1998 Camp Faunce Fire that burned over two-thirds of the Fibre area, including most of the mature spruce/fir forest component.

Primary wildlife species found in the area are those associated with wetlands – bobcat, beaver, snowshoe hare, ducks, great blue heron, moose, Connecticut warbler, short-eared owl, sandhill crane, and warpaint emerald dragonfly.

The wetland nature of the Fibre area promotes some opportunity for solitude within the interior lands. The sounds of motorized activities on roads within and outside of the area can be heard throughout the year. However, the noise from these activities is somewhat dissipated by the wetland vegetation, ridge-swale landscape and deep winter snows.

There is a snowmobile trail along the area's north boundary and the Soo Line Railroad parallels the area's south boundary. The interior and exterior access roads are used by 4-wheel drive vehicles, snowmobiles and OHVs, with the heaviest use occurring during hunting season(s) and winter snowmobiling.

The Fibre area was subjected to turn-of-the-19th century logging and periodic fires that characterized the eastern Upper Peninsula. These factors caused a reversion of the vegetation in the area to subclimax species, resulting in the loss of white pine, and creating areas of brush and herbaceous openings. Some of the openings were planted with red pine (primarily in sections 8 and 17), and past vegetative treatments were designed to prevent aspen encroachment into the plantations. Between 1996 and 2000, 79 acres of timber harvest occurred within the Fibre area. However, to the modern-day visitor, the area retains a naturally-appearing setting.

Hunting and trapping are the recreational activities most often associated with the Fibre area. The continual presence of surface water, limited access and the prevalence of insects, especially during the spring and summer months, diminish the appeal and/or participation in most other non-motorized recreation pursuits in the area. Recreation use within and surrounding the Fibre area has not been measured. The opportunity for physical isolation is high, except during hunting season. Wilderness-like recreation activities would be limited to nature study, challenge hiking through swamps and wetlands and wildlife viewing. There are no unique features or visuals that would encourage destination

hiking and/or wildlife viewing/photography within the area. The physical features of the land and the abundance of black flies, gnats and mosquitoes limit the season of usability of the area, while also providing a high degree of challenge for recreation use.

The wetland landscape includes hummocks and tufts which makes walking difficult. Hikers and campers would likely only be tempted to access the area in late fall or winter when the vegetation might be frozen and snowshoes could be used. Special features in the area include an opportunity to study wetland ecosystems and upland ridges associated with them. This includes a variety of waterfowl, beaver meadows, fur-bearing animals, dragonflies, wetland birds and animals and plant life.

The Fibre area is approximately 5 miles long by 2 miles wide. The area encompasses approximately 7,700 gross acres, of which the landownership consists of approximately 7,550 acres of National Forest System lands and 120 acres of private lands (within two in-holding parcels). The 40-acre parcel has a cabin, outhouse and tool shed. It is accessed by Forest Road 3204, which is gated at the private land boundary. The 80-acre parcel has no structures or road access. However, a well-used OHV trail (user developed) appears to lead to this parcel, where seasonal hunting structures are found.

The main access road into the Fibre area (Forest Road 3204) was widened and improved as a result of the need for access to suppress a wildfire in the area subsequent to the development of the 1986 Forest Plan. This road extends westward into the interior of the area for approximately 1.25 miles and provides access to a rustic cabin in Section 12.

Other than a user-created OHV trail, no access exists to the other private land, and the owner has not indicated a desire to develop roaded access to the property. Should this situation change in the future, there is the potential for another spur road from Forest Road 3204. There are several user-developed spur roads extending into the Fibre area:

- Six quarter-mile long spur roads from Forest Road 3339 and 3137 extend into the red pine plantations in Sections 5, 8 and 17; one spur road from Forest Road 3137 extends along Blind Biscuit Creek into Sections 4 and 9; one spur road from Forest Road 3137 extends into Section 1; one OHV trail extends from Forest Road 3338 through Sections 7, 12 and 13, crossing Biscuit Creek, and leading toward the 80-acre private parcel.
- Fibre's road density is 0.3 miles/square mile. The areas surrounding it were inventoried for potential roadless characteristics and they contain road densities between 0.8 -1.5 miles/sq. mile.
- The Fibre area boundary is well-defined by the roads and private lands that border the area. The majority of private lands could be excluded by drawing a boundary around them, although readily definable features adjacent to private lands could be hard to distinguish. The private land in-holdings would not be avoidable and would remain within the area unless the owners were willing to sell or exchange these parcels.

Availability. Vegetative treatment projects surrounding the Fiber area are an important component to providing critical wildlife habitat and a healthy forest ecosystem. The Fibre area is surrounded by a jack pine ecosystem. This ecosystem is prone to insect infestations and wildfire. Wildland fire suppression has resulted in more intense management of the ecosystem surrounding the Fibre area, including frequent timber harvest, prescribed burning, planting and seeding openings with jack pine.

The effect of vegetative treatments outside of the Fibre area has the potential to affect the quality of habitat and vegetation within the area, by reducing the potential for wildland fire to be carried through the jack pine stands. However, the Fibre area is a different ecosystem than the surrounding jack pine barrens, and therefore is minimally affected by surrounding vegetation management. This would be true whether or not the area was a wilderness.

Instead, the wetland ecosystem that comprises the majority of the Fibre area provides solitude wildlife habitat. This solitude habitat complements the habitat management activities occurring on the surrounding National Forest System land.

Evidence of the effects of wildfire is visible in portions of the area. The 1998 Camp

Faunce Fire burned nearly two-thirds of the Fibre area, ridding the area of the dead and dying overstory and changing the bog vegetation to the shrub component it is today. If the area became wilderness, wildfire response would be limited to hand tools and non-mechanized treatments which could increase costs of fire suppression and/or the number of acres burned. It could also increase the threat of fire damage to the private land/structures within the Fibre area.

Physical attributes include Biscuit Creek, Blind Biscuit Creek, wetlands, beaver ponds, and meadows interspersed with upland ridges, northern hardwoods and red pine plantation.

The use that can be expected for the area is not likely to contribute to the local economy to any significant degree other than subsistence livelihoods, nor is it likely to attract secondary uses. Local use in the area generally consists of hunting, snowmobiling and riding OHVs.

Water quality in all streams would likely not change in a measurable manner under the protection of wilderness status because the roads into the area have already been constructed and the amount of use in the area is not significant enough to appreciably change the water quality.

The Fibre area has little to no forage (livestock grazing) resource potential. The Fibre area contains about 7,700 acres of NFS land. Prior to the Camp Faunce Fire in 1998, the area was comprised of 43 percent lowland shrub, 38% openings, 13% aspen, 4% red, jack or white pine and 3 percent hardwoods. Of the estimated 24.5 thousand board feet (MBF) of wood volume that the area contained, 13% was classified as sawtimber-sized. Stands within the area have not been re-inventoried since the fire. The area's mineral resource potential is unknown. The federal government owns about 35% of the sub-surface mineral rights in the area, with the remainder owned by the state of Michigan and private entities (about 5,000 acres). The Forest has record of two expired applications for oil and gas exploration on 1,325 acres within the Fibre area. There are no known active mineral leases or exploration activities occurring within the area, currently.

There are no known historical or prehistoric sites within the Fibre area. However, the Forest has not completed an inventory of the area for heritage resources.

Need. Table C-1 shows the established Wildernesses in the Lake States. Within the state of Michigan, there are currently 14 designated Wildernesses totaling nearly 250,000 acres. In Wisconsin, there are six designated Wildernesses totaling about 44,500 acres. Minnesota has three designated Wildernesses totaling about 816,000 acres.

In comparison, Michigan provides the greatest number of wildernesses within the Lake States, while Minnesota's Boundary Waters Canoe Area has the largest Wilderness. The Lakes States provide more than 1.1 million acres of Wilderness for the American public. The majority of these areas are within an 8-hour drive of the Fibre area. At least 36 U.S. cities with populations in excess of 30,000 are within 8 hours travel time of the Fibre area. The population within a 400-mile radius is estimated to be between 40 and 50 million. In addition, Pictured Rocks National Lakeshore (PRNL) has recently revised its General Park Management Plan. As a result of that planning effort, PRNL has identified and recommended approximately 25,000 acres of potential wilderness.

The Fibre area is wet and has flat to rolling terrain. Wetland shrubs (cherry, willow and dogwood) predominate in wetter portions; red pine, aspen and northern hardwoods occupied drier sites. Primary wildlife species are those associated with the wetlands. Sandhill cranes occupy the area in spring and fall.

Motorized access is an essential element of current use. OHV use is established in the area. The groomed snowmobile trail that passes along the area's northern boundary connects Rudyard to Trout Lake, and is a heavily-used route that links these communities to the forest resources year-round (including OHV use in the snow-free months). The area is currently managed under a semi-primitive motorized recreation opportunity spectrum objective with a wildlife habitat emphasis.

Since the passing of the Wilderness Act in 1964, the Fibre area has had several hard looks and reviews to consider its suitability for wilderness designation. Each time, the area has not been recommended for wilderness designation. Despite the area's large size and

fairly solid federal ownership, limited support for wilderness designation of this area has been shown over time.

Public comment in general for Forest Plan revision has indicated a desire for more wilderness and wild and scenic rivers. Until comment on the Draft EIS and Proposed Forest Plan was received in June 2005, the Fibre area was not specifically referenced and/or cited as a means to fulfill this desire.

As a result of Pictured Rocks National Lakeshore's proposal to recommend a 25,000 acre area for wilderness, public outcry against the action was heavily voiced, as well as some support for the recommendation. If the Park Service is successful at implementing this area as wilderness, it will create another large land base for quality wilderness recreation experiences, in addition to the Hiawatha's existing wildernesses. Delirium, Mackinac, Round Island and Horseshoe Bay Wildernesses are in close proximity to Fibre.

The area is a fairly long, narrow piece of land and provides well-defined boundaries for management around the majority of the land base using forest roads. However, the noise from intrusions of snowmobiles, OHVs, the Soo Line Railroad and the need to maintain access to the private lands within the area are not conducive to a recommendation for wilderness.

The recreation opportunities afforded and season of use is limited within the area. Walking and hiking is tough; camping is limited to when mosquitoes, gnats and flies are absent or greatly reduced (fall and winter); and there is no apparent draw or attraction to the area other than wetland ecosystem and wildlife viewing/hunting. These things would be available whether or not it is recommended for wilderness. The Forest supports six Wildernesses (Big Island Lake, Delirium, Horseshoe Bay, Mackinac, Rock River Canyon and Round Island). Delirium and Mackinac provide a similar wetland environment/experience within relatively close proximity to the Fibre area. Neither receives significant recreational use outside of hunting season.

Part 4: Documentation of Roadless Inventory & Results

The Forest inventoried and documented findings for all 86 polygons identified in the GIS query for roadless characteristics. The following documentation is a summary of the findings based on characteristics that became limiting or exclusionary factors for the polygons on the West and East Units of the Hiawatha National Forest. The Fibre area (polygon #67) was the only area of the Forest met all the criteria.

Part 5: GIS Comparative Review

After reviewing the data and information from roadless area inventories with the other two Michigan NFs, the Hiawatha performed a second GIS exercise, employing the criteria and a similar query that the Ottawa National Forest used. That analysis process "buffered" forest roads by ½-mile to create core areas of solitude, as an initial screening. The Forest created a "layered" map which excludes Wilderness and used ML 3-5 roads, pipelines, powerlines, utility corridors, railroads, and designated motorized routes to create polygons across the Forest. Then the Forest applied a ½-mile buffer to create a map of "core areas" down to 2,000 acres in size. This resulted in the elimination from further consideration, some areas on the Forest that could not meet the "core area" criteria.

The next application created a layer that screened for road density and eliminated areas that contain over a half-mile of road per 1,000 acres, using ML 2-5 roads on the Forest's GIS Roads database. This left 8 polygons remaining that met the criteria. The last application laid the GIS landownership layer over the area to distinguish between private and national forest lands within the remaining polygons.

Five polygons remained (#453, 477, 486, 495 and 505). Polygons 486 and 495 are substantially less than 2,000 acres. Three polygons that were greater than 2,000 acres remained. Area 477 has 7,823 acres and Area 505 on Stonington Peninsula has 4,330 acres (both areas were inventoried and analyzed previously by the ID Teams); Area 453 near

Brevort Lake on the East Unit, contains 3,400 acres, and had not been previously analyzed. Polygon 505 did not meet inventory criteria for roadless inventory (corresponding polygon 294). Polygon 477 is the Fibre area and has been previously addressed.

Polygon 453 was not previously considered because the road density precluded it. However, project-level planning in the area completed refinements and field evaluation of the roads within this area, and resulted in road closures and changes to the roads database for the area. This area was further analyzed for other roadless characteristics. It did not meet the inventory criteria based on manageability of the area (influences from the surrounding private lands, motorized use within the area, and recreation access to the area), as well as past and planned vegetative treatments.

Part 6: Findings Based on Comment to the Draft EIS

Based on discussions that Forest representatives had during public meetings and on responses received for the Hiawatha National Forest's Draft Environmental Impact Statement (DEIS) and Proposed Forest Plan (Draft Plan), the Forest took another look at certain areas to verify the findings of the Forest's Roadless Inventory.

Some commenters to the DEIS and Draft Plan expressed concern about the Roadless Inventory and Wilderness Evaluation that the Forest conducted and cited their concerns.

Specifically, their comments stated: "There are many remote areas across the Hiawatha that should qualify for consideration as additions to the Wilderness System. These include, but are not limited to: the Fibre, Betchler March (*sic*), Remote Habitat Area *(sic)*, lands bordering Rock River Canyon and Big Island Lake Wilderness Areas, and lands bordering all designated and study Wild and Scenic Rivers." After reviewing the comments, the information in the DEIS and Proposed Plan, and associated documentation the teams agreed that:

- The Fibre area was inventoried, evaluated and fully addressed in the FEIS.
- The lands bordering segments of the designated Wild and Scenic Rivers (wild, scenic and recreational classified segments) were inventoried previously. Segments that were designated "recreational" generally involve access levels, landscape and shoreline modifications, facility developments, and private land inholdings that do not meet "roadless" characteristics.
- The lands bordering wild and scenic study river segments are primarily comprised of private lands and/or lie outside of the national forest boundary and do not provide roadless characteristics.
- Further analysis should be completed on the areas north of Big Island Lake Wilderness, Rock River Canyon Wilderness the Betchler Marsh area and the area surrounding the designated "wild" portion of the East Branch Tahquamenon River.

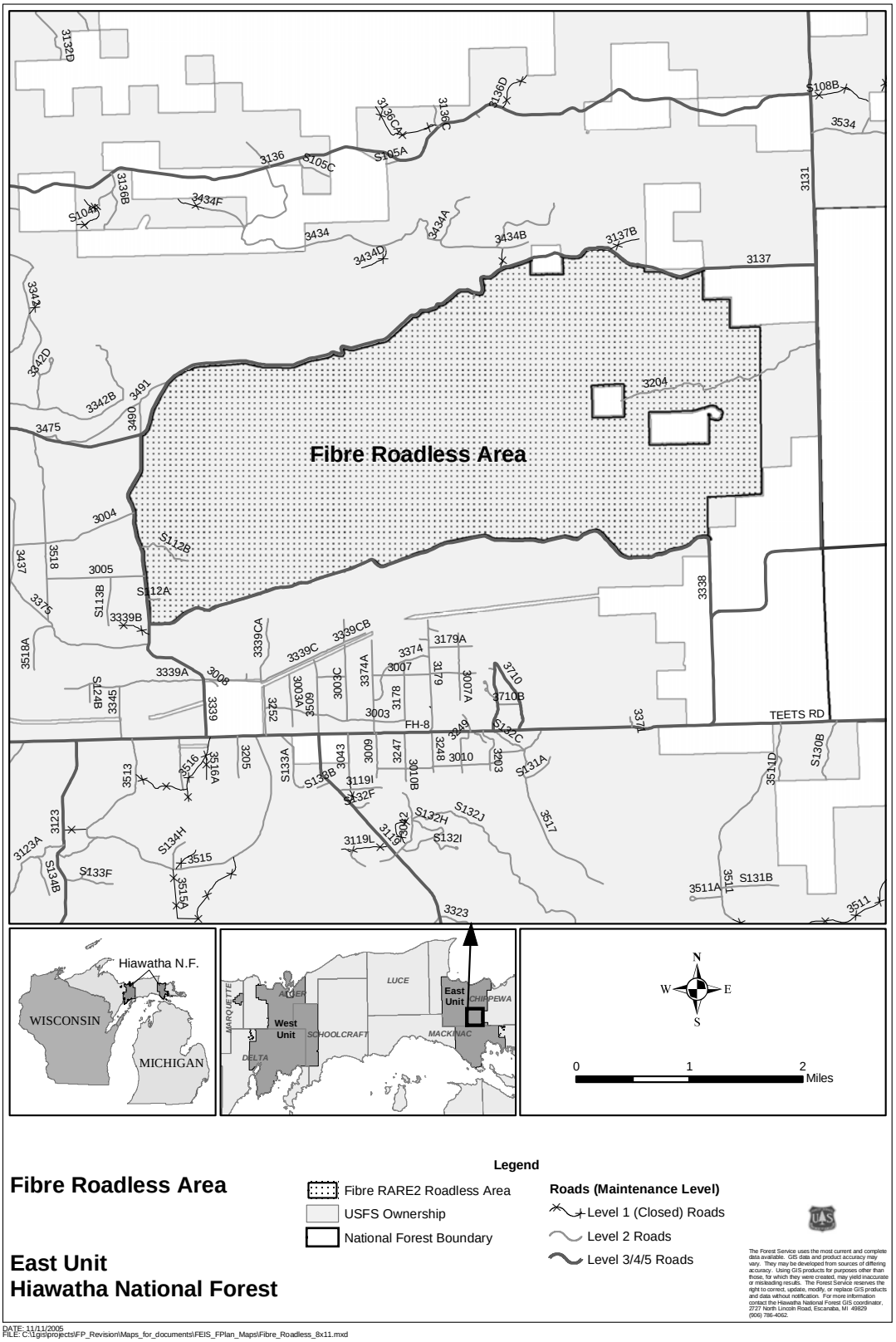
Findings:

- The team concurred with the initial inventory findings and rankings for Polygon 40 (Betchler Marsh area), and recommended continued management of the area in the revised Forest Plan in a manner that maintains the area for enhanced wildlife habitat and "healthy forest" management of the jack pine surrounding vegetation components.
- The team concurred with the initial inventory findings and rankings for Polygon 15, (the area north of the East Branch Tahquamenon River). The team recommended continued management of the area in the revised Forest Plan in a manner that complements the Wild and Scenic River corridor, provides older forest habitat, maintains wetland plant communities, provides dispersed recreation and habitat for upland and lowland wildlife species.
- The teams concurred with the previous findings for polygon 57, (the area north of the Big Island Lake Wilderness). The teams recommended continued management of the area in the revised Forest Plan in a manner that provides older forest habitat, maintains wetland plant communities, provides dispersed recreation and habitat for upland and lowland wildlife species.

Table C-1. Lakes States Designated Wilderness Areas			
State	**Wilderness Area**	**Managing Agency**	**Acres**
Michigan	Sylvania	Ottawa NF	18,327
	Sturgeon River Gorge	Ottawa NF	14,500
	McCormick	Ottawa NF	16,850
	Huron Islands	U.S. Fish & Wildlife	147
	Isle Royale	National Park Service	132,018
	Rock River Canyon	Hiawatha NF	4,640
	Big Island Lake	Hiawatha NF	5,856
	Seney	U.S. Fish & Wildlife	25,150
	Delirium	Hiawatha NF	11,870
	Mackinac	Hiawatha NF	12,230
	Horseshoe Bay	Hiawatha NF	3,790
	Round Island	Hiawatha NF	378
	Michigan Islands	U.S. Fish & Wildlife	12
	Nordhouse Dunes	Huron-Manistee NF	3,450
Wisconsin	Blackjack Springs	Nicolet NF	5,800
	Headwaters	Nicolet NF	20,000
	Porcupine Lake	Chequamegon	4,450
	Rainbow Lake	Chequamegon	6,600
	Whisker Lakes	Nicolet NF	7,500
	Wisconsin Islands	U.S. Fish & Wildlife	29
Minnesota	Agassiz	U.S. Fish & Wildlife	4,000
	Tamarac	U.S. Fish & Wildlife	2,180
	Boundary Waters Canoe Area	Superior NF	809,772
Total 23 Wildernesses			**1,109,549**

Table C-2. Roadless Inventory Areas for the West and East sides of the Hiawatha National Forest. (Based on the Roadless Inventory Polygons)					
Areas meeting untrammeled appearance:					
Area 67	Area 14	Area 208	Area 46	Area 76	Area 230
Area 139	Area 132	Area 15	Area 58	Area 196	Area 199
Area 135	Area 27	Area 205	Area 284	Area 57	Area 48
Area 2	Area 289				
Areas from above where improvements are disappearing or muted:					
Area 67	Area 208	Area 46	Area 76	Area 139	Area 132
Area 15	Area 58	Area 196	Area 199	Area 135	Area 205
Area 284	Area 57	Area 48			
Areas from above where land ownership patterns could ensure wilderness values:					
Area 67	Area 76	Area 132	Area 15	Area 196	Area 199
Area 135	Area 205	Area 284	Area 57	Area 48	Area 289
Areas from above where the location is conducive to the perpetuation of wilderness values:					
Area 67	Area 132	Area 196	Area 199	Area 57	
Inventory from above where that have .5 miles per thousand acres or less (GIS calculated):					
Area 67 – Fibre					

Figure C-1. Map of Fibre Roadless Area.



APPENDIX D

Candidate Research Natural Area Evaluation

Introduction

Research natural areas are part of a national network of ecological areas designed in perpetuity for research and education and/or to maintain biological diversity on the National Forest System lands. They also may assist in implementing provisions of special acts, such as the Endangered Species Act and the monitoring provisions of the National Forest Management Act (F.S. Handbook, 4063). The objectives of establishing research natural areas are to:

- Preserve a wide spectrum of pristine representative areas that typify important forest, shrubland, grassland, alpine, aquatic, geological and similar natural situations that have special or unique characteristics of scientific interest and importance that, in combination, form a national network of ecological areas for research, education and maintenance of biological diversity;
- Preserve and maintain genetic diversity;
- Protect against serious environmental disruptions;
- Serve as reference areas for the study of succession;
- Provide onsite and extension educational activities;
- Serve as baseline areas for measuring long-term ecological changes;
- Serve as control areas for comparing results from manipulative research;
- Monitor effects of resource management techniques and practices (FSH, 4063.02).

Hiawatha's 1986 Forest Plan forest-wide standards and guideline section (IV-52), directs that Forest managers identify and evaluate areas within the Forest that meet one of or more of the following criteria:

- Contributes to the protection of diversity of vegetation communities and wildlife habitat;
- Helps carry out provisions of laws, such as providing habitat for endangered species;
- Typifies important forest, shrubland, grassland, alpine, aquatic and geological types;
- Represents special or unique characteristics of scientific interest and importance;
- Protects or maintains special aquatic, geologic or potential natural vegetation and faunal communities or protects cultural resources.

Twenty-three candidate research natural areas (cRNAs) were identified during forest planning in 1986. These candidates are listed on page 4-172 of the Forest Plan (Amendment 2). Two of the candidates are boundary expansions of established RNAs (Grand Island and Dukes). In 1997, one of the candidates was designated as an RNA (Horseshoe Bay). Twenty-two candidates remain pending further study and evaluation (See Forest Plan Amendment 2 page 4-172).

The 1986 Forest Plan and amendments have placed the cRNAs in Management Areas 8.1 (cRNAs), 8.2. (experimental forest), 8.4 (wild, scenic and recreation rivers) or 5.1 (wilderness). The criteria used to designate cRNAs in the 1986 Forest Plan included:

1. High quality representatives of specific Society of American Forester (SAF) types;
2. Examples of unique or biological, geological or cultural features (primarily Michigan Natural Features Inventory community types).

Candidate Research Natural Area Evaluation Reports and Candidate RNA Description Forms have been completed for all candidates (Fred Metzger, 1986) except Grand Island. Since 1986, several candidates have also received secondary evaluations by contract with the Michigan Natural Features Inventory (MNFI) Ecologists Dennis Albert and Mike Penskar. Based on secondary reports and Forest Service investigations, Draft Establishment Records were written for four candidates.

Purpose and Need

Forest plan revision requires evaluation of any candidate research natural area. This report summarizes the available information for each cRNA and determines if the candidate is still eligible for RNA status.

There is a need to incorporate ecological boundaries into landscape design, and in some cases to modify the boundaries of cRNAs to provide a better representation of an SAF type that will be more resistant to both changes caused by natural events (windthrow, etc.) and management activities in the landscape surrounding the cRNA.

Some cRNAs are duplicate examples of specific SAF types or MNFI community types. Ultimately these candidates must be compared, contrasted and ranked to determine the best examples for RNA representation based on the quality of their plant communities and SAF types present and their landscape position.

Methods

Review the existing evaluation reports and documents provided by Forest Service personnel, MNFI ecologists and others to determine if candidates are still eligible for RNA status and if the candidates still provide the various representations intended.

Review cRNA boundaries to determine if the boundaries are consistent with changes in land ownership, the acquisition of ecological land-type mapping, soil mapping, landform mapping and national wetlands inventory mapping, and the generation of other relevant information since the 1986 Forest Plan was written.

Results and Discussion

The 1986 Forest Plan representation is from page 4-172 (Amendment 2). Representation findings since 1986 were gleaned from evaluation reports and draft establishment records written since 1986. MNFI community ranks or grades are listed for some community types within some candidates. Generally a grade of A or B is required for the community type to provide representation in an RNA.

Table D-1 provides a summary of representation of each candidate Research Natural Area. Figure D-1 is a map of the Research Natural Areas and candidate RNAs in 1986 Forest Plan.

Table D-2 is a summary of the 1986 Forest Plan cRNA system and the proposed cRNA system on the Hiawatha National Forest. Figure D-2 is the proposed map of the research natural areas and candidate RNAs that was developed after the evaluation.

Table D-1. Summary of Representation within each candidate Research Natural Area

cRNA Name	1986 Forest plan SAF or NFMI type	Representation findings since 1986	Notes
Munising Ranger District			
Duke's RNA expansion	Rich Conifer Swamp (No SAF type listed but would be 37. Mesic northern forest is listed on description form SAF 24 hemlock-yellow birch in RNA and possible in this candidate)	None	Uncut cedar stand adjacent to uncut northern hardwoods. In experimental forest. Stand is in the study area for Whitefish W&S expansion. Proposed by MNFI October 1985.
Grand Island RNA expansion (not a cRNA but was recognized in the Forest Plan for evaluation, page 4-172).	Northern Hardwood Forest (SAF types 23, 24, and 25. hardwoods and hemlock are likely).	None	Not enough data. The area was never formally evaluated as a candidate RNA. Area proposed for expansion is in a National Recreation Area with little conflict in management. The entire North Light Creek Watershed is proposed. According to a December 1999 file letter the SAF types listed in the proposed area are already represented in the established RNA.

Table D-1. Summary of Representation within each candidate Research Natural Area

cRNA Name	1986 Forest plan SAF or NFMI type	Representation findings since 1986	Notes
Rock River Canyon	Moist non-acid cliff and mesic northern forest (No SAF types listed but would include types 25, 27, 37, 39, and 60)	The draft Establishment report evaluated 460 acres, the current candidate is 83 acres. SAF types listed in the draft establishment report are 16, 25, 27, 37, 60, and 39	Area is in wilderness and use is compatible pending further evaluation for establishment report. Desire is to ensure that all of the uncut northern hardwood stand is included as well as another representative of northern hardwood forest.
Shingleton Bog	Patterned fen (No SAF types listed in plan. Types 5, 13, 15, 16, 18, 25, 27, 28, 37, and 108)	Draft Establishment Report (1994) evaluated 3052 acres and found: Mixed hardwoods forest, open bog or marsh/ associated conifers, dry northern forest, riparian areas, SAF types listed are 5, 13, 15, 16, 18, 25, 27, 28, 37, and 108. Many rare plants	Area is bounded by roads and NFS property lines, with the exception of the western boundary. District ranger letter details concerns and resulted in current boundaries. A more in-depth study of the area hydrology will be needed to determine appropriate boundaries to protect the patterned Fen.
Scott's Marsh	Patterned fen (No SAF types listed)	Metzger (1985) Patterned fen	Metzger report suggests not designating as RNA but some other protective status The west boundary should be evaluated further for groundwater inputs. Northwest corner is important to the hydrologic gradient feeding the patterned fen. Ecological boundaries are used to refine the east and north boundary (non-forested lands). Changes to the east and west boundaries simplify (all one MA) burning of the scrub-shrub overstory as suggested in preliminary report. See Lake Stella report for upland to peatland gradient representation. Scott's Marsh probably provides a better example.
Lake Stella Bog	None listed. Patterned fen implied	Penskar report (1989) evaluated parts of 18,000 acre block and found: patterned peatland, grade B; poor fen, grade A; Bog, grade AB; Muskeg, grade BC; poor conifer swamp, grade B; Rich Conifer Swamp, grade BC; special plants and animals. SAF types 12, 13, and 37	Current cRNA consists of 2 isolated FS 40s surrounded by Plum Creek (formerly MeadWestVaco Corporation) lands. A large area 18,000 acres was inventoried by MNFI, more than half of it is private. The 2 isolated 40s are centered on the patterned fen community type. At this time there is insufficient data to determine how expansion would fit into the rest of RNA strategy. Private lands are outside the scope of this evaluation. See Scott's Marsh discussion.
Rapid River/Manistique Ranger District			
Upper 18 Mile Lakes	Northern fen	SAF 37, Northern Fen, special plants	Two thirds of the polygon is in W & S River corridor. Area around FR 509 was discussed but more hydrology information is needed before changing boundary. See letters in project file.

Table D-1. Summary of Representation within each candidate Research Natural Area

cRNA Name	1986 Forest plan SAF or NFMI type	Representation findings since 1986	Notes
18 Mile Lakes	SAF 2, 18, 37, 39	Resource Management Group (1997) lists Mesic northern forest, northern shrub thicket, poor conifer swamp, Northern wet meadow & Northern Swamp. Metzger (1986) SAF types are 22, 23, 18, 43, 39, and 2.	At this time we do not have enough information to warrant a change. Two disjunct polygons are proposed, each with different features and SAF types.
Ramsey-Lost Lakes	SAF 2	Metzger (1985) SAF 2, sand ridge/lake plain complex	Metzger report recommended do not establish but find more suitable alternative in the area. Current cRNA is centered on a sand dune that has been roaded and logged. A dune ¼ mile south is not harvested and is somewhat isolated from other dunes by non-forested wetlands. There is a desire for fisheries management in South Lost Lake. Recommends dropping or combining with Ogontz Lake Plain.
Ogontz Lake Plain	Sand ridge-Lake Plain complex	Albert (1988) Dry northern forest, grade B; Muskeg, grade A; Rich Conifer Swamp, grade B; northern wet meadow, not graded. SAF types listed 1, 12, 13, 15, 38, 37, 11. Special plants.	Albert report suggested adding some of the bigger dunes in the area to the cRNA. Non-forested swales provide good isolation for dunes in the cRNA from activities and natural disturbances on dunes outside the cRNA.
Upper Sturgeon River	SAF 39	Metzger (1985) SAF 37 and 39	Not enough information to warrant change. Based on stands data the site is succeeding away from target SAF types.
Lower Sturgeon River	Hardwood Floodplain with strong southern element	Albert (1987) southern floodplain forest (not graded); rich conifer swamp (not graded); mesic northern forest (not graded); Special plants and animals.	Albert report recommends expansion well to the north and southern tip. The MNFI proposed area is almost entirely within the WSR corridor. The area at the southern tip is high quality and outside the WSR corridor.
Ogontz Bay	SAF 18 and 37	Metzger 1985, Albert (1988). SAF 18, 22, 37. Rich Conifer swamp, grade B & C; interdunal wetland, grade AB; Open dune, grade AB; Great Lakes Marsh, grade AB; Dry mesic northern forest, grade D; special plants	Albert report recommends expansion, but we need information from the Nahma, Wedens and Martin Bay sites to choose the best representative before enlarging the Ogontz Bay site.
Nahma	SAF 18, 37, 39, 55	Metzger, (1985) SAF 18, 37, 39, and 55. Great lakes coastal dune/wetland complex	Not enough information to warrant change. SAF 23 (hemlock) present but not a “good” example.

Table D-1. Summary of Representation within each candidate Research Natural Area			
cRNA Name	**1986 Forest plan SAF or NFMI type**	**Representation findings since 1986**	**Notes**
Wedens Bay	SAF 18 and 37	Metzger (1985) 18 and 37. Great Lakes coastal dune/wetland complex	Not enough information to warrant change.
Lake Sixteen	SAF 18 and 37.	Metzger (1985) SAF 18 and 37	Not enough information to warrant change. Report recommends finding a more suitable representative, but one has not been identified yet.
Sault Ste. Marie Ranger District			
Oak Ridge North	SAF 55	Metzger (1985) Albert (1988) SAF 55, 20 and 25. Mesic northern forest, grade B. Sand dunes and wave cut escarpment	Albert report recommends major change. Best example of Lake Superior Dunes with oak on south aspects and northern hardwoods on north aspects. All but a small part of the area is designated critical dunes by state of Michigan. Example of Lake Nippising escarpment & vegetation gradient are included in the revised boundary. The area is important to the Bay Mills tribe. Establishment needs to analyze cultural significance & use & OHV use.
Little Waiska Basin	SAF 108, red maple	Metzger (1985), Albert (1988). SAF 108, 25, 22, 37, 39. Hardwood-conifer swamps, grade B; mesic northern forest grade B	Albert reports including deeply dissected areas (red maple, unsuited). Follow stand boundaries to incorporate red maple stands. Expanded north and west. See map. Deeply dissected clay plain.
Betchler Tamarack Flats	SAF 38	Metzger(1985), Albert (1988) Albert evaluated an area much larger than the proposed candidate. Muskeg, grade A; Hardwood conifer swamp, grade B; Northern shrub swamp, grade A; Northern wet meadow, grade A. SAF types 12, 13, 37, and 38	Follow stand and ecological boundaries to capture hydrologic gradient associated with this stand. Tamarack stand is representation of this cRNA. Albert found good representation of a dry northern forest well outside the bounds of the proposed candidate.
St. Ignace Ranger District			
Summerby Swamp	Northern fen	Metzger (1985), Albert (1988), Draft establishment report (1994) and (2000). SAF 13, 16, 18 and 37. Northern fen, Rich conifer swamp. Many calcifiles, special plants and animals	Albert report recommends addition and speaks clearly about attributes of site. Area is close to unique in terms of plant communities. Recently acquired land (120 acres) at the SW corner of the candidate needs evaluation before possible addition to the cRNA.

Table D-1. Summary of Representation within each candidate Research Natural Area

cRNA Name	1986 Forest plan SAF or NFMI type	Representation findings since 1986	Notes
St. Martin Peninsula	Wet cobble beach, Fen-like wetlands	Metzger (1985) Penskar (1995). Northern fen, grade B; Rich conifer swamp, grade B; dry mesic northern forest, grade C; SAF 22 and 37. special plants and animals. No mention of the wet cobble beach..	There is very little chance of the Forest Service ever acquiring the private lands in this area (section 3). During establishment, review area around Paquin Lake, and edit north boundary to follow ELTs.
Pointe Aux Chenes	Interdunal wetland	Albert (1988) Draft establishment report (2000) Open dunes, grade A; Interdunal wetlands, grade A; Sand/gravel beach, grade A; Great lakes Marsh, Grade A; Northern Wet Meadow Grade A and B; Patterned Fen Grade BC; Northern Fen, grade B. Wooded Dune and Swale Grade A and B; Dry mesic northern forest Grade B; Dry northern forest, grade B; special plants and animals, Parabolic dunes.	Secondary report suggests additions on private and FS lands. At this time there is not enough information to incorporate the changes, especially around the pipelines that bisect the candidate and form the north boundary of the candidate.

Table D-2. Summary of the 1986 Forest Plan cRNA system and the proposed cRNA system on the Hiawatha National Forest.

Candidate RNA name	1986 Forest Plan Acres (GIS)*	Proposed Acres (GIS	Notes
Munising Ranger District			
1. Dukes (expansion)	59	63	Original paper maps had 63 acres
2. Grand Island (expansion)	0	0	No formal proposal
3. Rock River Canyon	83	83	No change
4. Shingleton Bog	3,366	3,366	Some private land
5. Scott's Marsh	1,418	1,538	Modified
6. Lake Stella Bog	634	634	Mostly Private land
Rapid River/Manistique Ranger District			
7. Upper 18 Mile Lake	478	478	No change
8. 18 mile Lakes	402	402	No change
9. Lost Lakes cRNA	0	1,604	New cRNA
Ramsey-Lost Lake	292	0	Modified part of new Lost Lakes cRNA
Ogontz Lake Plain	1,038	0	
10. Upper Sturgeon River	151	151	No Change
11. Sturgeon River Floodplain	606	662	Added 56 acres
12. Nahma	867	867	No Change
13. Ogontz Bay	170	170	No Change
14. Wedens Bay	147	147	No Change
15. Lake Sixteen	131	131	No Change
Sault Ste. Marie Ranger District			
16. Oakridge North	120	120	No Change
17. Little Waiska Basin	256	496	Expanded
18. Betchler Tamarack Flats	248	421	Expanded
St. Ignace Ranger District			
19. Summerby Swamp	658	1,668	Expanded, some private land
20. St. Martin's Point	518	518	No Change
21. Point Aux Chenes	4,266	4,266	Some private land
Total cRNAs Acres	**15,908**	**17,785**	
Established RNAs acres	**2,588**	**2,588**	Dukes, Grand Island and Horseshoe Bay.
Proposed RNA system acres	**18,496**	**20,373**	

* Original 1986 acres derived from paper maps may not exactly match the GIS acres in this table. One of the major task of the 2004 Evaluation Team was to create an accurate electronic coverage of the candidates based on original maps and descriptions.

Figure D-1. Locations of Research Natural Areas and candidate Research Natural areas from the 1986 Forest Plan.

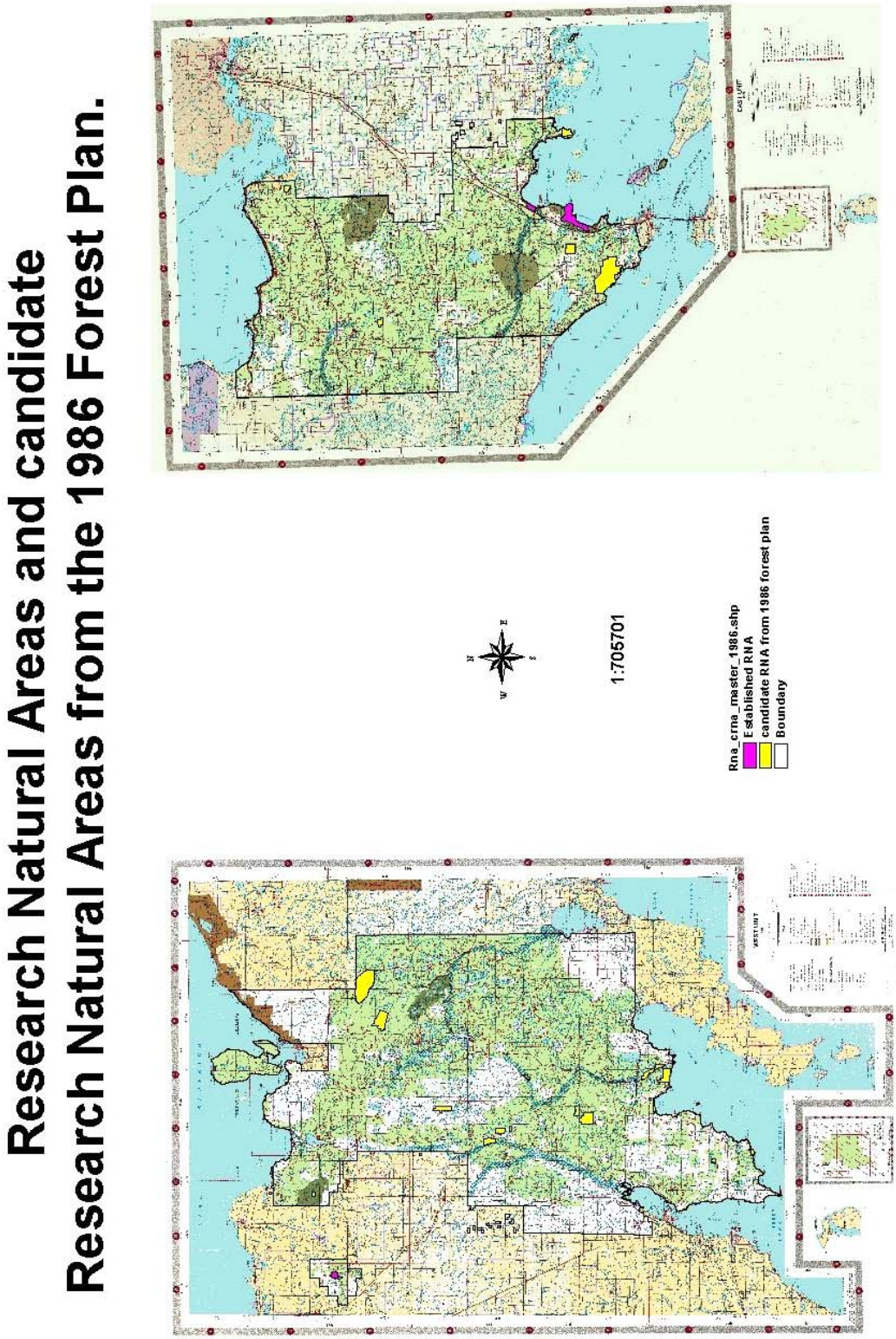
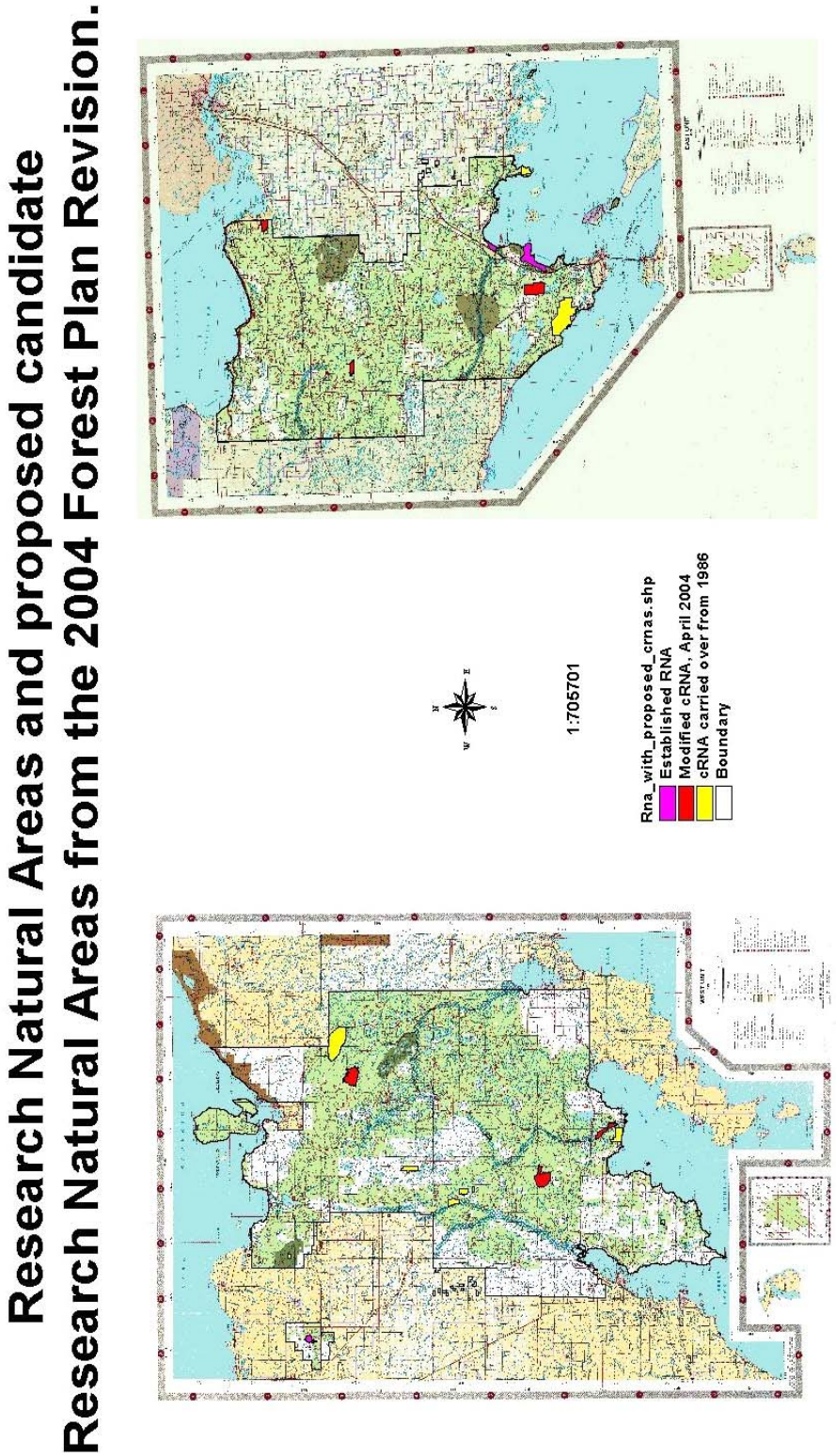


Figure D-2. Locations of Research Natural Areas and proposed candidate Research Natural areas from the Forest Plan Revision Evaluation completed in 2004.



The following section briefly describes each candidate RNA and provides recommendations and rationales for change.

Munising District

Dukes RNA expansion cRNA

Background. This cRNA is located adjacent to the established RNA which is within the Upper Peninsula Experimental Forest. The proposed boundary expansion (cRNA) is located within a stand of uncut northern white cedar (sections 26 and 27) adjacent to the established RNA. This proposed boundary change is located in the headwaters of the study area for the west branch of the Whitefish Wild and Scenic River. There is no conflict with proposed management of the Experimental Forest.

The 1986 Hiawatha RNA Evaluation Group proposed using 160 acres in Section 22, to the west of the established RNA, as a buffer for the northern hardwoods within the RNA and to maintain shallow groundwater flows that drain into the cedar stand within the (cRNA). This area (section 22) is private land and is not proposed to be part of the candidate and is therefore outside the scope of this evaluation.

Recommendation. Maintain the Dukes RNA proposed boundary expansion (section 26 and 27) and use ecological landtypes (ELTs) and stands as the revised boundary for this candidate. The 1986 proposed boundary addition to the RNA was approximately 63 acres. The 2004 HNF evaluation team revised boundary encompasses approximately 63 acres based on ecological landtype boundaries.

Rationale. The ELTs and stands layer provide the boundaries of the stand proposed for inclusion in the RNA. The private lands in section 22 were not recommended for RNA inclusion but were recommended as a buffer for the RNA and the candidate.

Grand Island RNA Expansion

Background. This RNA was established in 1977 and contains overstory types that have remained uncut since before turn-of-the 19th century logging. It was established to represent the sugar maple-beech-yellow birch type (SAF 25), soft maple-yellow birch-hemlock (SAF 24), hemlock-pine (SAF 23), Great Lakes sand beach and sandstone shoreline cliff communities (MNFI types).

The 1986 Forest Plan proposed to expand the RNA outside of USFS ownership, which included only the established RNA (all other lands on the island being privately held). This proposal was developed to acquire lands to protect the RNA from edge effect resulting from the extensive logging activity occurring at the RNA boundary (Cleveland Cliffs Inc. ownership). Since then, Forest Service ownership on Grand Island has increased to all lands surrounding the RNA. The area is now within a National Recreation Area.

Another proposal to expand the RNA to include the North Light Creek watershed was brought forth by the Michigan Natural Area Council in the late 1990s, but was not evaluated as it was not within the 1986 Plan and outside of the scope of this evaluation.

Recommendation. Keep boundaries as present. Possibly evaluate the MNAC proposal at a later date.

Rationale. No data was available to evaluate the MNAC proposal.

Rock River Canyon cRNA

Background. This candidate was proposed to represent: sugar maple (SAF 27); beech-sugar maple (SAF 60); sugar maple-beech-yellow birch (SAF 25) and the moist non-acid cliff community (MNFI type). Two draft Establishment Records have been generated (1974, 1993). The 1974 draft was put on hold pending Wilderness designation; the candidate is now nested within the Rock River Canyon Wilderness. It contains about 50 acres of uncut northern hardwood type.

Recommendation. No change. Future evaluations should strive for ecologically generated boundaries. Consider expanded boundaries to encompass all of the old-growth.

Rationale. The entire cRNA is nested within a congressionally-designated wilderness. There is not a need for change at this time.

Shingleton Bog cRNA

Background. This cRNA was proposed to represent the patterned fen community type. A draft Establishment Record was generated (1994). This cRNA includes many rare plants.

Recommendation. No change. The cRNA is bounded by roads and NFS property lines. There is a need for additional hydrological information before any proposal to change the existing boundaries. The most western segment could be modified to follow ecological boundaries, either land-type or stands.

Rationale. More information is needed regarding potential hydrological changes to the patterned fen and the ecological characteristics of the rare plant habitat.

Scott's Marsh cRNA

Background. This cRNA was proposed to represent the patterned fen (MNFI community type). The 2004 evaluation team proposed ecological boundaries to better preserve the hydrologic gradient feeding the patterned fen and the black spruce and hemlock representation in stands on the west side of the cRNA. The team also proposed to expand the boundaries to the north and east to capture the remainder of the scrub/shrub wetland that surrounds the patterned fen.

The team accepted the district recommendation to eliminate the southwest corner of the Plan boundary as it contributes nothing toward the preservation of the patterned fen. The 1989 Lake Stella cRNA MNFI report suggested locating good examples of hydrological gradient and types changes; this cRNA may represent that attribute.

Recommendation. Modify northern and eastern boundaries to follow ecological land-types or stands. Strive to develop ecological boundaries on the west side of the candidate. Expand the north boundary to follow stands boundaries and ELTs. Include a black spruce and hemlock stand near the northwest corner of the cRNA to protect gradient hydrology of the patterned fen. Expand the cRNA to the east to follow the scrub-shrub boundary on the orthographic image. Based on ELT mapping, stands and local knowledge of the area, the western boundary should be modified.

Additional hydrological information is needed to determine of the boundary should be placed at the ELT 60/70 boundary or ELT 20/60 boundary. Consider using this candidate to provide representation of a outwash sand gradient from upland to peatland (See Lake Stella Bog cRNA).

Rationale. The ELT clearly extends north and east beyond the 1986 cRNA boundaries. The area around the northwestern tip of the cRNA is important for maintaining the hydrologic gradient for the patterned fen. The western boundary should be located at ecological land-type boundaries based on a further analysis of the watershed feeding the patterned fen.

Lake Stella Bog cRNA

Background. Lake Stella cRNA consists of 640 acres, 80 of which are owned by the USFS. The remainder of the acres belongs primarily to Plum Creek (formerly Mead-Westvaco). The cRNA's intent was to provide a representation of a patterned fen. The Forest Service included a much larger study area with a desire to identify a representation of upland to peatland transition on outwash deposits. The 1989 MNFI contract report recommended further expansion of the potential study area to include areas within 18,395 acres of outwash plain**.**

Recommendation. No change. The changes proposed by the MNFI contract report include large tracts of private and USFS lands. The inclusion of private lands to this extent is outside the scope of the current evaluation. More information is needed relative to the merits of the additional USFS lands suggested for representation within this candidate. These examples of upland to peatland transition on outwash plains may be better represented elsewhere within the cRNA network (e.g. Scott's Marsh).

Rationale. More information is needed regarding the merits of the MNFI proposal relative to representation in other candidate RNAs.

Rapid River/Manistique Ranger Distinct

Upper 18 Mile Lake cRNA

Background. This candidate was proposed to represent the northern fen (MNFI type). Two-thirds of the candidate falls within the Whitefish Wild and Scenic River corridor. Two rare plants exist within the candidate. The northern fen depends in part, on groundwater from the hardwood forest located on the bluff upslope of the fen.

Recommendation. No change. Maintain the area as a candidate. During establishment, clarify the recreation opportunities and proposed management within the wild and scenic river corridor. Strive for ecologically-based boundaries.

Rationale. The team considered moving the east boundary of the candidate away from County Road 509, but lacked sufficient groundwater information to make the change. This area also provides geologic representation for a glacial scour channel. Two-thirds of the area lies within the Whitefish WSR corridor.

18 Mile Lakes cRNA

Background. This cRNA was proposed to represent: red pine type (SAF 2); paper birch (SAF 18); northern white cedar (SAF 37) and black ash-American elm-red maple (SAF 39). White pine-hemlock (SAF 22) and the northern fen (MNFI community type) are also found in the cRNA.

The area contains relatively undisturbed hemlock-white pine stand on ridges in wetlands and large white pine.

Recommendation. No change. Gather more information. Strive for ecological boundaries.

Rationale. At this time there is not enough information to warrant a change.

Ramsey-Lost Lakes cRNA

Background. This cRNA was proposed to provide representation of the red pine type (SAF 2). A preliminary report recommends not establishing, but finding a suitable alternative. The current cRNA is located on a sand dune that has been roaded and logged.

A similar sand dune one-quarter mile south has not been harvested and is somewhat isolated from other dunes by non-forested wetlands. File reports suggest adding this candidate to the Ogontz Lake Plain candidate.

Recommendation. Modify the boundary and combine this cRNA with Ogontz Lake Plain cRNA. Please see recommendations for Ogontz Lake Plain cRNA. Boundaries should be based on ecological units (stands or land-types).

Rationale. The stands within the 1986 cRNA are heavily disturbed by management activity. The 2004 evaluation team proposed change includes an undisturbed representative of a large sand dune. In concert with the Ogontz Lake Plain cRNA, the new cRNA boundary will have representatives of large and small sand dunes and numerous SAF types and MNFI communities on the dunes

Ogontz Lake Plain cRNA

Background. This cRNA was proposed to provide representation of a sand ridge/lake plain complex. Albert (1988) also found representation of dry northern forest, grade B; muskeg, grade A; rich conifer swamp, grade B; northern wet meadow, not graded and SAF types 1, 12, 13, 15, 38, 37 and 11; and special plants. Albert (1988) also suggested modifying the boundary of this candidate to include additional representation.

This candidate may allow for representation of a more intact ecosystem. The Ramsey-Lost Lake cRNA is in the next section to the immediate northeast.

Recommendation. Modify the boundary to incorporate MNFI contract report recommendations and to reflect ecological boundaries. Proposed boundaries should follow stands, property lines and ELTs. Combine this cRNA with the modified Ramsey-Lost Lakes cRNA to create a new Lost Lakes cRNA.

Rationale. The new candidate (Lost Lakes cRNA) will capture the best examples of large and small sand dunes and provide a more intact and centralized ecosystem, isolated from management activities and natural disturbances by non-forested wetlands.

Upper Sturgeon River cRNA

Background. This candidate was proposed to represent the following: black ash, American elm, red maple (SAF 39) and northern white cedar (SAF 37). The candidate falls within the Sturgeon River Wild and Scenic River corridor.

Recommendation. No change.

Rationale. There is not enough information in the Metzger (1985) report to warrant changing the cRNA at this time. The candidate lies within the Sturgeon River WSR corridor.

Sturgeon River Floodplain cRNA

Background. This cRNA was proposed to represent a hardwood floodplain with a strong southern element (MNFI type). The cRNA boundaries fall, for the most part, within the Sturgeon River Wild and Scenic River corridor. The MNFI contract report proposed boundary includes a small portion within section 16 that was not included in the 1986 Forest Plan boundary. This proposed addition includes a good example of the southern floodplain community type representation along Bull Run Creek (about 56 acres currently within M.A. 6.4). The report also suggested extending the cRNA upstream to the northern-most limit of the southern floodplain forest. Almost all of this contract report proposed addition falls within the WSR corridor (M.A. 8.4).

Recommendation. Add approximately 56 acres within M.A. 6.4 to the cRNA. Recreational use within the wild and scenic river corridor needs to be investigated relative to RNA designation. The proposed addition to this candidate is within the WSR corridor.

Rationale. The proposed addition to the cRNA will provide additional high quality representation of the southern floodplain forest. The proposed change is based on ecological boundaries rather than section lines used in the existing cRNA boundary

Ogontz cRNA

Background. This cRNA was proposed to provide the following representation: paper birch type (SAF 18) and the northern white cedar type (SAF 37). Subsequent reports identified additional representation SAF 22 and MNFI community types including: rich conifer swamp, grade B & C; interdunal wetland, grade AB; open dune, grade AB; Great Lakes marsh, grade AB; dry mesic northern forest, grade D; and special plants. Albert (1988) suggested modifying the boundary to include most of the beach ridge landform.

Recommendation. No change. However, the MNFI contract report suggests boundary changes to include more significant features. This candidate should be contrasted and compared to the merits of the Nahma and Wedens Bay cRNAs for the best and most complete representation. This cRNA and the surrounding environs may offer the best and most intact example of the beach ridges landform. The 2004 evaluation group agrees with the MNFI contract report's proposed boundaries, but feels that more information is needed regarding the ecological attributes of the Nahma and Wedens Bay cRNAs. Some overlap and potential duplication in community type representation is likely between these candidates.

Rationale. The needed information from the Nahma and Wedens Bay candidates is lacking at this time. Expansion without comparing to the other cRNAs would be premature.

Nahma cRNA

Background. This cRNA was proposed to represent the following: paper birch type (SAF 18); northern white cedar type (SAF 37); black ash-American elm-red maple type (SAF 39) and northern red oak type (SAF 55). The Metzger report found disturbance (ditching) in the cRNA. This area may be important for the implementation of the Piping Plover Federal Recovery Plan. The candidate is close to the community of Nahma and the county road along the beach is well-used. Purple loosestrife is common in Nahma and is present along the beach within the candidate.

Recommendation. No change.

Rationale. More information is needed to evaluate this area including the merits of the west half of section 20. This candidate needs to be compared to Wedens Bay and Ogontz Bay cRNAs to determine which provides the best representation.

Wedens Bay cRNA

Background. This cRNA was proposed to represent the following: paper birch (SAF 18) and northern white cedar (SAF 37). The area may be useful in the implementation of the *Iris lacustris* Federal Recovery Plan. Boundaries for this cRNA are not ecologically based.

Recommendation. No change.

Rationale. More information is needed to understand the merits of this cRNA. The cRNA needs to be compared and contrasted to the Nahma and Ogontz Bay cRNAs to identify best representation opportunities.

Lake Sixteen cRNA

Background. This cRNA was proposed to represent the paper birch type (SAF 18). The actual paper birch stand is small (13.6 acres). Preliminary reports suggest seeking a better representative elsewhere. The stand has not yet succeeded to another type and there is an additional paper birch/balsam stand in the area. The current cRNA includes 131 acres. No information has been gathered since 1986 and little is known of the area.

Recommendation. No change. The current boundaries are rectangular. If the candidate is established, strive for the incorporation of ecologically-based boundaries.

Rationale. The stand identified for representation in the cRNA is 13.6 acres. Reports recommend finding a larger, more suitable area to represent the paper birch type. Until a substitute is found, maintain the current cRNA. There is a lack of information about the candidate.

Sault Saint Marie District

Oak Ridge North cRNA

Background. This cRNA was proposed to represent a northern red oak type (SAF 55). A good representation of ancient Lake Superior shoreline also occurs within the vicinity. The area lies between Monocle Lake and Mission Hill. Forest Road 3089 traverses the southwest corner of the candidate. A portion of the cRNA is designated critical dunes.

The 1986 Forest Plan boundary includes 120 acres in a long narrow band encompassing sand plain and dunes. Albert (1988) recommended a boundary encompassing about 285 acres, of which about 240 acres is on USFS lands. The cRNA lies within MA 6.3 which emphasizes semi-primitive non-motorized recreation. The area has historic Native American use and is still considered an important site by the Bay Mills Tribe. The area is one of the best expressions of Lake Superior dunes on Forest Service land. The area along Monocle Lake also includes a good example ancient Lake Superior shoreline that could be included in the candidate.

Recommendation. No change. Consider proposed changes during establishment.

Rationale. The evaluation team agrees in concept with Albert's recommendation, but feels more information is needed regarding potential conflicts with Tribal use of the area and established OHV use.

Little Waiska cRNA

Background. The Little Waiska cRNA was proposed to represent the red maple type (SAF 108). Metzger (1985) and Albert (1988) found representation in SAF types 108, 25, 22, 37, 39; hardwood-conifer swamps, grade B; mesic northern forest grade B. A total of 261 acres was proposed on the clay plain adjacent to the Little Waiska River. The river has cut 60 foot deep gorges in the edge of the clay plain.

Albert (1988) suggested including the steep sided gorges (also red maple stands) in the cRNA. The GIS depiction of the original boundary included 371 acres and did not follow ecological breaks or the majority of the red maple stands in the area. Public comment recommended adding a second separate 160 acre polygon about a mile north of the existing cRNA to represent an escarpment formed by two different previous levels of the Lake Superior shoreline. There may have been a mapping error on the original cRNA maps. A quad line may have been mistaken for the forest proclamation boundary.

Recommendation. Modify the cRNA boundary to follow stand boundaries, also incorporating the deeply dissected terrain and the dominant red maple stands in the area. The resulting cRNA would be 496 acres, and includes stands 25002, 25003, 25005, 25006, 25007, 25009, 25047, 25048 and 25049. Do not include the 160 acre polygon to the north of the cRNA. The 2004 evaluation team recommendations generally follow those of the Albert report. Proposed boundaries would follow stand boundaries.

Rationale. According to 1850s GLO data, the current red maple stand in the area supported red maple over 150 years ago. To maintain natural processes (windthrow) the red maple stand needs to be fairly large. Following ecological boundaries (stands) improves the representation of red maple at this site. The proposed expansion will allow for more natural processes to occur within the stand independent of activities on adjacent lands. The 160 acre polygon proposed for addition north of the cRNA represents a different SAF type (northern hardwoods) and the Nippising Lake level escarpment may be better represented at the Oak Ridge North cRNA.

Betchler Marsh cRNA

Background. The initial intent of the cRNA was to represent the tamarack gap type (SAF 38). The site also represents northern shrub swamp and northern wet meadow (MNFI types). Albert (1988) proposed expanding this cRNA to include small areas of dry northern forest (jack pine and red pine), which are east of the existing cRNA. The initial boundaries for the cRNA encompassed 240 acres and were centered on a large stand of tamarack. The stand is bounded on the east and west by non-forested wetland stands with a localized drainage pattern from west to east (towards Betchler Marsh proper). The cRNA is nested within a larger 8.1 management area.

Recommendation. Modify the cRNA boundary to include the remainder of the tamarack stand and adjacent non-forested wetland stands. Do not include the examples of dry northern forest as suggested in the NMFI report. The 2004 team proposed to follow stand boundaries.

Rationale. Due to the small areas of dry northern forest identified for inclusion in this cRNA and the isolation of the dry northern forest from the tamarack stand, the 2004 evaluation team does not recommend including the dry northern forest within sections 22 and 27. The team recommends expanding the cRNA boundary to the west to include the remainder of the tamarack stand and the non-forested stand west of the tamarack stand because surface water from this area drains into the tamarack stand.

The team did not recommend including the non-forested portion of Betchler Marsh at this time because: 1) it was unlikely that any management activity would occur in the marsh and 2) there is no ecological break within the marsh to determine a cRNA boundary.

The team recommends including stands 94038, 94034, 94035, 94036 and 94037 (Soo Ranger District) in the cRNA based on the ecological conditions surrounding the

tamarack stand (94037). The 2004 team boundaries for this cRNA include 421 acres. Almost all of the added acres are non-forested stands that help maintain the hydrology of the tamarack stand.

St. Ignace District

Summerby Swamp cRNA

Background. This cRNA was proposed to represent the northern fen community type. Subsequent reports also found representation for SAF types 13, 16, 18 and 37 and MNFI community types northern fen and rich conifer swamp. Many calcifiles, special plants and animals also occur in the candidate. This candidate falls within The Nature Conservancy Lake Huron Bioreserve area.

Reports and surveys indicate that section 10 contains both federal and R9 sensitive plants and animals and ecologically significant community types. It is thus believed that sufficient information is available to substantiate the inclusion of section 10 into this candidate. The area may be useful in implementing the *Solidago houghtonii* and *Hymenoxys herbacea* Federal Recovery Plans.

Recommendation. Add section 10, the northern portion of section 15, the western border of 11 and the northwest corner of section 14 to the boundary. The 1986 Plan boundary included 640 acres. The revised boundary includes 1,668 acres, which is almost all of the Summerby Creek Watershed.

Rationale. Sufficient information from additional surveys exists to warrant inclusion of section 10 and part of section 15 in the cRNA (based on ecological and botanical uniqueness).

St. Martin Peninsula (Point) cRNA

Background. This cRNA was proposed to represent wet cobble beach and fen-like wetlands. Metzger (1985) and Penskar (1995) found representation of northern fen, grade B; rich conifer swamp, grade B; dry mesic northern forest, grade C; SAF types 22 and 37 and special plants and animals. The reports did not mention values associated with the wet cobble beach. The area is within The Nature Conservancy Lake Huron Bioreserve area and may be useful in implementing the *Solidago houghtonii* Federal Recovery Plan.

Recommendation. No change. During establishment, investigate including a small portion of section 35 north of Paquin Lake (about 2 acres) following ecological boundaries.

Rationale. The current boundaries capture the representative elements in this cRNA.

Pointe Aux Chenes cRNA

Background. This cRNA was proposed to represent interdunal wetlands. Based on subsequent reports, the cRNA also provides good to excellent representation of open dunes, grade A; interdunal wetlands, grade A; sand/gravel beach, grade A; Great Lakes marsh, grade A; northern wet meadow, grades A and B; patterned fen grade BC; northern fen, grade B; wooded dune and swale, grades A and B; dry mesic northern forest, grade B; dry northern forest, grade B; special plants and animals and parabolic dunes.

The area may be useful in implementing the *Solidago houghtonii* and *Cirsium pitcheri* Federal Recovery Plans and is currently used for implementing the Piping Plover Federal Recovery Plan. Critical habitat for this species has been designated here. The area falls within the Nature Conservancy Lake Huron Bioreserve area. Albert (1988) suggested expanding the cRNA boundary on private and Forest Service lands.

Recommendation. No change. During establishment, consider including the entire landform with the boundary adjusted to match roads and pipelines where appropriate. The 2004 evaluation team proposes no changes, as additional information is needed on attributes within the hardwood stands. The Albert report proposal includes almost all of the landform. Further proposals should consider the use of roads, pipelines, private lands and landforms as boundaries.

Rationale. There is inadequate information to propose changes to specific areas adjacent to H-57 and the pipelines. There is conflicting reports in the files regarding the attributes of the sand dunes in the northeast corner of the proposed additions.

Summary

Following review of the existing information for 20 candidate RNAs, the 2004 RNA evaluation team proposes major changes to the four candidates:

1. **Ramsey-Lost Lakes:** Modify and combine with Ogontz Lake Plain to create new Lost Lakes cRNA.
2. **Ogontz Lake Plain:** Include recommendations in the secondary report; combine with Ramsey-Lost Lakes candidate to create new candidate Lost Lakes cRNA.
3. **Little Waiska Basin:** Modify and expand cRNA to capture red maple stands and dissected terrain in the area.
4. **Summerby Swamp:** Modify to include section 10 south of Highway 123 and portions of sections 11, 14 and 15 south of Highway 123.

The 2004 RNA evaluation team recommends minor changes to these candidates:

1. **Dukes:** Minor change to better follow ecological land-type boundary
2. **Scott's Marsh:** Follow ELT or stand boundaries to include areas north and east of the candidate (non-forested areas). Include a black spruce stand and a hemlock stand near the northeast corner of the candidate.
3. **Lower Sturgeon River:** Follow floodplain and stand type (per Albert report) to include the remainder of the southern floodplain forest in the candidate (56 acres).
4. **Betchler Tamarack Flats:** Modify and expand candidate boundary to follow stand boundaries. Expansion includes rest of tamarack stand and non-forested areas.

There is potential duplication between several candidates, and pending further evaluation, there may be opportunities to eliminate some candidates while expanding others to achieve better representation. Ogontz Bay, Wedens Bay and Nahma are three candidates with some similarities in representation. An expanded Ogontz Bay cRNA may provide the best opportunity for representation. Several opportunities exist for representing the paper birch SAF type. Further evaluation and comparison may result in eliminating the Lake Sixteen cRNA.

There is also an increased awareness that some candidates should represent important ecological transition zones between land-type associations. Transition zone representation from upland to wetland on an outwash plain could occur at the Scott's Marsh site. More recent science also suggests that preserving larger blocks in fewer areas is preferable to preserving many small scattered parcels.

The 2004 RNA evaluation team used existing information collected from field surveys of each candidate in conjunction with new ecological maps produced since the forest plan was written. The resulting analysis led the team to propose changes to some candidates but for the majority change is not proposed due to lack of field data.

Shingleton Bog, Scott's Marsh, Upper 18 Mile Lake, and Lake Stella Bog cRNAs need a review of the groundwater influence before determining appropriate boundaries.

APPENDIX E

Management Indicator Species and Habitats

The Hiawatha National Forest has identified and selected four Management Indicator Species (MIS): sharp-tailed grouse, American marten, ruffed grouse and brook trout. In general , the Forest followed Region 9 direction for selecting Management Indicator Species as outlined in "*Managing R9 Plan Revisions:* 5. Revision Tools: Ecological. Management Indicator Species."

The four MIS were selected from an initial list of 30 potential MIS. The initial list consisted of the 23 MIS identified in the 1986 Forest Plan, plus 7 additional species identified by Forest biologists.

Each of the 30 potential MIS was evaluated against four criteria. These criteria follow the general direction given for "ideal" MIS as provided by the R9 web site. If any of the four criteria were not met, a species was considered unsuitable as a MIS. The four criteria are:

Criterion 1: Habitat and population information was known and complete regarding habitat use, threats, and limiting factors.

Criterion 2: Sampling protocols were in place sufficient to develop population and habitat estimates and trend information, and past and current data for the Forests exists.

Criterion 3: There is a direct cause and effect relationship from Forest management actions and changes in populations or their habitat on the Forest.

Criterion 4: Changes in its population likely represent changes in other species with similar habitat requirements.

Seven wildlife species and four fish species met all four criteria. They are: common loon, American marten, deer, ruffed grouse, sharp-tailed grouse, black-throated blue warbler, red-shouldered hawk, book trout, steelhead trout, largemouth bass and smallmouth bass.

The biologists decided to select one species that best represented terrestrial habitats that had the greatest potential to be influenced by management activities.

The habitats and species associated with them include:

- Open land including both temporary and permanent openings. (sharp-tailed grouse)
- Early serial deciduous, primarily aspen. (ruffed grouse and white-tailed deer)
- Late serial deciduous and deciduous/ coniferous mix (American marten, black-throated blue warbler and red-shouldered hawk)

The sharp-tailed grouse was selected because it was the only species meeting the selection criteria that is associated with open land habitat.

The ruffed grouse was selected as best representing early seral deciduous habitat. The white-tailed deer was not selected because it was felt that deer populations were influenced by factors other than early serial deciduous habitat including winter severity, condition of conifer winter deer yards, and hunting regulations.

The American marten was selected as best representing late serial deciduous and deciduous/coniferous mix habitats. The marten is non migratory, therefore population levels would more likely be the result of local habitat conditions. Additionally, habitat components such as snags, cavity trees and down woody debris that are important for marten habitat are required habitat components for many other wildlife species.

Only one fish species, the brook trout, was selected because it represents coldwater stream habitat that is highly vulnerable to the effects of management activities. The steelhead was not selected because there is substantial overlap in habitat preferences with brook trout. Largemouth and smallmouth bass were not selected because, relative to brook trout, they are able to survive and reproduce in a fairly broad range of habitats and, therefore are less responsive to changes brought about by management actions.

Table E-1. Potential MIS for Forest Plan Revision Evaluated Against Criteria

Potential MIS	Criterion				
	1	2	3	4	Suitability
Osprey	yes	no	yes	no	unsuitable
Sandhill Crane	yes	no	yes	no	unsuitable
Great Blue Heron	yes	no	yes	no	unsuitable
Bald Eagle	yes	yes	yes	no	unsuitable
Common Loon	yes	yes	yes	yes	potentially suitable
Timber Wolf	yes	yes	yes	no	unsuitable
American Marten	yes	yes	yes	yes	potentially suitable
Pileated Woodpecker	yes	no	yes	yes	unsuitable
Wood Duck	yes	no	yes	yes	unsuitable
Gray Squirrel	yes	no	yes	no	unsuitable
White-tailed Deer	yes	yes	yes	yes	potentially suitable
Ruffed grouse	yes	yes	yes	yes	potentially suitable
Beaver	yes	no	yes	yes	unsuitable
Sharp-tailed Grouse	yes	yes	yes	yes	potentially suitable
Black-throated Green Warbler	yes	yes	yes	no	unsuitable
Bobcat	yes	yes	yes	no	unsuitable
Black Bear	yes	no	yes	yes	unsuitable
Lake Sturgeon	yes	no	yes	no	unsuitable
Brook Trout	yes	yes	yes	yes	potentially suitable
Steelhead Trout	yes	yes	yes	yes	potentially suitable
Northern Pike	yes	yes	no	no	unsuitable
Largemouth Bass	yes	yes	yes	yes	potentially suitable
Smallmouth Bass	yes	yes	yes	yes	potentially suitable
Northern Goshawk	yes	yes	yes	no	unsuitable
Kirtland's Warbler	yes	yes	yes	no	unsuitable
Black-throated Blue Warbler	yes	yes	yes	yes	potentially suitable
Spruce Grouse	yes	no	yes	yes	unsuitable
Red-shouldered Hawk	yes	yes	yes	yes	potentially suitable
Incurvate emerald dragonfly	yes	no	yes	yes	unsuitable
Red-backed salamander	yes	no	yes	no	unsuitable

Table E-2. Species determined suitable as MIS and rationale.

Potential MIS Species	MIS Suitability	Rationale
Common loon	not suitable	Subject to conditions on wintering grounds; Difficult and time-consuming to survey due to abundance of habitat on the HNF.
American marten	suitable	Abundant and widespread on the HNF; non-migratory and sensitive to management actions.
White-tailed deer	not suitable	Potentially influenced by hunting regulations, winter severity fluctuations and condition of deeryards.
Ruffed grouse	suitable	Best species to represent early-seral forests; high public interest; historic population indexed by hunter and other survey methods.
Sharp-tailed grouse	suitable	Indicator for both open land including both temporary and permanent; good historic monitoring information; keen public interest.
Brook trout	suitable	Species is widely distributed in cold, headwater streams that are highly responsive to effects from land management activities.
Steelhead trout	not suitable	Habitat requirements overlap with brook trout and species is more tolerant of habitat perturbations than brook trout.
Largemouth bass	not suitable	Species is able to survive and reproduce in a fairly broad range of warm and cool-water habitats and, therefore would be relatively unresponsive to subtle changes caused by management activities.
Smallmouth bass	not suitable	Though somewhat less tolerant than largemouth bass, the species is able to survive and reproduce in a fairly broad range of warm and cool-water habitats and, therefore would be relatively unresponsive to subtle changes caused by management activities.
Black-throated blue warbler	not suitable	Migratory species - subject to conditions on winter habitat in Bahamas and Greater Antilles.
Red shouldered hawk	not suitable	Low abundance on the HNF; short duration of survey period may limit data collection.

Table E-3. MIS species, habitat conditions and associated species.

Management Indicators Species	Habitat Conditions and species associated with Management Indicators Species
Sharp-tailed grouse	**Habitats**: Open land and early-successional of jack pine **Associated Species**: Short-eared owl, black-backed woodpecker, eastern bluebird, Kirtland's warbler, meadow jumping mouse
American marten	**Habitats:** Late-successional of northern hardwoods and conifer dominated forests **Associated Species:** Pileated woodpecker, northern goshawk, eastern chipmunk, woodland jumping mouse, gray wolf, black-throated blue warbler
Ruffed grouse	**Habitats:** Early-successional of aspen **Associated Species:** Golden-winged warbler, white-tailed deer, snowshoe hare, American woodcock, indigo bunting
Brook trout	**Habitats:** Cold-water stream **Associated Species:** Mottled sculpin, blacknose dace, longnose dace, brook stickleback

APPENDIX F

Timber Land Suitability

Table F-1 identifies the timber land suitability for the Hiawatha National Forest. The table lists land classifications by acres according to the individual alternative direction and the National Forest Management Act.

Lands not biologically, physically, or legally withdrawn from timber production were identified as required in CFR 219.14a. The results of this analysis identified 679,086 acres as tentatively suited forest land. Each alternative formulated and evaluated in this Environmental Impact Statement, identified forest land not appropriate (administratively or economically withdrawn) for timber production as required by CFR 219.14c. The results of this analysis are shown for each alternative in Table F-1. More details of the analysis process are found in the planning record.[12]

Table F-1. Timber Land Suitability of the Hiawatha National Forest

Land Classification[13]	Alt 1 (Current Plan)	Alt 2	Alt 3	Alt 4
1. National Forest Lands	895,313	895,313	895,313	895,313
2. Non-Forest (includes water and permanent openings	93,254	93,254	93,254	93,254
3. Lands withdrawn from timber production by Congress, the Secretary of Agriculture, or the Chief of the Forest Service. Includes wildernesses, Dukes Experimental Forest, Research Natural Areas, Grand Island National Recreation Area, Designated Roadless Areas, and wild segments of Wild and Scenic Rivers.	57,178	57,178	57,178	57,178
4. Forest lands not capable of producing crops of industrial wood.	0	0	0	0
5. Forest lands physically unsuited.	o	o	o	o
6. Forest lands – inadequate information.	65,795	65,795	65,795	65,795
7. Tentatively suited forest lands.	679,086	679,086	679,086	679,086
8. Forest lands not appropriate for timber management. (Includes lands managed as openings, not cost effective, candidate research natural areas, special areas, semi-primitive non-motorized areas, and designated old growth in Alternatives 2-4).	168,451	100,625	55,315	153,079
9. Unsuited Forest Lands (Items 2+3+4+5+6+8).	384,678	316,852	271,542	369,306
10. Total Suited Lands (Item 1 minus Item 9).	510,635	578,461	623,771	526,007

[12] Acres were calculated using the most current data in the Forest's Geographic Information System database.

[13] Acres represent a top down approach to eliminated double counting.

APPENDIX G

Threatened, Endangered and Sensitive Species

The Hiawatha National Forest provides habitat for native and desirable non-native plants and animals, as mandated by 36 CFR 219.19. Accordingly, the Forest will provide habitat for species listed by the U.S. Fish and Wildlife Services as Threatened or Endangered under the Endangered Species Act (ESA) and for Regional Forester Sensitive Species (RFSS) that occur within the Forest's proclaimed boundaries.

Because federally-listed and RFSS may periodically change, contact the Forest Service or visit the USDA Forest Service, Region 9 website at: http://www.fs.fed.us/r9/wildlife/tes (as of November 2005) to obtain the most current information on species status.

APPENDIX H

Fire Regime Condition Class

The Healthy Forest Restoration Act of 2003 (H.R. 1904) and the Healthy Forest Initiative, reference Fire Regime Condition Class (FRCC) as a unit of measure for determining ecosystem health, fire risk and fire potential. FRCC is a landscape classification that compares landscape condition to the natural (historical) landscape conditions (Hann and Brunnell 2001). Comparisons are made according to the following ecological components:

1. **Vegetation/fuels:** Species composition, structural stages, stand age, canopy closure, mosaic pattern, fuel composition, non-fire disturbances such as insect and disease, and weather related factors.
2. **Fire dynamics:** Fire frequency and fire severity (occurrence of stand-replacement fires vs. ground fires).

The level of difference between natural (historical) conditions and current condition is termed "departure." There are three classes defined that can be used to classify a landscape's departure from the natural (historical) regime (Hann and Bunnell 2001, Hardy et al. 2001, Schmidt et al. 2002):

FRCC 1 represents low departure

FRCC 2 is moderate departure

FRCC 3 is high departure

Low departure is considered to be within the natural (historical) range of variability, while moderate and high departures are outside (Hann 2003). There are no wildland vegetation and fuel conditions or wildland fire situations that do not fit into one of the three fire regime condition classes (Hann 2003).

FRCC was calculated for the current condition of the lands administered by the Hiawatha and for projected management strategies of each alternative. The calculations are made in three steps:

1. Stratify the landscape into ecologically distinct Biophysical Settings (BpS) that display different vegetation and disturbance dynamics. Within each BpS, reference condition is determined for both vegetation type and fire dynamics.
2. Current BpS conditions are compared with reference conditions to calculate a FRCC rating for the present time.
3. Projections are made in changes to FRCC according to Spectrum model outputs for each Plan alternative.

Landscape Stratification

Biophysical Settings (BpS) are the sub-landscape level which reference conditions and FRCC calculations are determined. Each BpS describes a distinct suite of vegetation and fire dynamics. The Hiawatha National Forest distinguished eight BpS —namely, the eight ecological land-types (ELTs) identified for forest plan revision— to be used as a basis for FRCC analysis. These ELTs include 10/20; 30; 40/50/90; 60; 70A; 70B; 80A and 80B. More detailed descriptions of each ELT can be found in the Appendix I. For this discussion, ELT and BpS are considered synonymous and the term BpS will be used.

Vegetation Type Reference Condition

Vegetation type reference condition is a description of vegetation dynamics on the landscape that occurred naturally or historically. Typically, it involves relative abundance of naturally occurring-vegetation types within each Biophysical Setting. For this analysis, vegetation reference condition was calculated from General Land Office (GLO) survey notes collected from approximately 1840 to 1855 for section and quarter section corners within the Hiawatha National Forest.

Survey note information was used to determine whether the corner was forested or non-forested. If the corner was forested, survey note information was used to classify the vegetation type and structure at that corner. Each corner was also classified by BpS, based on a current map of Biophysical Settings on the forest. Methods for forested versus non-forested determination are discussed, as well as the calculation of the reference condition for each BpS.

Forested versus Non-Forested Calculation. The first step in vegetation reference condition determination was to classify each corner point as either forested or non-forested. The smallest bearing trees recorded by General Land Office (GLO) surveyors were approximately 4 inches diameter breast height (DBH). If the trees at the corner were smaller than 4 inches DBH, or non-existent, they were either not recorded or were recorded at long distances from the point. Determining forested versus non-forested was a two-step process: (1) determining trees per acre at the point and (2) using recorded tree size and trees per acre to determine canopy cover.

Trees Per Acre Calculation. Instructions for surveyors from 1838 to 1850, the period of time most representative of when current Hiawatha National Forest lands were surveyed, were to collect information from "two or more adjacent trees in opposite directions as nearly as they may be" at each section and quarter corner (White). This approximately mimics the standard Random Pairs Analysis inventory method (Cottam, G. and J. T. Curtis, 1949). Furthermore, Sauer (2002), describes how Random Pairs Analysis can be tailored to the GLO survey notes recorded in a particular area. These methods were applied to the notes collected at corner points within the Hiawatha's proclamation boundary to determine trees per acre at each point. Details about trees per acre calculations can be found in the planning record.

Table H-1. Vegetation Reference condition by BpS*

BpS	Vegetation Type				
	Early	Aspen	Jack Pine	Mid	Late
10/20	18%	4%	8%	12%	58%
30	0%	<1%	<1%	13%	86%
40/50/90	0%	1%	0%	7%	91%
60	<1%	2%	4%	40%	54%
70A	18%	2%	4%	38%	38%
70B	7%	6%	0%	42%	45%
80A	34%	0%	0%	42%	24%
80B	11%	0%	0%	44%	45%

* Percentages may not add to 100 % due to rounding

Canopy Cover Calculation. Trees per acre, combined with information about specific trees, was used to determine the percent canopy cover at each corner point. The typical corner point recorded species and DBH for two trees. Coefficients derived from Tubbs (1977) were used to determine the amount of canopy cover each tree represented. It was assumed that each tree represented half of the corner point's trees per acre. Each tree's canopy cover was applied to half of the trees per acre to derive a total percent canopy cover. Points with a percent canopy cover less than 10 percent were considered non-forested (open savannahs or regeneration phase). More details can be found in the planning record.

Vegetation Type & Structure Calculation. Each corner point was classified according to which BpS it occurred in, using a current Biophysical Setting map. Forested vs. non-forested status, species and DBH of the trees at the corner were then analyzed to classify the corner with a vegetation type and structure according to its BpS. There were up to five vegetation types defined for each BpS:

- **Early vegetation type** was assigned to points classified as "non-forested" in the calculation above. "Early" denotes either non-forested conditions (such as sparsely vegetated savannahs or wetlands) or regeneration phase vegetation.
- **Aspen vegetation type** was assigned to forested points with aspen as the dominant species.
- **Jack pine vegetation type** was assigned to forested points with jack pine as the dominant component.
- **Mid vegetation type** composition differs by BpS. It generally represents species or a mix of species in a transitional successional stage between either early and late; aspen and late; or jack pine and late. Details for each BpS (ELT) can be found in Appendix I.
- **Late vegetation type** composition differs by BpS. It generally represents species or a mix of species in a climax, or steady state specific to each BpS. It is the potential natural vegetation of the BpS. Specific details for each BpS (ELT) can be found in the Ecological Processes Appendix I.

Vegetation Type Reference Condition Calculation was calculated for each BpS after each corner point was classified by vegetation type. The percentage of each vegetation type in each BpS is the vegetation reference condition for FRCC calculation. Table H-1 displays reference condition for each BpS.

Fire Dynamics Reference Condition

Fire dynamics reference condition is defined by two sub-categories: (1) Fire rotation reference condition and (2) Fire severity reference condition. Departures from reference condition are calculated for both fire rotation and fire severity and averaged to obtain a fire dynamics FRCC rating.

Nationally, five distinct fire regimes have been identified to provide a framework for determining reference information about a landscape's fire rotation and fire severity. These fire regimes are described in Table H-2.

Table H-2. National Fire Regime Definitions

Fire Regime	Definition	Example
I	0 to 35 year fire frequency with less than 75% dominant overstory replacement	Under burn of older red and white pine
II	0 to 35 year fire frequency with more than 75% dominant overstory replacement	Grassy openings, jack pine, dry site aspen
III	35 to 100+ year rotation with less than 75% dominant overstory replacement	Mixed aspen/ coniferous forest
IV	35 to 100+ year rotation with greater than 75% dominant overstory replacement	Jack pine, red pine
V	200+ year rotation with high dominant overstory replacement.	Everything else

Fire Rotation Reference is the length of time necessary for an area equal to the entire area of interest to burn. Size of area of interest must be clearly specified. This definition does not imply that the entire area will burn during a cycle; some sites may burn several times and others not at all. In the Lakes States, fires are generally more infrequent than those described by the National Fire Regimes. Cleland (2004) calculated replacement fire rotations at a scale more appropriate to Lakes States landscapes.

For this discussion, the fire regimes Cleland calculated will be referred to as "fire rotation classes." Table H-3 provides general descriptions of the six Lakes States Fire Rotation Classes and shows fire rotations specific to Michigan's Eastern Upper Peninsula.For this analysis, fire rotation classes instead of national fire regimes were used to determine fire rotation reference condition. Fire rotation classes can be thought of as subdivisions of national fire regimes. Table H-4 shows the crosswalk between the two classification systems.

Reference fire rotations are a combination of both replacement fire rotation and non-replacement fire rotation. However, fire rotation classes provide information about replacement fire rotations only. Therefore, historic information about non-replacement fires was determined from several studies. This information was then combined with replacement fire rotation information to determine a total fire rotation for each fire rotation class. Total fire rotation for each fire regime is calculated as the inverse of the total area burned each year between the two types of fires. For instance, FR2 has 1/159 of its area burned each year with a replacement fire and 1/20 of its area burned with a non-replacement fire. The total area burned, therefore, is approximately 9/160 of the total area, representing about an 18-year rotation.

Table H-3 shows the total fire rotation by fire rotation class. Total fire rotation is used as the fire rotation reference for FRCC calculation.

Fire Severity Reference is a measure of the ratio of replacement fire occurrence to all fire occurrences. This is calculated as the proportion of area burned with replacement fire to total area burned. To use fire rotation class 2 as an example, the area burned by replacement fire is 1/159 per year and the total area burned is approximately 9/160. The proportion of annual replacement fire burning to total annual burning is therefore about 11%. The last column of Table H-3 shows the fire severity reference by fire rotation class.

Table H-3. Fire Rotation Classes - Historical (Cleland, 2004)

Fire Rotation Class	Lake States Fire Rotation Class General Description	Specific Figures for the Eastern Upper Peninsula				
		Replacement Fire Rotation (Years)	Non-replacement Fire Rotation (Years)	Total Fire Rotation (Years)	Fire Severity (% Replacement Fires)	National Fire Regime
1	50 to 100 year rotation. Stand replacement high. Dry site	50	N/A	50	100%	IV
2	100 to 200 year rotation. Stand replacement high. Dry site	159	20*	18	11%	I
3W	100 to 200 year rotation. Wetland conifer adjacent to fire prone systems (FR 1 and 2)	128	60**	41	32%	III
3	200 to 500 year rotation. Mesic site conifer	345	1000***	257	74%	IV
4	1400 years Very infrequent stand replacement or surface fires.	1,921	N/A	1921	100%	IV
4W	600 to 700 year rotation. Wetlands adjacent to hardwoods.	614	N/A	614	100%	IV

* Clark, 1990; ** Bergeron and Brisson, 1990 *** Mikel, 2004

Fire Dynamics Reference by BpS. Fire rotation class map boundaries determined by Cleland (2004) did not correspond precisely with mapped BpS boundaries. Therefore, these maps were intersected to determine each BpS fire rotation class component. Table H-5 shows the results of this intersection. Relevant fire rotation classes within each BpS are highlighted.

A weighted average of the fire dynamics of the relevant fire rotation classes in each BpS was used to calculate the fire dynamics by BpS. For example, Table H-5 shows that in BpS 10/20, fire rotation classes 1, 2 and 3 (84.6% of the entire BpS) were chosen to represent the entire area. Fire class 1 represents 26.2/84.6 (31%) of this area, fire class 2 is 41 percent of the area and fire class 3 is 28 percent of the area. Fire rotation answers the question: "*How long does it take an area equal to the total area of the BpS to burn?*" Table H-6 shows an example fire rotation calculation for BpS 10/20. The adjusted abundance of each fire class within this BpS is shown along with reference replacement and non-replacement rotations.

Table H-4. National Fire Regimes vs. Lake States Fire Rotation Classes

National Fire Regimes	Lake States Fire Rotation Classes
I	2
II	N/A
III	3W
IV	1
V	3, 4, 4W

Source: Cleland, 2004

"% Total Replacement Per Year," is the percent of the total BpS burned by replacement fires in each fire rotation class each year. It is calculated by dividing the adjusted percent by the replacement rotation.

"% Total Non-Replacement Per Year," is the percent of the total BpS area burned by non-replacement fires in each fire rotation class each year. It is calculated by dividing the adjusted percent by the non-replacement fire rotation.

"Total % Burn/Year," is the total percent of the BpS that is burned each year with each fire type. "Rotation" is the inverse of "Total % Burn/Year" and represents how long it takes for an area equal to the total BpS to

burn under each of the these fire types. Total fire rotation and fire severity is calculated in the same manner described in the Fire Classes (Table H-3), using numbers from the "Rotation" columns. Table H-7 shows total fire rotation and fire severity reference conditions calculated for each BpS.

Table H-5. Acres and percent area by BpS and Fire Rotation Class

Fire Rotation Class	BpS Percentage/Acres								Total
	10/20	30	40/50/90	60	70A	70B	80A	80B	
FR 1 (50 yrs.)	26.2%	0	0	1.7%	0.1%	0	0	0	4.39%
Acres	48,085	0	0	2,677	35	37	2	20	50,857
FR 2 (159 yrs.)	34.7%	4.4%	0.3%	11.3%	3.6%	1.6%	4.2%	1.1%	8.21%
Acres	63,817	3,605	1,260	18,334	1,731	2,084	2,177	2,244	95,018
FR 3 (345 yrs.)	23.7%	17.4%	6.3%	35.7%	5.9%	6.3%	2.3%	2.2%	13%
Acres	43,476	13,680	19,090	57,694	2,813	8,049	1,224	4,424	150,451
FR 3W (128 yrs)	2.9%	1.4%	0.2%	2.9%	26.0%	5.4%	32.5%	8.8%	5.70%
Acres	5,379	1,110	681	4,703	12,424	6,806	16,930	17,978	66,011
FR 4 (1921 yrs.)	9.8%	68.2%	89.5%	40.5%	6.6%	6.4%	6.4%	4.6%	37.28%
Acres	17,962	53,562	270,701	65,476	3,154	8,105	3,312	9,339	431,610
FR 4W (614 yrs.)	2.7%	8.3%	3.7%	7.9%	40.5%	80.2%	54.6%	83.4%	31.42%
Acres	5,011	6,540	11,114	12,849	27,563	101,898	28,486	170,286	363,748
Total	15.87%	6.78%	26.14%	13.97%	4.12%	10.97%	4.5%	17.65%	
	183,730	78,498	302,612	161,733	47,721	126,979	52,131	204,291	

Table H-6. Example Fire Rotation Calculation for BpS 10/20.

Fire Rotation Class	Adjust. Abundance	Replacement Rotation	Non-Replacement Rotation	% Total Replacement Per Year	% Total Non-Replacement Per Year
1	31%	50	N/A	.62%	0%
2	41%	159	20	.26%	2.05%
3	28%	345	60	.08%	.47%
			Total % Burn/Year	.96%	2.53%
			Rotation	104	40

Table H-7. Reference Fire Dynamics By BpS.

BpS	Replacement Fire Rotation (Years)	Non-replacement Fire Rotation (Years)	Total Fire Rotation (Years)	Fire Severity (% Replacement)	National Fire Regime
10/20	104	40	29	28%	I
30	1921	N/A	1921	100%	IV
40/50/90	1921	N/A	1921	100%	IV
60	612	128	106	17%	III
70A	282	N/A	282	100%	IV
70B	614	N/A	614	100%	IV
80A	255	N/A	255	100%	IV
80B	614	N/A	614	100%	IV

Table H-8. Current Conditions by BpS.

BpS	Vegetation Type					Fire Dynamics	
	Early	Aspen	Jack Pine	Mid	Late	Fire Rotation	Fire Severity
10/20	27%	10%	16%	9%	39%	336	98%
30	7%	16%	3%	49%	25%	2000*	98%
40/50/90	3%	13%	0%	8%	76%	2000	46%
60	9%	22%	9%	29%	31%	1518	96%
70A	15%	8%	17%	20%	40%	2000	77%
70B	25%	22%	0%	32%	21%	2000	81%
80A	56%	0%	0%	18%	26%	2000	65%
80B	20%	0%	0%	38%	41%	2000	71%

*2000 in all cases represents cases where fire is effectively non-existent

Current Conditions

Vegetation Type Current Condition. Current vegetation in each BpS was classified according to vegetation type. Relative abundance of each vegetation type within each BpS was calculated and used as the current condition for FRCC calculation (see "Vegetation Type" section on Table H-8).

Fire Dynamics Current Condition. Modern fire history data recorded from 1986–2004 was analyzed to determine modern fire dynamics. There are two mutually-exclusive sources for modern fire history data: (1) a wildfire database maintained by the Forest that records natural or non-designed fire statistics and (2) prescribed burn history.

Wildfires occurring within the Forest boundary are recorded in a GIS database on a yearly basis. Each fire was classified by the BpS in which it occurred. The total area burned (with either a replacement or non-replacement fire) within each BpS over the 18-year period, was used to determine a modern wildfire rotation interval for each BpS. Prescribed burns used by the Forest to achieve management objectives were also used in modern fire dynamics calculations. An average annual prescribed burn acreage amount by BpS was estimated by Mikel (2004).These burns were further classified as either replacement or non-replacement and incorporated appropriately into fire dynamics calculations by BpS. The "Fire Dynamics" section of Table H-8 shows fire rotation and fire severity current conditions by BpS.

Fire Regime Condition Class Calculations

Methodology and Example Calculations. Fire regime condition class is calculated by a comparing both vegetation type conditions and fire dynamics conditions at a point in time with reference conditions. The difference in the conditions is termed "departure."

The condition (either vegetation type or fire dynamics) with the highest departure is used as the basis for FRCC calculation for that BpS. Specifically, if the departure is between 0 and 33%, the condition class is FRCC 1; it it's between 34% and 66%, the condition class is FRCC 2, and if it's between 67 and 100 percent, the condition class is FRCC 3.

Table H-9. Example Calculation of Vegetation Departure for BpS 10/20

Vegetation Type	Reference	Current	Similarity
Early	18	27	18
Aspen	4	10	4
Jack Pine	8	16	8
Mid	12	9	9
Late	58	39	39
		Total Similarity	78
		Departure	22

Vegetation Type Departure Example Calculation. To calculate vegetation type departure, the percentage of each vegetation type within the BpS is compared with

reference conditions. The lower of the two percentages compared for each type is identified as "similarity." The similarity between all vegetation types is added together to get a similarity rating for the BpS. Departure is 100 less the similarity. Table H-9 shows an example calculation vegetation type departure in BpS 10/20. Total similarity is 78; departure is 22.

Table H-10. Example Calculation of Fire Dynamics Departure for BpS 10/20

Reference Type	Reference	Current	Similarity
Rotation	29	336	9
Severity	28	98	28
		Average Similarity	18

Fire Dynamics Departure Example Calculation. Fire dynamics departure involves calculating similarity for both fire rotation and fire severity, averaging the two ratings and subtracting from 100. Table H-10 shows an example calculation for BpS 10/20.

Fire rotation similarity is calculated first. The shorter rotation time (either reference or current), is divided by the longer rotation time and multiplied by 100 to get fire rotation similarity. In the example calculation, fire rotation similarity is 29/336 multiplied by 100 for an outcome of 9. Fire severity similarity is calculated in the same way. Similarity is the lesser percentage (either current or reference) divided by the greater percentage. That ratio is then multiplied by 100 to get similarity. Fire dynamics departure is 100 less average similarity. In this example, average similarity is 18 and departure is 82.

Final FRCC Calculation. Departures for vegetation type and fire dynamics are compared to determine a final FRCC rating. For this BpS, vegetation type departure is 22 (Table H-9) and fire dynamics departure is 82 (Table 10). The greater departure is used for FRCC rating; in this case, it is 82. The corresponding rating for this BpS is FRCC 3.

Current FRCC Calculation was calculated for the current condition of the Hiawatha. Current vegetation type composition was assessed by BpS and estimates of modern fire rotation and fire frequency were also determined. Fire Regime Condition Class was calculated by BpS and also for Hiawatha National Forest lands as a whole.

Current Vegetation Type FRCC Rating. Current condition was compared to reference condition by BpS to determine a departure and ultimately a vegetation type FRCC rating by BpS. Table H-11 displays current departure and vegetation FRCC rating by BpS. Each BpS departure was weighted by the relative abundance of the BpS on the Forest. These weighted departures were summed across all BpSs for a forest-wide departure rating of 26 and a corresponding FRCC rating of FRCC 1 (see "Totals" row in Table H-11).

Current Fire Dynamics FRCC Rating. Modern fire dynamics (Table H-8) were compared with the reference fire dynamics (Table H-7). A fire dynamics departure and FRCC rating was calculated for each BpS (Table H-11), and the weighted average of the departures across all BpSs was used to determine a forest-level fire dynamics FRCC rating. The weighted fire dynamics departure is 51 and has a corresponding rating FRCC 2 (see "Totals" row of Table H-11).

Current Forest-wide FRCC Rating. The current forest-wide vegetation type departure is 26 and the current forest-wide fire dynamics departure is 51. The larger departure (51) corresponds with a current forest-wide FRCC rating of FRCC 2.

Projected Fire Regime Condition Class by Alternative. Changes in vegetation type FRCC and fire dynamics FRCC ratings were projected for each alternative for the next 100 years. Tables H-12 through H-15 display these projections by Biophysical Setting.

Vegetation Type Assumptions and Calculations. Changes in vegetation type by BpS were standard outputs of the Spectrum model. Relative abundances of vegetation types within each BpS were calculated for the first 100 years of model outputs. At each time period, the projected vegetation type composition was compared with the reference vegetation type composition to determine departure. Figure H-1 shows by alternative how vegetation type departures are projected to change over time (All points on the chart represent a vegetation type FRCC 1 rating).

Fire Dynamics Assumptions and Calculations. For all alternatives, wildfire rotations and severity ratios were assumed to remain at the same levels as 1986-2004 (see Table H-10). Additionally, non-replacement prescribed burning activities were assumed to remain the same as 1986-2004.

Spectrum outputs were used to determine the amount of replacement prescribed burning that would occur according to each alternative. Since these prescribed burns were associated with even-aged management options, they were assumed to represent replacement fires. Annual prescribed burn acres were calculated as an average of projections 15 years in to the future. Prescribed fire usage projected by Spectrum varied by alternative and affected the overall Fire Dynamics departure by Alternative.

Figure H-2 shows how fire dynamics departure is projected to change over time (all points on the chart represent a FRCC 2 rating). The sudden drop seen in the first period is because the projected replacement prescribed fire occurrence over the next 15 years is different from the prescribed fire occurrence in the past 18 years.

Projected Forest-wide FRCC Ratings. For all time periods under all alternatives, the fire dynamics is greater than the vegetation departure. For all time periods under all alternatives, the corresponding forest-wide FRCC rating is FRCC 2.

This is the same FRCC rating as the current condition (see discussion above). However, within each ecological component (vegetation type and fire dynamics), the general trend over time for all alternatives is a slight improvement.

For Alternatives 1, 2 and 4, vegetation departure decreases over time. In all alternatives fire dynamics departure decreases over time, with Alternatives 2 and 3 showing the greatest departure decreases.

This suggests that even though the forest-wide FRCC rating does not change by alternative over time, the management activities projected by these alternatives moves the landscape toward reference condition.

Table H-11. Current Vegetation Type FRCC Ratings by BpS

BpS	Vegetation Type		Fire Dynamics	
	Departure	Rating	Departure*	Rating
10/20	23	1	82	3
30	61	2	3	1
40/50/90	16	1	29	1
60	33	2	87	3
70A	21	1	54	2
70B	34	2	44	2
80A	24	1	61	2
80B	10	1	49	2
Totals	24	1	51	2

* Fire dynamics departure depicts an average between fire rotation departure and fire severity departure.

Figure H-1. Projected Vegetation Type departures over time by Alternative.

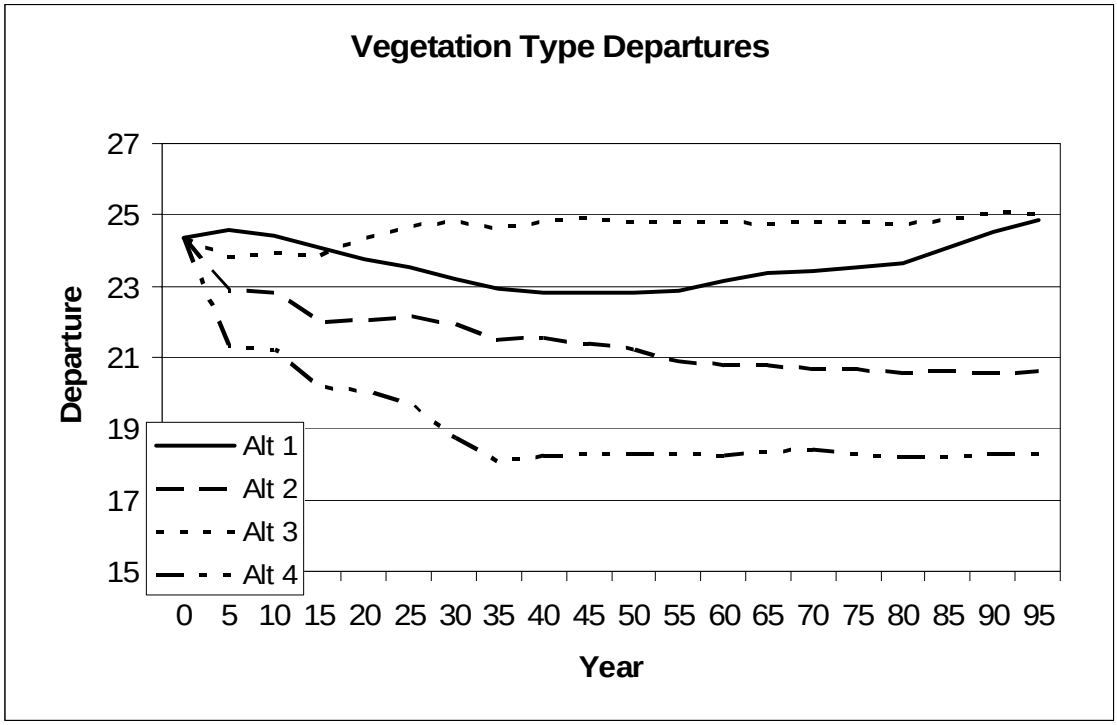


Figure H-2. Fire Dynamics Departure.

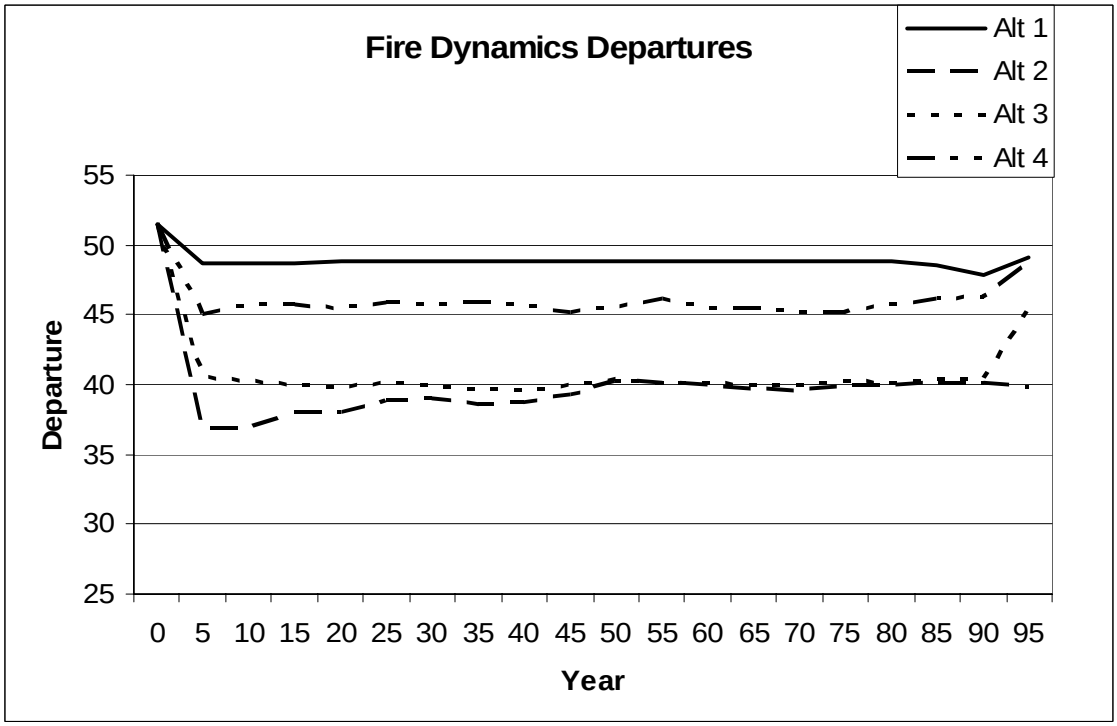
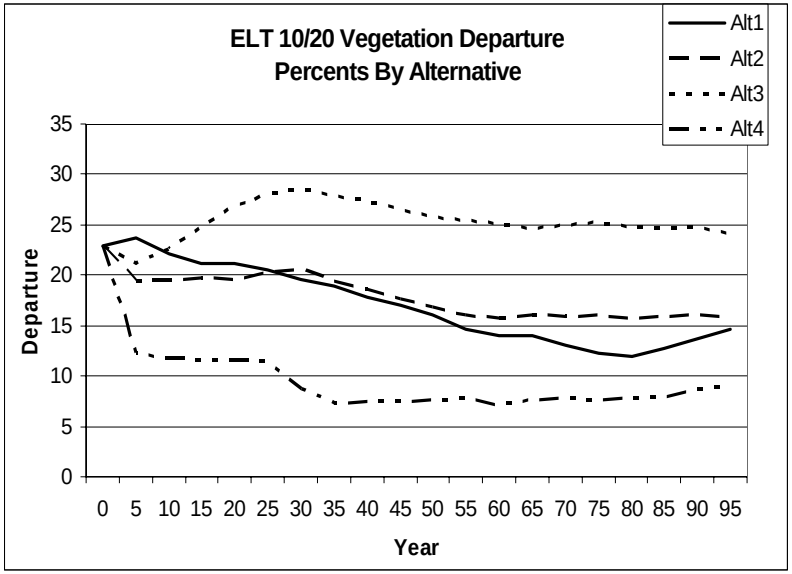
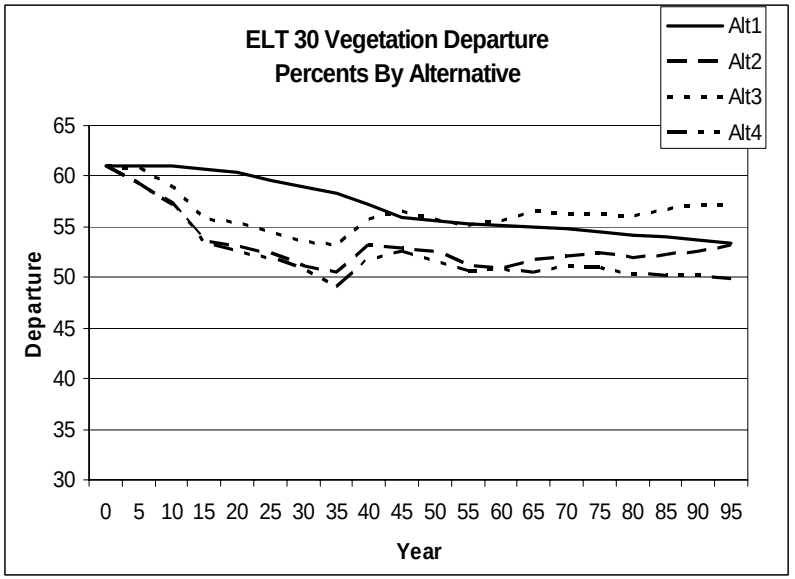
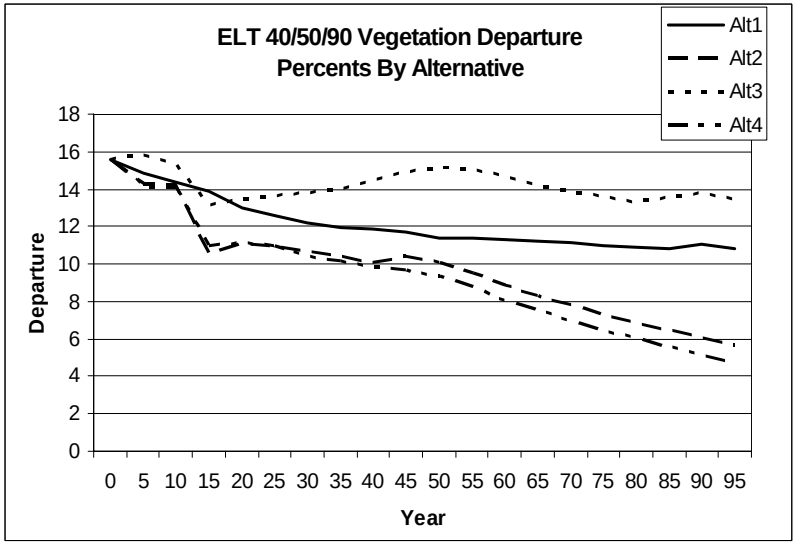


Figure H-3. Vegetation Type Departures by BioPhysical Setting (ELT)







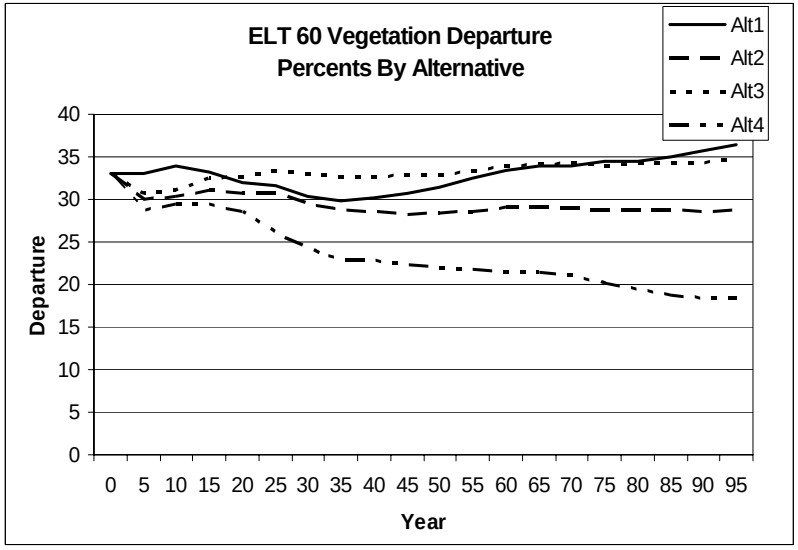
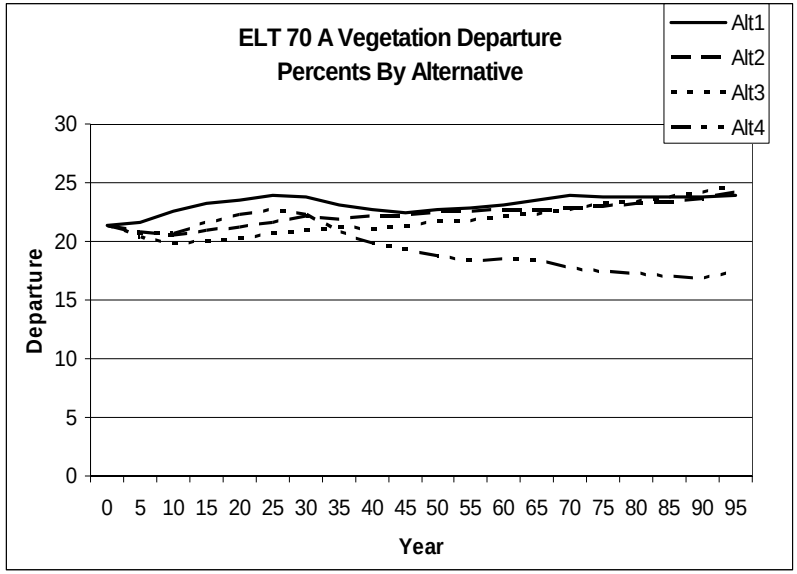
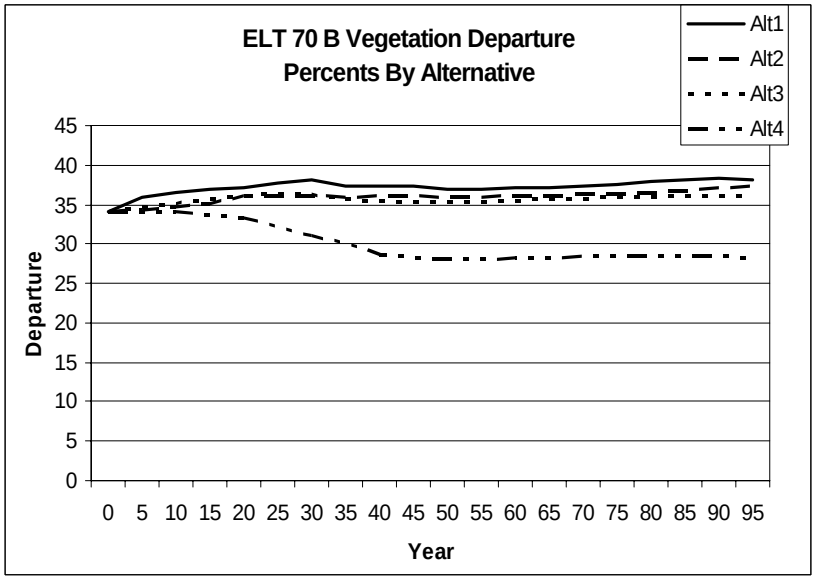
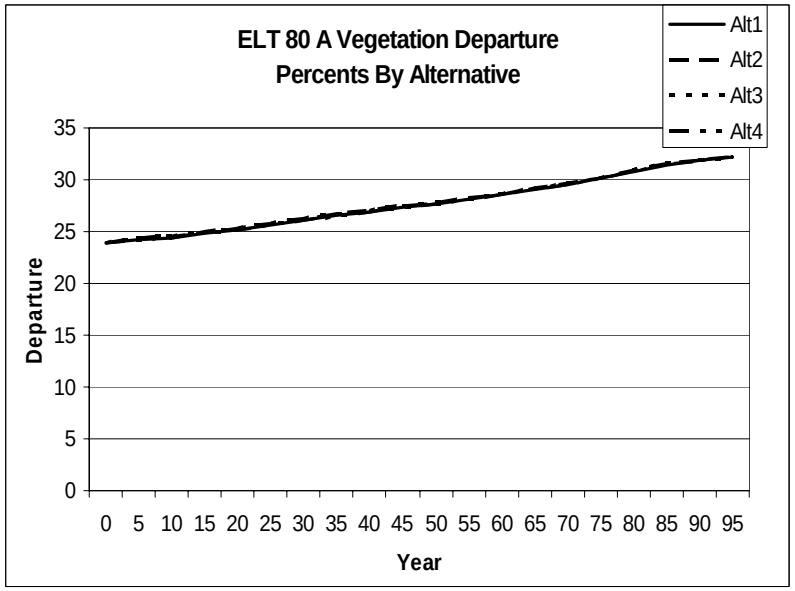


Figure H-4. Vegetation Type Departures by BioPhysical Setting (ELT)







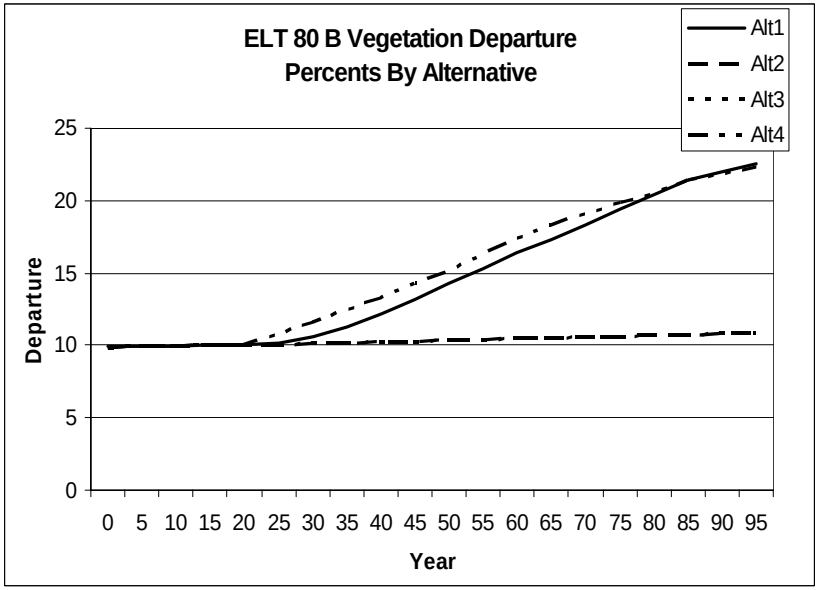
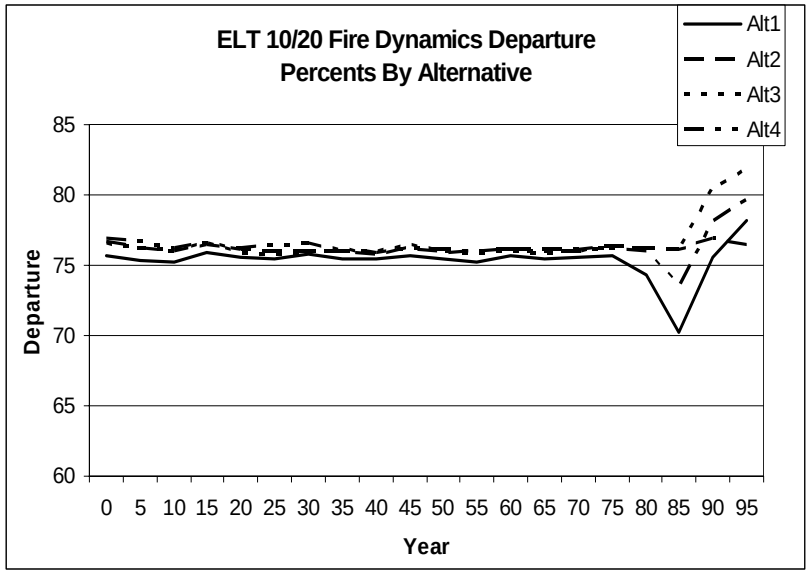
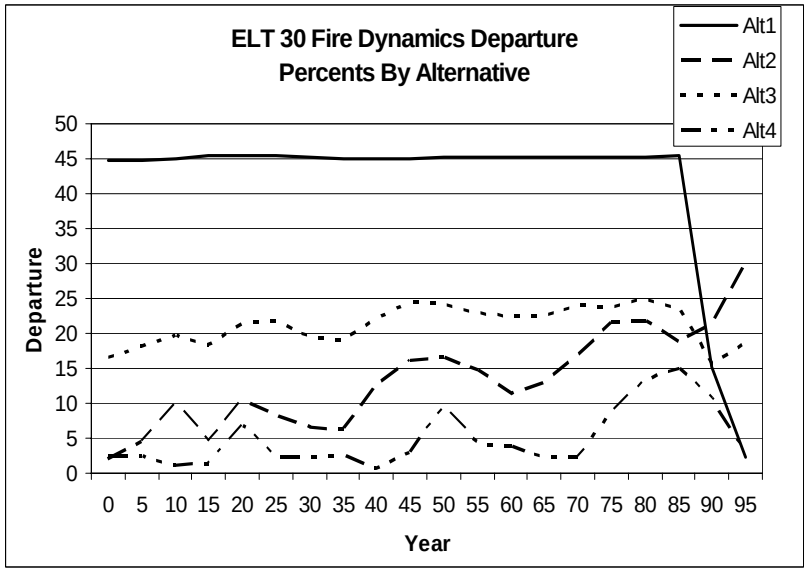
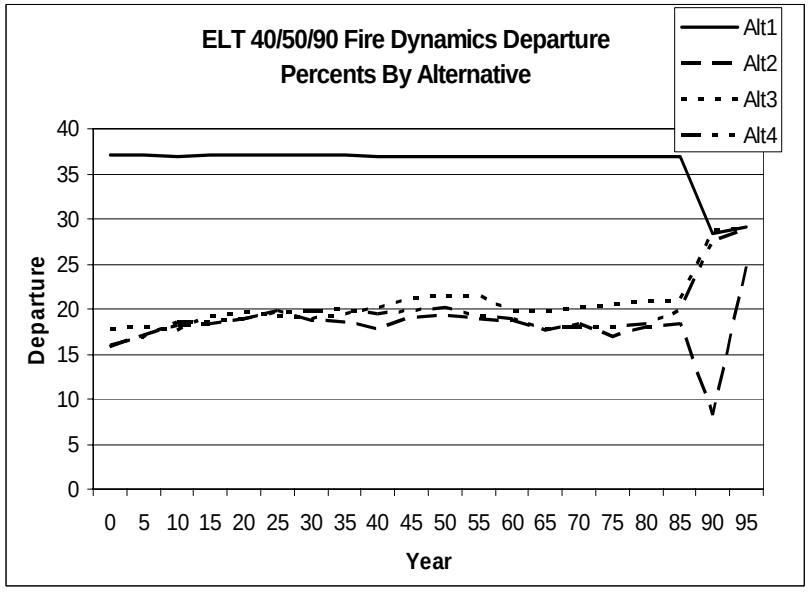


Figure H-5. Vegetation Type Departures by BioPhysical Setting (ELT)







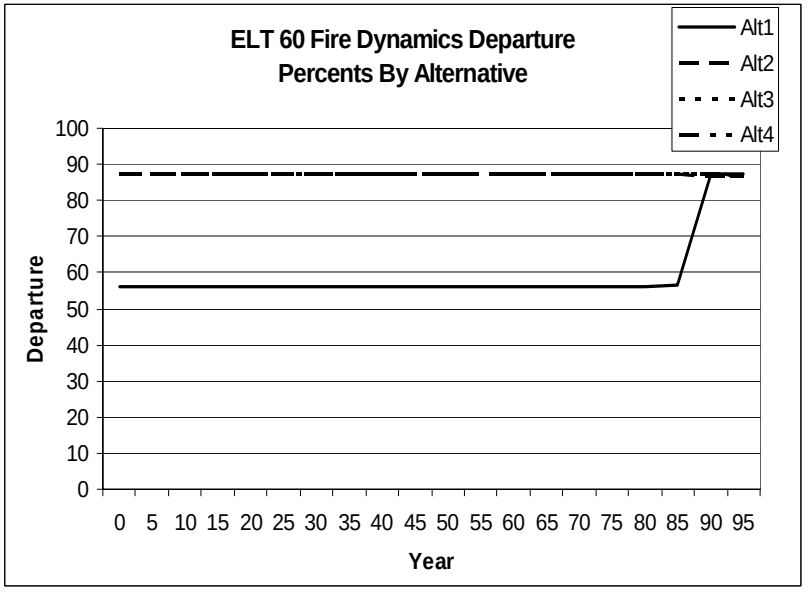
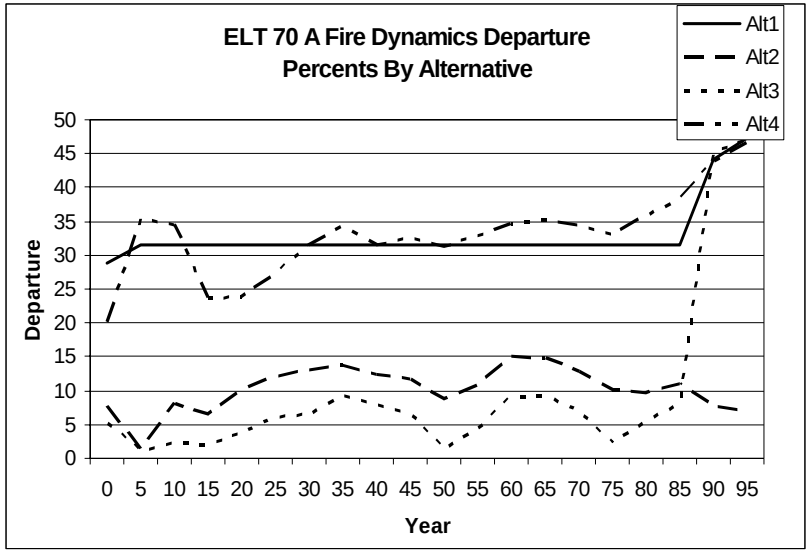
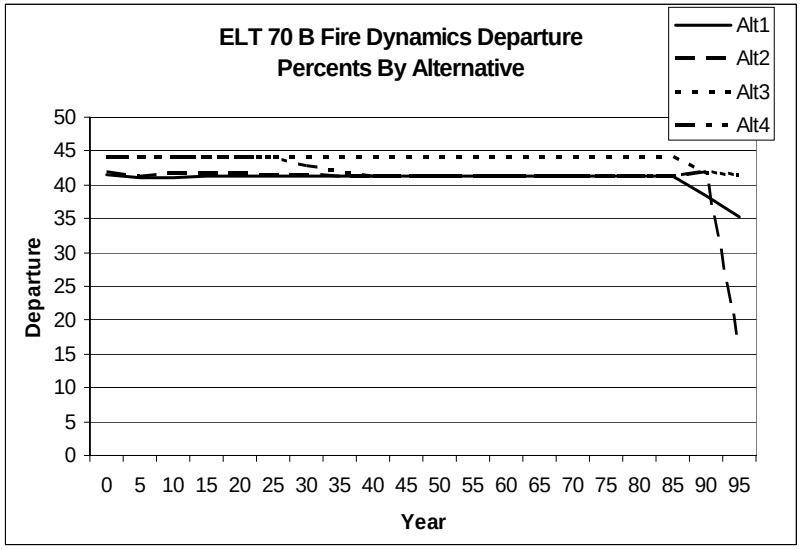
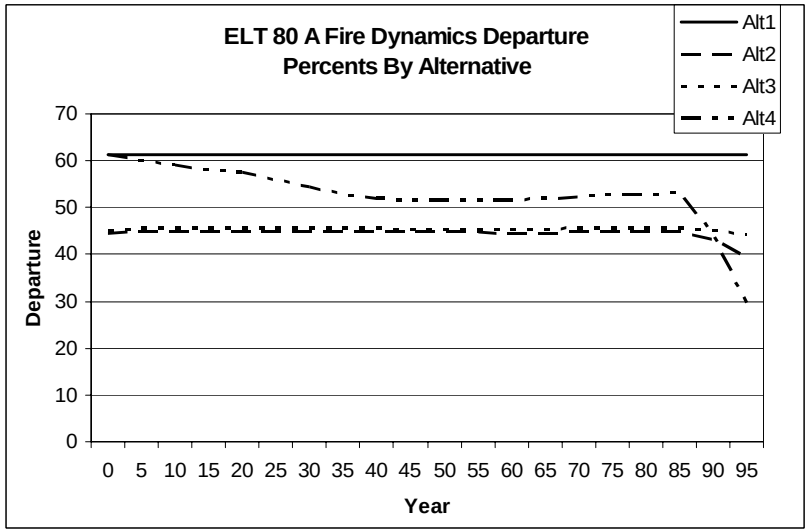
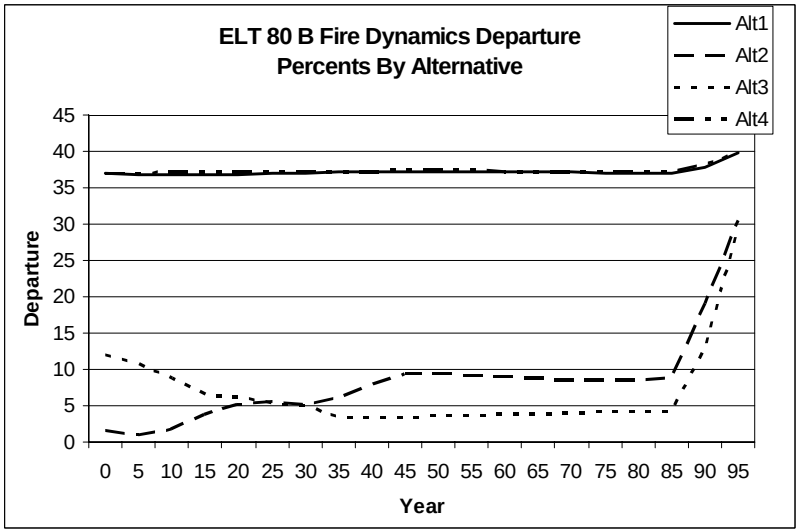


Figure H-6. Vegetation Type Departures by BioPhysical Setting (ELT)









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APPENDIX I

Ecological Processes

Background and Overview

Ecological context. The existing vegetation on the Hiawatha National Forest is the result of soil-site conditions, colonization and succession following the retreat of the last glacial ice sheet. Natural disturbances such as fire and windthrow and human disturbances such as logging and planting also contributed to the existing vegetation.

Michigan's ecological context is described by Cleland et al (2002, unpublished draft). The vegetation on the Forest has been stratified by forest type and ecosystem. Hiawatha's biophysical setting is described by the ecological context paper (Cleland et al, 2002 unpublished draft) and the information provided in this appendix. The biophysical setting for each ecological landtype group is included in the ecological landtype descriptions in the latter part of this appendix.

Forest types refer to the dominant tree species in a stand of trees. Thirty-three forest-types have been mapped on the HNF. Much of the analysis in the 1986 Forest Plan is based on aggregation of forest types into forest-type groups. Some of the analysis in the vegetation section of the revised forest plan EIS is based on forest-type groups. There are seven forest-type groups identified on the Hiawatha:

1. Aspen
2. Cedar
3. Hardwoods
4. Jack pine
5. Red and white pine
6. Spruce-fir-swamp-conifer
7. Open or non-forested

Vegetation Objectives. In this planning cycle and in management areas where vegetation management is appropriate, desired conditions for vegetation are based on ecological landtype. Vegetation management objectives are expressed as percentages of the ELT area within suited lands in each management area. The detailed percentages by management area can be found in Chapter 3 of the Forest Plan. The vegetation management objectives are based on the ecological capability of the land expressed in each ELT, in the wildlife habitat objectives and in other outputs desired within each management area.

An interdisciplinary team developed the vegetation management objectives based on soil-site-vegetation relationships, existing conditions, species viability concerns and desired conditions for each ecological landtype within each management area.

Development of Ecological Processes. The Hiawatha determined that ecological landtypes were the appropriate scale for plan revision analysis based on the issues identified during scoping. Societal demands for a natural-looking forest, timber products and wildlife habitat, hinge largely on the ability of the soil-site to produce specific vegetation in specific quantities. Tree species are often best adapted to specific site conditions. The ecological landtype mapping on the forest captures the soil-site-vegetation relationship at a scale that is not too fine for forest-wide management.

An interdisciplinary team used the forest inventory data, literature and experience to determine potential natural vegetation for each ELT. In addition, this team determined the vegetation and size classes likely to comprise the early, mid and late seral stages for each ELT. The late seral stages describe the Potential Natural Vegetation (PNV) for each ecological landtype.

Disturbance factors and probabilities for each disturbance event that could affect the stand were also considered. Disturbance factors important to vegetation on the Hiawatha include wind, fire, insects, disease and herbivory. Human disturbances like vegetation treatment prescriptions and prescribed fire probabilities for each disturbance factor were determined by seral stage and age class.

The disturbance factors and vegetation successional pathways developed by the team were modeled with the Vegetation Development Dynamic Tool (VDDT). The VDDT model was used to project the effect of

vegetation management activities and natural disturbance processes on the vegetation of the Hiawatha National Forest.

The VDDT was used in combination with the SPECTRUM forest planning tool to determine how long it will take to achieve vegetation goals and what it will cost to achieve those goals. Successional pathway diagrams for each ELT are included in the Administrative Record for the Final EIS.

Ecosystems on the Hiawatha

Ecosystems on the Hiawatha have been mapped based on the National Hierarchical Framework of Ecological Units (ECOMAP, 1993). The ECOMAP framework provides a standardized method for classifying, mapping and describing ecological units at various geographic, planning and analysis scales. The ECOMAP hierarchy includes eight scales of mapping:

1. Domain (1,000,000s of square miles)
2. Division (100,000s of square miles)
3. Province (10,000s of square miles)
4. Section (1,000s of square miles)
5. Subsection (10s to low 1,000s of square miles)
6. Landtype Association (1,000s to low 10,000s of acres)
7. Ecological Landtype (100s to 1,000s of acres)
8. Ecological Landtype Phase (<100 acres)

At the forest planning scale subsections, landtype associations and ecological landtypes are used. Subsections are relatively broad scale mapping units based on geomorphology and local climate influences.

Seven subsections have been identified on the HNF. The subsection lines display change in climate, primarily snowfall differences on the northern tier of the forest versus the southern tier of the forest.

Prevailing winds and Lake Superior affects the local climate on the northern part of the forest, whereas the climate in southern part is more similar to a continental climate albeit tempered somewhat by Lake Michigan.

Figure I-1. Subsections of the Hiawatha National Forest.

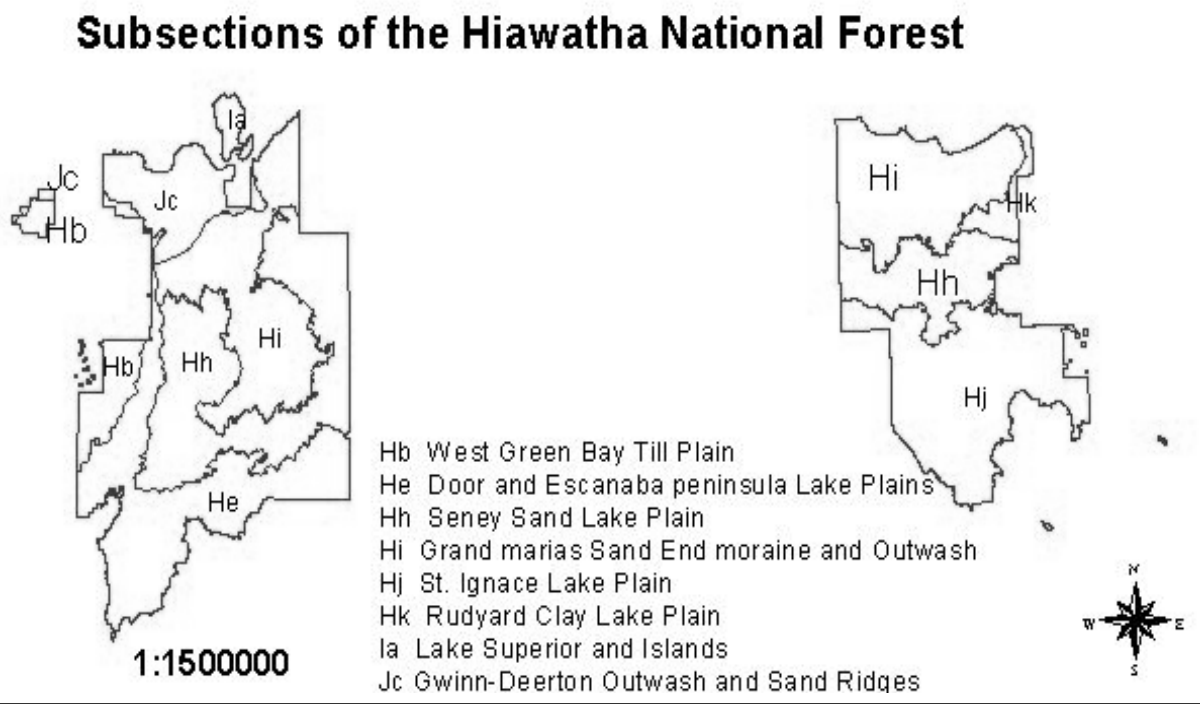
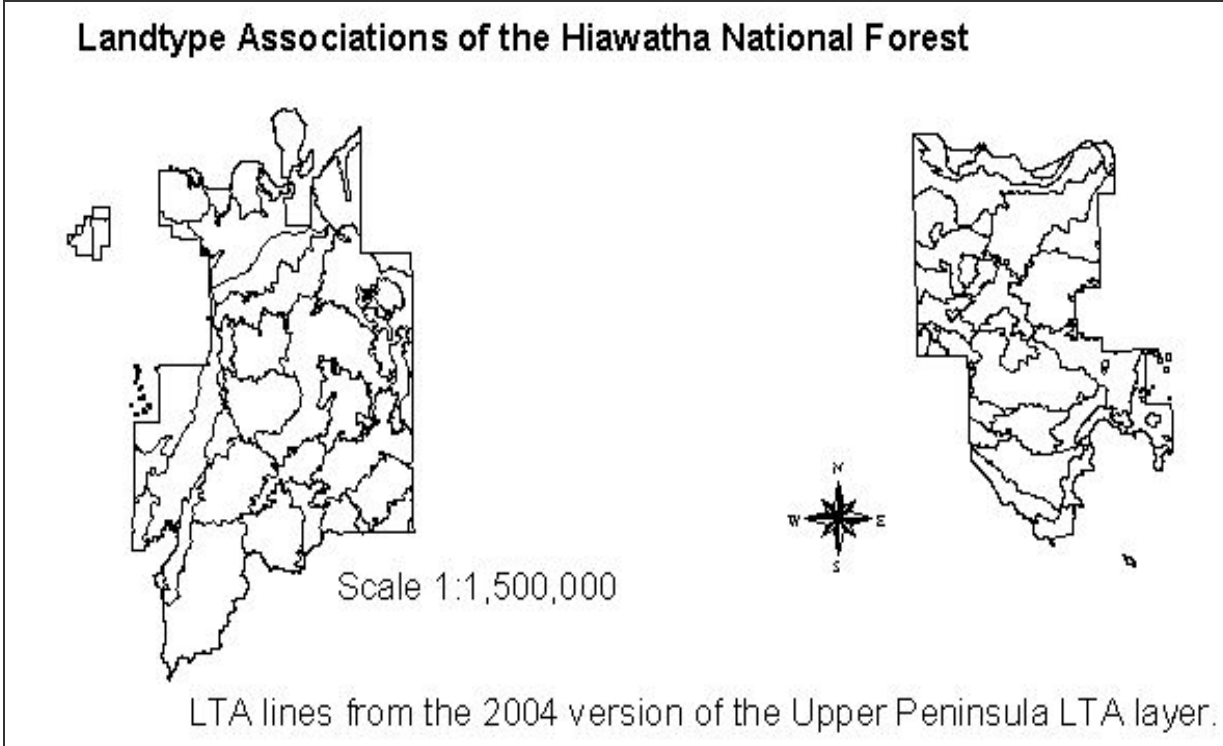


Figure I-2. Landtype Associations of the Hiawatha National Forest.



Land-type Associations (LTAs) are unique (non-repeating) map units that are primarily based on landform and geomorphology. For forest plan revision, LTAs were used as building blocks for revising management area boundaries. LTAs are appropriate building blocks for management areas because they encompass a group of ecosystems with similar ecological processes and management concerns.

Management area boundaries follow LTAs, and the mix of LTAs used to create management areas differs by alternative. For example, Management Area 4.4 may include all outwash plain LTAs in Alternative 3, but a smaller set of the outwash plain LTAs in Alternative 2. Special management areas like wildernesses, Dukes Experimental Forest, research natural areas, wild and scenic rivers and candidate research natural areas have boundaries independent of LTA boundaries.

Ecological landtypes (ELTs) are groups of ecosystems with similar soils, productivities and potential natural vegetation. ELTs occur in a repeating pattern across the landscape.

The biophysical setting of the Hiawatha NF has been stratified into 15 different ELTs. For plan revision purposes, the ELTs have been aggregated into 12 ELT groups, eight of which are forested. The ELT grouping was necessary because several ELTs lacked sufficient acreage for analysis purposes and the management of some ELTs is so similar that at the forest scale it would be difficult to display a difference between some ELTs.

Table 1 displays a brief description of the ELT groups used to assign vegetation objectives. A more detailed description of each ELT follows the table.

Table I-1. A brief description of the ecological land-type groups used on the Hiawatha NF.

ELT group	Description	Approx. Acres
10/20	Sandy outwash plains typically supporting jack pine or red pine. Fire is the major disturbance factor in these xeric ecosystems.	165, 908
30	Sandy outwash plains and morainal areas with a slightly higher productivity than ELT group 10, 20. ELT 30 typically supports red pine, mixed conifer, hemlock, or low volume hardwood stands.	73,047
40/50/90	Glacial moraines, pitted outwash, bedrock controlled moraines and areas where bedrock is close to the surface. Typically these land-types support northern hardwoods and have better developed soils. Soil texture ranges from sand to silty clay loam.	204,302
60	Land-type 60 encompasses the transition zone between dry uplands to true wetlands. ELT 60 often occurs at the edge of the outwash plains, but includes the somewhat poorly drained soils on the clay plain landform. Vegetation is highly variable on ELT 60. In the historic condition the 10/20, 30 and 60 ELTs were the heart of the white pine-hemlock forest type.	121,341
70A	ELT 70A includes mineral soil wetlands supporting vegetation indicative of acid soil conditions. Black spruce, tamarack and hemlock are common species on this land-type. Approximately 32,478 acres are forested, 4,238 acres are non-forested.	36,716
70B	ELT 70B consists of mineral soil wetlands supporting vegetation indicative of higher pH (>5.5) or basic soil conditions. Cedar, mixed swamp conifers, tamarack and balsam fir are typical of the vegetation on this land-type. Approximately 61,647 acres are forested, 23,961 acres are non-forested.	85,608
80A	ELT 80A consists of forested wetlands with more than 12 inches of wet, acidic (pH<5.5) organic soil. The forested areas of this ELT (80AF) typically supports black spruce stands and to a lesser extent tamarack stands. Approximately 16,678 acres are forested, 27,566 acres are non-forested.	44,244
80B	ELT 80B consists of forested wetlands with more than 12 inches of wet, basic (pH > 5.5) organic soil. The forested areas of this ELT (ELT 80BF) typically supports northern white cedar stands, mixed swamp conifer stands and to a lesser extent tamarack and black ash stands. Approximately 125,303 acres are forested, 33,497 acres are non-forested.	158,821

Ecological Landtype Descriptions

ELT Group 10/20

Composition and Structure. Jack pine, red pine, white pine and hemlock were the tree species most commonly documented by Government Land Office surveyors in the 1850s. Today, jack pine and red pine forest types occupy more than 50 percent of ELT 10/20 acres on the Hiawatha National Forest.

ELT 10/20 is characterized by dry, sandy nutrient-poor soils. This ELT typically occurs in large blocks, primarily on outwash plains, but can also occur on sand dunes in the wooded dune and swale complex, or on low beach ridges with enough relief to create a well-drained soil.

Stand replacement fire was the dominant disturbance regime in ELT 10/20. Patch sizes ranged from hundreds to thousands of acres. Historically, jack pine stands succeed to red pine and mixed pine stands in the absence of stand replacement fires. Non-forested openings or red pine savannahs occur when frequent stand replacement fires destroy the jack pine seed source. In the absence of stand replacement fire or other disturbances, jack pine areas eventually succeeded to white pine-hemlock, hemlock or a hemlock-hardwood mix.

Vegetation Growth Stages and PNV

- ***Early seral stages*** are comprised dominantly of jack pine and aspen, with some non-forested openings or red pine savannahs. Small amounts of red maple, paper birch, red pine and white pine occur in early seral classes.
- ***Mid-seral stages*** include red pine, red oak, balsam fir, paper birch, aspen and some red maple. Most of these species will arrive as the result of succession from declining aspen and jack pine stands.
- ***Late seral stages (PNV)*** are dominated by hemlock, white and red pine and red maple. In later stages, an uneven-aged stand of hemlock-white pine and red maple will result.

Function. On the large outwash plains, ELT 10/20 experienced frequent fires. When fire occurred in older jack pine stands, the result was often stand replacement. Central areas of the outwash plains typically would burn more than the edges of the plains where the water table was higher and the soils supported more fire resistant vegetation.

Surface fires in the late seral stands served to reduced understory competition for limited soil moisture and nutrients. Under natural conditions surface fires may have prevented more of the ecosystem from succeeding to hemlock and late seral conifers. Please see the Fire Regime Condition Class discussion in Appendix H for specific fire rotation lengths by fire regime class and ELT.

On sand dunes, wind was a dominant disturbance regime on the lead edge and top of the dune. Fire across non-forested and forested wetlands surrounding the dunes would result in surface fires on the dunes with fewer stand replacement fires than on the outwash plains.

The jack pine budworm is currently affecting large areas of jack pine on this ELT. The budworm is capable of killing trees in closed canopy jack pine stands. Historically the budworm infestations may have been a precursor to stand replacement fires.

ELT Group 30

Composition and Structure. The tree species most commonly used by Government Land Office Surveyors in the 1850s were hemlock and sugar maple. Today, ELT 30 is dominated by red pine and the sugar maple-beech-yellow birch forest types.

ELT 30 is characterized by dry, sandy soils with organic matter accumulations that are greater than on ELT 10/20. The soils are moderately rich for sandy sites. ELT 30 areas typically occur adjacent to ELT 10/20 and ELT 40/50/90. The soils are transitional between outwash and moraine, pine stands to hardwoods. Typically ELT 30 is located on the edges of outwash plains, or in pitted outwash areas where duff destroying fires were less frequent than on ELT 10/20. White pine, hemlock and red pine tend to do very well on ELT 30 sites.

In the historic condition, surface fires may have been common and stand replacement fires were infrequent. Aspen, black cherry and red maple would be primary colonizers of disturbed sites. Succession pathways may pass through paper birch, balsam fir, red oak and red and white pine. In the late seral class white pine-hemlock, red pine, hemlock-hardwoods and occasionally large red maple stands would result.

Vegetation Growth Stages and PNV

- ***Early seral stages*** consist primarily of aspen. Jack pine, paper birch, black cherry and red pine would all be possible minor components. In later age classes, red maple, red pine and black cherry continue to grow and form a shelterwood for the stands to move into mid or late seral stages.
- ***Mid-seral stages*** are dominated by red pine, white spruce, black cherry and balsam fir. As these stands move toward late seral, red pine, white spruce with lesser amounts of black cherry dominate.

- ***Late seral stages (PNV)*** will have red pine, white pine-hemlock and occasionally red maple stands evolve, with hazel becoming a common shrub as the stand ages. ELT 30 sites are capable of supporting hemlock-sugar maple stands, but the sugar maple will be subject to slow growth due to limited soil moisture and limited soil nutrients.

Function. Historically, windthrow was the dominant disturbance regime on ELT 30. Infrequent surface fires would result in a "thinning" of small fire susceptible trees like balsam fir, small white pine and red maple. Shallow rooted hemlock and super canopy white pine are susceptible to wind throw on ELT 30 on outwash plains.

ELT Group 40/50/90

Composition and Structure. Sugar maple, beech and hemlock were the tree species most commonly used by Government Land Office surveyors in the 1850s. Sugar maple-beech-yellow birch and nearly pure sugar maple stands currently occupy more than 60% of this ELT. ELT Group 40/50/90 covers a wide array of ecological site conditions. ELT 40 and 50 consists of sandy soils with some finer textured layers that tend to hold and provide more soil moisture and/or nutrients to plants.

ELT 90 soils typically are derived from carbonate-rich till and support a wide diversity of understory plants under a productive northern hardwood overstory. These sites are very limited on the Hiawatha NF and due to inadequate acreage, ELT 90 is grouped with ELT 40 and 50.

In the historic condition, individual tree or small gap windthrow was the dominant disturbance regime. Sugar maple and hemlock seedlings established under the overstory would grow to occupy the canopy gap created by the windthrow event. Surface fires occurred very infrequently. The occasional catastrophic wind event would result in stand replacement. Aspen would typically pioneer these sites.

Vegetation Growth Stages and PNV

- ***Early seral stages*** are dominated by aspen stands, but red maple, sugar maple, or paper birch stands may occur. Balsam fir is a common species under aspen and mixed stands. As the stands mature, the shade-tolerant sugar maples and hemlocks begin to occupy more of the stand.
- ***Mid-seral stages***: Aspen and balsam fir are dying out and the more tolerant maples and hemlock begin to dominate the stand. Yellow birch, basswood and ash are beginning to occupy part of the stand.
- ***Late seral stages (PNV)***: On the sandy soils, the stand will tend to be occupied by sugar maple, beech and black cherry. White pine and yellow birch will be minor components. On the finer-textured sites or those with carbonate-rich till, sugar maple and beech will still dominate the stand, but basswood, white ash and yellow birch will occupy an increasing percentage. On the southern part of the forest, butternut, elm and silver maple may occur.

Function. Individual and small group tree windthrow is a dominant disturbance factor in this ELT group. Sugar maple and hemlock are common tree species. Catastrophic wind events which result in aspen regeneration occur infrequently, with succession eventually leading back to a sugar maple-dominated stand with hemlock and other hardwoods. Dutch elm disease altered the composition of these northern hardwood stands. Beech Bark Disease and Emerald Ash Borer are currently threatening to remove those species. Surface fires have very low return interval on ELT 40/50/90.

ELT Group 60

Composition and Structure. Hemlock, spruce, tamarack and cedar were the most common tree species used by Government Land Office surveyors in the 1850s. Today, quaking aspen is the most common forest type, but many other forest types are well represented on this ELT. This landtype consists of somewhat poorly-drained and moderately well-drained soils with textures ranging from sand to silty clay loam.

Historically, ELT 60 supported a wide array of vegetation. It often occurs as a transition zone from well-drained sands on outwash plains to poorly and very poorly drained sands on lowland outwash plains. On beach ridges, lake plains and in wooded dune and swale LTAs, it often occurs in complex

with better drained and more poorly drained ELTs. In some locations, stand replacement fire can result in dense jack pine stands. In the absence of fire, white pine, hemlock and balsam fire could occupy significant portions of this ELT. On the Rudyard clay plain, ELT 60 occurs in complex with ELT 70B.

In the absence of catastrophic wind events, tamarack, spruce and cedar with occasional white pine, would dominate the clay plains.

Vegetation Growth Stages and PNV

- ***Early seral stages*** are dominated by aspen and paper birch. Where stand replacement fires occur, jack pine could dominate the stand. As the stand matures, balsam fir and red maple could occupy a large component of the stand. In the latest phase of the early stage, white pine, spruce and hemlock become established in the understory and the aspen and paper birch begin to decline.
- ***Mid-seral stages***: Balsam fir and red maple grow into the overstory. White spruce, hemlock and some white pine move from the seedling to sapling stage.
- ***Late seral stages (PNV)***: Green ash, yellow birch, with some beech and sugar maple become established on the dryer sites. White pine grows through the pole size class and continues to eventually become a super canopy tree. Hemlock, with yellow birch and red maple, occupy increasing areas on ELT 60.

Function. On sandy sites, stand replacement fires and surface fires are the dominant disturbance regime. Fire would have served to perpetuate conifers on this ELT. In the absence of fires, the dryer parts of the ELT would have tended toward a hardwood-hemlock dominated stands with occasional white pine super canopy trees.

On clay soils. rooting depth is limited due to the high water table. Stand replacement windthrow was the primary disturbance factor. Under natural conditions, windthrow may have kept larger areas of the clay plains from succeeding to white pine-hemlock stands. Windthrown areas would typically revert to aspen.

ELT Group 70A

Composition and Structure. Spruce (most likely black spruce) tamarack, cedar and hemlock were the most common trees used by Government Land Office surveyors in the 1850s. Today, black spruce, jack pine and mixed swamp conifers are the most common forest types. ELT 70A occurs as forested and non-forested wetlands typically in small areas in a matrix of other ELTs. Soils are typically sandy. It consists of poorly drained mineral soils that have a water table within 12 inches of the surface for most of the year. The organic surface is less than 12 inches thick. Due to the high water table and acid soil conditions, tree growth on these sites is relatively slow. Tree decline occurs before trees reach the sizes and growth forms possible on better drained ELTs.

Vegetation Growth Stages and PNV

- ***Early seral stages*** are dominated by aspen and paper birch. Where stand replacement fires occur, jack pine could dominate the stand. As the stand matures, balsam fir and spruce could occupy a large component of the stand. In the latest phase of the early stage, aspen and paper birch continue to decline and red maple and balsam fir continue to develop.
- ***Mid-seral stages***: Balsam fir, spruce and red maple grow into the overstory. Tamarack and spruce occupy the wetter sites. Later in this stage, older balsam fir begins to decline but seedlings remain in the understory. Hemlock seedlings occupy part of the understory on some sites.
- ***Late seral stages (PNV)***: Black spruce with or without tamarack begin to dominate some sites and canopy gaps begin to form in this type. Nearly pure hemlock stands occupy the slightly better drained sites.

Function. The fire regime is dependant on the fire regime of the adjacent and often surrounding ELTs. In fire-prone ELTs, the small ELT 70A areas often support jack pine. In fire-protected areas, individual tree mortality or canopy gaps lead to an uneven-aged condition with black spruce and/or tamarack.

Windthrow creates pit and mound topography, especially in the hemlock type. Woody debris on the forest floor provides nurse logs for eastern hemlock regeneration.

ELT Group 70B

Composition and Structure. Cedar, tamarack, spruce and balsam fir were the most common tree species documented by Government Land Office surveyors in the 1850s. Today, lowland brush, quaking aspen and mixed swamp conifers are the most common forest types. Due to the diversity in substrates, ample soil moisture and the higher soil pH, this ELT has the highest diversity of plant species of any ELT.

Landtype 70B consists of forested and non-forested poorly-drained mineral soils. The substrate is typically silty clay loams on the Rudyard clay plain on the Forest's East Unit. On the West Unit, some ELT 70B sites occur on sand. In the sandy areas, subsurface water flow keeps the pH of the soils higher than in ELT 70A. The 70B Landtype is more productive than the 70A Landtype.

Vegetation Growth Stages and PNV

- ***Early seral stages*** are dominated by aspen and paper birch. Mixed stands with other species such as balsam fir, black spruce, tamarack and red maple are also common. Black ash stands can occur on this ELT and alder will be a component on some sites.
- ***Mid-seral stages***: Balsam fir, aspen and paper birch continue in this stage and older balsam fir begins to decline but seedlings remain in the understory. Hemlock seedlings occupy part of the understory on some sites. Cedar and white pine seedlings show up on some sites under a balsam fir and red maple canopy.
- ***Late seral stages (PNV)***: In the early phase, pure cedar stands can develop, but most stands include mixtures of cedar, red maple and hemlock.

Function. Windthrow by canopy gaps or stand replacement events is the most common disturbance regime on ELT 70B. Surface fires can occur, resulting in a thinning of smaller diameter trees.

Aspen was used for 5.5% of the witness or bearing trees in the 1850s Government Land Office survey on ELT 70B, indicating that wind throw disturbance resulting in aspen regeneration was not uncommon.

ELT Group 80A

Composition and Structure. Black spruce and tamarack were commonly documented by Government Land Office surveyors in the 1850s. Today, this ELT supports non-forested bogs, black spruce and lowland brush. Landtype 80A consists of very poorly-drained soils with more than 12 inches of organic material on the surface. The substrate under the organic material, is typically sand. These depths can range from 12 inches to several feet. ELT 80A defines a fairly narrow range of ecological conditions. Due to the wet, acid soils, timber productivity is generally low. Less than 17,000 acres of this ELT is forested.

Vegetation Growth Stages and PNV

- ***Early seral stages*** are dominated by non-forested conditions and lowland brush. Sphagnum is common on the soil surface. Leatherleaf and other acid tolerant plants occupy much of this phase.
- ***Mid-seral stages*** are dominated by Balsam fir, but some sites go directly to young black spruce, depending on the location of the seed source. Minor species include tamarack, paper birch, white pine and occasionally cedar. On disturbed sites, jack pine and red pine can occur.
- ***Late seral stages (PNV)*** supports a black spruce or tamarack stand or some combination of the two. Non-forested sites are common.

Function. In the natural setting, both wind and fire have low probabilities. Individual tree windthrow can affect larger trees. Tip up mounds provide microsites for woody species to germinate. The very wet conditions make the vegetation on this ELT susceptible to minor changes in ground water table depth. Stand replacement by flooding due to cyclic climate changes or beaver impoundments can occur.

ELT Group 80B

Composition and Structure. Cedar, tamarack and spruce were the tree species most commonly used by Government Land Office Surveyors in the 1850s. Today, the most common forest types are cedar, mixed swamp conifers and lowland brush. ELT 80B consists of very poorly-drained basic soils with more than 12 inches of organic material on the soil surface. The organic surface can range up to more than five feet in thickness, but is often 1 to 4 feet thick. The substrate ranges from sand to clay. ELT 80B has a higher soil pH than ELT 80A and thus is typically more productive and supports a different suite of plants than ELT 80A.

Vegetation Growth Stages and PNV

- ***Early seral stages*** can be a very diverse mix of balsam fir, alder, aspen, balsam poplar, red maple and paper birch. Alder and balsam fir would be the dominant species.
- ***Mid-seral stages*** are dominated by balsam fir, although red maple, aspen and to a lesser extent paper birch, can be major components. Cedar is coming into the understory in this stage. Where groundwater flow is strong, black ash and alder can dominate.
- ***Late seral stages (PNV)*** are dominated by an evolving northern white cedar stand. The stand culminates into a dense cedar stand in the latest stage.

Function. In the natural setting, wind and fire have very low probabilities. Individual tree windthrow, and to a lesser extent stand replacement windthrow, were probably the dominant disturbance factors. The very wet conditions make the vegetation susceptible to minor changes in groundwater table depth. Stand replacement by flooding due to cyclic climate changes or beaver impoundments can occur.

Historic Range of Variation

Description of Historic Range of Variation

Landscape conditions are dynamic; vegetation grows, dies, burns, blows down, is foraged, etc. Soils erode or are created from decaying vegetation. Over longer time periods, mountains may be created or leveled; glaciers may cover the land and then retreat; water bodies may cover the land and then dry up. A given portion of land may be in many different physical and vegetative conditions over a period of time. Two factors of measurement affect just how much historic variation is present in the analyzed landscape.

Landscape size affects variation. As the area of land being analyzed becomes smaller, the variation in conditions on that landscape becomes larger. For example, a given 10 acre plot of land may be 100 percent large mature red pine if it has not experienced a catastrophic fire for several decades; conversely, it may be 100 percent bare soil right after a catastrophic fire. If one were to evaluate the condition of that plot of land over time, they may conclude that the variation of that landscape is 100 percent.

The converse is arguably true as well; as the size of the landscape one evaluates over time increases, the variation of overall conditions becomes smaller. So, for example, if one evaluates several million acres over time, one might find that on average 50% of the landscape consisted of large mature red pine and 5% of the area consisted of bare ground after catastrophic fire. The physical location of these conditions would change over time, but one could measure the average and standard deviation of these landscape conditions and conclude that landscape conditions were within a certain range.

Temporal scale affects variation. Holding the size of the landscape constant and varying the time scale over which conditions are evaluated affects the variation of landscape conditions. Choosing too short of a time period to evaluate could show low variation if there is little change within the landscape during the time period. Conversely, choosing a time period that is too lengthy will lead to

greater variation if it encompasses the effects of climate change (i.e., the variation in landscape conditions of Michigan's upper peninsula between the last ice age and the present is great).

Historic Range of Variation of the Hiawatha National Forest

Scale of Analysis for the Hiawatha National Forest. The goal of historic range of variation analysis for the Hiawatha National Forest is to characterize the average landscape condition of the area of land that is, as of this writing, part of the Hiawatha National Forest. The time period of interest is that between roughly 1800 and 1900. Range of variation was determined for each of the aggregated Ecological Landtypes described above.

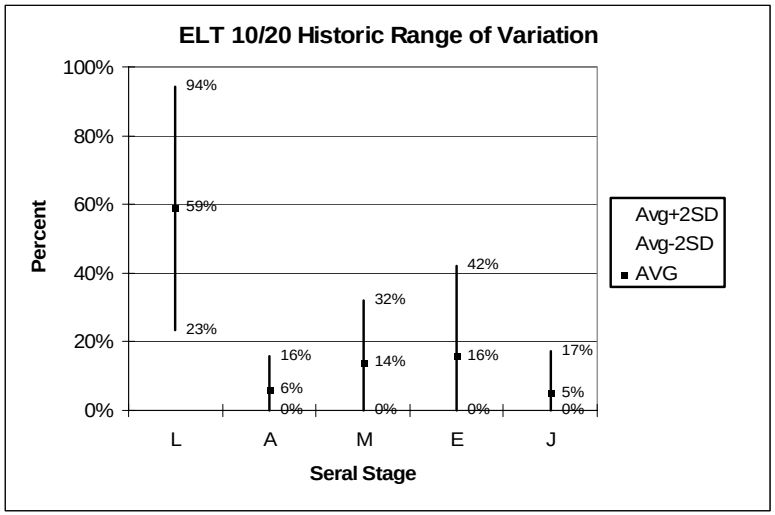
Calculation Methods. General Land Office (GLO) survey notes were used as the basis for calculating Historic Range of Variation. These notes were collected on present-day Hiawatha National Forest lands from approximately 1840-1860. Each corner point described in the survey notes was classified according to its present-day ELT affiliation and historic seral class condition. The condition for this single point in time is shown in Appendix H table H-1. However, the time scale is relatively short and there is only one sample set, so it is not possible to calculate a range directly from these points.

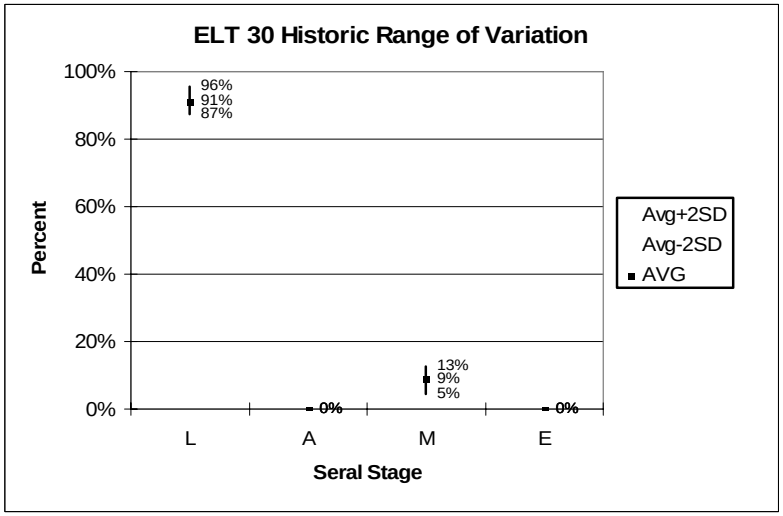
To use the limited number of temporal samples taken historically, the forest was broken into analysis areas smaller than the forest-wide analysis area. The thought being, "look across the conditions of several similar areas at one point in time rather than the same larger area through several points in time". The forest was split into aggregated Landtype Association groups to be used as analysis areas.

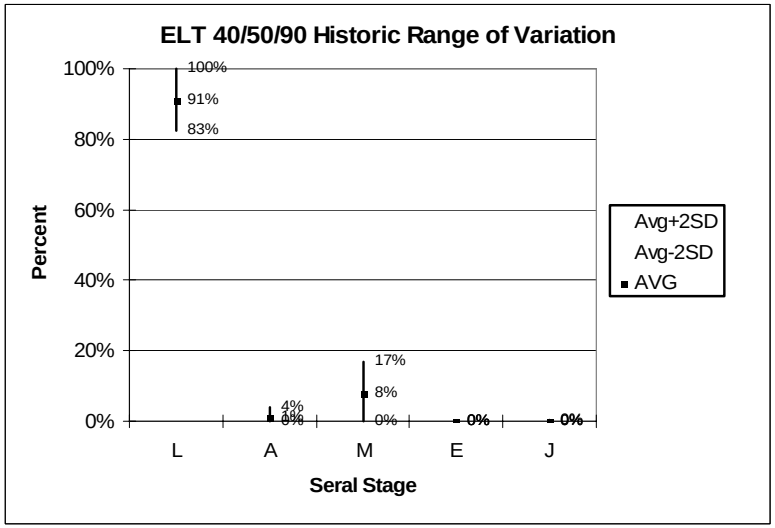
This resulted in approximately 27 useable analysis areas forest-wide. Within each analysis area, ELTs with at least 20 GLO points represented were considered as an independent sample. The distribution within the sample was calculated; occurrences of Late, Open, Jack Pine, Aspen, and Mid seral corners were counted and the percentage of each represented the average for that ELT in each analysis area.

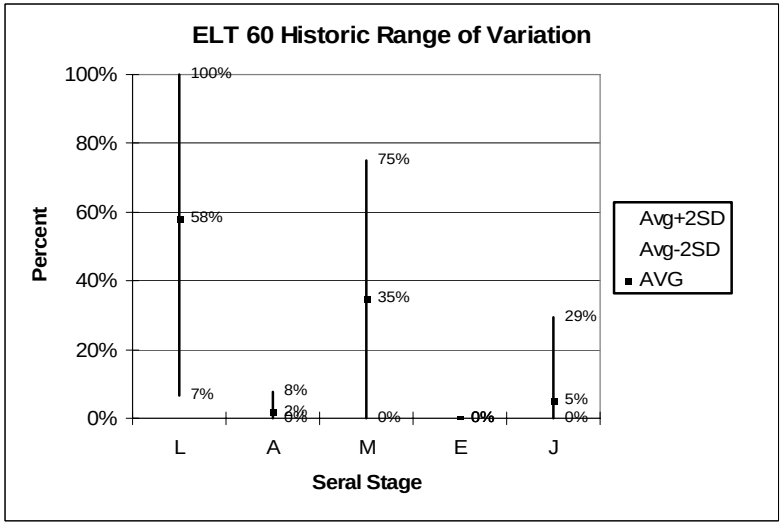
Next, the average of the sample averages for each seral stage of each ELT was found and a standard deviation of that average was calculated. The average plus and minus two standard deviations was used to represent a 95% confidence interval of the average and was also used to represent the Historic Range of Variation. The caveat is that the range that was calculated is probably wider than the range of the larger forest because it was calculated from analysis areas smaller than the area of the Hiawatha.

Results. Results of Historic Range of Variation calculation for Hiawatha National Forest lands are shown in Figure I-3. The "AVG" point represents the average condition across all of the individual samples, and the other points represent plus and minus 2 standard deviations of the average. The range represents a 95% confidence interval of the average landscape condition of each Seral Class within each ELT. On the "Seral Class" axis, "L" represents late seral, "A" is aspen, "M" is mid seral, "E" is regeneration/ openings and "J" is jack pine.


ELT 10/20 Historic Range of Variation
100%
80%
60%
40%
20%
0%
Percent
94%
59%
23%
16%
6%
0%
32%
14%
0%
42%
16%
0%
17%
5%
0%
L
A
M
E
J
Seral Stage
Avg+2SD
Avg-2SD
AVG


ELT 30 Historic Range of Variation
100%
80%
60%
40%
20%
0%
Percent
96%
91%
87%
0%
13%
9%
5%
0%
L
A
M
E
Seral Stage
Avg+2SD
Avg-2SD
AVG


ELT 40/50/90 Historic Range of Variation
100%
80%
60%
40%
20%
0%
Percent
100%
91%
83%
4%
0%
17%
8%
0%
0%
0%
L
A
M
E
J
Seral Stage
Avg+2SD
Avg-2SD
AVG


ELT 60 Historic Range of Variation
100%
80%
60%
40%
20%
0%
Percent
100%
58%
7%
8%
2%
0%
75%
35%
0%
0%
29%
5%
0%
L
A
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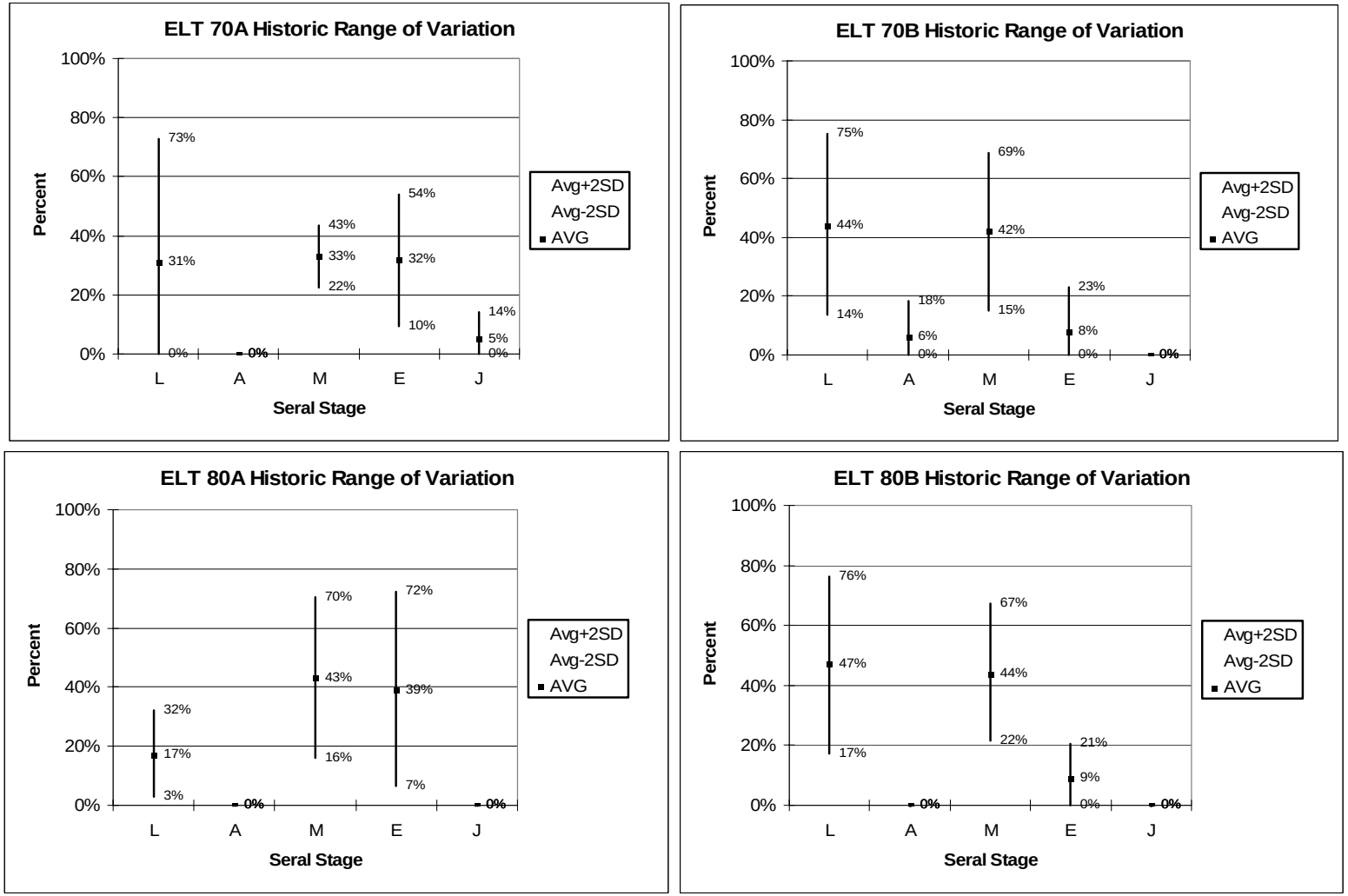
Seral Stage
Avg+2SD
Avg-2SD
AVG

Figure I-3: Historic Range of Variation by Ecological Land Type



APPENDIX J

Visual Quality Objectives

Maps J-1 and J-2 provide visual quality objectives for the Hiawatha National Forest.

Note: Individual stand changes to VQO are not reflected at this mapping scale. Please reference the Final EIS Visual Quality Section and specific stand database(s) for additional information.

Figure J-1. Hiawatha National Forest Visual Quality Objectives map for the East Unit

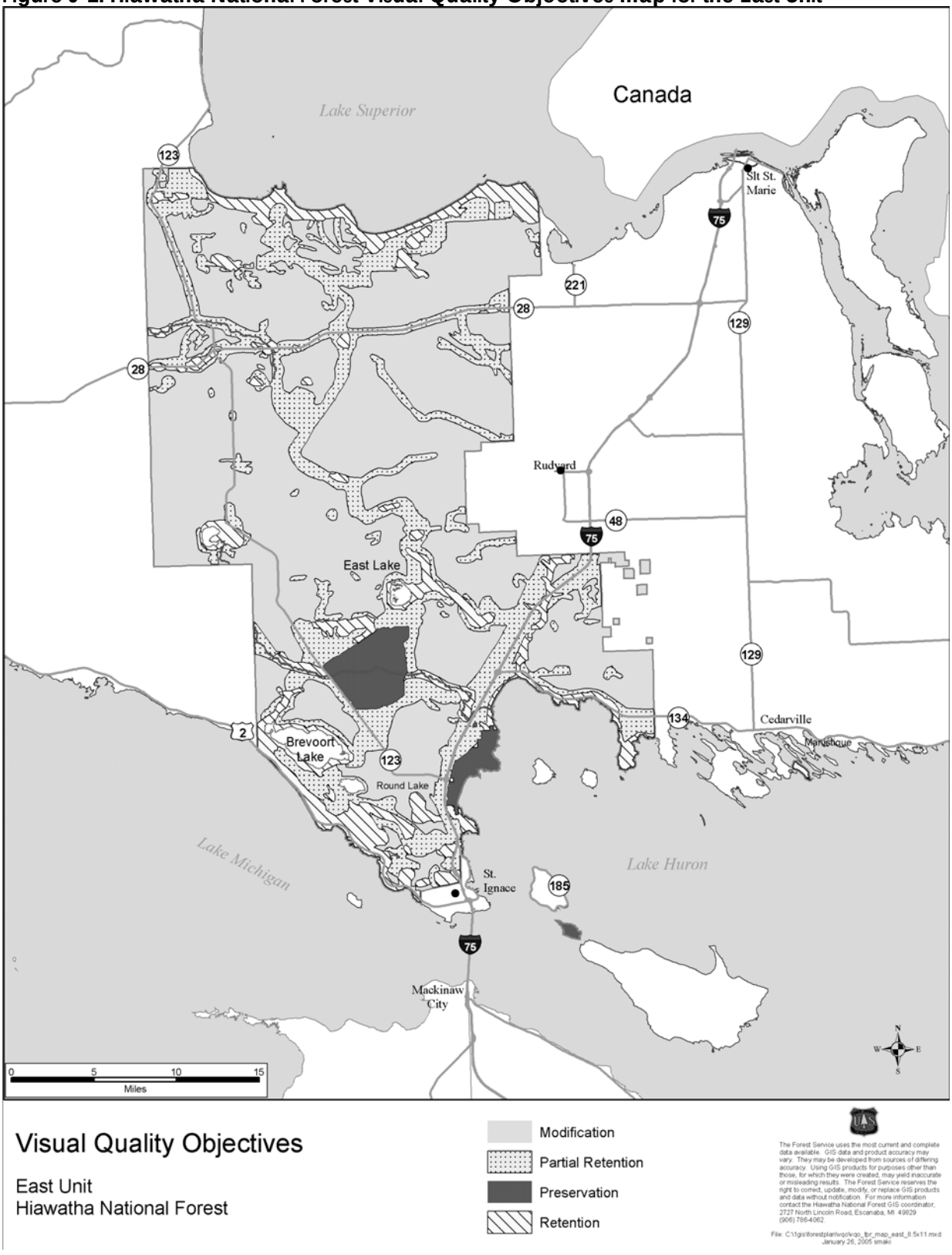
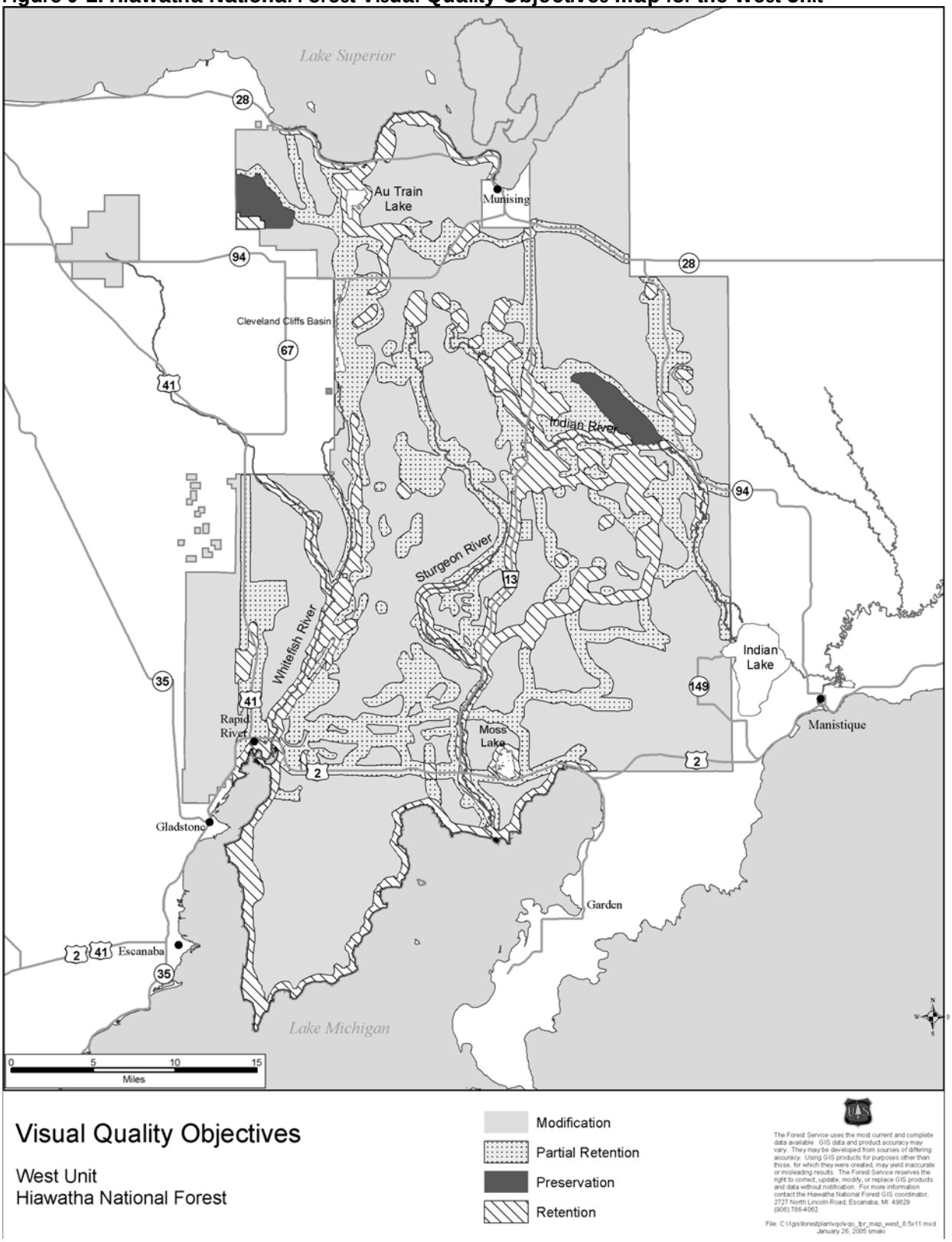


Figure J-2. Hiawatha National Forest Visual Quality Objectives map for the West Unit



APPENDIX K

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APPENDIX L

Response to Comments

Public review of the Proposed Land and Resource Management Plan and Draft Environmental Impact Statement was conducted between March 25, 2005 and June 27, 2005. This appendix is a summary of the comments received.

Comments are numbered consecutively as they appear in this summary. Comment numbers are shown in the gray bar. Numbers identifying each commenter are shown in parentheses after the comment narrative.

Similar comments have been combined into one statement. In some cases, a comment summary statement introduces groups of similar comments is shown in bold font.

There are some gaps in numbering of the comments, because some comments were combined.

Please note that the page references in the responses to the comments reference the printed copy of the draft EIS and draft Forest Plan. There is a slight discrepancy in page numbering between the printed and CD version of these documents. This discrepancy is a result of differences between the layout for printing (developed by the publisher) and the computer version used to produce the CD. When reference is made in the following "Responses to Comments", please be aware of this difference.

The same resource sections were retained between the draft and final EIS and Plans. Any changes made to the final documents as a result of comments, can be found within the same general resource section.

Some of the comments were specific to a particular project or location and are considered "outside the scope of forest plan revision." These comments were forwarded to the appropriate Hiawatha National Forest manager for future consideration.

This appendix is organized as follows:

- Part 1: Comment statements
- Part 2: Copies of letters from elected officials and federal and state agencies
- Part 3: Listing of commenters' names and numbers of commenters

Comment Topic (comment numbers in parentheses) **Page #**

Comment Topic (comment numbers in parentheses) **Page #**

Understanding the Forest Plan

#001

COMMENT: *…page 1-3 of the Forest Plan (proposed) lists the goals and objectives relating to the mission statement and the four critical threats facing national forests: fires and fuels; non-native invasive species; fragmentation; unmanaged outdoor recreation…threats have not been given enough attention…Any proposed action must first consider threats before public needs and desires. (#00547)*

RESPONSE: The Plan is a strategic document and does not propose any "actions" on the ground. The Forest Service Strategic Plan goals and objectives, as well as the Four Threats to the National Forests identified by the Chief of the Forest Service, were used in conjunction with laws, policy, regulations and public involvement to guide the management direction in this Plan. Any site-specific proposed management action would meet Forest Plan direction requirements and include environmental effects disclosed under the National Environmental Policy Act (NEPA).

Fires and fuels are addressed on pages 3-92 to 3-103 of the DEIS. Proposed goals and objectives for fires and fuels are described on page 2-17 to 2-18 of the proposed Plan. Non-native invasive species (NNIS) are addressed on pages 3-85 to 3-91 of the draft EIS. Proposed goals and objectives for NNIS are described on page 2-16 of the proposed Plan.

Fragmentation is addressed through management area designations, designated old-growth areas, and all lands designated as unsuitable for timber production that would enhance connectivity and reduce fragmentation. Outdoor recreation management is addressed on pages 3-293 to 3-342. Desired conditions, goals and objectives for outdoor recreation can be found on pages 2-3 to 2-6 of the proposed Forest Plan.

Public Involvement

#002

COMMENT:…*A Sierra Club member said there had been changes made to a previously published plan, and yet no one received notification of these changes, and there is not enough time for public comment. (#00191)*

RESPONSE: As stated on page 1-1 of the draft Environmental Impact Statement (DEIS), the purpose of the DEIS and proposed Forest Plan is to revise the 1986 Hiawatha National Forest Land and Resource Management Plan, in accordance with national regulation and to incorporate new science. The 1986 Forest Plan has been amended 23 times to keep management direction on the Forest current. Each amendment was accompanied by public involvement, analysis and a formal decision in compliance with the National Environmental Policy Act.

Public involvement efforts for this revision were described on pages 1-3 to 1-5 of the DEIS. Public involvement was initiated August, 2002 and included mailings and meetings. Additional mailings, meetings and newsletters have been sent/held to keep interested citizens, groups and agencies informed and involved with Forest Plan Revision. The draft EIS and proposed Forest Plan were distributed March 25, 2005, and allowed 94 days for comment. The comment period closed on June 27, 2005. In response to the errata mailed out after the proposed Revised Plan was published, refer to comment #110a.

#003

COMMENT: *The previous Forest Plan Revision scoping efforts used mostly vague language, so it was difficult to comment on many of the points back then because there was so little substance to support or to challenge. Now that tendency continues with the removal of much of the technical detail (tables, maps, figures, S&G's) present in the 1986 version of the plan. Again it is hard to effectively comment when you have no idea if the absence of detail is a "permissive" stance or if the absence of detail is being cloaked by hidden "restrictive" guidelines that may have not even been developed yet. There is an implied "trust us"*

factor in the tone of the document, but again (in my opinion) not enough substance present (in the Proposed Forest Plan) to place that trust…. (#00768)

RESPONSE: The Proposed Forest Plan provides a framework and context that guides the Hiawatha National Forest's day-to-day resource management operations. It is a strategic, programmatic document and does not make project-level decisions (Plan p. 1-4). The Forest will reach its desired conditions for vegetation and other forest resources through natural ecological processes and by using a diverse range of management tools and techniques. Implementing the Plan means developing and implementing site-specific management projects to reach the desired conditions described in the Plan (p. 1-5).

The National Forest Management Act (NFMA) at the site-specific level requires that the proposed action is consistent with the Forest Plan and other federal regulations. Compliance with NEPA requires site-specific environmental analysis for the proposed project, proper documentation, and public disclosure of effects within the appropriate document (e.g. environmental assessment, environmental impact statement or in a categorical exclusion). Environmental analysis of site-specific projects will use as its basis, the data and evaluations in the Forest Plan and the Final EIS.

Standards and guidelines in the Plan are designed to provide overall guidance, with more specific resource protection measures to be decided on a site/project-specific basis. The revised Forest Plan is a permissive document and is not intended to be prescriptive.

#004

COMMENT: *RNA or SIA proposals should be included in a separate (SOPA) schedule of proposed actions with [a] separate scoping letter and analysis with adequate public input per NEPA process and amended to the plan if warranted and not buried in the Forest Plan process. (#01642)*

RESPONSE: The Forest Plan establishes overall management direction for resources on the Hiawatha National Forest (proposed Forest Plan page P-3). An important part of the Plan is management area designation and direction. This direction provides the basis on how the Forest Plan responds to issues and concerns. No special interest areas (SIAs) have been designated in the proposed Forest Plan. Heritage areas that have national or tribal significance will be identified for special management (proposed Forest Plan page 2-3) and special habitats for unique plant and animal communities (proposed Plan 2-10).

Research natural areas (RNAs) are part of a national network of ecological areas designed in perpetuity for research and education and/or to maintain biological diversity on the National Forest System lands (draft EIS page D-1). They are part of the overall management scheme proposed for the Forest at the Forest level. No changes were made to RNAs boundaries; however some boundary adjustments were made to existing candidate RNAs based on new information. No new RNAs were designated. Designation of new RNAs requires the appropriate level of analysis under NEPA, and includes public involvement. Refer to Comments #401 and #402.

#005

COMMENT: *We respectfully ask for an extension of the comment period to accommodate the full range of public input available for all three plans. (#02287)*

RESPONSE: The public comment period is in accordance with 36CFR219.10 (b). Any request for and extension of the comment period can only be granted by the Regional Forester. A formal request made to the RF for an extension of the comment period for all three Michigan National Forests was denied in June of 2005.

Issues

#006

COMMENT: *I find it curious that the DEIS devotes specific time and space to discuss certain requests for more designated wilderness areas, wild and scenic river access and the elimination of logging. There was no mention of requests for more access - lakes, rivers, roads, etc. (#01639)*

RESPONSE: The National Forest Management Act (NFMA) requires an inventory of potential roadless areas and wilderness evaluation for any qualifying roadless areas as part of Forest

Plan revision. Likewise, an inventory for potentially "eligible" rivers under the National Wild and Scenic Rivers Act were inventoried as part of the revision process.

In the Notice of Intent to Prepare and Environmental Impact Statement for Revision of the Land and Resource Management Plan for the Hiawatha National Forest (2003), the Need for Change topics included the Hiawatha's proposal to provide direction for the quantity and level of development for both motorized and non-motorized settings for inland lakes and Great Lakes boat accesses.

In addition, the Forest proposed to provide opportunities for loops and connected trails/ routes for motorized and non-motorized uses and direction to reduce user conflicts (draft EIS page 1-2). Increased demand for lake access is described on page 1-9 of the draft EIS and increased demand for more trail/road access is described on page 1-10 of the DEIS.

In all alternatives, motorized recreation provides pleasure to a large segment of the population by providing access to the Forest, contact with nature, and opportunities for families and groups to enjoy short- and long-distance travel within the Forest and to other areas (draft EIS page 3-326).

Alternatives

#007

COMMENT: *I am the owner of about 18 acres of property which includes approximately 1200 feet of Lake Superior shoreline adjacent to the Hiawatha National Forest [Township of Bay Mills, Salt Point. From the small O.G./unsuited land maps in...the Proposed Forest Plan, present protection to old growth forest would be diminished in alternatives 2, 3 and 4. It would help me achieve my goal of preservation if the Hiawatha shore area south of me would be 6.3 instead of 6.2 and designated as unsuited, and if O.G. designation were given to the piece of the Hiawatha adjacent to my old growth [sic]. (#00033)*

RESPONSE: The proposed Forest Plan provides an overall strategy for how the Forest will be managed. Any actions proposed on a specific area of land, would be subject to public involvement and site-specific analysis.

Although designated as MA 6.2, actual management actions on the land in question would be based on how well conditions on the site meet Forest Plan desired conditions. Refer to comment #397.

#008

COMMENT: *I don't think the public should ever be given "alternatives" of the government's choosing...we have a well educated enough citizenry that they can tell you what they want. (#00006)*

RESPONSE: Alternatives are a product of public involvement. The Forest Service has used a variety of methods to communicate with the public and to provide ways for public comment. Alternatives are developed in response to public issues and comments in accordance with Council of Environmental Quality regulations. The significant issues found in Chapter 1 of the draft EIS formed the basis for the range of alternatives examined in detail in the EIS (draft EIS page 2-1). Each alternative provides a different combination of responses to the issues expressed during the scoping process. Each alternative also emphasizes a different range of opportunities and resource values. Alternatives provide a way to compare environmental and social impacts; they sharply define the issues and provide a clear basis for a decision.

#009

COMMENT: *Range of alternatives is inadequate. The Society also questions whether the Draft Plan and DEIS have provided a "reasonable range" of alternatives as required by NEPA 40 CFR 1502.14. Alternatives 3 and 4 take an all or nothing approach that would negatively impact and lead to the loss of essential wildlife habitats and native species populations, violating Forest Service policy... Alternatives are needed that meet the needs of both early and late successional wildlife, instead of pitting one side against the other as Alternatives 3 or 4 do or by decreasing early successional species at a moderate level as Alternative 2 does. (#02218)*

COMMENT: *Federal agencies are required under NEPA to evaluate all reasonable alternatives of a proposal and to discuss the*

reasons for eliminating development of specific alternatives. 40 CFR 1502.14. Under NEPA and NFMA, a broad range of reasonable alternatives must be developed and analyzed during the planning process. Both Acts require accurate scientific analysis, expert agency input, and public involvement. In choosing only 4 alternatives without sufficient elaboration and in selecting Alternative 2 as its Preferred Alternative, the Hiawatha violates these statutory mandates. The lack of range and variety expressed in the alternatives analyzed by the Forest Service in the DEIS does not reflect the public's desire for significantly more Wilderness and non-motorized areas. Of additional concern is the fact that the Forest Service mentions, at DEIS 2-15, that it originally considered 7 alternatives but failed to establish why it settled on only four. (#01761)

RESPONSE: As stated on page 2-1 of the DEIS, "There are four proposed alternatives in this Draft Environmental Impact Statement. Each alternative has a different approach to managing the Hiawatha National Forest's resources for the next 10 to 15 years. Each of these alternatives is a potential forest plan that can be implemented if selected."

The Hiawatha used an interdisciplinary team approach when developing the alternatives. Each alternative was designed to respond to the comments and significant issues by providing different scenarios for applying Forest Plan management area direction. Although the alternatives do not vary in forest-wide direction, they may vary in acreage allocated to each management area.

The alternatives include the proposed changes to components of the Forest Plan and incorporates goals, objectives, standards, guidelines, management area delineations, monitoring and evaluation strategies, allowable sale quantities (ASQ) for timber, and recommendations for wilderness.

All four alternatives comply with applicable laws, regulations and Agency policies and guidelines. All alternatives adhere to the concepts of multiple use and ecosystem management. In addition, all alternatives:

1. Meet the minimum management requirements of 36 CFR 219.27. These requirements guide the development, analysis, approval, implementation, monitoring and evaluation of forest plans, including: resource protection; vegetation management; silvicultural practices; even-aged management; riparian areas; soil and water protection and diversity.
2. Recognize the unique status of American Indians and their rights retained by treaty with the United States.
3. Meet minimum health and safety standards.

Seven alternatives were considered. The reasons for eliminating three of the alternatives from detailed study, can be found on pages 2-15 to 2-16 of the draft EIS.

#010

COMMENT: T*he amount of acreage involved in all action alternatives is mind-boggling-hardly an adequate range of alternatives (208,874 + 126,128 acres represents a large percentage of HNF's loggable portion). None of those acres would appear natural for decades...page ES-29 mentions the proposal in alternatives 2-4 to change SPNM acreage to motorized acreage. This makes the conversion a done deal, instead of offering the public a range of alternatives. No new wilderness is recommended under any of four alternatives. (#00775)*

RESPONSE: The purpose of forest plan revision is to establish management direction for forest resources (proposed Plan page P-3) across the Hiawatha National Forest. The Hiawatha covers a total of 895,313 acres (Plan page 3-2).

Alternative 2 includes about 578,000 acres of land suitable for timber production and about 317,000 acres of unsuited lands that would move towards later successional vegetation types (DEIS page 3-22). Activities on all lands would be designed to work towards forest-wide and management area desired conditions, and would be conducted in a manner that would be consistent with visual quality objectives.

As stated in the Notice of Intent to Revise the Forest Plan, the only proposed change to ROS objectives were for the Delias Run/Boot Lake and Buck Bay areas. These areas were proposed to change from a semi-primitive non-motorized (SPNM) emphasis to semi-primitive motorized (SPM) recreation opportunity spectrum (ROS) objectives.

Alternative 1 would manage these areas toward SPNM recreation opportunity spectrum objectives. The effects of the various alternatives on recreation using ROS class opportunities, including semi-primitive, can be found on pages 3-293 through 3-342 of the draft EIS. Refer to to comment #386 for information on the roadless inventory and wilderness evaluation process.

#011

COMMENT: *We believe that [the] range of alternatives is responsive to comments received from the public during the scoping phase. (#02204)*

RESPONSE: Thank you for your comment.

#012

COMMENT: *One of the original objectives of the Forest Service was to provide a consistent flow of timber to meet the need of local industries. Your preferred alternative 2 will not meet this need as some of our industries in the UP need hardwood fiber managed on the even-aged system. We do not question the use of uneven-aged management on high site index northern hardwoods to produce the highest possible quality timber, however, not all northern hardwood sites would benefit from uneven-aged management. Alternative 2 leaves the Hiawatha with no option other than uneven-aged management of northern hardwoods and we feel that is not a sound management decision.*

We are supportive of the amount of Old Growth proposed in Alternative 3 as this is the lowest amount of all the alternatives. Our National Forests were created to be managed for a variety of products including Old Growth; however, Old Growth should neither be the focus nor a major component. Wilderness areas already comprise 50,000 acres and we feel this is enough Old Growth. The more acres designated Old Growth will reduce the overall forest health and discriminate against early successional vegetation and wildlife species. Alternative 3 provides the framework of a forest that is maximizing diversity of not only species but also age classes; this will result in a healthy vigorous forest. (#00666)

RESPONSE: The Hiawatha National Forest anticipates a mix of even and uneven-aged management of northern hardwoods. Some hardwoods would be managed under an even-aged silvicultural system. See comment #127.

Goals for old growth described on page 1-8 of the proposed Forest Plan include maintaining a 52,000 acre old growth system. This would provide habitats for a variety of wildlife and plant species. In addition, vegetation goals include providing habitats for early or mid successional species. See comments #132 and 139.

#013

COMMENT: *I was unable to determine the rational for the difference in designated groomed trails between alternative two and three. (#00320*)

RESPONSE: Alternative 3 generally responds more strongly to Forest interests and commenters that desire greater levels of motorized recreation access and more recreation facility development (e.g. back-in boat launches, etc). In reflecting this difference, Alternative 3 would allow up to 415 miles of groomed snowmobile trails to be developed, whereas Alternative 2 would allow 340 miles (38 and 113 additional miles beyond current condition, respectively).

#014

COMMENT: *I support Alternative 1. I would support Alternative 2 provided cross-country travel is allowed. (#00404, 00527, 02346)*

RESPONSE: The Forest Service does not view public comment as a vote to select an alternative. Comments are an opportunity for people to gain a better understanding of proposed alternatives, to participate collaboratively, to offer suggestions for improving or modifying alternatives and to point out errors or omissions in the analysis.

Comments are used to determine whether issues have been adequately addressed and clearly displayed, so the public can understand what is being proposed. Information gathered during the public comment period is reviewed and addressed where appropriate in the FEIS. Response to issues raised about cross-country travel is addressed under Recreation (see comments #049 to 122). It is the Regional

Forester's responsibility to make a well-informed, well-reasoned decision from all of the information available, including public comment, science, law and regulation.

The Forest has taken a second look at Alternative 2 based on comments to the DEIS and to the proposed Forest Plan. Based on current use and the anticipated environmental effects, the 2006 Forest Plan will allow cross-country snowmobile travel (excluding any environmentally sensitive or non-motorized areas) and retain the direction for roads and trails to be "open unless posted/designated closed" for snowmobiles (only). The Forest will monitor the potential effects of snowmobiles to determine if additional restrictions are needed. Cross-country OHV travel will continue to be prohibited.

#015

COMMENT SUMMARY: ***I support Alternative 1 or 3 for snowmobile access****. (#00247, 00306, 00387, 00393, 00531, 01638, 01682, 02348)*

COMMENT: *Snowmobilers who annually visit the Upper Peninsula have voiced concerns about their ability to use the forest roads, pipelines and power line easements to travel from one designated trail to another, or to access nearby communities for necessary services. Changing this policy will have a negative financial impact on these communities. Because of the failure of the forest to identify all marked groomed trails along with the ghost roads and other trails used by snowmobilers we strongly recommend consideration for the removal of the "cross country travel by snowmobiles Not Allowed" portion of the alternatives. Retention of the current policy for "roads open unless posted closed: rather than the opposite is also the preferred choice. At the present time it would be to easy in this time of budget cuts to not mark the trails open. The Association will support Alternative #1 or #3 at this time, and finds that support for the preferred alternative (#2) is possible if that restriction pertaining to cross country travel were eliminated. (#00242, 00249, 00248, 00249, 00251, 00493, 01631, 02173)*

COMMENT: *I prefer your Alternative 1, which I understand, is the existing forest plan and has served well. As a second choice I would prefer Alternative #3 which would still allow cross-country travel. (#00448, 00565, 02041-02044)*

COMMENT: *Please consider the current Forest Plan or Alternative Plan #3 the choice best suited for the huge economic family sport of snowmobiling. (#02140)*

RESPONSE: Thank you for your comments. Refer to comments #014 and #018. Response to the economic aspects of snowmobiling is covered under Social and Economic Environment (comments #325 to 342) and in the DEIS pages 3-448 through 3-490.

#016

COMMENT SUMMARY: ***I support Alternative 3. I would support Alternative 2 if cross-country travel were allowed for snowmobiles.*** *(#*00041, 00216-00222, *00224*, *00228*, *00232*, 00241, 00243, 00247, *00250*, *00253*, 00273, 00275-00277, 00301, 00302, 00305, 00307, 00308, 00310, 00312, 00313, 00315, 00317-00321, 00323, 00325-00327, 00335, 00348, 00350-00354, 00356-00359, 00362, 00364-00371, 00373-00376, 00378, 00379, 00382-00384, 00386, 00389-00392, 00394-00398, 00400-00409, 00411-00416, 00418, 00419, 00421, 00424-00425, 00427, 00429, 00431, 00434-00437, 00439-00441, 00444, 00446, 00447, 00449, 00450, 00459, 00461, 00463-00467, 00470, 00472-00474, 00476, 00479-00482, 00490-00492, 00494, 00495, 00498-00508, 00511, 00513, 00514, 00516-00518, 00523-00526, 00528-00532, 00533, 00535-00538, 00539, 00540, 00542, 00543-00546, 00552-00558, 00560-00564, 00568, 00570-00572, 00574- 00579, 00581-00590, 00592- 00593, 00595-00598, 00600-00604, 00606-00614, 00616-00628, 00634, 00636-00639, 00641-00643, 00645, 00647-00652, 00654-00657, *00363*, 00659, 00663, 00667-00668, 00670, 00673-00676, 00736-00738, 00740, 00742, 00744-00746, 00748, 00750-00751, 00753-00755, *00757*, 00758, 00760-00762, 00774, 01121, 01181, 01373, 01607-01609, 01611-01612, 01615-01624, 01628, 01629, 01631-01633, 01635, *01639*, 01640, 01644, 01647, 01652-01654- 01669, 01673-01679-01681, 01684-01691, 01694, 01697, 01700- 01701, *01703*-01708, *01711*, 01714-01719, 01722-01723, 01725, 01728, 01730-01734, 01743, 01748-01749, 01751-01754, *01998*, 02000, 02001, 02003, 02005, 02007, 02009, 02011, 02014- 02017, 02019, 02022, 02025-02027, 02031, 02034-02040, 02046, 02048-02053, 02055, 02057-02060, *02062*-02064, 02066, 02070, 02071, 02074-02080, 02082, 02083, 02085, *02087*-02091, 02093-02097, 02099, *02101*-02108, 02110-02111, 02113, 02114, 02116-02119, 02122, 02123, 02127, 02128, 02130-02132, 02135, 02136, 02138, 02139, 02141,

02142, 02146-02148, 02150, 02156, 02161, 02162, 02164, 02173, 02174, 02176, *02178*-02180, 02182, 02183, 02186-02188, 02190-02192, 02194, 02195, 02197-02201, 02209, 02214, 02228-02230, *02234*, 02235, 02237, 02240-02245, 02247, 02248, *02253*, 02254, 02256, 02258, 02268-02271, 02276-02279, 02283-02285, 02288, 02289, 02293-02295, 02299, 02300, 02304 02307, 02310, 02312-02317, 02320, 02322, 02323, 02326, 02327, 02329-02331, 02333-02335, 02337, 02339-02343, 02347, 02351-02352, 02358, 02361, 02362, 02364-02365, 02368-02371, 02373, 02374, 02379-02385, 02387, 02388, 02392, 02394-02396, 02398, 02401-02403, 02410-02413, 02415, 02418-02422, 02424, 02425, 02428, 02431, 02434, 02435, 02440-02443, *02448*, 02452-02454, 02456-02459, 02462-02469, 02471, 02472, 02475, 02478, 02482-02485, 02488, 02492-02496, 02499-02503, 02505-02507, 02513, 02514, 02520-02532, 02535-02539, 02541-02543, 02545, 02548-02552, 02554, 02555, 02557, 02558, 02560, 02563-02567, 02570, 02571, 02574, 02577-02580, 02582-02584, 02587-02590, 02593, 02594, 02597, 02598, 02604, 02608-02609, 02611-02614, 02616, 02617, 02682, 02687-02689, 02698*)*

COMMENT: *We do support your Alternative #3. We would support Alternative #2 if you were to remove the not allowed portion of the cross-country travel to snowmobiles.... Snowmobiles need access to get from the trails to villages etc., particularly for gas, food and lodging. (#02169)*

COMMENT: *I am writing in support of Alternative 3 for the Hiawatha National Forest Plan Revision. In addition to supporting Alternative 3, I would also support Alternative 2 if; and only if the language was changed to allow cross-country travel by snowmobiles.... My family and I regularly snowmobile in the central Upper Peninsula in the winter months, routinely using some parts of the Hiawatha National Forest. While we do traverse the regularly groomed snowmobile trails often, we also bring our small children with us at times. During these times is when we more frequently travel either forest service roads and/or cross-country because the marked snowmobile trails often don't seem safe enough to travel with children, especially on weekends. (#02168)*

RESPONSE:. See comment #014.

#017

COMMENT: *I would prefer Alternative 3 for the OHV section, but I would support Alternative 2. Either alternative needs to following changes made:*

- *OHV - Road open/closure direction: Change it to; All roads open unless designated/posted closed.*
- *OHV - Cross-country travel: Cross-country travel is Allowed.*

The [MSA] will support #1 or #3 at this time, and finds that support for the preferred alternative (#2) is possible if that restriction pertaining to cross country travel were eliminated. (#00543)

RESPONSE: Please refer to comments #014 and 060a.

#018

COMMENT: *I believe that Alternatives 2 and 3, which determines that 578,461 and 623,771 acres respectively are suitable for timber management are the preferred options. (#02696)*

RESPONSE: The Forest Service does not view public comment as a vote to select an alternative. Comments are an opportunity for people to gain a better understanding of proposed alternatives, to participate collaboratively, to offer suggestions for improving or modifying alternatives and to point out errors or omissions in the analysis. Comments are used to determine whether issues have been adequately addressed and clearly displayed, so the public can understand what is being proposed. It is the Regional Forester's responsibility to make a well-informed, well-reasoned decision from all of the information available, including public comment, science, law and regulation.

Alternative 1

#019

COMMENT: *I support Alternative 1 because the plan is just fine the way it is.* (#00349, 01737, 01741, 01742, 02062, *02128*, *02145*, *02149*, 02153, *02162*, *02318*, *02336*, *02355*, *02364*, *02399*, *02553*, 02447)

COMMENT: *I fully support alternative 1... "If it isn't broken, don't fix it."...(#00434)*

RESPONSE: Please refer to comment #018. The National Forest Management Act (NFMA) of 1976 requires that forest plans be revised at least every 15 years. Since 1986, the Hiawatha has successfully implemented site-specific projects using the the management direction in

the Forest Plan. In addition, the Plan has been amended 23 times to keep it current. Based on an extensive public collaborative effort and internal monitoring and evaluation, some changes to the Forest Plan were identified and published in the Notice of Intent to Revise the Plan (September 2003).

Alternative 1 is a continuation of the 1986 Forest Plan management direction and incorporates new science, policy and information. Information on pages 1-1 through 1-5 (DEIS) outline the Purpose and Need, Proposed Action, the Decisions to be Made, and the Public Involvement that guided the effort to revise the Forest Plan.

#020

COMMENT: *I support Alternative 1 for OHV and cross-country snowmobile access. (#00223, 00468, 00512, 02177, 02421, 02487, 02540, 02585, 02691)*

COMMENT *It would be the recommendation of the American Council of Snowmobile Associations to retain Alternative #1 which is now in existence. (#00241)*

COMMENT: *The Michigan Snowmobile Association will support Alternative #1...at this time...(#00241)*

COMMENT: *I ask that the current access to the Forest during the winter would remain intact. If any changes are made I would request that you would still allow broad access to snowmobilers. (#00316)*

RESPONSE: See comments #018, 019, 060b and 063.

Alternative 2

#021

COMMENT: *I would support Alternative 2 if cross- country travel by snowmobiles is allowed. (#00190, 00241, 00252, 00360, 00361, 00428, 00430, 00658, 01610, 01744, 02045, 02137, 02154, 02236, 02238, 02246, 02272, 02274, 02290, 02308, 02353, 02356, 02378, 02479, 02515, 02517-02519, 02592)*

RESPONSE: See comments #014 and 018.

#022

COMMENT: *...Alternative 2 would best meet the needs of most any snowmobiling enthusiast that would want to use the Hiawatha National Forest without great impact to the environment. (#02212, 02213)*

RESPONSE: See comment #018.

#023

COMMENT: *The plan's preferred alternative #2 generally provides a good balance of the goods, services and values, which the Hiawatha National Forest should produce. The increases in ASQ and suitable acres are directionally correct, and the plan appears to adequately address the issues raised by the public during the initial comment period. (#01760)*

RESPONSE: See comment #018.

#024

COMMENT: *I support Alternative 2, which is a compromise between the interests of non-motorized boaters and those that utilize motorized watercraft, and PWC. (#02696)*

RESPONSE: See comment #018.

#025

COMMENT: *I support Alternative 2's mix of miles of designated trails, ML 2 and ML 3-5 roads being available for OHV use. These miles in combination with county roads open to OHV's represent excellent opportunities for looped and connected riding between communities, points of interest, and pit stops. (#00764)*

RESPONSE: See comment #018.

#026

COMMENT: *I support Alternative 2 because it represents a balanced approach to forest management. (00237)*

COMMENT: *Because DEIS Alternative 2 best incorporates these principles while balancing the multiple-use demands placed upon the Hiawatha National Forest, EPA concurs with the selection of Alternative 2 as the Preferred Alternative....EPA has no objections to the Forest Service's proposed Forest Plan for the Hiawatha National Forest. We have rated the DEIS an "LO" - Lack of Objections. (#02204)*

COMMENT: *I feel Alternative 2 is fair to the preservation of the forest and the public's right to usage of our state's natural resources... (#02029)*

COMMENT: *I fully support Alternative 2... I believe that Alternative two provides a very good balance of access to lands for these activities, while providing better condition and viability of our forests by abolishing the same-age forest cutting that has been in affect since the mid-1900's. I also feel this alternative provides the best opportunity for habitat establishment for Michigan's Wildlife, especially those species that are now struggling with habitat.* (*#00471 00764*)

RESPONSE: See comment #018.

#027

COMMENT: *...We support the preferred alternative. If fully implemented, the plan will provide a much-needed increase in the hardwood log supply in the Upper Peninsula. (#01637*)

RESPONSE: See comment #018.

#028

COMMENT SUMMARY: ***I do not support the Preferred Alternative.***

COMMENT: *I find the Plan to be much too restrictive and limiting in the area of recreation. (#00034, 00035, 00036, 02002)*

COMMENT: *What the Forestry has proposed in the HNF D.E.I.S. Off-Highway Vehicles (Issue-Recreation) Alternative #2...is a timid proposal. OHV riders have very little Direct Access to these roads and trails. ...OHV riders should have free rights of travel in the HNF, the same as any legal wheeled vehicle. (#00029*)

RESPONSE: See comments #018 and 060a.

#029

COMMENT:*...disappointed to see...Alternative 2 offers no Management Area acreage for even-aged hardwood management (MA3.1 or MA3.2)...uneven aged management of northern hardwoods is the best tool for high site index northern hardwoods, ...Hiawatha National Forest should leave itself the opportunity to manage for even-aged hardwood production as Alternatives 1 & 3 propose. (#00235*)

RESPONSE: The Hiawatha National Forest anticipates a mix of even and uneven-aged silvicultural systems for management of northern hardwoods. See comment #127.

#030

COMMENT SUMMARY: ***I do not support Alternative 2 because it will be detrimental to woodcock, grouse and other game and non-game species.*** *(#00025)*

COMMENT: *The Ruffed Grouse Society is disappointed in the Forest's selection of Alternative 2 as the Preferred Alternative in the Plan Revision Process. Touted to "emphasize a mix of early and late seral species," the Preferred Alternative overemphasizes later successional habitats to the detriment of already declining young forest ecosystems. (#02218)*

COMMENT: *Alternative 2 is a plan that will be detrimental to woodcock, grouse and other game and non-game species. It calls for a decrease of 18,000 acres (15% decrease from current plan levels) of aspen habitat, and a decline of 22,600 acres (27% decrease) of aspen emphasis areas. It is these types of forest that are needed by grouse and woodcock...(#00660)*

COMMENT: *Alternative 2 does not meet the needs of the forest wildlife. ...Plan includes a confusing minimum/maximum range for each forest type with a minimum level of aspen ranging from 29,139 acres (3% of the Forest) up to 100,430 acres (11% of the Forest)... These lower aspen levels would also have a negative effect on grouse and woodcock populations... Environmental Impact Statement includes very little analysis and sound science to support the...harmful aspects of Alternative 2. (#00042*)

COMMENT: *Our National Forests should be managed for their benefit by maintaining a mix of vegetation in various stages of ecological succession. Young aspen stands provide both food and shelter from predators for a variety of birds and animals, game and non-game species alike. Your preferred alternative proposes a significant reduction (48%) of this forest type. Areas of high stem density should be increased, not decreased. Forest creatures are now more than ever dependent on good stewardship, and Alternative 2 appears to be a reversal of sound forest management practices. (#02224*)

RESPONSE: See comments #018, 125, 176, 239 and 240.

#031

COMMENT: *I am writing in opposition to elements of Preferred Alternative Two, in the DEIS, which proposes to increase the suitable timber acreage; from 58% of the total acreage to 66% of the total acreage. Timber extraction in Hiawatha is a money-losing proposition. The degradation of the National Forest is therefore costing the citizens money rather than earning money for the taxpayers. By increasing the allowable board feet, the Forest Service is doing a great disservice both to the forest ecosystem and to the taxpayers of the country who are forced to pay for the lumber subsidy. (#02227*)

RESPONSE: See comments #018, 340 and 341.

#032

COMMENT: *...Alternative 2 takes us one step closer to discouraging recreational activities on the Forest. Decreasing hunting opportunities will result in further reduction of the number of people using the Forest. (#00671)*

RESPONSE: Effects of the proposed Forest Plan on hunting can be found in the Recreation Management and Social/Economic Sections of the DEIS/FEIS. See comment #018.

#033

COMMENT: *...Alternative 2, includes several changes with regard to vegetation and wildlife management that are substantial, and, in my opinion as a wildlife biologist, detrimental to several species of game animals that are important to the hunting public and also to the federally listed threatened gray wolf and Canada lynx....*

...The proposed direction decreases vegetation and wildlife diversity on the forest, decreases forest health, potentially reduces forest fiber output, reduces wildlife outputs for popular game species such as white-tailed deer, ruffed grouse, woodcock, and snowshoe hare, and will have negative impacts on trustee species such as wolves and Canada lynx. The revision documents themselves offer no clear, coherent reason for this abrupt change in management direction and no explanation as to why the proposed management direction with regard to aspen, openings, and early seral stages in other types is to be preferred over competing alternatives.... (#00239)

RESPONSE: See comments #340 and 341.

Alternative 3

#034

COMMENT SUMMARY: ***I support Alternative 3 for snowmobile and OHV access.*** *(#00011, 00233, 00235, 00241, 00252, 00279, 00303, 00322, 00324, 00381, 00422, 00426, 00442, 00462, 00469, 00478, 00496, 00497, 00510, 00515, 00551, 00573, 00591, 00599, 00632, 00640, 00646, 00660, 00664, 00672, 00741, 00764, 01605, 01614, 01625, 01626, 01648, 01671, 01672, 01693, 01695, 01696, 01699, 01702, 01709, 01710, 01713, 01726, 01729, 01735, 01739, 01740, 01745, 01999, 02004, 02010, 02028, 02030, 02032, 02033, 02061, 02065, 02072, 02081, 02084, 02086, 02092, 02098, 02100, 02109, 02121, 02124, 02125, 02129, 02133, 02134, 02144, 02151, 02155, 02158, 02160, 02163, 02165, 02184-02185, 02189, 02196, 02224, 02232-02233, 02251, 02252, 02255, 02275, 02282, 02291, 02296-02298, 02301-02303, 02311, 02319, 02325, 02328, 02349, 02350, 02354, 02357, 02359, 02364, 02366-02367, 02372, 02375-02377, 02389, 02390, 02393, 02400, 02404-02407, 02414, 02416, 02417, 02426, 02427, 02429, 02432, 02433, 02436-39, 02444-02446, 02449, 02451, 02455, 02461, 02473, 02474, 02476, 02481, 02486, 02489-002491, 2509-02512, 02544, 02547, 02559, 02561, 02572, 02573, 02576, 02581, 02595, 02599, 02606, 02615, 02696)*

COMMENT: *I support Alternative #3. As an avid user on the weekly basis in the wintertime, cross-country travel is very important to my family.... Especially for my physically challenged son who can see parts of the forest that he would otherwise not be able to see if cross country travel was not allowed. (#00477)*

COMMENT: *As a snowmobiling enthusiast and member of the MSA, I would like to urge you to choose Alternative #3, with regards for allowing snowmobiles access to roads in the forest. Reducing the amount of access will only increase congestion on the allowed roads, thus increasing hazards. (#00443)*

RESPONSE: Thank you for your comment. Refer to comment #014 and #063. For more discussion on snowmobile and OHV access see the Recreation Management section (comments #049 to #122).

#035

COMMENT: *The "Executive Summary" of the draft EIS clearly states some of the advantages of Alt.3. "Alternative 3 would maintain the highest minimum aspen at 59,400 acres" and "could maintain the highest maximum amount of aspen with over 154,000 acres". "Alternative 3 would provide more jack pine habitat than the other alternatives... "Alternative 3 would provide more habitat and the most benefit to species requiring young aspen/birch." "Alternative 3 would increase mature northern hardwood forests by about 15 percent over existing condition." "Alternative 3 would provide the greatest amount of brood cover and winter food habitat for ruffed grouse." "Alternative 3 would provide the most habitat for sharp-tailed grouse". With the recognition of the above it is hard to understand why Alternative 3 is not the preferred alternative. It is the most productive of the alternatives while best preserving important options or future choices in forest outputs and desired conditions. (#02067, 02068)*

RESPONSE: See comment #014. For discussion on wildlife habitats see the Wildlife, Fish and Sensitive Plant Habitat Management section.

#036

COMMENT SUMMARY: ***I support Alternative 3 because it manages for the least amount of old growth and the most early successional habitat.*** *(#00189)*

COMMENT: *I support the amount of old growth proposed in Alternative 3 as this is the least mount of the four alternatives. The Forest Service needs to recognize that it already has 50,000 acres of old growth in the Congressionally designated Wilderness Areas and the Grand Island National Recreation Area. ...Forest Service needs to get on with multiple use management of its forest for the greater good of the majority of its forest users. (#00235)*

COMMENT: *We are supportive of the amount of Old Growth proposed in Alternative 3 as this is the lowest amount of all the alternatives. Our National Forest were created to be managed for a variety of products including Old Growth, however, Old Growth should neither be the focus nor a major component. Wilderness areas already comprise 50,000 acres and we feel this is enough Old Growth. The more acres designated Old Growth will reduce the overall forest health and discriminated against early successional vegetation and wildlife species. Alternative 3 provides the framework of a forest that is maximizing diversity of not only species but also age classes; this will result in a healthy vigorous forest...*

I support the Forest Composition - Vegetative Management goals proposed in Alternative 3 over Alternate 2 as this alternative places more emphasis on early seral species and provides for even-aged management of northern hardwoods. Management along these lines will provide for better multiple use (timber outputs, game habitats, hunting, berry picking, etc.) than the preferred alternative and is more in line with the demands that the people of the central and eastern U.P. place on the...Forest. (#00666, 00235)

RESPONSE: See comment #018.

#037

COMMENT SUMMARY: ***I support the lands suitable for timber production and ASQ level proposed for Alternative 3.*** *(#00388)*

COMMENT: *I feel the Forest Service has done a good job in recognizing the large regional increase in timber demand since 1986, and Alternative 3 reflects this and shows that the HNF has the capability to produce more timber as the forest has matured and the timber demand has increased. (#00666, 00235)*

RESPONSE: See comment #018.

#038

COMMENT: *...after careful study and thought, I've come to the conclusion that Alternative 3 is far better for future management of the forest than Alternative 2 because 3 would better provide habitat for endangered species and other wildlife. (#01630)*

RESPONSE: See comment #018.

#039

COMMENT: *I favor Alternative 3 because it appears to be the most balanced approach. It allows for timber harvest and recreation access. There are more lake back-in sites, and more PWC availability. Also there is more open road miles. (#00022*)

RESPONSE: See comment #018.

#040

COMMENT: *I support Alternative 3 as a fair compromise to inland lake access. This will allow more lakes to be designated as Non-motorized while at the same time apply much needed guidance for the type of motorized boats allowed. I would also agree to establishing additional motor horsepower limits on designated lakes. (#00252)*

RESPONSE: See comments #018 and 092.

Alternative 4

#041

COMMENT SUMMARY: ***We prefer Alt. 4 because of its emphasis on uneven-aged forest and old growth, with less motorized recreation.*** *(#00615, 02225)*

COMMENT: *We like the emphasis on late seral and large tree size in forest composition, and the larger possible amounts of old growth [sic] acres. We think the forest should include trees of all ages, and a variety of species. We do not prefer stands of even-aged, near monoculture trees. We approve of old-growth management in large blocks rather than small-scattered areas, with efforts at maintaining connecting forest corridors between blocks. Attention should be paid to linking the Hiawatha Forest with corridors on adjacent DNR and private lands.*

We like the snowmobile management proposals in Alt. 4 because they prohibit cross-country travel which is more disturbing to vegetation and wildlife.

We like the larger maximum number of non-motorized lakes...recreation experience of a forest setting is enhanced by the absence of large numbers of large motors. ...in favor of increasing the number of motorized lakes without [personal watercraft] (above the 23 of 0 indicated in alt. 4), or we would approve prohibiting [personal watercraft] on all lakes in the Hiawatha. These devices are an intrusion, a deterrent to personal enjoyment of the forest - because of their noise...they are a distinct menace to waterfowl, and a nuisance to fishermen. (#00045)

RESPONSE: Please see comment #018.

#042

COMMENT: *I oppose Alternative 4 because it restricts timber management and snowmobile/OHV access. (#00022)*

COMMENT: *Alternative #4 is not desirable from any standpoint including timber management and benefits no one who actually uses Hiawatha National Forest. (#02177)*

COMMENT: *Alternative 4 is not acceptable at all...Restricting riding via alternative 4 would most likely have a economical impact on business owners that have snowmobile riders as significant sources of income during the winter months. (#00434)*

RESPONSE: Please see comment #018.

Forest-Wide Management Direction

#043

COMMENT: *We are concerned about the cumulative impact on the remote character of the UP with the heavy logging plans of both the Ottawa and the Hiawatha. Are either the Hiawatha or the Ottawa plan going to address these cumulative impacts? There is no doubt that the UP is an ecosystem, and it is arbitrary to just decide to consider the impact of each forest separately without considering that large scale projects with potentially damaging impacts are being concurrently planned for both forests, which are within a short distance of each other within the same mostly contained ecosystem, and yet, the cumulative impacts of this is never considered, even though we have brought it up repeatedly. (#00778*)

RESPONSE: Cumulative effects were analyzed for the revised Forest Plan in terms of resource indicators presented in the DEIS. Geographic boundaries for the area to be analyzed in a cumulative effects analysis differs for each resource or species being analyzed. Please refer to Chapter 3 of the DEIS/FEIS for cumulative effects within each resource area. The Plan is a strategic document and does not propose any actions on the ground. Any site-specific proposed management action must meet Forest Plan direction, with the environmental effects (including cumulative effects analysis), disclosed under NEPA.

#044

COMMENT: *The plan does not include access for renewable energy creation. Studies of wind generation 55 meters off the ground suggest that land within the Hiawatha Forest has some of the greatest potential for wind generation in North America. A wind farm is under development 10 kilometers north at Gros Cap, Prince Township Ontario. The plan should include protections and policies for wind generation. (#00278*)

RESPONSE: One of the guiding documents for the Forest Plan is the USDA Strategic Plan Framework, which includes a goal to contribute to meeting the Nation's need for energy (Plan page 1-3). There are no standards or guidelines that would preclude access for renewable energy creation and the Plan is a permissive document. The Plan does include goals, objectives, standards, guidelines and desired condition descriptions to manage the resources that could be affected by renewable energy creation proposals. However, the Forest has certain areas (e.g. wilderness and RNAs) that these types of actions would generally not be allowed. Any proposal would be subject to site/project-specific public involvement and analysis under NEPA guidelines.

#045

COMMENT: *Is firewood for home heating the "objective" of providing forest products as stated on P.2-9 of the plan? A healthier industry, improved local economics and better forests would seem nobler objectives. (#02069*)

RESPONSE: This objective for firewood has been expanded to "special forest products" in the final Plan. Vegetation management goals call for contributing towards ecosystem sustainability, biological diversity and providing commercial wood products for area mills (proposed Forest Plan pages 2-8 and 2-9). On pages 3-484 to 3-490, all alternatives would contribute toward local economies.

#046

COMMENT SUMMARY: ***Forest Plan goals and objectives should emphasize environmental preservation, protection, and restoration, and eliminate commercial logging, other resource extraction, new road construction, and off-road vehicle use.*** (#00749, 00763, 00766*)*

COMMENT: *Honest analysis would show that virtually every acre not just of the Hiawatha, but of the other national forests in the eastern region are best managed for their environmental, aesthetic, and recreational values, and do [not] provide the maximum benefits to the public when they are exploited for commodity production so that private interests can profit. The Forest Service does not do honest relative value analysis when it does forest plans, because there is no way that an honest evaluation could come up with these plans which are emphasize logging and other exploitative activities. We oppose logging on the Hiawatha. (#00778*)

COMMENT: *There are 3,097 signatures on a petition which states: We, the undersigned, petition the Forest Service to provide revised Forest Plans for the...Ottawa...National Forests that emphasize environmental preservation, protection, and restoration, and eliminate commercial logging, other resource extraction, new road construction, and off-road vehicle use. Recovery of Threatened and Endangered species should be the highest priority. Providing high quality, non-motorized recreation opportunities while protecting wildlife and preserving water quality should be the next priority...The enclosed CD also contains several studies that we want the Forest Service to consider and include on the record. (#02220)*

RESPONSE: See comments #047, 131, 166, 209 and 385. National forests provide for multiple use management by providing timber products, healthy forests and habitat and other

uses. The proposed Plan's desired conditions, goals and objectives refer to restoration for aquatic and terrestrial ecosystems of wild and scenic rivers (Plan page 2-7), diversity and abundance of aquatic flora and fauna (page 2-10), wetlands ecosystems and soil productivity (page 2-11), riparian and in-channel stream habitat (page 2-12), and desirable plant community attributes (page 2-17).

#047

COMMENT: *...We urge you Forest Service to recommend more land for Wilderness designation, designate Research Natural Areas, reduce road densities, improve standards for management and designation of old-growth forests, develop scientifically-defensible standards for protection of Threatened, Endangered and Sensitive species, including those found on the Michigan state TES lists... (#02287*)

RESPONSE: Alternatives that included additional wilderness and no timber harvest were considered. The reasons they were eliminated from detailed study are described in pages 2-15 and 2-16 of the draft EIS. Alternatives in the DEIS/FEIS 1-4 include scientifically-defensible standards for protection of threatened, endangered and sensitive species (TES), in cooperation with the U.S. Fish and Wildlife Service. Standards and guidelines for threatened, endangered and sensitive species can be found on pages 2-32 to 2-34 of the proposed Forest Plan.

2100 Environmental Management

#048

COMMENT: *The forest plan should address the issue of how much carbon is being stored in the forest, and how the actions proposed in the draft plan will release stored carbon. For example, recent research in the Eastern U.S. has indicated that mature white oak trees store excess carbon in this carbon-enriched atmosphere. Forest management activities such as logging, road building, and burning result in significant carbon release to the environment. Increases in CO2 in the atmosphere are contributing to global climate change, which could have a serious effect on our forests. This needs to be considered.* (#00043, 00051-00186, 00192-00203, 00212-00214, 00225-00227, 00244-00246, 00254-00257, 00259, 00261-00263, 00265, 00266, 00268-00272, 00280, 00282-00290, 00293-00297, 00328-00334, 00336-00338, 00340-00347, 00452-00458, 00485-00489, 00777, 00778, 02226, 02619-02635, 02637-02641, 02643, 02645-02648, 02650, 02652-02660, 02662-02681)

RESPONSE: Carbon in the atmosphere is increasing due to burning fossil fuels and changes in terrestrial ecosystem land use. The major terrestrial source is tropical ecosystem destruction through land clearing. However, recent studies have shown that non-tropical terrestrial ecosystems are roughly in carbon balance. Some analysts suggest forest ecosystems in the temperate regions may be a sink rather than a source (Armentano and Ralston 1980; Schimel et. al. 1994). This is attributed to increasing total forest biomass, soil carbon, and forest floor carbon-sequestering litter.

USDA Forest Service timber inventories for the past four decades indicate a continuous increase in net timber volume on federal lands (growth in biomass exceeds removal). Birdsey and Heath (1997 page 82) noted that US forests have been a significant carbon sink since 1952 and that additional carbon will continue to be sequestered through 2040, although at a slower rate.

Grigal and Ohmann (1992) found most terrestrial carbon in the Lake States is stored in the upper meter of mineral soil (55%) and the forest floor (9%). These values are very similar to those estimated for carbon storage in the average US forest, with 59 percent in mineral soil and nine percent in the forest floor (Birdsey and Heath, 1997, page 81). Thus, the physical soil resource is an important factor in the global, regional, and landscape scale carbon budget.

In the proposed Forest Plan, the Hiawatha is maintaining forest floor and mineral soil layers during management activities. Objective 3 of the proposed Forest Plan (page 2-11) states: "...seek to restore (soil) organic matter on these sites through long-term management objectives." A particular emphasis on this objective will be in ecological land type 10/20.

References:

Armentano, T.V. and C.W. Ralston. 1980. The Role of Temperate Zone Forests in the World Carbon Cycle. Canadian Journal of Forest Research, 10: 53-60.

Birdsey, R.A. and L.S. Heath. 1997. A forest Carbon Budget of the United States. In USDA Forest Service Global Change Research Program Highlights 1991 to 1995. GTR-NE-237. USDA Forest Service, Northeastern Forest Experiment Station.

Grigal, D.F. and L.F. Ohmann. 1992. Carbon Storage in Upland Forests of the Lake States. Soil Sci. Soc. Am. Journal, 56: 934-943.

Schimel, D.S., B.H. Braswell, E.A. Holland, R. Mckeown, D.S. Ojima, T.H. Painter, W.J. Parton, and A. R. Townsend. 1994. Climatic, Edaphic, and Biotic Controls Over Storage and Turnover of Carbon in Soils. Global Biochemical Cycles, 8(3): 279-293.

#048a

COMMENT: *I think...burning, which causes air particulates...[that] hurt vegetation,...cause lung cancer, asthma, heart attacks and strokes...should be banned from this national forest [sic]. (#00006*)

RESPONSE: The proposed Forest Plan includes guidelines to coordinate with Seney Wildlife Refuge and the State of Michigan, Department of Environmental Quality, Air Quality Division for management activities with the potential to adversely affect forest air quality (proposed Forest Plan page 2-21).

State air quality standards will be met. All management ignitions/prescribed burns require thorough planning and coordination before implementing the action. Part of the planning process for these burns, is completing a smoke management plan. Actual conditions must be within ranges described in the burn plan before a management ignition is implemented (DEIS page 3-104). Compliance with state air quality standards would minimize potential for adverse effects on humans and the environment.

Overall, about one-third of the Hiawatha National Forest consists of fire-dependent ecosystems. Many of the vegetation systems/ types such as pine barrens/savanna and jack pine are maintained by periodic fire or depend on fire to establish reproduction. Without the use of prescribed fire to mimic natural fires these ecosystems would eventually succeed into other systems. This would result in a loss of habitats on which some species depend.

2300 Recreation Management

#049

COMMENT: *There are many other users of the National Forests in Michigan, from the budding sled dog trekking business, to cross country skiers and long distance hikers along the North Country Trail...You can not base decisions for the future on the past, but on the present uses and activities. That would require the Forest Service to look not to building roads, but decreasing them. (#01948)*

RESPONSE: Information regarding current and projected recreation use and activities were used in the analysis and disclosed in the DEIS Recreation section (pages 3-293 to 3-300) and in the Social/Economic sections (pages 3-448 to 3-470). Projections of future use(s) on the Forest are based on visitor use data and predicted trends for the planning period. To help describe the differing recreation settings, opportunities and experiences which the Forest may/will support over the planning period, the Forest Service uses a nationally-recognized classification system called the Recreation Opportunity Spectrum (ROS) (DEIS page 3-293). There is no change proposed from the 1986 Forest Plan for the management of the North Country Trail.

Recreationists would continue to experience both motorized and non-motorized recreation opportunities under all alternatives (DEIS page 3-306).

The proposed Forest Plan (Alternative 2) identifies a desired condition for the Forest Transportation System and describes it as, “a system of roads to accomplish required management activities and meet the needs of a variety of uses.” The transportation system is designed to consider the environmental, social and health concerns of the public” (proposed Forest Plan page 2-19). The goals and objectives for the Forest’s transportation system management, road closures, and road decommissioning are also identified in the proposed Forest Plan on pages 2-19 to 2-20.

#050

COMMENT: *There must be greater funding and personnel in the law enforcement. (#00547)*

RESPONSE: Law enforcement is considered when evaluating alternatives in the DEIS/ FEIS. The effects of certain activities with regard to law enforcement are discussed in Chapter 3 of the DEIS. Funding for law enforcement is tied to appropriations from Congress and beyond the scope of the Plan.

Recreation Access

#051

COMMENT SUMMARY: ***Desire to maintain motorized access to the National Forest.*** *(#00011, 02002)*

COMMENT: *Please keep open all access trails and spaces. (#02386)*

COMMENT: *I am physically disabled and a snowmobile is the only way I can travel any distance into the forest to enjoy it. To close the National Forest to snowmobiles or any other motorized vehicles would be closing the forest to me completely. (#02446)*

COMMENT: *I had my knee replaced two years ago and cannot walk very far. I can enjoy the forest by a powered vehicle. This is most important in the winter (I use a snowmobile). I don't understand why the disabled can't use what is already there... Please don't close any roads, trails, or paths to cross country travel. (#02449)*

RESPONSE: See comment #072. The Forest understands that mobility is an issue for some people and that use of OHVs and snowmobiles to access the Forest can help. However, "areas, roads, or trails where OHV and snowmobile use is prohibited apply to persons with disabilities as well as the general public. An exception is the use of a wheelchair wherever foot travel is allowed. The definition of a wheelchair is in the glossary." (DEIS page 3-325).

The Forest has worked to provide a range of legal riding opportunities for all users, and has worked with persons-with-disabilities on a case-by-case basis, to help identify and locate areas for recreation/hunting that are legally accessible by OHV or snowmobile. The existing condition on the Hiawatha prohibits cross-country travel by OHVs (travel off designated roads and trails and outside of the existing OHV/snowmobile area). No change to this regulation for OHV use is proposed.

The proposed Forest Plan would allow a maximum of 75 miles of OHV trail to be managed, and 150 miles of maintenance level 3 through 5 roads open to OHV use (DEIS Table 3-REC-4 page 3-328; page 3-331). This allows for an increase over existing condition and does not include County roads that may be open to OHVs. In addition, the proposed Forest Plan could maintain up to 2,100 miles of maintenance level 2 roads open to OHVs, and would focus efforts to create better loops and connections between these routes to enhance riding opportunities. This is an increase over the existing condition. Additionally, the Forest would retain access to almost all maintenance level 2 through 5 roads for snowmobile use, and would focus efforts to create additional loops and connections with facilities and services (DEIS Table 3-REC-5 page 3-329; page 3-331). See comment #014, paragraph 4 for more information.

#052

COMMENT: *I am concerned about the lack of non-motorized opportunities that you provide for under the new Forest Plan. In Alternative 2, 94 percent of the forest is managed for motorized use, leaving only 7% in the non-motorized ROS class. I believe that 7% is inadequate. While a non-motorized experience would have been difficult to achieve in the Delias Run and Boot Lake areas, the Buck Bay Creek area should have been considered for addition to the non-motorized ROS class. There are insufficient acres for non-motorized use, due in part to the lack of designated areas as well as due to the motorized intrusions into existing non-motorized areas. Please focus your efforts in this next planning period on maintaining the integrity of your non-motorized areas, as well as your semi-primitive motorized areas. Do not allow them to move into the motorized and roaded natural ROS class. (#01649*)

RESPONSE: The Forest's Notice of Intent to Revise the Forest Plan identified the need to change the Recreation Opportunity Spectrum (ROS) objectives for these areas. The reasons

for the proposed change to the Delias Run/Boot Lake and Buck Bay Creek areas are discussed in the DEIS page 3-300.

Continued management of these areas toward a semi-primitive non-motorized condition was analyzed and considered in Alternative 1 (DEIS pages 3-304 to 3-305). Alternative 2 includes nearly 7,000 additional acres of non-motorized opportunities compared to Alternative 1, and Alternative 4 considered and analyzed the opportunity to further increase acres of semi-primitive non-motorized recreation (DEIS page 3-303).

Non-motorized ROS management objectives (in whole or in part) are prescribed for MAs 5.1, 6.1, 6.3, 8.3, 8.4, 8.4.2 and 8.4.5. Management area goals, objectives, standards and guidelines to facilitate these objectives are prescribed in the proposed Forest Plan.

New designated motorized trails would not be developed in non-motorized ROS objective areas, and existing OHV and snowmobile routes that are inconsistent with ROS objectives will be permitted until they can be moved or managed to meet ROS objectives (draft EIS page 3-324).

#053

COMMENT SUMMARY: ***Increase development of motorized off-road trail recreation.*** *(#00018, 02216, 02690)*

Current motorized off-road trail recreation opportunities are underdeveloped, or even unavailable, in the current Hiawatha National Forest spectrum of recreation opportunities. Current non-motorized trail recreational opportunities meet, and exceed both current and future trail use expectations.

Greater emphasis needs to be place on accommodating Motorized Off-road recreation activities. There is considerable public interest in increased opportunity for quality motorized off-road recreation. Non-motorized trails (hike, bike, and horse) are over emphasized compared to demand.

Despite extraordinary need for motorized trail development, the emphasis on motorized off-road trail development takes a back seat to non-motorized trail development in the proposed plan.

The Plan should improve development of motorized off-road recreation trails to better address safety concerns, provide better opportunity to improve management of noise intrusiveness, and to develop the ability to accommodate a significant (and growing) segment of recreationalists.

None of the options presented offer ORV trail miles to adequately meet demand.

Motorized off-road recreation and trail development can be assisted by local, state, and national clubs, groups, and governmental entities.

UP Sandstormers Motorcycle and ORV Club [has] manpower and monies available for trail creation and maintenance. This club has extensive experience with trail maintenance programs in coordination with the Michigan DNR, as well as trail development and maintenance on a privately owned tract of land.

SORVA chapters in many UP counties have interest in promoting ORV recreational opportunities. Michigan Department of Natural Resources has a well-established funding mechanism and ORV trail program in place to finance trail development, trail maintenance, restoration activities, promoting and enforcing responsible off-road recreation throughout the State of Michigan.

COMMENT: *Cycle Conservation Club of Michigan [promotes] off-road recreation in Michigan.*

Blue Ribbon Coalition is... dedicated toward preservation, enhancement, and development of off-road recreation (#02217)

COMMENT: *I find the Off-Highway Vehicle (OHV) trails, routes and OHV areas to be extremely limiting and disproportionately lacking in comparison to non-motorized and snowmobile recreational trails. By the very nature of our sport, OHV recreational trails require longer routes and more trail mileage then [sic] hiking trails. This is due to the fact that Jeeps, trucks, motorcycles and ATV's [sic] traverse an area more rapidly than a hiker. (#00034-00036)*

RESPONSE: Some reviewers believe more Forest roads (and trails) should be available to motorized use and others believe motorized use should be greatly reduced (DEIS p. 1-10). DEIS Table 3-ROS-3 shows the breakdown of activities and relative use. Information regarding current and projected recreation use and activities was used in the analysis and disclosed in the DEIS Recreation section (p. 3-

293 to 3-300) and in the Social/Economic sections (p. 3-448 to 3-470).

In all alternatives, the Forest acknowledges and plans that "motorized recreation provides pleasure to a large segment of the population by providing access to the Forest, contact with nature, and opportunities for families and groups to enjoy short- and long-distance travel within the Forest and other areas. However, motorized recreation also affects soils, wildlife, and vegetation and can cause conflicts with non-motorized users. User habits and intensity of use play a role in the extent and nature of impacts (Stokowski 2000)" (DEIS p. 3-326).

The Forest has identified a niche for recreation as part of the planning process. Specifically the niche features, "great lakeshores, great islands, great lighthouses and great snow" (DEIS page 3-295). It is understood that the Forest cannot provide all things for all people nor meet all demands for recreation experiences and/or opportunities. However, it is also clear that, "While the recreation portion of the niche focuses on great lakeshores, great islands, great lighthouses and great snow, it is understood that within this framework, a variety of other recreation opportunities and settings would also be managed for." (DEIS page 3-301).

The proposed Forest Plan intends to balance the desires of those who advocate OHV use versus those who prefer more non-motorized recreation opportunities, and the potential for impacts to other resources. The underlying focus of Forest Plan allocations for Alternatives 2—4 for OHV and snowmobile routes is to create loops between trails and roads, and better connections to facilities with the intent of providing enhanced riding opportunities and to achieve better distribution of users.

Alternative 2 prescribes up to 75 miles of designated OHV trails and 340 miles of snowmobile trails. Full implementation of Alternative 2 could result in an additional 31 miles of designated OHV trail and 22 more miles of maintenance level 3 through 5 roads open to OHVs, and up to 38 more miles of designated snowmobile trail, all above the existing condition (DEIS page 3-331).

The Forest has a history of working with snowmobile and OHV groups to identify and develop riding opportunities that enhance the recreation experience on the Forest and minimize impacts to other resources. All alternatives provide for coordination with other agencies and entities when analyzing and making site-specific decisions for motorized recreation involving constructing/developing new trails, roads and routes (DEIS p. 3-325).

The Hiawatha is expected to continue working with other agencies, groups and landowners to manage a forest-wide OHV and snowmobile system that provides connections and loops within and from the existing trail systems, as well as pursue acquisition of rights-of-ways for snowmobile trails that cross on private lands. These activities on other ownerships would complement motorized recreation opportunities on the Hiawatha (DEIS page 3-324).

#054

COMMENT: *Forest Plan Table 2300-3 on page 2-5 indicates that 75 miles of ATV trails will be provided during this planning period. What about all the user developed ATV trails on the HNF that probably exceed this number currently. Instead of "providing" this amount the HNF should look to "select" 75 miles from those in existence and rehabilitate additional miles already in existence. (#00665*)

RESPONSE: User-developed OHV trails are not condoned on the Forest (DEIS page 3-325). They have been created without adequate consideration for safety, maintenance and/or impact to other resources. As stated in the DEIS on page 3-301, "user-developed accesses and trails would not be encouraged and would be evaluated. Depending upon the social and resource impacts of these accesses and/or trails, each would be removed and the site rehabilitated, or they could be managed at an appropriate level" if they do not cause resource damage. Through implementation of the proposed Forest Plan, it could be that some user-developed trails do not cause damage, and may be incorporated into the designated route system. However, all trails would have to be within the parameters specified in the Plan.

#055

COMMENT: *In regards to the proposals on OHV/ATV management both the Hiawatha and Ottawa need to work with the State of Michigan and Wisconsin to assure a uniform management plan as to what roads or trails*

are open and what is closed to this use. Cooperation with user groups can be an asset in regards to the implementation of the Plan; any implementation of closures should be on hold pending further analysis and designation of open trails/roads. (#00298, 00767)

RESPONSE: Cooperation with states and user groups regarding OHV management is an important consideration (DEIS page 3-324). When possible, the Forest works collaboratively with state and other agencies for consistency in policy and management.

Site-specific decisions regarding which trails are open and which are closed will continue to be done in collaboration with these groups. However, decisions on which trails and how these uses will be managed will be made by the Forest. Decisions regarding specific trail designations are not made in the Forest Plan, but rather on a site-specific basis and through a separate planning and analysis effort (DEIS page 3-2). Closure of *user-developed trails/roads* will continue to occur at any time.

#056

COMMENT: *On the subject of ATVs, our wish would be that you would develop a clearer route for riders to follow. The current restrictions are frustrating and confusing. The forest map does not show which roads are open and which are closed to ATVs making it very difficult to plan a route to a destination. While I understand the need for restricting ATVs in certain areas, it would be nice if the National Forest would designate routes for ATVs and provide maps for those that wish to ride within the forest. (#02214)*

RESPONSE: As project-level decisions are made regarding OHV routes, information and education tools will likewise need to be considered and provided to help users understand the designated OHV route system (DEIS page 3-325).Between the Draft and Final EIS and Forest Plans, the Forest Service issued its Final Travel Management Rule (November 2, 2005) which revised regulations in 36 CFR Parts 212, 251, 261 and 295, to require designation of roads, trails and areas for motor vehicle use.

Within four years from issuance of the Rule, the Forest is required to develop a Motor Vehicle Use Map(s) that will identify the designated roads, trails, and areas for motorized use by vehicle class (including OHV use). Those roads and trails that are designated and displayed on the Forest's Motor Vehicle Use Map(s) will become "authorized" routes. All other roads and trails that may lie on the land, but are not shown on the Motor Vehicle Use Map(s) will be "unauthorized" roads and trails, and as such, closed to motorized use. The Motor Vehicle Use Map(s) will be the tool that authorizes motor vehicle use(s) and designates routes for each class of vehicle. It will also be the reference for law enforcement purposes, in accordance with the Forest Service Travel Management Rule.

#057

COMMENT: *If the forest is going to go to a posted trail system (whereby all roads and trails open to OHVs are signed as open, and not "designated" by what type of road number post they have), why not designate an OHV trail system that resembles the statewide snowmobile trail system, and have all other roads on the forest closed to OHVs, except during the fall months (September 1 through January 1) when all roads would be open to OHVs for hunting? This would:*

1. *Provide a trail system for recreational OHV riders that would be posted and easy to follow on the ground;*
2. *It would provide some limitation on the number of roads/areas easily accessed by OHVs; and*
3. *It would provide relatively unlimited OHV road access to the forest during the fall months, when hunters are seeking those opportunities. This alternative could respond to the needs of recreational OHV riders, respond to those who would like to restrict the number of roads/areas open to OHVs, and respond to the needs of hunters. (#01649)*

RESPONSE: See comment #056. The direction for OHVs in Alternative 4 reflects the intent to identify a primary OHV trail system similar to that for snowmobiles and to allow for seasonal expansion to include roads to provide hunter access. The range of potential miles of designated trail to provide is reflected in the range of Alternatives 1 through 4 (DEIS Table 3-REC 5 pages 3-329 through 3-337).

Where practical, motorized trail/road management would be consistent with

adjacent public land management agencies" (DEIS page 3-325). In all alternatives, "certain Forest roads would be designated for motorized recreation uses, but managed as roads (primarily for licensed motor vehicle use). Roads would generally provide utilitarian opportunities for access to activities such as hunting, fishing, logging and berry-picking.

Some maintenance level 3 through 5 forest roads could be designated to allow for OHV/snowmobile use. These roads are typically better surfaced and higher maintained roads that support a mixture of motor vehicle types. These vehicles usually travel at higher rates of speed than on ML 2 roads.

Even though safety consideration, sight distances and other needs are addressed and considered as part of the decision whether to designate a maintenance level 3 through 5 road open to OHV or snowmobile use, the potential for accidents between licensed motor vehicles and OHV/snowmobiles could be greater on these roads" (DEIS page 3-325). Based on the Forest's experience with site-specific analysis efforts to identify maintenance level 3 through 5 roads that can be open to OHV use, it is not viable to open all Forest roads, even for a limited period of time, due to safety concerns, and impacts to other resources.

#058

COMMENT: *I am concerned about the "maximum number of miles" of all trails, motorized and non-motorized alike, shown in the Alternative comparison charts, in so far as there are no "minimums" shown. While you are proposing to add miles of non-motorized trails, snowmobile trails, ATV trails and roads open to OHVs, I am uncomfortable that there are no minimum miles shown. Is there any assurance that you will not be closing roads or trails to OHVs, snowmobiles, and non-motorized users, below that which currently exists? (#01649*)

RESPONSE: You are correct that there are no stated minimums for miles of trails. In all alternatives, if resource protection measures are not effective in specific locations, Executive Order 11989 provides direction for agencies to immediately close areas or trails to off-road use (OHV use) if considerable adverse effects are occurring. Forest Service Manual 2355.05 #3 defines "considerable adverse off-road vehicle effect" as any adverse effect that will not meet the designation criteria as identified in FSM 2355.14; and that is or may become irreparable because of the impossibility of or impracticability of performing corrective or remedial measures. In making this determination, the Forest Officer may consider the following factors:

- The availability of funding and staffing to prevent or correct adverse effects.
- Off site (secondary) impacts.
- Physical and biological conditions, such as slope, vegetation, soil erodibility and compaction, surface and subsurface hydrology, the site's natural rehabilitative capability and so forth.
- Other social and political factors that may impair the ability to correct or prevent adverse effects.
- Those natural, historical and cultural resources and areas that are susceptible to irretrievable resource damage." (DEIS page 3-327).

Notwithstanding, the above-listed conditions, closure of existing, designated trails generally requires project-level (site-specific) analysis that includes public involvement and a decision issued to do so.

The intent of the "maximum/additional potential to develop both motorized and non-motorized trails" is to provide a more useable trail/route system through the creation of loops and connections between the existing trail/routes, and to achieve the desired condition for recreation access on the Forest (proposed Forest Plan page 2-3).

The existing 44 miles of designated OHV trails and 302 miles of snowmobile trails (DEIS page 3-328) would remain open unless there is further public involvement, analysis, and a decision made to change. User-developed OHV trails "are not condoned and can be closed immediately. When Forest personnel become aware of such routes, they will investigate the situation and remove and/or rehabilitate the route to alleviate continued use and/or resource damage" (DEIS page 3-325).

Non-motorized trails are rarely "closed." However, lack of use, irreparable resource damage, and/or high costs of maintenance could result in a decision to close some trails,

but generally not without consideration for safety and/or a site-specific analysis, public involvement and a decision issued to do so.

#059

COMMENT: *Off-Highway Vehicles: More attention is needed to this issue. My preference is a combination of what has been proposed. The need for expanded trail systems is the main reason why off-road enthusiast use non-designated roads and trails. The proposed 85-miles of designated trial system would be much more exciting to ride than running roads and would therefore solve most usage issues.*

I am unaware of any designated OHV areas in Hiawatha, but I can say that many enthusiasts avoid such areas because of safety concerns. Frankly, most OHV enthusiasts would rather have better trails systems than more designated OHV areas, any day. (#00252, 00539)

RESPONSE: See comment #018. The proposed action allows the existing designated OHV/snowmobile area (Thunderbowl) to remain open and allows the potential to expand the designated OHV trail and route system, as indicated in this comment.

#060a

COMMENT SUMMARY: ***Reduce and/or restrict OHV and snowmobile use on the Forest.*** *(*#00001, 00013, 00045, 00198, *00717, 00768*)

COMMENT: *Heartwood opposes ATVS and ORVs on our national forests. They cannot be controlled and they do great damage to sensitive areas.* (#00778, 02226)

COMMENT: *The Forest Service's preference for Alternative 2 highlights its goal of increasing widespread motorized access throughout the Hiawatha. In doing so, it rejects Alternative 4, which responds to comments for decreased motorized access to inland lakes and less off-highway vehicle (OHV) and snowmobile access. Achieving this goal will cause adverse environmental impacts, as it will increase flexibility for OHV and snowmobile recreationists through construction of connections between routes.*

Under Alternative 2, OHV use increases significantly (75 miles of use versus the existing plan's 12 miles of designated OHV trails and routes), as does snowmobile use (340 miles of forest land open to snowmobile use versus 244 in the existing plan). The draft EIS acknowledges that "[f]ull implementation of Alternative 2 could result in an additional 31 miles of designated OHV trail...and up to 38 more miles of designated snowmobile trail, all above the existing condition" (draft EIS 3-331). (#01761)

COMMENT: *I think...[two stroke vehicles] should be banned from this national forest [sic]. (#00006)*

COMMENT: *The restriction of ORV's on public lands has been late in coming, but better late than never! My family and I had hunted, fished, hiked, and camped in the Hiawatha and Ottawa National Forests in Michigan's UP for decades. In the last 5 years we have been driven away by the unrestricted use of ORVs in the Forests...I would encourage the Forest Service to adopt rules that severely limit the area of ORV use. (#00014)*

COMMENT: *I do not want all roads and power lines open to ORV traffic. The power line goes through my property and creates a nuisance. The dirt flies and intrudes on my private life. Smelly too. And where is protection for wildlife? Erosion is also a problem. ORVs need to stay on trails. Why should they feel they can go anywhere they want! (#02208)*

RESPONSE: Refer to comment #056. The Chief of the Forest Service has identified unmanaged recreation, especially impacts from unmanaged OHV use, as one of four key threats facing national forests and grasslands today. Concern has been expressed about use of unplanned roads and trails, erosion, lack of quality OHV opportunities, water degradation and habitat destruction from OHV activity. In response to this issue, in January 2004, the Chief chartered two national teams to develop policy and tools to address this issue effectively at the field level. Final results from those teams are not yet available; however, a Draft OHV Policy for National Forest System Lands was released for 60-Day public review and comment on July 7, 2004 (USDA July 2004). The comment period ended on September 13, 2004.

The USDA Forest Service Strategic Plan for Fiscal Years 2004 through 2008 also identified managing motorized recreation as one of the primary outdoor recreation opportunity goals,

stating "... it is critical that we improve management of off-highway vehicle access and use on National Forest System lands to preserve high-quality experiences for all recreational users" (DEIS page 3-322).

As referenced in the DEIS, "Federal agencies are required by NEPA to rigorously explore and objectively evaluate all reasonable alternatives and to briefly discuss the reasons for eliminating any alternatives that were not developed in detail (40 CFR 1502.14).

Public comments received in response to the Proposed Action provided suggestions for alternative methods for achieving the purpose and need. Some of these alternatives may have been outside the scope of the proposed changes, duplicative of the alternatives considered in detail, or have components that would cause unnecessary environmental harm. Therefore, a number of alternatives were considered, but dismissed from detailed consideration [for reasons that were cited].

Seven alternatives were considered during the initial analysis process. Some of the alternatives considered were developed internally and some were proposed by outside groups. Some alternatives had similar themes, so they were combined" (DEIS page 2-15).

In addition, The National Forest Management Act (NFMA) requires a broad range of reasonable alternatives be developed and analyzed during the planning process. There are four proposed alternatives in the DEIS. Each alternative has a different approach to managing the Hiawatha National Forest's resources for the next ten to 15 years. Each of these alternatives is a potential forest plan that can be implemented if selected.

The 1986 Forest Plan Appendices referenced the potential development of 12 miles of OHV and 244 miles of snowmobile trails. The 1986 Forest Plan (Alternative 1, DEIS) uses maximum trail and road densities to prescribe maximum trail and road development, by management area. For example, the direction for MA 3.2 specifies, "Density of motorized trails may be up to one mile per square mile" and "long-term road densities may average four miles per square mile or less over the entire management area" (1986 Forest Plan page IV-96).

The current condition is that the Forest has 302 miles of groomed snowmobile trails and 44 miles of designated OHV trail (DEIS Table 3-REC-4 and Table 3-REC-5). Maximum motorized trail densities have not been exceeded within motorized management areas across the Forest.

The managed use of OHVs is recognized as an acceptable use of National Forest System lands. Cross-country travel (travel off of designated routes) by OHVs is not permitted on the Forest to help reduce the likelihood of resource damage in sensitive areas, to eliminate noises and intrusions in areas away from roads, and to reduce conflicts between recreationists (DEIS page 3-325). No change in this policy was proposed in any alternative.

The intent of Alternative 2 and allowing additional miles of motorized and non-motorized trails to be developed is to provide a more useable trail/route system on the Forest through the creation of loops and connections between the existing trail/routes, services and facilities, and to achieve the desired condition for recreation access on the Forest (proposed Plan page 2-3). The effects of this management direction and that of the other alternatives, is identified in DEIS Chapter 3. OHV travel along pipelines and powerlines (beyond administrative use) is prohibited. The addition of these areas as designated trail routes would require project-level (site-specific) analysis that includes public involvement.

#060b

COMMENT: *draft EIS page 3-175 indicates that beach and dune species benefit from a prohibition on cross-country OHV use. Isn't cross-country OHV use prohibited across the HNF? Maybe this should be highlighted somewhere else. (#00665)*

RESPONSE: Cross-country travel (travel off of designated routes) by OHVs is not permitted on the Forest to help reduce the likelihood of resource damage in sensitive areas, to eliminate noises and intrusions in areas away from roads, and to reduce conflicts between recreationists (DEIS p. 3-325). No change in this policy was proposed in any alternative. Statements regarding the prohibition on cross-country OHV use occur in many places in the DEIS, including p. 2-3 under the Alternative 2 description, and in Table 3-REC-4 on p. 3-328.

#060c

COMMENT:...*Environmental Impact Statements need to be conducted, especially for the 6,000 + mile statewide snowmobile trail system. (#00778, 02226)*

RESPONSE: Assessing the impacts of the 6,000 plus miles of state-wide snowmobile trails is beyond the scope of forest plan revision. In addition, there is no provision in NEPA or in other federal regulations that requires environmental impact statements be developed on state or private land for snowmobile trails. On the Forest, effects of individual proposals for creating new snowmobile trails will be assessed at the project scale and will include public involvement.

#060d

COMMENT:... *The Forest Service admits that the motorized recreational expansion determined by the Proposed Plan—such as the proposed conversion of semi-primitive non-motorized acres in Delias Run, Boot Lake, and Buck Bay Creek into semi-primitive motorized acres (draft EIS 1-13)—could exacerbate conflict between non-motorized and motorized users, only to hastily conclude, "this could also decrease conflicts by dispersing use and reducing use within concentrated areas." (draft EIS 3-332). This type of contradictory and confusing analysis fails NEPA because it does not sufficiently investigate cumulative effects of the agency's action. Furthermore, it disables the public from full participation in what should be a thorough and clear analysis of environmental impacts. Additionally, by acknowledging public disobedience of rules that require reduced motorized vehicle use while, at the same time, failing to analyze environmental effects stemming from this use in any other manner except by using the Recreation Opportunity Spectrum (ROS) criteria, the Forest Service violates its own Forest Service Handbook regulations which do not use the ROS criteria and which prohibit the use of off-road vehicles "in a manner which damages or unreasonably disturbs the land, wildlife, or vegetative resources". 36 CFR 261.13 (h)... (#01761)*

COMMENT: *draft EIS page 1-13 states that the HNF will be changing the ROS for Boot Lake, Delia's Run, and Buck Bay to reflect "actual use of the land". This may not be a good standard to set. There are already many miles/areas of user developed ATV trails on HNF and changing ROS to existing use if considered a precedent could end up providing an incentive for OHV users to create their own recreational areas. (#00665)*

COMMENT: *I noted in your 4 threats section that you refer to the obvious shredding of the land, but you missed the incredible noise and physical pollution generated by these machines. Some of these ORVs are loud enough to impact more than a square mile of area from their point of use and the typically operate their machines for many hours out of the day. (#00014)*

RESPONSE: See comments #069 and 071.The analysis provides precisely what is required under NEPA, a full disclosure of potential actions, both the positive and negative aspects. The "this could also decrease conflicts..." statement cited is not a final conclusion statement, rather another aspect of increasing OHV designated trail miles, meaning that increasing designated OHV trail mileage could result in fewer conflicts between OHV users because of greater dispersion. It is regrettable that this seems confusing and contradictory to some readers. Negative aspects of OHV use, including cumulative effects, are referenced and cited throughout the draft EIS, such as on page 3-182 where the discussion includes OHV impacts on bald eagles, and page 3-326 contains a lengthy discussion of OHV engine noise and emissions.

Alternative 1 would continue a SPNM emphasis for the Delias Run/Boot Lake and Buck Bay Creek areas, but still retain them as part of MAs 2.1 and 2.2 (which have roaded natural ROS objectives) even though these areas are traversed by ML 3 roads and a designated OHV/snowmobile trail. The change to SPM (Semi-Primitive Motorized) objectives for these areas is more an acknowledgement of existing legal uses rather than allowing illegal uses to dictate policy. A discussion regarding these areas is on page 3-300 of the draft EIS.

#060e

COMMENT: *The Proposed Plan fails to sufficiently "analyze and evaluate current and potential impacts arising from operation of specific vehicle types on soil, water,*

vegetation, fish and wildlife, forest visitors and cultural and historic resources" generally, and specifically with regard to threatened and endangered species, as required by 36 C.F.R. § 295.2(a). By not gathering sufficient information on ORV impacts, the Forest Service fails in its duty to maintain continuous, current "comprehensive and appropriately detailed inventory of all National Forest System lands and renewable resources." 16 U.S.C. § 1603. The ORV management plan must protect resources and minimizes negative impacts on wildlife and other ecological resources. 36 C.F.R. § 295.2(b). The Plan should provide for annual review of off-road vehicle management plans and all legal and illegal temporary off-road vehicle designations required by 36 C.F.R. § 295.6. The Hiawatha needs to "evaluate the potential effects of vehicle use off roads" required by 36 C.F.R. § 219.21(g). Finally, given that illegal ATV use is persistent and fines do not deter illegal usage, the absence of an adequate monitoring program is a violation of NFMA while nonexistent or inadequate mitigation measures fail to meet minimal standards of NEPA. (#01761)

COMMENT: *Although the attempts to decrease illegal off-road vehicle traffic are well-intentioned, we reject the proposed changes regarding ATV and snowmobile use which would increase the amount of trail area on which ORVs are permitted. Those changes will not protect the forest from the high traffic volume from which it suffers. ORV use is not compatible with regeneration of the natural ecosystems of Hiawatha Forest. It should be restricted only to roads, which can tolerate automotive traffic and should be banned on sensitive dirt roadways. A comprehensive analysis of the impacts of the existing roadways must be undertaken so that the valuable ecosystem of Hiawatha will not be destroyed by motorized recreation (#02227)*

RESPONSE: Research cited in a paper by Robert H. Holsman of University of Wisconsin-Steven's Point states, "creating policies for managing wildlife disturbance and damage from ORV [OHV] use will require a three-pronged attack: increased designation and development of legal ORV riding trails, more comprehensive educational programs, and increased funding and authority for law enforcement" The paper goes on to cite that an argument for expanded trail networks of planned, managed routes offers riders a place to go and can be made and used to direct use into less ecologically sensitive areas and that in Michigan state forests the number of illegal trails was reduced when the policy was changed to a "closed unless posted open" system (Nelson, 1999).

He also cites the important need and role for user information and education, consistency of regulations among local, state and federal landowners and the importance of law enforcement in managing and controlling OHV/ORV use (*Management opportunities and obligations for mitigating off-road vehicle impacts to wildlife and their habitats,* Holsman). Refer to comments #050, 055, 056, 060f and 070.

The DEIS and proposed Forest Plan identify the potential actions and effects to the physical, social and biological resources for the four management alternatives carried through the analysis process, in accordance with appropriate policy, law and regulation. In addition, Chapter 4 of the proposed Forest Plan specifically addresses monitoring requirements for OHV and other resources on pages 4-1 through 4-11.

Forest policy and regulation specifically allows OHV use only on "designated" OHV trails and roads, and within one OHV area. Currently, the designated routes include maintenance level 2 roads (vertical road number posts) and some maintenance level 3 and 4 roads (horizontal road number posts with OHV symbol on them). Cross-country travel by OHV is prohibited forest-wide (DEIS page 3-323).

The proposed Forest Plan would allow as a maximum, 75 miles of OHV trails, which would be a potential increase of 31 miles over the existing condition. Any additions to the existing designated OHV trail system would require project-level analysis, disclosure of potential impacts of activities proposed, and would be consistent with Forest Service policy and regulations. The Forest Plan sets programmatic direction regarding OHV use and does not provide project-level analysis (proposed Forest Plan pages 1-4 and 1-5).

#060f

COMMENT: *Any allowances for ORV or ATV use on the Hiawatha needs to be accompanied by a credible law enforcement plan. If such a plan is not in place, then the FS cannot assume that riders will stay on the trails, and therefore the EIS must reflect this impact... (#00778, 02226)*

RESPONSE: See comment #056. The Forest Service has adequate regulations, policies and orders in place to cite and prosecute illegal activities on the Forest. While law enforcement is a consideration when evaluating alternatives in the EIS and the effects of certain activities with regard to law enforcement is discussed within the Chapter 3 of the EIS, funding for law enforcement is tied to appropriations from Congress and beyond the scope of the Forest Plan. The DEIS does address impacts of illegal OHV use. Illegal OHV use (off designated roads and trails) is likely to occur with any alternative, even if OHVs were legally banned from the National Forest. The DEIS on page 3-301 states, "Under all alternatives, illegal motorized intrusions by vehicles could continue to occur in some of the wildernesses (especially along the shoreline on Horseshoe Bay Wilderness) and in some of the other SPNM areas across the Forest.

However, if the Forest moves to a "closed unless designated/posted open" system for motorized trails and routes, this could assist in the enforcement and/or user-education efforts." Meanwhile, enforcement of a total ban on OHVs would be nearly as difficult as enforcing a designated trail system. The DEIS (page 3-326) states, "No direct correlation can be made about the likelihood of certain effects (e.g. noise, visuals, number violations, development of user-developed trails, etc.) between alternatives, based on the allocation of maximum route miles.

These effects are heavily dependent upon personal preferences, proximity to the use/noise, density of use, site-specific characteristics, and the repetitiveness of travel. Therefore, no attempt to quantify these effects has been addressed between the alternatives."

#061

COMMENT:...*While I agree with the proposed direction for OHVs in general, I see value in retaining the SPNM designation for the Delias Run area adjacent to the Big Island Lake Wilderness Area. While the proposed change in designation to SPM recognizes existing use that has developed in nonconformance with the current forest plan, have all alternatives been exhausted that might retain all or a part of this area in SPNM as a buffer to further protect the wilderness seeker from the noise and distraction of proximal OHV use? (#00239*)

RESPONSE: See comment #060d. Alternative 1 would continue the management of this area with a SPNM emphasis. The legal use of this area by vehicles and snowmobile/ OHV existed during the development of the 1986 Plan. Amendment #5 of the Plan prescribed an emphasis to manage these areas toward SPNM. The Forest has been unable to achieve this. A lengthy discussion of the Delias Run area and the rationale for the proposed change in Alternatives 2-4 is on page 3-300 of the DEIS.

#062

COMMENT: *...There are, far more than enough, roads and trails for ORVs.... (#00236)*

RESPONSE: Some reviewers believe more Forest roads [and trails] should be available to motorized use and others believe motorized use should be greatly reduced (DEIS page 1-10). Table 3-ROS-3 on page 3-298 of the draft EIS shows the breakdown of activities and relative use. The identification of Alternative 2 as the proposed Forest Plan seeks to strike a balance between these two diverse opinions.

#063

COMMENT: *I see the service wants to restrict the pubic from using public land again...leave the open spaces open... (#00410*)

RESPONSE: See comment #053, paragraphs 1, 3, 5 and 6.

#064

COMMENT: *We feel that to take a stance of absolutely no cross-country OHV's, severely limits access of hunting properties to hunters as well as fishermen. We have Disabled or others with Disabilities that have for years used their OHV's [sic] as their legs to enjoy the sport they loved. The limitations this clause*

puts on them we feel is undue and could be written better to accommodate. (#00017)

RESPONSE: The existing condition on the Forest prohibits cross-country by OHVs (travel off of designated roads and trails and outside of the existing OHV/snowmobile area). No change in this policy was proposed for revision. The DEIS on page 3-325 states, "Cross-country travel by OHV is prohibited in all alternatives. This prohibition reduces the likelihood of resource damage in sensitive areas, eliminates noise and intrusions in areas away from roads, enhances enjoyment by non-motorized users, and reduces conflicts between motorized and non-motorized users." See comment #051.

#065

COMMENT: *I live on Big Murphy Lake. There is an un-improved public access, carry down. For many years we've had no vandalism problem at all. But recently people have been using that public landing to 'case the joint', for possible breaking and entering (B&E). The State Police know about this as do the Schoolcraft County Sheriff's Dept. We on the lake would prefer to see that access closed for good. That would solve a lot of our problems and there are still many, many, other lakes people can get to. This is not a fishing problem but a security problem. (#02221)*

RESPONSE: Any decision on closing a particular lake access is a project-level decision. The Forest Plan sets programmatic direction and does not provide project-level analysis (proposed Forest Plan pages 1-4; 1-5).

#066

COMMENT: *Many times the condition of the groomed [snowmobile] trails gets real bad if there hasn't been fresh snow for the groomers to work with. Driving on very bumpy, or worse yet, trails down to the dirt, is not fun at all and can be dangerous to those using them. Having access to forest trails seems to reduce the traffic on the groomed trails a little, which helps keep the groomed trails in better shape. (#00565*)

RESPONSE: See comment #072. Alternative 2 provides for a maximum of 340 miles of groomed snowmobile trails. This is a potential increase of 38 miles of trail over the existing condition. Currently almost all of the Forest's maintenance level 2 through 5 roads are open to snowmobiles, and these roads would continue to be open to snowmobiles under the proposed Forest Plan (Alternative 2, DEIS Table 3-REC-5 page 3-321; page 3-329).

#067

COMMENT: *Closing connector routes will only create problems, why deter recreation when you should promote it... (#02602)*

RESPONSE: The underlying focus of Forest Plan allocations for Alternatives 2–4 for snowmobile (and OHV) routes is to create loops (connector routes) between trails and roads, and connections to facilities to provide enhanced riding opportunities and to achieve better distribution of users. Refer to comment #066 for additional information.

#068

COMMENT: *I think it is time for the leaders to step up and institute a snowmobile plan that will allow families to enjoy snowmobiling for years to come. (#02022)*

RESPONSE: Please see comment #53, paragraphs 2 and 3 for additional information. The proposed Forest Plan intends to balance the desires of those who advocate motorized use versus those who prefer more non-motorized recreation opportunities, and the potential for impacts to other resources. Alternative 2 prescribes up to 340 miles of snowmobile trails.

The underlying focus of Forest Plan allocations for Alternatives 2–4 for OHV and snowmobile routes is to create loops between trails and roads, and connections to facilities to provide enhanced riding opportunities and to achieve better distribution of users.

Full implementation of Alternative 2 could result in up to 38 more miles of designated snowmobile trail above existing condition and improved loops and connections between facilities (DEIS p. 3-331).

#069

COMMENT: *There are no conclusive studies to show that snowmobiles are doing any damage to the roads or environment. (#02421*)

RESPONSE: See comment #53. The DEIS and FEIS analyze the effects of snowmobile use on

Forest resources. According to research and reviews of multiple studies and publications referenced by Stokowski and LaPointe, "A wide variety of environmental and social impacts are documented in the research literature, including those related to soil erosion and trail degradation; vegetation, water and air quality; noise; wildlife and fish; and social conflicts among different types of recreation user groups...it should be noted that snowmobiles - thought by many to create fewer environmental and social impacts by virtue of their use on a ground-protecting cover of snow- have received increasing attention from researchers in the last two decades.

Available research suggests that snowmobiles have generally similar effects as ATVs [all-terrain vehicles] and ORVs [off-road vehicles], though the impacts of ATVs, ORVS and snowmobiles manifest themselves differently on different resources and places. For example, impacts on soils vary by type of vehicle, but impacts on wildlife, air quality, user conflicts and forest vegetation are similar." (Stokowski and LaPointe, Environmental and Social Effects of ATVs and ORVs: An Annotated Bibliography and Research Assessment, November 20, 2000. University of Vermont, Burlington).

#070

COMMENT: *some riders do [not] obey the rules of the road...these individuals should be taken care of by the law enforcement teams that ride on our trails. These individuals should not have the chance to restrict the trails for [use by] the snowmobilers who obey the laws, who protect the environment, and who enjoy riding as families and groups to the various spots in the UP. (#00231*)

RESPONSE: See comment #056. The proposed Plan intends to balance the desires of those who advocate motorized use versus those who prefer non-motorized recreation opportunities, and the potential for impacts to other resources. The Forest Service has adequate regulations, policies and orders to cite and prosecute illegal activities on the Forest. Law enforcement is considered in EIS Chapter 3 when evaluating the effects of activities to law enforcement. However, funding for law enforcement is tied to appropriations from Congress and beyond the scope of the Plan.

#071

COMMENT: *After reviewing concerns of others opposed to snowmobile access, their main concern appears to be pollution created by these machines. Over the past couple years; manufacturers have significantly reduced emissions generated by snowmobiles. In the years I have been riding I rarely see other snowmobiles more than 5-10 years old, so the impact made by snowmobiles is and will continue to drop over the years ahead. (#00324)*

...as you are probably aware modern snowmobiles have very little impact on the environment as they ride on top of the snow and not directly on terra firma, and thus have little to no impact on erosion concerns, and as far as air quality, snowmobiles emissions are now regulated by the EPA in regards to the 1990 Clean Air Act, it is my hope that you use these facts in your decision... (#02238)

RESPONSE: See comments #053 and 069. The potential effects from snowmobile noise and emissions is discussed on page 3-326 of the DEIS. A reduction in snowmobile emissions does make this use less obtrusive. However, even with the newer, quieter machines, "compliance with noise standards does not mean that all users would find the noise level acceptable. One of the primary complaints among non-motorized users is that OHV and snowmobile noise destroys the solitude of natural settings" (DEIS page 3-326).

#072

COMMENT: *In the EIS, you point out that while many snowmobilers prefer to ride groomed snowmobile trails, there are many times when neither trails nor roads are available to take sledders to areas where they want to go. As an example, I frequently travel between Rapid River and the Nahma Grade Snowmobile trailhead on County Road 509 by riding across the ice of the Whitefish River on the pipeline. Most sledders use this route to get between these points and in fact, the route is signed for non-local riders. A second route that parallels US 2 is also used frequently, and also requires cross-country travel past the District office on National Forest land. However, under Alternative 2, riding snowmobiles on these two routes would be an*

illegal activity. How would you proposed to get snowmobilers from the community of Rapid River to the Nahma Grade trailhead on County Road I40?

At the public meeting in Escanaba, I heard it suggested that the problems created by prohibiting cross-country travel by snowmobiles would be solved if power lines and pipelines were opened to them. This is not true. Even if you were to open the pipeline to cross country snowmobile travel, I still would not be able to use the route described above to connect to the Nahma Grade snowmobile trail because you cannot climb the bluff on the pipeline (it has been closed by the pipeline company).

Sledders have to ride a small trail through the woods north of the pipeline in order to climb the bluff and continue east to the trail. And while the closure of the bluff was precipitated largely by ATVs abusing the hillside, snowmobiles were also causing damage there as well. If you were to open the pipeline corridor to sledders, the resource damage that has been repaired there would resume. You do not want to condone sledders using the hill on the pipeline corridor. (#01649)

RESPONSE: Access on county roads and across private lands is not under National Forest jurisdiction. The Forest cannot provide all things for all people and access to all desired riding locations may or may not be accommodated based on full implementation of the Forest Plan. The Forest Plan does not make site-specific decisions on routes or trails to be developed or designated for snowmobile use (proposed Forest Plan pages 1-4 and 1-5).

The underlying focus of Plan allocations for Alternatives 2–4 for snowmobile (and OHV) routes is to create loops (connector routes) between trails and roads, and connections to facilities to provide enhanced riding opportunities and to achieve better distribution of users on the Forest. Full implementation of Alternative 2 could result in an additional 38 miles of designated snowmobile trail, and would retain the current access to almost all Forest's maintenance level 2 through 5 roads (DEIS page 3-331).

The Forest has taken a second look at Alternative 2 based on comments to the DEIS and proposed Forest Plan. Based on current use and the anticipated environmental effects, the Final Forest Plan will allow cross-country travel for snowmobiles (excluding any environmentally sensitive or non-motorized areas) and retain the direction for roads and trails to be "open unless posted/designated closed" for snowmobiles (only), while monitoring the potential effects of snowmobiles during the planning period to determine if additional restrictions are needed.

#073

COMMENT: *I... am supportive of the Forest Plan guideline that states that a snowmobile bridge may be constructed over the Whitefish River (page 3-86). This bridge is long overdue to complete Trail #2, so that sledders can ride from Ironwood to St. Ignace. However, it will be several years before the feasibility studies, MDEQ permits, environmental analyses, funding, design and construction begins for this trail, assuming that it is approved. In the interim, sledders need to be able to continue to bridge this gap in the trail system by riding cross-country across National Forest lands.*

While this route could conceivably be "designated" as a trail and thereby made legal for riding under your proposed policy, it is unlikely that the MDNR would support designation. In the past, the state has indicated that they would not designate a trail to the edge of the river, because it could imply to users that the ice is safe for crossing. Furthermore, if these types of cross country routes would have to be "designated" in order to be open under Alternative 2, these miles would be counted against the maximum number of miles of trail allowed under Alternative 2. I'm concerned that if these routes were designated as open to snowmobiles, it would not leave enough miles leftover to add to the statewide groomed snowmobile trail system. The highest priority for adding snowmobile trail miles should be to the statewide groomed trail system, which is where most of the use occurs. (#01649)

COMMENT: *The preferred alternative would also prohibit cross country travel for snowmobiles. This becomes an issue where there is a break in the designated trail system, such as at Whitefish River in the Rapid River area. (#02205)*

RESPONSE: Please refer to comment #072.

#074

COMMENT: *…we have not had the opportunity to see much wildlife on the roads or trails. This past winter, we saw a couple of logging operations that were in progress. It seems to me that there has to be more of an environmental impact done by this operation then any snowmobile can ever make. Since snowmobiling takes place on roads and trails, the impact to wildlife must be much less than that of the logging equipment. Logging certainly will disrupt any ground birds and hibernating animals. I wouldn't think that these critters would be looking for winter homes under the roads and trails. (#00320*)

RESPONSE: Logging operations are an environmental impact, which is why each timber sale is evaluated in an environmental document (environmental impact statement, environmental assessment, or categorical exclusion) before the operation proceeds. However, logging operations occur over a limited area and for a limited period of time, so impacts to wildlife occur over a small area and short time-frame for each timber sale.

Snowmobile-related disturbance occurs every year and over the entire extent of the trail system. For specific information on how snowmobiles and/or logging activities disturb wildlife, see the Wildlife Resources section Chapter 3 of the draft EIS.

#076

COMMENT SUMMARY: ***As a matter of safety first and recreation second I recommend you keep as many snowmobile trails open as possible.*** *(#02151)*

COMMENT: *If someone gets lost or hurt, more access could provide a quicker solution to a potential life threatening situation. (#01693)*

RESPONSE: During events of immediate emergency and those demanding significant safety and health response, circumstances may necessitate a deviation from the ordinary permitted practices on the Forest. It could necessitate a response that is contrary to "normal" recreation use, either by members of the public or administratively. On page 3-327 of the DEIS, it states, "Administrative OHV and snowmobile use for law enforcement, emergencies, fire-fighting, maintenance and other purposes may be allowed in areas closed to public motorized use under all alternatives." Even within wilderness, the Forest Supervisor may authorize flights and other non-conforming uses to respond to emergencies.

Trails

#077

COMMENT: *The listed Alternatives indicates (#2,3,4) plan for 115 miles of trails. I am very pleased to see the increase of 16 miles planned (although we would love more miles, please) and I am really happy to see the plan to have loops. (#00188*)

RESPONSE: Thank you for your comment. It is important to know that these figures are planned maximums and not a commitment to construct. Any additions to the existing trail system would require project-level analysis. The Forest Plan sets programmatic direction (proposed Forest Plan pages 1-4 and 1-5).

#078

COMMENT: *I would support the access allowed with Alt #3 however not finding a cost basis in this report any, all improvements would have to garner the proper budget and those clearances/limits could derail any attempts for improvements at this time... (#01639)*

RESPONSE: See comment #018. It is important to know that these figures are planned maximums and not a commitment to construct additional accesses. Any additions to the existing system would require project-level analysis. Likewise, the effect of funding and the relationship it has to the implementation of the 2006 Plan is acknowledged on page 1-6 of the proposed Forest Plan.

#079

COMMENT: *I would like to bring to your attention Delta County. From the Super 8 motel in Wells to LaBranch along 569 through Danforth to Schaffer that trail system is small. The trails to my knowledge have steel posts at roads. Does that mean we stay off the trails or not. These trails are the old railroad grades. (#02350*)

RESPONSE: Thank you for your comment, however, this is not a Forest Service trail (nor is it on National Forest System land) so we are unable to address your question.

#080

COMMENT: *Single-track trail opportunities are not adequately addressed in any of the proposals. This is not the same as ORV routes over existing roads. A significant population of the motorized off-road recreationalists desires to actually recreate "off-road". This means development of "single-track" trails designed specifically for motorized off-road recreation. New trail opportunities need to be developed to address this need. A significant allowance of single-track motorized trail miles need to be created, at least in the same amount of trail miles as available to non-motorized recreationalists. This will spread the utilization of the trails, lessen the possibility of trail over-use (which might lead to undesired damage to forest lands), and continue to mitigate unauthorized trail development. (#02217*)

RESPONSE: See comment #117. Single-track motorized trails are not specifically referenced in the DEIS, except to say that "there are no trails specified for single-track use only" (DEIS page 3-323). The discussion on that same page states that "the Hiawatha National Forest has made a conscious decision to use the terminology of 'OHV'." The Glossary (DEIS and Proposed Forest Plan), defines an OHV as, "A motor vehicle less than 50 inches in width that is designed or retrofitted primarily for recreational use on designated roads and/or trails. Includes mini-bikes, off-highway motorcycles, and motorized trail bikes. Often defined by the state or counties as ORV or ATV, with some differences in definition.

Single-track motorized vehicles fall under the OHV category. Full implementation of Alternative 2 could result in 31 more miles of designated OHV trail above the existing 44 miles (DEIS Table 3-REC-04 page 3-328). At the project level, site-specific decisions will be made on the trail location, design and permitted use/vehicles. The planning levels proposed in the DEIS alternatives do not preclude the development of "single track" trail, and instead prescribe the maximum allocation of trail and roads open to OHV use.

#081

COMMENT: *I am also concerned about the discrepancies between the demand data and the miles of trail proposed. Barb Ott's data shows that the forest already has more than a sufficient number of miles of non-motorized trails on the forest, and that the existing non-motorized trail system is underutilized. While my experience tells me that horse use on the forest is increasing dramatically and that additional miles of horse trail may be needed, you propose to add 83 more miles of non-motorized trail to the system which includes 12 more miles of hiking trail and 39 more miles of bike and cross country ski trail. The forest has closed numerous cross country ski trails in the last 15 years, due to lack of use and expense of maintaining. On the other hand, you describe the enormous growth in riding OHVs and snowmobiles, and yet add only 69 miles of motorized trail to the existing motorized trail system. This seems to be a discrepancy and is not based on the demand data, which you provide. It appears to me that more miles of both snowmobile and OHV trail should be added, such as those miles shown under Alternative 3. While I recognize that roads may also be open to OHVs and snowmobiles, roads do not always provide the desired recreational experiences being sought by OHV enthusiasts. (#01649*)

RESPONSE: The Forest cannot provide all things for all people, nor may it be able to fulfill the demand for future motorized recreation use, solely on National Forest System lands. It is also clear that access to all desired riding locations and/or opportunities may or may not be met on the Forest even with full implementation of the Forest Plan.

The proposed Forest Plan intends to balance the desires of those who advocate motorized use versus those who prefer non-motorized recreation opportunities, and the potential for impacts to other resources. It is important to know that these figures are planned maximums and not a commitment to construct additional trail miles and any additions to the existing system would require project-level analysis. Likewise, the effect of funding and the relationship it has to the implementation of the Plan is acknowledged on page 1-6 of the proposed revised Plan.

#082

COMMENT: *It is particularly important that trail users know where the trails are located (maps and what not) and can follow the trails when in the woods (good marking). And the visit to the area will be more rewarding if these are loop trail experiences. We need short loops for the two-hour visit, one-day loops, and perhaps only for the backpacker, multi-day loops. Well-marked loop trails, supported with trail maps, will tend to keep people on the trail. The damage that people do with off-trail use will be lessened and the landscape will be enhanced; the feeling of "wild" supported.* (#01651)

RESPONSE: As project-level decisions are made regarding trail routes, signing, information and education tools will also need to be considered and provided to help users understand the Forest's designated trail system (DEIS page 3-325).

#083

COMMENT: *You will probably receive comments that maintain the North Country National Scenic Trail (NCNST) should be closed to bicycling. These people tend to argue that national trails should be managed in the pattern of the Appalachian Trail, which Congress declared is "primarily" for hiking. However, that is the only national trail where Congress made such a statement. In 1983 Congress amended the National Trails Act to support diverse trail uses, including bicycling. 16USC1246(j) states(j) Types of trail use allowed Potential trail uses allowed on designated components of the national trails system may include, but are not limited to, the following: bicycling, cross-country skiing, day hiking, equestrian activities, jogging or similar fitness activities, trail biking, overnight and long-distance backpacking, snowmobiling, and surface water and underwater activities. Vehicles, which may be permitted on certain trails, may include, but need not be limited to, motorcycles, bicycles. Four-wheel drive or all-terrain off-road vehicles.*

The standard you proposed would incorporate by reference the above section of law. Also please note that the Official 1982 plan for the NCNST does not state that the trail is "primarily" for hiking. Rather, Section III-C-4 (p28) states: All segments of the NCT shall be open to travel by foot, i.e., hiking and backpacking. Other non-motorized uses, including bicycling, horseback riding, cross-country skiing, show shoeing, and jogging, may be permitted on a given segment according to the desires and policies of the managing authority responsible for the segment....Please do not close the NCNST in the Hiawatha NF to bicycling. (#02239)

RESPONSE: No changes in the management of the North Country National Scenic Trail were proposed in Forest Plan revision. Management of the trail on the Forest will continue under the existing guidelines and agreements.

#084

COMMENT: *I feel the...Forest would benefit from more single-track type trails. These types of trails are what attract mountain bikers...Building new single-track or opening existing trails to biking could increase mountain biking in the Forest. (#00204)*

RESPONSE: As stated in the DEIS (p. 3-338), the National Visitor Use Monitoring (NVUM) survey did not identify visitors who indicated that biking was their primary activity; while two percent indicated that they participated in biking activities. However, due to public comments (such as this one) and field observations, the Forest estimates a potential for up to 39 additional miles of trails open to mountain biking. This additional mileage is incorporated into Alternatives 2–4 and into the proposed Forest Plan (DEIS page 3-341).

#085

COMMENT: *...I would...like to impress upon the recreational management of the...[HNF] that the hobby and sport of horseback trail riding is growing and is predicted to continue to grow as we baby boomers enjoy gaited or pleasure horses and horse camping....I would encourage you to continue the focus of providing shared hiking and horse trails in the Hiawatha. (#00188)*

RESPONSE: The Forest receives more requests for additional horse trails than any other (non-motorized) trail type (DEIS page 3-338). There are currently 83 miles of trails open to horses, with a potential for up to 32 additional trail

miles (total of 115 miles) allowed by the proposed Forest Plan (DEIS Table 3-REC-6).

#086

COMMENT: *In regard to additional loop trails for horseback riding...yes! The joy of not having to dodge a 4-wheeler or listen to the noise of their motors is grand. More trails and additional horse friendly campsites would be appreciated. (#00237*)

RESPONSE: See comment #085.

#087

COMMENT: *My office sells to Illinois and Wisconsin residents Trail Passes for Michigan trails. Snowmobilers have purchased over 750 Trail Passes since the beginning of the program. (#01698)*

RESPONSE: Great! Thanks for your comment.

#088

COMMENT: *1) Please give motorized recreation the same considerations and resource planning, that you expend for hunters, fishermen and boaters.*

2) Please leave a sufficient number of roads open so we can get to our trails, even if new roads need to be created.

3) Please consider and plan for, new trails and repair and replacement of old trails.

4) Most important, keep open the opportunities for riding that I enjoyed, so, my Grandsons can enjoy them also. (#00776)

RESPONSE: Some reviewers believe more Forest roads (and trails) should be available to motorized use and others believe motorized use should be greatly reduced (DEIS p. 1-10). Table 3-ROS-3 on p. 3-298 of the DEIS shows the breakdown of activities and relative use.

In all alternatives, the Forest acknowledges that "motorized recreation provides pleasure to a large segment of the population by providing access to the Forest, contact with nature, and opportunities for families and groups to enjoy short and long distance travel within the Forest and other areas. However, motorized recreation also affects soils, wildlife, and vegetation and can cause conflicts with non-motorized users.

User habits and intensity of use play a role in the extent and nature of impacts (Stokowski 2000)."(draft EIS page 3-326). Same as 53, 63, etc.

The proposed Forest Plan intends to balance the desires of those who advocate OHV use versus those who prefer non-motorized recreation opportunities, and the potential for impacts to other resources. The underlying focus of Forest Plan allocations for Alternatives 2—4 for OHV and snowmobile routes is to create loops between trails and roads, and better connections to facilities with the intent of providing enhanced riding opportunities and to achieve better distribution of users.

Alternative 2 prescribes up to 75 miles of designated OHV trails and 340 miles of snowmobile trails. Full implementation of Alternative 2 could result in an additional 31 miles of designated OHV trail and 22 more miles of maintenance level 3 through 5 roads open to OHVs, and up to 38 more miles of designated snowmobile trail, all above existing condition (draft EIS page 3-331).

#088a

COMMENT: *...DNR trail 8 that runs across the north side of the peninsula...[with] so much use it is practically impossible to keep it in good [snowmobile] riding condition. We desperately need a parallel trail to help spread the traffic out along this route. (#00026*)

RESPONSE: See comments #072 and 088. Department of Natural Resources Trail 8 is under jurisdiction of the state of Michigan. The Forest Plan does not make site-specific decisions on routes or trails to be developed or designated for snowmobile use (proposed Forest Plan pages 1-4 and 1-5).

Lakes and Watercraft

#089

COMMENT: *The Department is concerned with the potential control and designated use of inland lakes by the USFS that are not totally surrounded by USFS land. Michigan law recognizes the right of riparian to certain uses, including boating, and these rights attach to the entire surface of a may (sic) be adversely impacted by restrictions on those rights. Additionally, the State of Michigan has regulatory authority over all waters within the territorial boundaries of the State under*

Part 801, Marine Safety, of the Natural Resources and Environmental Protection Act. Therefore, any use and access restrictions must comply with State law. (#02205)

RESPONSE: The draft EIS recognizes that the State retains regulatory authority over the water and beds of inland lakes, streams and rivers and it has certain delegated authorities from the EPA to administer, regulate and permit certain activities on these waterbodies.

However the draft EIS also states that the Forest Service has "the authority to regulate the types and kinds of watercraft access facilities that are constructed/permitted on national forest lands and to regulate the launch and retrieval of watercraft from national forest lands" (draft EIS page 3-309). Nothing within the draft EIS or proposed Forest Plan is proposed to abrogate authorities and/or responsibilities of the State of Michigan.

#090

COMMENT SUMMARY: ***Limit the use of personal watercraft.***

COMMENT: *Looking over Alternative 2, I'm somewhat concerned with the increase in the number of lakes that will allow PWCs. I really think the number of lakes currently available would seem to be plenty.* (#02210)

COMMENT: *I am grateful that you have dealt with the issue of motorized use on lakes under this new forest plan. However, I am concerned that in Alternative 2, you are proposing to allow PWCs on more lakes (15%) than what currently exists (10%, see page 3-315), in spite of the fact that there are already numerous conflicts between users. Given that you acknowledge that problems already exist, I believe that you should select a percentage of PWC use that does not exceed the existing condition (10%) or better yet, select a percentage below that which you believe currently exists. By increasing this percentage, you are choosing to increase the number of conflicts between PWC users and others, such as anglers, swimmers, and non-motorized users. And given the increased likelihood for spreading non-natives into inland lakes, it would seem more prudent to reduce the number of lakes on which PWCs are allowed, rather than increase the number. (#01649)*

COMMENT: *I would like to see a ban on the use of personal watercraft (jet skis on all lakes within the national forests) as well as quiet times(curfew) for snowmobile and ATV use (similar to hunting season) so that the silent sports can be enjoyed. (#00730)*

RESPONSE: There continues to be a high demand for access to inland lakes and Lakes Michigan, Huron and Superior for a variety of recreational activities (draft EIS page 109). Based on current high demand, personal watercraft (PWC) use is expected to increase over the planning period. Management direction in Alternatives 2–4 include more specific desired condition descriptions for recreation access forest-wide, goals and objectives. It will also have more outcome-based standards and guidelines to address resource and social concerns when analyzing watercraft access facilities and settings, both current and future (DEIS page 3-313). The DEIS alternatives analyzed a range of PWC access from six percent to 25 percent. The current condition (10% PWC use) is based on the Forest's inventory data and information.

Alternative 2 provides for a variety of watercraft accesses and uses on inland lakes that most closely reflects the existing condition. Different than Alternative 1, Alternative 2 prescribes an allocation of non-motorized and motorized (with and without PWC) access management across all the inland lakes (draft EIS page 3-314).

The increase between the existing condition and Alternative 2 is identified and discussed on page 3-317 in the DEIS which states, "The increase in allocation of PWC would allow for the slight expansion of use on inland lakes across the Forest, over the existing condition. It is likely that this use would occur on larger lakes that provide more riding opportunities and on lakes that can accommodate the speed and demand for multiple users." Only lakes entirely surrounded by NFS lands are able to fully restrict the type of watercraft launched and retrieved from national forest system lands. The state of Michigan retains regulatory authority over the water and beds of most of the rivers, lakes and streams, and access for watercraft is afforded by other land ownerships. Because of these factors, desired management allocations for lakes on the Forest may be exceeded under any

of the alternatives and a ban on PWC use on inland lakes is not feasible.

Likewise, the Forest is not aware of a legislative authority that would not allow us to enact "quiet times" for OHV and/or snowmobile use. Non-native invasive species can be spread in numerous ways, including motorized and non-motorized boats and/or PWCs. Refer comments #319 through 321.

#091

COMMENT SUMMARY: ***A boat launch is not appropriate between the narrows and Salt Point.***

COMMENT: *The area between the narrows and Salt Point is not the place for the CORA requested boat launch....The CORA proposed launch is not appropriate for either the 6.2 Forest shoreline or any place on the Scenic Byway. ...The beach at the narrows is used by tourists for recreation. For folks traveling the Whitefish Bay Scenic Byway from east to west, this is the first place the Byway comes close to the water with places to park and get out and enjoy the beach. Native American fishermen launch small boats from the beach early in the morning but with a more substantial boat launch there would be larger boats, both for commercial fishing and recreational use throughout the day. This will present a hazard to swimmers and people launching small inflatable craft or kayaks for a few hours of fun. The noise and commotion will greatly degrade this beautiful spot on the Scenic Byway for recreational purposes.*

Also to be considered is the fact that the Hiawatha National Forest map published in 2001 shows the area west of the narrows as semi- primitive non-motorized. What are semi-primitive and primitive levels as they pertain to boat launches? The present boat launch (CORA2) at the narrows is to my way of thinking primitive and suitable for the Scenic Byway. (#00547)

COMMENT: *A boat launch/safe-harbor at the narrows would bring noise and lake traffic to this quiet area as well as degrade the beach for non-motorized recreation. As I understand there are 2 launch areas nearby – one near the large Bay Mills casino and one at the Bay Mills Township Hall. Would either of these sites be better choices for a more extensive boat launch? (#02618)*

COMMENT: *Specific reference to a large-boat, or commercial boat launch site (3-312, 3-316) at the Narrows is unwise and unnecessary. The area is unprotected, shallow, and sand-based, all of which would require significant resource management to overcome. Such a project should require significant hydrologic and environmental impact studies. I suggest the proposed Land and Resource Management Plan eliminate the site...Alternative sites, such as Bay Mills Township, are available. (#00238)*

RESPONSE: These comments are directed toward a site-specific project analysis that is outside of the scope of forest plan revision. Direction proposed in the DEIS and proposed Plan would allow the construction of an additional Great Lakes boat access on the Forest (DEIS page 3-312). In fact, the site-specific project proposal that these comments reference, calls for the closure of one Great Lakes boat access and the creation of a new access in a different site. Thus, there would be no net increase in the existing condition of the DEIS for the number of Great Lakes boat accesses on the Forest, but an existing site could change. See comment #397.

#092

COMMENT: *Inland Lake Access: I support Alternative 3 as a fair compromise. This will allow more lakes to be designated as Non-motorized while at the same time apply much needed guidance for the type of motorized boats allowed. I would agree to establish additional motor horsepower limits on designated lakes. (#00539*)(00252)

RESPONSE: See comment #018. Alternative 3 would prescribe fewer lakes within the "non-motorized" allocation and a greater allocation of motorized and PWC inland lakes settings. Alternative 2, the Proposed Revised Forest Plan, would provide slightly less non-motorized lake settings, but most closely represents the current condition on inland lakes within the Forest.

Hunting

#093

COMMENT SUMMARY: ***There is no discussion of specific management for hunters or hunting. The EIS did not address the impacts of reduced habitat for grouse and woodcock on hunting.*** *(#00631)*

COMMENT: *The EIS did explain the impacts of reduced habitat for grouse and woodcock in terms of the species but not in terms of the effects on the hunters, which I would consider a socio-economic factor. I believe that overall management of the forest should be targeted to appeal to this major user group of the forest. (#02280)*

COMMENT: *As a serious hunter who is concerned about future impacts on hunting by federal agencies such as the U.S. Forest Service, I request that the revised plan devote at least one paragraph to specific plans that may restrict and/or improve hunting opportunities. It wasn't that many years ago that efforts were underway by some Forest Service personnel to ban baiting for deer and bear on forest service land. It was eventually decided the setting or changing of hunting regulations was the responsibility of the state Department of Natural Resources. A statement to that effect in regard to hunting under recreation management would be important. (#01630)*

RESPONSE: According to Forest visitor use surveys, about 14 percent of the Forest's total visitors participate in hunting (all types). Eleven percent indicated that hunting was their primary activity on the Forest (DEIS page 3-455). Potential effects for all alternatives are addressed in the DEIS Chapter 3. The effects to hunters are included in the Social and Economic Effects sections on pages 3-448 through 3-490. The DEIS (page 3-465) states "Alternatives 1 and 3 will be most favored by those seeking hunting opportunities. These alternatives increase early seral habitat conditions favored by these species." The DEIS also states (page 3-458) "Several commenters said that old growth should be protected or increased because it provides critical habitat, is needed to maintain biodiversity, or because it is an essential part of the forest environment."

The competing interests between those who favor "old growth" and those who favor early seral conditions favorable for hunting is discussed as socio-economic factors. Nothing within the DEIS or proposed Forest Plan is proposed to abrogate authorities and/or responsibilities of the state of Michigan and the Forest will, "coordinate management activities with the appropriate local, state or tribal governments as well as with other federal agencies (proposed revised Plan page 1-4). Reference comments for aspen in the Vegetation, Wildlife, Fish and Sensitive Plants sections for related comments and responses.

#094

COMMENT: *Where hunting regulations are more restrictive on portions of the Hiawatha than elsewhere, these differences should be clearly spelled out in the revised plan. Baiting restrictions are more restrictive on Grand Island, for instance, than the mainland and that is stated on page 3-99. However, it is my understanding that bear hunting with dogs is not permitted on the island, and that is not stated. That should be clarified in the revised plan. (#01630)*

RESPONSE: Nothing within the DEIS or in the proposed Forest Plan is proposed to abrogate authorities and/or responsibilities of the state of Michigan. The Forest will "coordinate management activities with the appropriate local, state, or Tribal governments as well as with other federal agencies (proposed revised Forest Plan page 1-4).

Bear hunting with dogs is not prohibited on the Island. However, the use of vehicles and the opportunities for accessing the island with vehicles is limited, which affects bear hunting. The Proposed Revised Forest Plan guidelines for Grand Island (MA 8.5) state, "The Forest should consult with the Michigan Department of Natural Resources (MDNR) to address hunting bears with dogs" and "Areas of the island may be closed to hunting, trapping and fishing by Forest Service order for reasons of public safety, administration, the protection of non-game species and their habitats, or public use and enjoyment. The MDNR will be consulted prior to implementing such closures" (proposed Forest Plan page 3-103).

#095

COMMENT: *I think hunting and trapping should be banned from this national forest. (#00006*)

RESPONSE: The actions you propose are outside the scope of forest plan revision and would affect authorities that are managed by the state of Michigan.

Recreation Management

#097

COMMENT: *Regarding lake access, (pg. 2-4), this seems a fair distribution of access & use types. (public/user) (#00677*)

RESPONSE: Please refer to comment #018.

#098

COMMENT: *Recreation can be a source of many threats across a landscape. Associated roads can lead to greater invasive spread, increased sedimentation at road crossings and where Off Road Vehicles (ORV) crosses waterways and erosion. Additionally, recreational sites are often associated with invasive, both terrestrial with campsites and aquatic with boat landings. We recommend that prevention of erosion, invasive and sedimentation from ORVs is a stated goal for all recreation management categories. (#00779)*

RESPONSE: Goal 2 for Motorized and Non-Motorized Trails (proposed Forest Plan p. 2-5), states, "Trail and route development provide for multiple use, mitigates social conflicts and prevent natural resource damage." Implicit in the "prevent natural resource damage" statement, is the prevention of erosion, sedimentation and spread of invasive plants.

Each of these potentially harmful effects of OHV use, and trade-offs by alternative, are discussed in the DEIS. Likewise, non-native invasive species can be spread in numerous ways, including cars, equipment, motorized and non-motorized boats, vehicles, OHVs etc. Refer to comments for aspen in the Vegetation Section and Wildlife, Fish and Sensitive Plants Sections for related comments and responses.

#099

COMMENT: *HNF is not in a "natural-appearing" condition. Stumps ruin the natural appearance.... It was nice to see that "Later-successional northern hardwoods will increase," on page 2-8, but a disappointment to read, "Harvest activities will create temporary openings." That ruins the natural appearance. (#00775)*

RESPONSE: "There are differing ideas about what 'naturally appearing' looks like and how much emphasis should be placed on scenic quality in management practices applied across the Forest" (DEIS page 3-343). The Forest Plan approach is to prescribe visual quality objectives (VQOs) through overlay maps and forest-wide standards and guidelines. The Preservation VQO the most natural-appearing and Maximum Modification the least natural-appearing.

The more natural-appearing VQOs are for wilderness, key travel corridors, shorelines, portions of wild and scenic river corridors, ecologically sensitive areas, and areas where scenic integrity is high (DEIS page 3-343). Other areas may retain a less natural-appearing character and/or result in openings for species viability and other resource needs.

#100

COMMENT: *I am concerned about the lack of specificity and direction in the Forest Plan (page 2-7) pertaining to meeting VQOs. While the objective is described as "increasing the amount of national forest lands meeting VQOs..." (see page 2-7), providing no standards and guidelines leaves to interpretation what it means to say that "Management activities are not visually evident." (See the definition for the Retention VQO, page D-13). In its strictest interpretation, it could mean that all human-caused activities associated with timber sales (tree marking paint, road lathe, flagging) as well as harvest activities (most notably clear cutting) would be inconsistent with the VQO of retention. Is it your intention to leave this interpretation open to every line officer and staff to determine exactly what "management activities are not visually evident" means? (#01649)*

RESPONSE: Visual quality objectives (VQO) were not identified as a need for change item in the Notice of Intent to Revise the Forest Plan. Visual quality objectives that were established in the 1986 Forest Plan were retained and are allocated in map form in the proposed revised Forest Plan (Appendix J).

The descriptions for the various classifications are found in the glossary and are further supported by Forest Service manual and handbook direction, publications, research and monitoring information. Nationally, the Forest Service has been moving toward a Scenery Management System which builds from basic data and information used to create VQOs in the Forest Plan.

Since the Forest has been implementing the 1986 Forest Plan VQOs for almost 20 years, and applying these objectives to site-specific projects, the Forest retains a good understanding of the requirements to meet these objectives. Likewise, site-specific analysis addresses the actions, opportunities and mitigation that will be taken to implement Forest activities. It includes opportunities for public comment, collaboration and appeal if there is concern or question whether VQO objectives can/will be met.

Recreation Access

#101

COMMENT: *Please keep the Hiawatha Forest as open as possible to ORV and Snowmobile use... (#00205, 00355, 00372, 00420, 00438, 00566, 00605, 00747, 01722)*

COMMENT: *...I would like to draw your attention to the fact that in the EIS Draft, Chapter 2, pages 2-2, 2-3, 2-4 and 2-5, all of the Alternatives do not allow any cross-country travel with OHV's [sic] or snowmobiles? This is a significant change from current Forest Plan accepted use policy... I believe this was not your intent and that Alternative 1 and 3 would allow some cross-country travel. This needs to be corrected ASAP. (#00207)*

COMMENT: *If you elect to restrict my ability to utilize these lands, I will without question join any class action suit that will surely result from this action. (#00635, 00735)*

RESPONSE: The existing condition on the Forest prohibits cross-country travel by OHVs (travel off of designated roads and trails and outside of the existing OHV/snowmobile area). No change to this regulation for OHVs is proposed. The proposed Forest Plan would allow a maximum of 75 miles of OHV trail to be managed, and 150 miles of maintenance level 3 through 5 roads opened to OHV use (DEIS Table 3-REC-4 page 3-328; page 3-331).

This is an increase over the existing condition and does not include county roads that may be open to OHVs. In addition, the proposed Forest Plan would maintain up to 2,100 miles of maintenance level 2 roads open to OHVs, and would focus efforts to create better loops and connections between these routes to enhance riding opportunities.

DEIS Alternative 2 and proposed Forest Plan restricts cross-country travel for snowmobiles in an effort to minimize resource damage and conflicts with non-motorized recreation users, and to reduce potential conflicts with threatened and endangered wildlife species management and recovery.

For snowmobiles, the proposed Forest Plan would provide a maximum of 340 miles of groomed snowmobile trails. This is an increase over the existing condition. Additionally, the Forest would retain access to almost all of the maintenance level 2 through 5 roads on the forest for snowmobile use, and would focus efforts to create additional loops and connections with facilities and services (DEIS Table 3-REC-5 page 3-329; page 3-331). See comment #072, paragraph 5.

#102

COMMENT SUMMARY: ***Cross country travel should be allowed for snowmobiles***. (#00230, 00250, 00231, 00304, 00311, 00355, 00377, 00380, 00387, 00448, 00460, 00472, 00521, 00543, 00559, 00567, 00568, 00580, 00591, 00666, 00739, 01606, 01610, 01611, 01613, 01626, 01632, 01634, 01639, 01647, 01649, 01683, 01699, 01721, 01712, 01727, 01741, 01753, 02008, 02021, 02023, 02047, 02159, 02172, 02181, 02209, 02210, 02215, 02219, 02257, 02273, 02345, 02360, 02391, 02477, 02534, 02556, 02569, 02586, 02596, 02600, 02610, 02693)

COMMENT: *Cross-country traffic allowed locals and others to bypass high traffic areas and provide relief of over traveled trails. (#02607)*

COMMENT: *It has come to my attention the forest service wishes to close access to the land...[W]e must consider the store owners, snowmobile/ATV dealers, hunters and fishermen, handicapped, etc. in the equation. The trickle down economics are far reaching... (#00399)*

COMMENT:...*With the proposed forest revisions you want to close all cross country travel of snowmobiles. This is in direct contradiction to the statements that Dave Maercklein, Forest Planner made in several meetings I have attended. He told us that the forest service considered any trail that was compacted by snowmobiles in the winter for a small percentage of the winter a legal trail....With this new decision to close all roads unless posted open you are going to make all snowmobilers outlaws. We, as snowmobilers are not damaging or even leaving a track on the forest by using these roads.... (#00432)*

COMMENT: *Cross-country snowmobiling allows physically challenged people to reach areas otherwise inaccessible to them. (#01638)*

COMMENT: *As landowners and taxpayers whose properties are surrounded by the Hiawatha National Forest and as Snowmobilers, and as prospective business owners in that area, we oppose any additional closing of access by snowmobilers within the Hiawatha National Forest. (#00661)*

COMMENT: *I don't want any closing of cross-country travel...The marked trail system is sometimes to crowded for safety and enjoyment. I have grand kids just learning the sport and I don't want them competing with the big high performance sleds. (#00259)*

COMMENT: *If snowmobiles are disturbing small isolated areas then address these areas as small areas. Closing all the forest is not the way to handle the problem. Leave cross-country travel open for the people to use and enjoy. (#02332)*

COMMENT: *The only way to access the main snowmobile trail from our cabin is by forest road. We could use the main roads, but for safety reasons because of automobile traffic, we prefer not to travel them. Also, conditions often do not warrant travel on the main roads due to weather conditions and the melting of snow off the plowed portions. (#02214)*

COMMENT: *Your prohibition on cross-country travel by snowmobiles in Alternative 2 would be inconsistent with the policies of the other two large, public landowners in the Upper Peninsula of Michigan. The state of Michigan allows cross-country travel by snowmobiles on state lands, as does the Ottawa National Forest. The Ottawa NF has chosen not to change their policy on cross-country travel by snowmobiles in their revised forest plan. You have been working closely with the other Michigan National Forests and with the state to try and coordinate policies, to reduce confusion among users, and this goal is admirable. However, by restricting cross-country travel by snowmobiles on this forest, you are once again creating a policy that is inconsistent with other policies in the Upper Peninsula. (#01649, #02205)*

RESPONSE: Refer to comments #072 and 101.

#103

COMMENT SUMMARY: ***Cross country access for OHV and snowmobiles is needed for administrative purposes.***

COMMENT: *We urge you to take another look at your off road vehicle policy. It doesn't make much sense to prohibit the use of four-wheelers/snowmobiles by your people while doing fieldwork for environmental assessments, timber sales or other project work, or industry people looking over a sale prior to bidding or during harvesting operations. It appears to us that here is an opportunity to reduce unit costs and manpower needs with little risk to the environment. After all, four-wheelers/ snowmobiles are pretty benign compared to other types of large mechanical equipment that will likely follow.* (#02166)

COMMENT: *The Forest Service has proposed a standard that would prohibit motorized cross-country travel except "on designated snowmobile and OHV areas." If approved, it appears that this standard would prohibit Great Lakes from traveling down or working on its pipeline right-of-way with motorized equipment and could prevent Great Lakes from performing required maintenance to keep its pipeline safe and in good repair. We respectfully request that the Forest Service provide an exception to this standard that*

would allow Great Lakes to travel down and work on its pipeline right-of-way with motorized equipment so that it can operate and maintain its pipeline in a safe and reliable manner and in accordance with federal pipeline safety regulations. (#01756)

COMMENT: *Wheeled vehicles are involved with the harvest these machines should be granted special access as they are designed to minimize the impact to the terrain and aid in the managing of the forests from other natural disasters and their effects. (#01639)*

RESPONSE: Refer to comments #072 and 101. On page 3-327 of the DEIS, it states, "Administrative OHV and snowmobile use for law enforcement, emergencies, fire-fighting, maintenance and other purposes may be allowed in areas closed to public motorized use under all alternatives." Use of OHVs with regard to special use permits and maintenance repair of utility corridors can/will be addressed under administrative use and specified terms and conditions addressed in the operating and maintenance plan for the permit and outside the scope of Forest Plan Revision. Likewise, use of various equipment and vehicles in timber sale areas can be addressed through timber sale contract and sale administration, outside the scope of the Forest Plan.

#104

COMMENT SUMMARY: ***Additional steps are needed to better regulate ATVs, off-road vehicles and snowmobiles.***

COMMENT: *These vehicles are disruptive and damaging to precious wildlife habitat.* (#00679-00716, 00718-00734, 00765, 00769-00773, 00780-00857, 00862-01180, 01182-01372, 01374-01603, 01762-01949, 01951-01997, 02249, 02250, 02683, 02685)

COMMENT: *We appreciate the attempts to limit illegal ATV and snowmobile use on the forest. But there are still measures that need to be taken to better regulate ATV's, off-road vehicles and snowmobiles. I agree that cross-country travel should be prohibited and require these vehicles to use a designated trail system. Monitoring and policing of ATV use needs to increase. Analysis of the current system of trails – designated and undesignated should be conducted. Environmental Impact Statements need to be conducted, especially for the 6,000 + mile statewide snowmobile trail system. Road closures need to be assessed for effectiveness and better closure methods need to be developed.* (#00043, 00051-00186, 00192-00203, 00212-00214, 00225-00227, 00244-00246, 00254-00257, 00259, 00261-00263, 00265, 00266, 00268-00272, 00280, 00282-00290, 00293-00297, 00328-00334, 00336-00338, 00340-00347, 00452-00458, 00485-00489, 00777, 02619-02635, 02637-02641, 02643, 02645-02648, 02650, 02652-02660, 02662-02681)

RESPONSE: Some reviewers believe more Forest roads and trails should be available to motorized use and others believe motorized use should be greatly reduced (DEIS page 1-10). DEIS Table 3-ROS-3 on page 3-298 shows the breakdown of activities and relative use. In all alternatives, the Forest acknowledges and plans that "motorized recreation provides pleasure to a large segment of the population by providing access to the Forest, contact with nature, and opportunities for families and groups to enjoy short and long distance travel within the Forest and other areas.

However, motorized recreation also affects soils, wildlife, and vegetation and can cause conflicts with non-motorized users. User habits and intensity of use play a role in the extent and nature of impacts (Stokowski 2000)." (DEIS p. 3-326). Same as 53, 63, etc. Additional effects to wildlife and other resources are addressed in these respective sections of DEIS Chapter 3. The proposed Forest Plan intends to balance the desires of those who advocate OHV and snowmobile use with those who prefer non-motorized recreation opportunities, and the potential for impacts to other resources. The underlying focus of Plan allocations for Alternatives 2–4 for OHV and snowmobile routes is to create loops between trails and roads, and better connections to facilities to provide enhanced riding opportunities and achieving better distribution of users.

The Forest has taken a second look at Alternative 2 based on comments to the DEIS and proposed Forest Plan. Based on current use and the anticipated environmental effects, the Final Forest Plan will allow cross-country travel for snowmobiles (excluding any environmentally sensitive or non-motorized areas) and retain the direction for roads and trails to be "open unless posted/designated closed" for snowmobiles (only), while

monitoring the potential effects of snowmobiles during the planning period to determine if additional restrictions are needed.

The Forest Service has adequate regulations, policies and orders in place to cite and prosecute illegal activities on the Forest. While law enforcement is a consideration when evaluating alternatives in the EIS and the effects of certain activities with regard to law enforcement is discussed within the EIS Chapter 3, funding for law enforcement is tied to appropriations from Congress and beyond the scope of the Forest Plan.

Illegal OHV use (off designated roads and trails) will occur with any alternative; however, if the Forest moves to a "closed unless designated/posted open" system for motorized trails and routes, this could assist in the enforcement and/or user-education efforts." Assessing the impacts of the 6,000 plus miles of snowmobile trails statewide is beyond the scope of this assessment. Additionally, there is no provision in NEPA or other federal regulations that requires environmental impact statements be developed on state or private land for snowmobile trails.

The proposed Forest Plan (Alternative 2) identifies a desired condition for the Forest Transportation System and describes it as, "a system of roads to accomplish required management activities and meet the needs of a variety of uses. The transportation system is designed to consider the environmental, social and health concerns of the public" (proposed Forest Plan page 2-19). Goals and objectives for the Forest's transportation system management, road closures, and road decommissioning are also identified in the proposed Forest Plan on pages 2-19 and 2-20. Additionally, Chapter 4 of the proposed revised Forest Plan specifies monitoring requirements for OHV, snowmobiles and other resources.

#105

COMMENT: *There are more than enough designated & maintained trails for ATVs and snowmobiles I heartily approve the corrected Plan. (#00046)*

RESPONSE: See comments #018, 092 and 101.

#106

COMMENT: *I support additional enforcement of the snowmobile regulations and suggest that snowmobile use be concentrated to designated trails whenever possible to avoid conflict and aid in enforcement... (#00615*)

RESPONSE: See comments #018, 092 and 101.

#107

COMMENT: *Recreation Access pgs. ES-9 thru ES-11: The maximum amounts allowed seems to run counter to the precept that Forest Plans should be permissive and not restrictive and limiting of management options. The Standards and Guidelines need to be updated to reflect needs in the 21st century for recreation trails and access to Forest attractions. The statement should be made that these maximums are proposed and subject to change at the project level EA analysis. We are in general agreement with the limitation of cross country travel with the exception of snowmobile travel where it should be restricted only in posted/fragile areas. (#00298, 00767)*

RESPONSE: It is true that the proposed Forest Plan is permissive in nature; however, one of the six decisions made in a Forest Plan (36 CFR 219.13 to 219.27) is, "The Forest Plan establishes forest-wide management requirements in the form of standards and guidelines which establish the "bounds" or "rules" which are applied to management practices to achieve the Plan's goals and objectives (DEIS page 1-3). Thus the Plan sets the broad programmatic structure and limits over which project level (site-specific) project analysis is done to implement Plan direction on a particular piece of ground within a particular period of time. Occasionally it is necessary to amend the Plan and the conditions which this is likely to occur are described on page 1-6 of the proposed Plan.

Information regarding current and projected recreation use and activities were used in the analysis and disclosed in the draft EIS Recreation section (pages 3-293 through 3-300) and in the Social/Economic sections (pages 3-448 through 3-470). Projections of future use(s) on the Forest are based on visitor use data and predicted trends for the planning period. The goals, objectives, standards and guidelines in the proposed Forest Plan were developed to be responsive to these needs. See comment #104, paragraph 3.

#108

COMMENT: *...How [were] the maximum miles of designated OHV trails and routes, 75 miles, determined. Please describe in detail, and for my review, of the p.f.p. Alternative #2 (preferred). (#00029*)

RESPONSE: This comment was responded to via letter prior to the close of the comment period so the commenter could provide substantive comment, as requested. The maximum trail and road miles were developed using the Forest's current OHV system, reviewing county roads and routes that are open to OHVs, and with substantial consideration of the potential to develop links and connections between designated routes and facilities. Maps and calculations of the Forest's existing OHV system were used to look at potential opportunities to construct trails and/or designate roads to provide loops and connections. The maximum miles for each alternative were developed with consideration of the management emphasis in each alternative, through estimation of some potential routes that could create loops and connections, and with consideration of the potential of known impacts to threatened, endangered and sensitive species and other ecologically sensitive areas.

Neither site-specific decisions, nor proposed route or trail developments were made. The desired outcome was to provide a qualitative estimate of the range of potential opportunities to create a looped and connected OHV system, similar to that that snowmobiles currently have across the Forest. The ID team discussed concerns and conditions for safety, the environmental impacts to sensitive areas, the potential to affect the spread of non-native invasive species by OHVs, and known locations of environmental concern. However, most of these concerns would need to be addressed through site-specific analysis of potential OHV roads/trails and routes. The team used professional knowledge, public comments, and information from prior work with OHV groups and representatives and other interested publics. The result was a range of potential trail and road miles for each alternative that broadly addressed the team's concerns and identified needs for OHV users. This is the range of maximum OHV road and trail miles that are identified in the alternatives.

#109

COMMENT SUMMARY: ***Request to revise Chapter 2, Section 2300, Motorized and Non-motorized Trails, page 2-24 Standard 3 to read "Roads and trails will be open to OHVs and snowmobiles unless designated/posted closed."***
(#00017, 00023, 00028, 00048, 00190, 00205, 00216, 00217, 00224, 00232, 00241, 00243, 00252, 00299, 00355, 00374, 00433, 00495, 00472, 00533, 00539, 00629, 00653, 00662, 00768, 01624, 01636, 01639, 01649, 01701, 01741, 01745, 02021, 02091, 02104, 02115, 02118, 02128, 02167, 02177, 02179, 02198-02201, 02326, 02364, 02369, 02394, 02398, 02404, 02480, 02603)

COMMENT: *The issue of having all roads closed unless posted open is unacceptable. It is unrealistic to think that any Agency can handle the task of posting and maintaining the large number of "open to OHV" signs necessary to be considered consistent and fair to OHV enthusiasts. To have essentially all roads closed to OHV operation is a recipe for disaster and will lead to greatly increased conflict.*

COMMENT: *... The phrase "closed unless posted open" should be avoided because it is confusing to the public. It is contrary to public policy, and is costly to manage. It would be more accurate, and more agreeable to state that the forest is closed to cross-country travel and travel is limited to designated trails and roads. (#02286)*

COMMENT: *I am concerned about the Forest-wide Standard that states that roads and trails will be closed to OHV's...unless designated/posted open. (p. 2-24, standard # 3 of the Proposed Plan). I would support that statement as long as the designation can be interpreted as displaying the open roads and trails on a map. These maps could be posted in ranger district offices and printed as ROG's. I will not support the statement if designation/ posting would require the putting of a sign on each individual road or trail. The latter approach would be extremely costly and difficult to manage. In summary, I am suggesting the wording be changed to: "...closed unless designated open."* (#00764)

COMMENT: *Retention of the current policy for "roads open unless posted closed" rather than the opposite is also the preferred choice. At the present time it would be too easy in this time*

of budget cuts to not mark the trails open... (*#00543*)

COMMENT: *Changing the OHV/snowmobile access from being "open unless posted closed" to "closed unless posted open" is an unnecessary change. It is not consistent with the Michigan DNR directions across the UP, nor is it consistent with some of the county direction, such as Delta County opening all their road right-of-ways as legal OHV/ snowmobile travel corridors. (#02216)*

COMMENT: *If the "closed unless posted open" rule is established, it is crucial that the Forest Service establish some type of policy during hunting seasons that would permit individuals to use their OHV in areas where these vehicles are not typically permitted if they are not physically able to access their favorite hunting areas and deer blinds on foot. (#02696)*

COMMENT: *The intent to make all roads "closed unless posted open" is a concern to both OHV and snowmobile users. This is a reversal from the past and may create animosity from recreational users. Many snowmobilers use un-plowed roads on the HNF in conjunction with the designated trail system for short day or weekend trips. Posting the roads closed may eliminate recreation from this area of the forest. (#02205)*

RESPONSE: In all alternatives, "designation could be accomplished in a variety of ways, including 'posting' roads, routes and trails. The details of how designation will be accomplished, will be developed through implementation of the revised Plan. To explain public access, regulations, the Forest would clearly define allowed, restricted and prohibited motorized trail, road and route access uses to the public. Where practical, motorized trail/road management would be consistent with adjacent public land management agencies" (DEIS page 3-325).

As project-level decisions are made regarding OHV routes, information and education tools will likewise need to be considered and provided to help users understand the designated/posted OHV route system (DEIS page 3-325).

The existing condition on the Forest prohibits cross-country travel by OHVs (travel off of designated roads and trails and outside of the existing OHV/snowmobile area). No change to this regulation for OHVs is proposed. The proposed Forest Plan would allow a maximum of 75 miles of OHV trail to be managed, and 150 miles of maintenance level 3 through 5 roads opened to OHV use (DEIS Table 3-REC-4 page 3-328; page 3-331). This is an increase over the existing condition and does not include county roads that may be open to OHVs. In addition, the proposed Forest Plan would maintain up to 2,100 miles of maintenance level 2 roads open to OHVs, and would focus efforts to create better loops and connections between these routes to enhance riding opportunities.

With regard to special permitting during hunting season for those with physical limitations, "areas, roads, or trails where OHV and snowmobile use is prohibited apply to persons with disabilities as well as the general public. An exception is the use of a wheelchair wherever foot travel is allowed" (DEIS page 3-325). The Forest has worked to provide a range of legal riding opportunities for all users, and has worked with persons-with-disabilities on a case-by-case basis, to help identify and locate areas for recreation/hunting that are legally accessible by OHV or snowmobile.

The Forest has taken a second look at Alternative 2 based on comments to the DEIS and proposed Plan. Based on current use and the anticipated environmental effects, the Final Forest Plan will allow cross-country travel for snowmobiles (excluding any environmentally sensitive or non-motorized areas) and retain the direction for roads and trails to be "open unless posted/designated closed" for snowmobiles (only), while monitoring the potential effects of snowmobiles during the planning period to determine if additional restrictions are needed.

The rationale for the shift to a "closed unless designated/posted open" policy is proposed to provide more consistent OHV management across national forest boundaries, to assist with law enforcement on user-developed trails, and to place reasonable responsibility on the recreationists for responsible riding on the Forest (provided the Forest is adequately signed and/or reasonable user information is available-such as maps, ROGs, or other forms of designation or posting). See DEIS Chapter 3 pages 3-322 through 3-337 and comment #060e for additional information.

#110

COMMENT: *page 3-332 states that "a closed unless designated/posted open policy for both OHVs and snowmobiles.... ...could result in clarifying a complex system of route identification that currently exists on the forest. Do not try and manage snowmobiles with an OHV policy! The effects of each sport are different, and they should not be treated the same. Develop a policy that makes sense for each sport, and then focus your efforts on educating the users about each respective policy. (#01649*)

RESPONSE: See comment #109.

#110a

COMMENT: *...summary of the Hiawatha revision plan for the forest is very deceiving! It doesn't mention roads will be closed unless posted open for snowmobiles anywhere. (#00032*)

RESPONSE: The Forest identified this error during the comment period and sent out an errata letter and replacement page for the Proposed Revised Forest Plan (p. 2-34) to the Hiawatha's revision mailing list on May 4, 2005. The mailing list includes all those who have indicated a desire to be informed and to receive information regarding forest plan revision. In addition, the letter and replacement page was posted on the Forest's website with the Proposed Revised Forest Plan, DEIS and other revision information. The DEIS correctly shows this direction and analyses the effects of this direction in Chapter 3, pages 3-322 to 3-337 and in Table-3-REC-5.

#111

COMMENT SUMMARY: ***Maintain roads and trails open for OHV and snowmobile use. (#00235, 00666, 01682, 02020, 02225, 02605)***

COMMENT: *I...hope you will allow snowmobiles on posted Forest roads and power lines, pipelines, and any management areas that are open. (#01724)*

COMMENT: *...operation of ORVs should be permitted on most forest roads and designated trails. I am opposed to cross country travel.... ORV users are a small (though increasing) percent of the general population, so it would seem reasonable that "users pay". Given the cost of owning an ORV(s)...I believe that users should purchase a "federal sticker" or otherwise fund whatever cost is necessary to appropriately manage and enforce OHV use. (#00388)*

COMMENT: *It is my humble opinion that the safety of HNF users and residents should be a number one priority of the forestry... Considerable risk to OHV riders, men, women, and young people is imposed by forest management road access restrictions on most of their ML 3-5 forest roads. These restrictions force OHV riders to use heavily traveled county roads within the HNF. By comparison, traffic on forest roads is almost non-existent...it would be a benevolent act of kindness, for the forestry to open their ML 3-5 forest roads to OHV traffic, in the name of increased safety for HNF visitors and residents. (#02684)*

COMMENT: *We need roads such as 3131, 3139, and 3137, the Mudpuddle road, and Huckleberry road [for snowmobiling]... (#02170, 02171)*

COMMENT: *I would like to see all road levels open for OHV/snowmobile travel on a one to two year trial basis. Give the OHV/ snowmobile users a chance to prove their competence in safe, "land friendly", courteous travel on these roadways. If after that trial it appears there is more "land damage" because of the access then more restrictions can be placed with a Forest Supervisor's Order. (#02216)*

RESPONSE: See comment #109 in addition to the following information. Even though safety consideration, sight distances and other needs are addressed and considered as part of the decision whether to designate a ML 3 through 5 road open to OHV or snowmobile use, the potential for accidents between licensed motor vehicles and OHV/ snowmobiles could be greater on these roads" (DEIS page 3-325).

Based on the Forest's experience with site-specific analysis efforts to identify ML 3-5 roads that can be open to OHV use, it is not viable to open all Forest roads, even for a limited time due to safety concerns and impacts to other resources. The state of Michigan has enacted an OHV permit system. Implementation of a fee system on national forest lands for snowmobiles or OHVs would

have to be part of implementation of the 2006 Forest Plan and would require analysis, public involvement and a decision.

#111a

COMMENT: *Power line, pipe lines & 2 track roads must remain open to the law abiding ORV & Snowmobile use. (#00024*)

COMMENT: *In regards to "cross country travel" it appears additional clarification is needed and a closer look be taken to exclude "existing utility corridors" as cross-country travel! ...example of this is the overhead power line running more or less North/South along County Road 513, also the main power lines and underground gas line located several miles North of Rapid River, MI. (#00207*)

COMMENT: *I would ask that the forest planning team include the use of existing and even future utility line corridors as open to OHV's [sic] and especially snowmobiles if nothing else. I do not believe the Forest intended to make average forest users of these corridors "criminals" over night. It would also tax an already strained Law Enforcement organization, which has better and more pressing enforcement issues to deal with! (#00207*)

RESPONSE: See comments #103 and 109. Utility corridors on the Forest are closed to OHV use and such riding (beyond authorized administrative use by the utility permittees or forest officer) is and will continue to be illegal, unless a site-specific analysis and decision is made to open up portions of utility corridors for OHV use. These trails would have to be within the parameters specified in the Plan.

#112

COMMENT: *Our family has recreated via snowmobile since the 1960's on snowmobiles. A simple posting of a speed limit would suffice in the effort to control the outlandish behavior of the persons that do not respect the area. (#00534)*

RESPONSE: Thank you for your suggestion and for commenting. Generally, the establishment and enforcement of speed limits is a function of state and local government.

#113

COMMENT: *We use unplowed FS roads, right-of-ways, firebreaks, etc. to (a) access "groomed" trails and facilities; (b) get away from crowded trails. Current "designated trail system" can be very rough and congested on weekends;(c) we (and many others) own property surrounded by Hiawatha NF and it is often the only reasonable way to travel without trailering sleds many miles. To restrict access would be a large blow to our family's enjoyment of the forest in winter...If anything Hiawatha NF needs more designated trails. More and better groomed trails will reduce the activity on the forest interior. However, even 100 miles more won't replace 2000 miles of FS roads...New restrictions will only make the sport less safe...I do not see where restricting snowmobile access to forest service roads puts one creature at disadvantage to others. (#02177*)

RESPONSE: Please refer to comment #109.

#114

COMMENT: *This came up in discussion at a District meeting. There is a fair amount of confusion, among users and HNF employees about which roads are open, which are closed...Rather than a complicated system of "yes" roads and "no" roads, with exceptions if they are co-maintained by HNF & Co., or whomever, would it not be easier to simply designate several large (and interconnected) loops for OHV (and perhaps snowmobile) travel? (#00677*)

RESPONSE: The objective of the Forest is to reduce confusion and provide a safe and manageable route system for OHV and snowmobiles through the creation of loops and connections to facilities and between roads and trails open for these uses. Goal 1 for Motorized and Non-Motorized Trails (proposed Forest Plan page 2-5) states, “A safe and cost-effective road and trail system provides a variety of recreation experiences, responds to changing social needs and minimizes user conflicts.

The system includes loops and connections to access recreation facilities and local community services.” In all alternatives, “designation could be accomplished in a variety of ways, including ‘posting’ roads,

routes and trails. The details of how designation will be accomplished will be developed through implementation of the revised Forest Plan.

To explain public access regulations, the Forest would clearly define allowed, restricted and prohibited motorized trail, road and route access uses to the public. Where practical, motorized trail/road management would be consistent with adjacent public land management agencies" (DEIS page 3-325).

#115

COMMENT: *I do not support the Forest-wide Standard that prohibits cross-country travel for snowmobiles. I support the prohibition for cross-country OHV use because of the resource damage and on the effect on recreation experiences. However, there is no strong rationale for prohibiting cross-country use by snowmobiles. By far and away, snowmobilers enjoy groomed trail riding and riding on ungroomed, unplowed roads. Very few people travel truly cross country through the forest. Plus, the little activity of that nature that occurs results in virtually no resource damage. There is some damage to young pine plantations but as a whole that damage is insignificant. In addition, enforcement of the prohibition would be almost impossible. I suggest the standard be changed to: "cross country travel is prohibited for OHV's except in designated OHV areas." (#00764*)

RESPONSE: See comment #109. According to research and reviews of multiple studies and publications referenced by Stokowski and LaPointe, "A wide variety of environmental and social impacts associated with OHV are documented in the research literature, including those related to soil erosion and trail degradation; vegetation, water and air quality; noise; wildlife and fish; and social conflicts among different types of recreation user groups.

It should be noted that snowmobiles-thought by many to create fewer environmental and social impacts by virtue of their use on a ground-protecting cover of snow, have received increasing attention from researchers in the last two decades. Available research suggests that snowmobiles have generally similar effects as ATVs and ORVs, though the impacts of ATVs, ORVS and snowmobiles manifest themselves differently on different resources and places. For example, impacts on soils vary by type of vehicle, but impacts on wildlife, air quality, user conflicts and forest vegetation are similar" (Stokowski and LaPointe, *Environmental and Social Effects of ATVs and ORVs: An Annotated Bibliography and Research Assessment*, November 20, 2000. University of Vermont, Burlington).

For snowmobiles, the proposed Forest Plan would provide a maximum of 340 miles of groomed snowmobile trails. This is an increase over the existing condition. Additionally, the Forest would retain access to almost all of the maintenance level 2 through 5 roads on the forest for snowmobile use, and would focus efforts to create additional loops and connections with facilities and services (DEIS Table 3-REC-5 page 3-329; page 3-331).

#116

COMMENT: *My last comment refers to OHV management. I agree with the new policy of closed unless posted open! (#02210)*

RESPONSE: See comment #018.

#117

COMMENT: *The plan provides programmatic direction for the designation of motor vehicle use on trails...As written, the proposed plan technically provides for the use of 4-wheel drive vehicles on trails but the glossary calls into question whether this will be the management situation on the ground. The glossary makes a distinction between off-highway vehicles and off-road vehicles. Only the terminology of the off-road vehicle included 4X4 motor vehicles and SUVs. While the proposed plan makes reference to off-road vehicles, there is a concern that the terminology is used to indicate general use by ORV and not specifically a reference to those types of vehicles defined in the glossary by off-road vehicles.*

The point of this example is to illustrate the fact that there is an inadvertent tendency...within the agency to think of trails as suitable for vehicles under 50 inches wide, despite the fact that "the 50 inch vehicle width limitation was removed in 2002 [www.fs.fed.us/r3/inventory/trails%20files/Trail_Definition.doc].

Please make it a point in the final Plan to expressly eliminate this tendency to think of trails suitable only for vehicles under 50 inches wide. Agency personnel should be encouraged to consider the suitability of designating trails for 4-wheel drive vehicle use, not just roads, as has been done traditionally. (#00433, 02239, 02286)

RESPONSE: See comments #056 and 080. The 2006 Plan will accommodate the majority of the uses that currently occur on the Forest for recreation (all-terrain vehicles [ATV], multi-passenger ATV [MATV] and motorcycles).

The Forest has made a focused effort to use the terminology of OHV to prescribe management direction and has provided a definition of the vehicles that this terminology (and management direction) addresses. Forest Service standard definitions have been provided for trail, road, and other associated references within the Glossary appendices.

Also, the 2006 Forest Plan standard number 1 requires trail management objective prescriptions for new trail construction (page 2-24). Among other things, these prescriptions will identify the uses that are appropriate on the trail, based on site-specific analysis (project level) analysis.

#118

COMMENT: *IMBA provides highly trained volunteers and crew leaders to assist the Forest Service with needs stemming from the expansion of mountain biking and other recreational trail use...Given adequate volunteerism, the plan could take a positive approach to new trail construction. It could state, "New trails may be built when Forest Service resources are adequate to ensure continued maintenance." (#00538)*

RESPONSE: The Plan is permissive in nature and allows for this as a consideration for site-specific implementation of Plan direction. However, there are more considerations that are analyzed in the decision to construct new trails beyond the ability to ensure continued maintenance. The Forest has made an effort (where feasible) to move from prescriptive standards and guidelines to outcome based direction in the 2006 Forest Plan.

#119

COMMENT: *The Draft Forest Plan and Draft EIS have no standard or guideline concerning mountain bikes. International Mountain Bike Association (IMBA) strongly supports open-unless-closed policies because they are easiest to understand and enforce and minimize user-created trails. Such non-discriminatory policies also agree with scientific studies, which indicate the disturbance to wildlife, vegetation and trails from mountain biking is about the same as from hiking...*

To avoid confusion over the Forest Plan's intention, IMBA recommends that Hiawatha adopt a policy similar to the one currently proposed by the Huron-Manistee National Forest concerning mountain bike access: "Mountain bike use is allowed on all Forest Service roads and trails unless closed by Forest Supervisor's order."

Closing trails to certain users should be the result of social issues, not environmental concerns. When ecological health is at stake, IMBA believes all users should be uniformly restricted...

We suggest that the Hiawatha NF initiate a travel management planning process for the National Forest.

In such a planning process, the agency can, with ongoing public participation, thoroughly inventory all travel routes and make decisions about each path. Some should be decommissioned, some should be shared-use trails and other may occasionally be appropriate for a single type of user. The community of people involved can probably come close to consensus on a reasonable system of trails and rules for each place.

...[A] needed key to this process is recognition that bicycling is not especially or particularly damaging to natural resources compared to other users. If there is need to restrict bicycling more than hiking it stems only from social issues. Some hikers wish to have hiking-only areas, and that may be appropriate in certain instances, but many national forests and other areas have implemented successful mountain bike or shared-use trail systems with great success. (#02239)

RESPONSE: See comment #084. The Proposed Forest Plan is a programmatic document and is permissive in nature. The Plan allows for these

considerations for project level (site-specific) implementation of Forest Plan direction. As stated in the DEIS (p. 3-338), the NVUM survey did not identify any visitors who indicated that biking was their primary activity while 2% indicated that they participated in biking activities. However, due to public comments (such as this one) and field observations, the Forest estimates a potential for up to 39 additional miles of trails open to mountain biking. This additional mileage is incorporated into Alternatives 2 –4 and into the draft Forest Plan (DEIS p. 3-341).

Implementation of the Forest Plan will be done at the project level, where site-specific decisions will be made regarding the location, design and permitted uses for these trails and will include public involvement. Within the 2006 Forest Plan, standard number 1 requires trail management objective prescriptions for new trail construction (page 2-24). Among other things, these prescriptions will identify the uses that are appropriate on the trail based on site-specific analysis (project level) analysis.

#120

COMMENT: *We recommend that native plant seed mixes be used at all recreation sites.* (#00779)

RESPONSE: Guideline 1 under Sensitive Plant Management (proposed Forest Plan page 2-32) states, "Indigenous plants of the Hiawatha National Forest seed zone or those non-native plants identified at project level, should be used in all planting or seeding operations."

This allows for the use of non-native plants if deemed appropriate at the project level, but emphasizes native (indigenous) plant use in planting or seeding operation.

Lakes and Watercraft

#121

COMMENT: *page 2-23 Great Lakes & Inland Lakes Access Guidelines: Guideline No. 7: on inland lakes that are entirely surrounded by national forest lands, launching & retrieving personal watercraft should be prohibited...U.S.F.S. has been closing off access sites that have been used for years, little by little you keep chipping away my rights to fish some lakes.*

Guideline No 9: You have been blocking off back-in sites that have been open for 40 years on some lakes because of erosion or sand run-off in a hard rain. I have used these back-in access sites for years & seen [sic] little or no change in sediment. (#00024)

RESPONSE: Guideline number 7 specifically refers to personal watercraft, e.g. jet skis, seadoos, and jet/air boats, not fishing boats.

The intent of this guideline is to minimize conflicts between personal watercraft and other recreational uses on these lakes, such as fishing and swimming. A discussion of the personal watercraft issues can be found on page 3-311 of the DEIS. Guideline number 9 is intended to minimize erosion on certain unimproved back-in accesses: "On slopes that are greater than two percent, back-in access should be graveled or paved." This guideline does not mention blocking off back-in sites.

#122

COMMENT: *Proposed Plan. page 2-23. Great Lakes and Inland Lakes Access: We recommend that the guidelines in this section be expanded to address access to river waters, where appropriate. Specifically, we suggest that Guidelines No.2 and No.7 thru No. 11 be evaluated to determine if they should have comparable riverine access components added. (#02686*)

RESPONSE: The Notice of Intent to Revise the Forest Plan did not propose to address the issue of riverine watercraft access. Therefore, this request is outside the scope of forest plan revision. However, the ability to enact the direction referenced in this comment exists in some cases regardless of whether it is stated as a Forest Plan guideline. For example, boat accesses that are non-functional can be closed and/or removed, and restricting the launch and retrieval of PWC and/or other specified watercraft from national forest lands/facilities can be accomplished through a Forest Supervisor Order. These restrictions exist already on the Indian River and on Grand Island National Recreation Area.

However, on some rivers the issue of "navigability" and the privileges under the law that this brings may prohibit local orders restricting certain types of use(s). These needs are river-specific and broadly variable, therefore the need to enact or prescribe this

type of management direction for rivers would likely occur at the project (site-specific) level with public involvement.

Scenery

#123

COMMENT: *Page 2-24 states, "Timber activities may be seen along portions of the trail." Seeing logging activity from the trail ruins the natural experience. No cutting ought to occur within sight of a scenic trail. Buffer zones aren't even mentioned on page 2-24. Trail buffers are grossly inadequate. (#00775, 02606)*

RESPONSE: Page 2-24 of the proposed Forest Plan also states, "5 percent of the trail should be managed to achieve preservation in the wilderness; 37 percent should be managed to achieve retention and 58 percent should be managed to achieve partial retention."

Retention visual quality objective provides for management activities that are not visually evident or obvious on the landscape while partial retention allows for human activities to be evident but must remain subordinate to the characteristic landscape (DEIS page 3-373). A buffer zone is not set for the trail because the distance a hiker can see from the trail is highly variable, from a few hundred feet in thickly wooded areas to several miles at overlooks.

2400 Vegetation Management

Seral Stage

#125

COMMENT: *The Society is disappointed with the extreme ranges provided for forest management goals in each seral condition. Aspen goals in Alternative 2 (draft EIS page 2-6), for example, range from 29,000 to 100,400 acres. This wide range provides little information to the public as well as the decision maker as to what results can be expected from the Plan's implementation. We recommend that the Forest refine these estimates to make them more meaningful and also more trackable in planned monitoring. If ranges are used they should be limited to less than 10,000 acres between minimum and maximum goals. (#02218*)

RESPONSE: Minimum and maximum goals shown on DEIS page 2-6 are inclusive of condition trends over 100 years. These goals represent a complex mix of forest-wide standards and guidelines and management area (MA) standards and guidelines that would lead to desired conditions. The numbers are presented for comparison purposes to show trends between alternatives.

The desired range of the aspen component in each ecological land type within each MA for each age/size class is relatively narrow. See proposed Forest Plan Tables 3-2 through 3-10, Vegetation Composition and Size Goals by Ecological Land Types, for MAs 1.2 through 8.3. The broad forest-wide range for the aspen type is derived from combining all minimum values for the low end of the range, combining all maximum values for the high end of the range, and comparing the two combined values.

Aspen may be managed at the extreme ends of the applicable range in small areas, but to meet overall Plan goals, the cumulative level of aspen management is expected to be in the middle of the range.

Early Successional/Even-Age

#126

COMMENT: *The preferred Alt. 2 and Alt. 4 emphasize late seral conditions and non-game wildlife. Statewide late seral conditions are increasing. Under all management scenarios this is expected to continue. This end of the vegetative spectrum is going to take care of itself regardless of management attention. The other end of the spectrum is suffering significant reductions. Opening and early seral conditions are rapidly being reduced. This is having negative affect on important wildlife. Increased management attention is required to avoid farther loses. Only Alternative 3 comes close to addressing this. Still even under this alternative the level of management is not intensive.*

The draft EIS documents that the Forest is currently over 42% in late seral stage. Only a little over 12% in aspen and 7% jack pine. Mid seral stage that is and will move toward late

seral is another nearly 23% of the Forest. This points out the need for management to maintain and restore more early seral stages to result in the habitat and diversity needed to provide important forest outputs and values. Values that we want to continue to enjoy the benefits from. The preferred Alt. 2 over the next 10, 20, 50 and 100 years will further reduce open, early seral and mid seral conditions. The Forest will become at least 55% late seral stage while the critically productive aspen falls to 8% or less. Given this, less than 2% of the Forest will be maintained in prime condition to satisfy critical wildlife habitat needs. This is hardly balanced forest management. It is better defined by management by neglect. (#02067, 02068)

RESPONSE: Desired conditions described in the proposed Forest Plan on page 2-8, include vegetative conditions that represent native species in age, size and successional states that support native and desired non-native wildlife and fish species and other uses of the forest and contribute toward ecosystem sustainability and biological diversity. There is no intent to emphasize late seral conditions and non-game wildlife. Currently the Forest consists mostly of uniform age classes, with little within-stand diversity or structure. Species that are short-lived, like jack pine, aspen and balsam fir, are currently mature and over-mature. Longer-lived species like red and white pine, northern hardwoods, and cedar, are maturing and growing into larger size classes (DEIS p. 3-7).

Plan alternatives examine the consequences of setting goals for both short- and longer-lived species to achieve a range of age classes and structural diversity. As shown on page 3-16, goals for late seral conditions average about 50% for Alternatives 2 –4. The remaining suitable lands would be managed for early to mid seral conditions. Projected acres of aspen and jack pine regeneration are shown on page A-3 in the Plan. As described on page 3-23, with Alternative 2, aspen will decrease over time as vegetation goals are met and aspen on unsuited land succeeds to later seral forest types. Jack pine is maintained at approximately current levels to meet vegetation and wildlife habitat goals.

See also DEIS Table 3-VEG-5, summary of current condition in various seral stage and size classes (all National Forest System lands) on page 3-10. Aspen stands currently account for only about 12 percent of the acres on the Hiawatha. While Alternative 2 does have a lower goal for aspen acreage than Alternatives 1 and 3, the desired range of five to 17 percent aspen for Alternative 2 does not require a decrease from the existing condition.

Table 3-VEG-5 shows jack pine currently accounts for just over seven percent of the acres on the Hiawatha National Forest. Table 3-VEG-7 on page 3-16 shows a desired range for jack pine of seven to 13 percent under Alternative 2. Alternative 2 would at least maintain the jack pine acreage, and could nearly double it. In addition, vegetation goals have been refined since the DEIS and Proposed Forest Plan were made available for review. The goals for aspen and jack pine have both increased in the revised Forest Plan.

#127

COMMENT SUMMARY: ***Do not eliminate even-aged northern hardwoods****. (#00042, 00631)*

COMMENT: *...reconsider the proposed elimination of even-aged northern hardwood management emphasis that regenerates oak, ash and cherry forests, and provides critical young forest habitat as well as key mast production....Hiawatha Forest already has an abundance of northern hardwoods (primarily sugar maple and basswood); therefore, an increase of 76,000 acres of uneven-aged hardwoods seems unnecessary. (#00040*)

COMMENT:...*While uneven-aged management should be a primary management technique in northern hardwoods in order to promote structural diversity, even-aged management should remain a part of the mix to increase wildlife outputs while assuring superior stand regeneration in some settings. (#00239*)

RESPONSE: The Hiawatha NF anticipates a mix of even and uneven-aged management of northern hardwoods. Hardwoods managed under the even-aged system will be those less tolerant of shade, such as red maple, birch, basswood, cherry and oak (proposed Forest Plan p. 2-8). Even-aged management should be used where vegetation objectives emphasize less shade-tolerant species such as ash, birch or cherry (proposed Forest Plan p. 2-27).

Some even-aged management of northern hardwoods will be needed to achieve and maintain mid-seral vegetation goals. Both MAs 6.4 and 8.3 emphasize even-age as well as uneven-age timber management (proposed Plan p. 3-2). Although MA 2.3 places a strong emphasis on uneven-aged management of northern hardwoods, up to 25 percent of northern hardwoods in this MA may be managed using even-aged systems (proposed Plan p. 3-11). Other MAs will contain stands managed for northern hardwoods. Where mid-tolerant species like northern red oak, ash and black cherry are present in these other MAs, even-aged management methods may be used to maintain or increase them.

Uneven Age Management

#128

COMMENT:...*There should...be much more emphasis on uneven-age harvesting particularly for white pine, and hardwood trees.* (*#00236*)

RESPONSE: Alternatives 2–4 include MA 2.3 with increased acreage for uneven-age management of hardwoods (DEIS page 2-14). Alternative 1 will continue to work towards a 40/60 percent mix of even/uneven-aged northern hardwood management (DEIS page 2-2). The uneven-aged system will emphasize management of shade tolerant hardwoods, such as sugar maple and beech for quality sawtimber (proposed Plan page 2-8).

Regarding white pine, see Table 2400-1. Type of Timber Management Practices by Forest Type Group in the Plan. Shelterwood/ seed tree (even-aged) and selection (uneven-aged) treatments are identified as appropriate regeneration methods for white pine. Uneven-aged management may also be used.

#129

COMMENT: *[page] A-3 The lack of uneven-aged treatments in the second decade is a real concern. The improvement harvests are uneven aged but some of those should be shown as uneven aged. I must have missed this in earlier reviews. The model either needs to be "tweaked" or just show some of the 36,200 acres in the uneven aged row. Early on, Eric and I had not differentiated between thinning and uneven aged treatments in the NH type because we were designing the treatments to fit the "late seral" group that had both even aged and uneven aged types. I thought we had worked it out so we got reasonable results but this may need to be rechecked and adjusted based on the amount of even vs. uneven aged types in the late seral age/size classes. (#01641*)

RESPONSE: Table A-2 Forest-wide Harvest Treatments (proposed Forest Plan page A-3) has been edited in the final version to clarify that acres shown as Regeneration are even-aged regeneration only. The acres shown separately in the draft Plan as Improvement and Uneven-aged have been combined as Improvement/Selection to better reflect what the model runs intended.

Old Growth

#130

COMMENT: *Are the confusing paragraphs describing total acreages in the alternatives on page 3-58, draft EIS correct? It seems that in some cases they do not agree with the graph on that page, especially Alternative 1. Do they agree with the figures shown on 2-7 of the draft EIS? Only Hiawatha old growth should be considered. I'm sure you don't mean it, but it looks as if an attempt is being made to increase the appearance of old growth by including late seral on suited lands and old growth on other properties. Old growth is more than late seral according to the definition on page 4-43 in the draft EIS. (#00547*)

RESPONSE: The acreages for alternatives on page 3-58 of the draft EIS have been corrected in the final document, and have been matched between this discussion and the Alternative Comparisons Table in Chapter 2.

The discussion on DEIS page 3-58 is part of the cumulative effects analysis for the old growth issue. That is the reason the discussion includes potential old growth on other ownerships. The discussion of direct and indirect effects is limited to old growth stands on National Forest System lands only.

Actual old growth conditions occur now on only about 500 acres of National Forest System lands on the Hiawatha National Forest. The

reason for focusing on late seral stands in the old growth discussion is that these lands offer the best opportunity to develop old growth characteristics soon on lands that do not yet fully meet these conditions.

#131

COMMENT: *I appreciate the amount of old growth that is classified needs to be reevaluated. A large number of secondary forests in the Hiawatha have not been cut since the early 1900s and are now starting to obtain some old-growth characteristics. These "secondary old-growth" sites need to be identified and preserved to ensure future increases in the amount of older forests in the UP. All old growth needs to be classified and potential or secondary old-growth areas need to be identified and classified as old-growth to ensure that future conditions are enhanced.* (#00043, 00051-00186, 00192-00203, 00212-00214, 00225-00227, 00244-00246, 00254-00257, 00259, 00261-00263, 00265, 00266, 00268-00272, 00280, 00282-00290, 00293-00297, 00328-00334, 00336-00338, 00340-00347, 00452-00458, 00485-00489, 00777, 02226, 02619-02635, 02637-02641, 02643, 02645-02648, 02650, 02652-02660, 02662-02681)

RESPONSE: An ID team identified large blocks of trees with potential old growth characteristics (DEIS page 3-44). These blocks were also chosen for spatial connectivity and to allow for dispersal of plants and animals that depend on habitat conditions likely to be found in old growth areas. Many identified old growth stands do not currently meet the full forest definition of old growth, but will develop these characteristics as stands mature (DEIS page 3-45). Designated old growth in Alternatives 2-4, will be classified as unsuited for timber harvest.

The 2006 Forest Plan will manage about 52,000 acres of designated old growth, complemented by about 308,400 acres of other unsuited lands (wildernesses, research natural areas, Management Areas 6.1 and 6.3 the wild portion of wild and scenic rivers, and Grand Island National Recreation Area) for a total of about 361,000 acres. In addition, land managed for old growth on other ownerships in the eastern U.P. (EUP) brings the total to about 583,000 acres (15% of the EUP).

Commercial harvest activities are not proposed for these lands under any alternative, but stands will move in and out of old growth conditions as they mature and are regenerated through natural processes such as fire and windthrow (draft EIS page 3-58).

#132

COMMENT: *The acres of old growth should be pushed as low as possible while still maintaining reasonable representatives of late successional species... (#00388*)

RESPONSE: New ecological information and monitoring of designated old growth stands indicated need for adjustments to the old growth system (DEIS p. 1-8). All alternatives examined a range of acres in old growth from approximately 52,000 to 142,500 acres (DEIS p. 2-7). Goals for old growth described on page 1-8 of the Proposed Plan include maintaining a 52,000 acre old growth system. This would provide habitats for late successional species. Vegetation goals also include providing habitats for early or mid successional species in other parts of the Forest.

The total designated old growth acres in the 2006 Plan are similar to the acres of designated old growth called for in the 1986 Plan. The difference is in the acres' spatial arrangement. As compared to the 1986 Plan, the 2006 Forest Plan calls for larger blocks of designated old growth, with greater connectivity between the blocks.

#133

COMMENT: *There is a growing knowledge of the ecology of old growth areas, within Michigan's forested land. Instead of directly planning old growth area in the Hiawatha national forest based on the old plan, priority should be given to the growing body of new information, on where to designate old growth within the forest, and how best to manage old growth areas... (#00236*)

RESPONSE: As described in comment #192, the ID team reviewed the latest scientific data, new information, and monitoring and evaluation reports to make recommendations for changes to the Forest Plan (DEIS page 1-1). New ecological information and monitoring of designated old growth stands indicated adjustments to the old growth system are needed (DEIS 3-43). Alternatives examined differences in management of old growth areas in terms of inclusion as suitable vs. unsuitable

acres for timber production, design and arrangement of old growth, and response to a catastrophic disturbance such as fire or windthrow that reduces old growth characteristics. As described in the DEIS on page 3-44, current scientific research has shown that larger, fairly contiguous blocks of old growth are preferred to smaller, scattered blocks (Nauertz 2004). Research has also shown that using an ecological function approach rather than simply designating portions of each management area for old growth contributes more to ecological function.

#134

COMMENT: *We encourage you to reconsider the acreage, which is designated as old growth forest under the revised plan. Instead of designating 52,000 acres as old growth as in Alternative Two, we believe that it is more appropriate to designate 142,000 acres as in Alternative Four. Old growth forest is a rare resource that takes hundreds of years to attain. Certain species require habitats provided by late successional forests. These species will be threatened by increased clearcutting or domination of the landscape by young forest types. Our national forests, including the Hiawatha, should be primarily managed to allow the natural ecosystem processes to continue. (#02227*)

RESPONSE: As the comment suggests, all alternatives examined a range of designated old growth acreages from about 5,400 to about 142,500 acres. However, these acres will not be the only old growth areas on the Forest. Some special management areas have been administratively removed from the suited landbase: wildernesses, research and candidate RNAs, Grand Island NRA, the wild portion of wild and scenic rivers and semi-primitive non-motorized areas. Plan standards and guidelines promote succession toward late seral/old growth conditions. At the level of about 52,000 acres of designated old growth, species viability analysis raised no concerns relative to species that depend on habitat characteristics associated with old growth forests.

On lands suitable for timber production, treatments will mimic natural processes to meet vegetation composition goals (DEIS page 3-14). Note the vegetation goals for late seral stage forest types on suited lands, across all Management Areas and ELTs. These late seral stage forest types will offer many habitat components associated with old growth.

#136

COMMENT: *While Alt #2 is labeled the preferred, I notice that Alt #3 provides for more timber production and lowers the 'old growth' designations. Having been 'out there' myself I see very little sign of true 'old growth'. As with most of the land in this state re-growth is more the correct term. Over a hundred years of harvesting cannot erase this fact. old growth [sic] just does not exist... (#01639)*

RESPONSE: The Hiawatha recognizes that very little true old growth remains on the Forest (or in the U. P.). Many identified old growth stands do not meet the full forest definition of old growth, but will develop old growth characteristics as the stands mature. In all alternatives, it may take designated old growth stands varying amounts of time to attain full old growth characteristics (DEIS page 3-45).

#137

COMMENT: *...The only 500 acres of true old forest must be protected to the utmost and more than the proposed 51,500 acres added to it as well as more unsuited land. This will provide critical habitat and maintain biodiversity which is our "bank" of species. The Hiawatha has more Threatened and Endangered species than any other Eastern Region Forest. This will also lessen the possibility of introducing NNIS, fire and unmanaged recreational use....The Hiawatha proposes to designate core areas of old growth that include other relatively primitive secluded areas and to determine the most effective configuration of the stands. Because of a decrease of unsuited land, Alternative#2 does not do this to any great meaningful extent.*

Alternative #2 not only dropped some small old growth areas, but some large ones too in the Naomikong and Salt Point areas with which I am especially concerned. Alternative #4 excluded old growth almost entirely from this northern hardwood dominated generalized land type and concentrated it in a centrally located swath. More meaningful old growth with unsuited

connectivity on the areas south of Naomikong and Salt Points is found in Alternative #1 where old growth fits into the 6.1 area around Grant's Creek and is not along the edges; where unsuited land includes the 6.2 area along the shore between the narrows and private land at Salt Point. Also, in Alternative #1 the old growth around Delirium Wilderness and Fibre Roadless the unsuited and old growth areas seem better integrated... (*#00547*)

RESPONSE: In Alternatives 1 and 2, old growth areas south of Naomikong and Salt Point are complemented by other unsuited lands. One area of designated old growth south of Salt Point on Figure 3-OG-10 is shown as forested unsuited land on Figure 3-OG-11. Although not designated old growth, these areas would still develop old growth characteristics. Associated management areas include MA 6.1, which provides undisturbed habitat for wildlife species. MA 2.3 emphasizes older forests and uneven-age management. Although there are fewer acres of designated old growth in this area, in Alternative 4, there are still unsuited lands complemented by management areas that emphasize older forest characteristics.

Additional designated old growth can be seen adjacent to the Delirium Wilderness along with forested unsuited land. The area of designated old growth shown in Alternative 1 within the Fibre Roadless Area is shown as forested unsuited lands for Alternative 2. As with the area south of Salt Point, these forested unsuited lands would still develop old growth characteristics although they're not designated old growth. Alternative 1 maintains the direction found in the 1986 Plan, where designated old growth comprised a certain percentage of each management area. This resulted in relatively small blocks of old growth which were generally isolated from designated old growth in other management areas.

The design of the old growth system for Alternative 2 focuses on connectivity of old growth blocks, and on larger blocks of designated old growth than Alternative 1, but with similar total acres of old growth. This shift results in larger blocks of old growth with better connectivity between blocks, which better meets wildlife needs and provides for the aesthetic value of large, old trees over large areas. These larger blocks provide more undisturbed interior habitat, but when considered with the unsuited lands, there is not much difference in connectivity or total block size between Alts 1 and 2. (DEIS p.3-49).

#138

COMMENT:*...The new old growth plan is problematic and would obviously undermine health and integrity of old growth: The old growth areas are being switched inappropriately...old growth areas owned by the Nature Conservancy are not part of the Hiawatha National Forest and should not be counted; 52,000 acres is supposed to be the minimum acreage for old growth in the Hiawatha - not the maximum! The decrease in unsuitable acreage would encroach on old growth. (#00187*)

RESPONSE: See comments #130 and 137. The Nature Conservancy and other non-NFS lands were included only in the cumulative effects discussion within the analysis area, which includes the eastern Upper Peninsula, not just the Hiawatha National Forest.

#139

COMMENT: *Vegetation management pg. ES-8 Old Growth: The amount in alt. #2 seems large compared to alt. #3, removing this amount from classified as suited seems to limit the managers options in these areas. The requirement for larger blocks does not meet the scientific test for demonstrated need, only a wish of the preservationist/wilderness advocates. The connective corridors may not always be feasible, this sounds like the agenda for the radical Wildlands Project. (#00767*)

RESPONSE: As described in comment #132, new ecological information and monitoring of designated old growth stands indicated need for adjustments to the old growth system (DEIS page 1-8). Old growth goals described on page 1-8 of the Proposed Plan include maintaining a 52,000 acre old growth system.

Adjustments for Alternative 2 maintain the current amount of designated old growth while adjusting the design and arrangement of old growth stands. As described in the DEIS on page 3-44, current scientific research has shown that larger, fairly contiguous blocks of old growth are preferred to smaller, scattered blocks (Nauertz 2004).

Old growth designations will limit manager's options. More management options would be available in lands suitable for timber production.

#140

COMMENT: *I continue to support the proposed classification of designated Old Growth stands to be "unsuited for timber production". (#00768)*

RESPONSE: With Alternatives 2–4, designated old growth will be classified as unsuited for timber harvest (draft EIS page 2-7).

#141

COMMENT: *Please check the second paragraph from the bottom on page 3-47, draft EIS where Wilderness is stated to be an administratively removed area. I thought Congress designated those areas. (#00547*)

RESPONSE: You are correct that wilderness is legally withdrawn from the landbase suited for timber management. The Final EIS has been corrected to reflect this.

Forest Health and Diversity

#142

COMMENT: *Small clearcuts...can prevent the spread of some diseases... (#00004*)

RESPONSE: For the DEIS, acres susceptible to disease were modeled as those representing mature and over-mature forest (DEIS p. 3-78). Spread rates and avenues of infestation vary widely by disease type. Clearcuts may reduce the risk of spread for some diseases and increase the risk for others. Management practices have a substantial impact on the susceptibility of trees to various insect and diseases (DEIS p. 3-78).

For most insects and diseases, science has developed a set of recommended practices, which either prevent or contain impacts of these pests and pathogens to acceptable levels. The Hiawatha has adopted most of these practices as standard operating procedures. An example is the practice of maintaining overhead cover on white pine regeneration to prevent white pine weevil problems. In this case, clearcutting is not the recommended practice.

#143

COMMENT SUMMARY: ***Both the draft EIS and proposed Forest Plan do little to address forest health issues related to global climate change.***

COMMENT: *At a minimum they should review the work of Dr. Richard Birdsey and others at the USDA Forest Service Global Change Research Program. Then, quantitative (or at least qualitative) comparisons of Forest Plan Alternatives and how they meet projected vegetative changes under the Hadley and Canadian model scenarios can be made. For example, Dr. Birdsey is suggesting a decrease in aspen, maple, birch, and beech in the UP as the area transitions towards a temperate deciduous forest containing more oak, hickory and pine.* (*#00550*)

COMMENT: *Nowhere in the plan's discussion of vegetation management could I find climate impact studies of proposals. Data is available of local climate changes through Lake Superior University and neighboring Canadian studies.* (*#00238*)

RESPONSE: Forest conditions that occurred during the 18th and most of the 19th centuries were primarily shaped by climate, soils, landforms and natural disturbances (Frelich 1998) (DEIS page 3-45). The DEIS considered effects of climate change on northern forests. Although climate and lake levels are unlikely to change within the context of this planning period, negative cumulative effects of a warming climate on some species are a distinct possibility, especially those relegated to cooler, wetter microsites in the forest (DEIS page 3-116). Effects to lynx (DEIS page 3-199) include the potential for global climate change (warming) to adversely affect overall habitat conditions for prey species.

Factors associated with global climate change are uncertain and are not likely to be affected by differences among alternatives.

Vegetation response to climate change is highly complex and related to minimum and maximum temperatures, range and timing of temperature extremes, seasonality of temperature changes, seasonality of precipitation, snowpack relations, snow-water contents, timing of snow vs. rain, ground water recharge levels, persistence of periods of increased or decreased temperature and/or

precipitation, etc. (USDA 2005). In addition to the complexity of vegetation response relationships, climate change is also not linear.

With so much uncertainty, any estimates of effects would be unreliable at this time. There are numerous provisions in forest planning direction and regulations to allow plan revision and amendment in response to changes in conditions and to address new information. The science on global warming is not yet at a stage to provide direction and answers to forest planning questions.

#144

COMMENT:...*The proposed plan increases the acreage and structural diversity of older forests while paying inadequate attention to diversity on a landscape scale by limiting openings, disturbance seral stages and the aspen type to unnaturally low acreages with inadequate distribution across the landscape. The proposed plan should be revised to address this deficiency*. (*#00239*)

RESPONSE: In response to comments about the range of aspen acreages to be maintained under the Proposed Plan, aspen vegetation goals have been adjusted between the draft and final EIS. Modeling now predicts that long-term aspen levels will be maintained between approximately 38,200 and 95,800 acres. Se comments #126 and 132.

Attention to diversity in the landscape is illustrated on page 1-6 of the DEIS where vegetation is listed as a significant issue and the introductory paragraph to that issue describes how the Forest Plan's vegetation composition and structure goals have not been met. This paragraph goes on to say that forest types most affected were aspen and jack pine. Later in that section it says "there is concern that 23,000 of those acres may succeed to other forest types which may result in aspen falling below the Plan's goal of 76,320 acres."

Although aspen and jack pine management are the primary need for change issues, the Hiawatha's goal is to provide a healthy, sustainable forest that has vegetation composition and structure that meets needs for plant and animal species habitats and provides timber products. Early successional forest types such as aspen will decrease as a result of natural succession. However, some will be maintained through management activities to meet vegetation and wildlife habitat objectives (proposed Forest Plan page 2-8). MA 1.2 emphasizes aspen management. Most other MAs, except those designated unsuited for timber production, include goals for aspen. Early successional areas will continue to be created on the Forest through natural processes such as blow-downs and fires.

Appendix A in the DEIS describes the modeling process used to determine the management strategies that would meet the goals and objectives of each alternative. The balance of earlier and later successional forests in each alternative results from meeting the goals and objectives for that alternative.

#145

COMMENT: *When reviewing timber management plans, I strongly urge the Forest Service to work to rebuild healthy and diverse forests which will be better able to avoid the onslaught of various tree diseases by maintaining tree species diversity and uneven age classes. The forest should be managed for quality wood products, not quantity of wood products... (#00615*)

RESPONSE: Emphasis on healthy, diverse forests is illustrated on page 1-2 of the DEIS. The first need for change statement is for the Hiawatha to review and make necessary changes to the vegetation objectives to incorporate species viability needs, biological diversity requirements, and to meet public demands for timber and recreation.

Forest-wide goals for vegetation include vegetation communities that are diverse, productive, healthy and resilient. Attention to quality wood products is illustrated on page 3-70 where higher quality lumber is described as larger diameter logs and red pine used for utility poles. See the Vegetation Management goals on page 2-8 of the Proposed Plan.

The first goal calls for native vegetation communities to be diverse, productive, healthy and resilient. The second calls for vegetative conditions that contribute toward ecosystem sustainability and biological diversity. MA 2.3 emphasizes managing for high quality saw logs (proposed Forest Plan page 3-2). Desired conditions in the proposed Plan include using uneven-aged management of shade tolerant hardwoods, such as sugar maple and beech for quality sawtimber (proposed Plan page 2-8).

#146

COMMENT: *We support the increase in regeneration of mature stands that nature through mortality is already harvesting and converting to other species. We believe these stands should be harvested before the trees become decadent and lose their commercial value. (#02166*)

RESPONSE: The level of harvest anticipated by the Proposed Forest Plan is directly connected to achieving the desired vegetation conditions on the Forest. However, some stands on unsuited lands will be allowed to convert to other, later successional types without harvest. See Table 2400-2 on page 2-28 of the Plan, which contains recommended rotation ages for various tree species in managed stands.

Timber Management

#147

COMMENT: *The Proposed Plan and draft EIS also have a significant lack of cumulative impacts analysis.... In particular, the draft EIS does not adequately examine the cumulative effects of the timber program. (#01761*)

RESPONSE: The environmental consequences section for each resource topic covered in the DEIS (vegetation, forest health, flora and fauna habitat, watershed, candidate research natural areas, recreation opportunities and experiences, wild and scenic rivers, heritage resources, and social and economic environment) discloses cumulative effects of the timber program on the environment likely to result from activities and resource output levels of each alternative along with direct and indirect effects.

Cumulative effects result from actions taken to achieve goals of each alternative along with past, present and reasonably foreseeable future activity undertaken by the Forest Service or other public or private entities.

Timber Land Suitability

#148

COMMENT: *The plan should clearly state the intention to examine the "suited acres" and place them in a more appropriate category. 67,795 acres are just too many to not be classified, per table F-1.* (*#02054*)

RESPONSE: The National Forest Management Act requires the “inadequate information category” to include not only lands where information is lacking but also lands with low productivity levels, generally capable of producing less than 20 cubic feet of wood per acre per year. As contained in our stand database, most of the 67,795 acres fall into the low productivity part of this classification.

#149

COMMENT: *The increase in "suited acres" from 510,637 to 578,461 represents good scientific analysis since the 1986 plan. However, the 67,795 areas in Table F-l and classified under" Forestlands - inadequate information" should be reviewed for proper classification. These are too many acres to keep in such a classification. The plan should clearly state the intention to examine these areas and place them in a more appropriate category since at least some of them could be added to the "suited acres" category. (#01760*)

RESPONSE: Refer to comment #148.

#150

COMMENT: *Suitability: The Admin. Unsuited: This category has the most variability across the range of alternatives, and shows that it may be a subjective call depending on the managements desires.* (*#00298, 00767)*

RESPONSE: See DEIS Appendix F, Table F-1. The administratively unsuited lands include management areas without scheduled timber harvest, which vary somewhat between alternatives, and old growth acreages, which also vary among alternatives. This variation is based on public comment and represents the Forest’s response in the form of a range of alternatives. Most of the range between Alternatives 2–4 is related to the range of acres designated as old growth.

Alternative 1 addresses an option that would continue the management direction contained in the Hiawatha's 1986 Forest Plan. Much of the large acreage of unsuited lands in Alternative 1 was considered economically unsuited, based on the available markets for timber on the East side of the Forest at the time the 1986 Plan was completed.

#151

COMMENT: *We believe you should calculate and show the non-chargeable volumes from unsuitable lands as part of your timber sale program. Most forests are showing these numbers in the appendix as part of the "Proposed and Probable Goods Produced section."* (*#02166*)

RESPONSE: Estimated timber volumes are based on outcomes from moving toward desired conditions (DEIS page 1-14). This includes timber and pulpwood production. Non-chargeable volume is typically the result of actions to achieve other objectives besides timber production such as salvage, fuelwood production, recreation improvements, or habitat improvement. Non-chargeable volume is usually a byproduct of these other actions. It is both unpredictable and non-sustainable.

The Hiawatha has no goals for production of forest products from unsuited lands. Some forests have estimated timber volumes to be harvested from unsuited lands, but conditions on those forests allow for more predictable volumes from these lands than do conditions on the Hiawatha. For example, some forests are converting predictable acreages from forested conditions to fuel breaks or to meet habitat needs. The Hiawatha has no similar plans to conduct harvests on unsuited lands that would allow us to predict volumes to be removed from such lands. For that reason, timber harvests on unsuited lands on the Hiawatha are not expected to yield volume that is either substantial or predictable, and so no estimate of this volume was made.

#152

COMMENT: *After reviewing the proposed Plan and the draft EIS, I think the preferred Alternative 2 has too much suited land, the ASQ is too high and there are too many roads. Could there be a compromise solution between Alternatives 2 and 4?* (*#00187, 00547*)

RESPONSE: Alternative 2 was selected as the proposed Forest Plan because it responds to the proposed changes published in the Notice of Intent and addresses new issues identified during the public comment period. This alternative was developed after reviewing monitoring and evaluation reports, resource area assessments, applying new information and reviewing current Forest Plan direction in relation to the Hiawatha's Niche Statement and the Forest Service Strategic Plan (DEIS page 2-3). ASQ is an outcome of achieving the desired condition (vegetative goals). Refer to comments #009 and 153–174.

Allowable Sale Quantity

#153

COMMENT SUMMARY: ***The ASQ for Alternative 2 seems reasonable. The plan should be clear that if levels are not met, desired conditions would not be met.***

The ASQ of 114 mbf per year is a reasonable number. However, the plan should make it clear in the "Significant Issues" section on page ES- 3 of the Executive Summary, and elsewhere in the plan, that although the ASQ is considered the maximum average harvest level, any harvest level below the ASQ results in not accomplishing desired future conditions. Too often, the public does not understand the inter-relatedness of ASQ and other goals. This should be remedied*.* (*#01760*)

COMMENT: *Forest Service personnel have been careful to point out at public meetings that 114mbf ASQ set of alternative 2 is not a target. The plan should be clear that putting up less that that (on average) delays, or may impede, reaching the desired future condition of the forest. (A)The ASQ, or a percentage of it, should serve as a goal. If it is simply a maximum rather that a goal or objective, it loses priority and immediacy.*

(B) If ASQ is not more clearly defined, the EIS should describe short and long term implications for several levels of (non) attainment. (*#02069*)

COMMENT: *The allowable sale quantity set in the forest plan seems reasonable and will be reasonable not only for our industry but the health of the forest if a higher percentage of the ASQ is met in the new plan versus the trend that has taken place in the old plan, which has put the forest at risk of bug infestation and disease and could lead to wildfires. The plan should also note that if the ASQ levels are not met then the future desired condition as set forth in the plan are also not being met under Significant Issues on page ES-3 of the Executive Summary and the plan. (#02054)*

RESPONSE: A discussion on how well each alternative would meet desired conditions currently and over time, is presented in the DEIS pages 3-19 to 3-38. It states volume sold from 1986 to 2003 averaged 52 mmbf/year. This is below the ASQ of 70 mmbf/ year for Decade 1; and 90 MMBF for Decade 2. During the last few years, the sell volume on National Forest land has declined due to numerous factors including lower budgets, higher costs of planning timber sales, and resource protection (mitigation) (DEIS page 3-69).

Due to differences in actual sell vs. projected timber volume, the vegetation condition of the forest is likely different from what the 1986 Plan projected (DEIS p. A-16). Tables A-2 and A-3 in the revised Forest Plan list the proposed and probable silvicultural practices that would be used to move toward the vegetative and other multiple-use desired conditions and objectives of the Forest Plan. The tables display the amount of each harvest treatment for the first two decades of Plan implementation based upon modeling.

Actual treatments during implementation may vary from these modeled outputs (proposed Plan page A-3). Tables A-2 and A-3 address proposed and probable management practices to achieve vegetation objectives. The Hiawatha intends to implement proposed and probable management practices as presented in the revised Plan to work towards desired conditions.

Commercial timber harvest is the major means to adjust ecosystem conditions to meet Plan goals and objectives, but the relationship between harvest and achieving these goals and objectives is not directly proportional. The Hiawatha may not be funded to meet ASQ in all years, but progress will be made in all years toward the goals and objectives of the Plan to the degree that funding allows. Due to refinement of the model between the DEIS and the FEIS, the ASQ has changed slightly.

#154

COMMENT: *On the topic of plan implementation, we support the preferred alternative but only if it is fully implemented. The preferred alternative sets an ASQ of 114 MMBF per year. However, in 2004 you only cut 32.5 MMBF. Your target harvest for the next 5 years ranges from 30 to 40 MMBF/ year. These volumes are woefully inadequate. Furthermore, if you are failing to meet harvest targets, then you are failing to meet other vegetation management and wildlife habitat objectives as well. We will work through our legislators to secure additional funding for your timber program but you need to work to efficiently allocate resources to achieve the plan that we are supporting. There is no value in planning if the plan is not intended to be followed. (#01637)*

RESPONSE: See comment #153.

#155

COMMENT: *Many communities in the eastern and central UP derive significant benefit from fiber production and timber harvest. Thus the increase in ASQ should gladden our hearts (and, perhaps wallets?). But casual ocular inspection while traveling along the roads in HNF suggests that much of the forest is young – can ASQ be reached (in the past harvest has been well below ASQ). And should ASQ be reached. What are the environmental costs? What is the impact on recreational opportunities? And on other Quality of Life opportunities? (#01651*)

RESPONSE: See comment #153. One of the decisions to be made through the plan revision process is determining ASQ – the maximum level of timber that may be harvested from suited lands covered by the Forest Plan (DEIS page 1-3). The EIS analyzed effects of timber management based on treatment of suited lands. In Alternative 2, over 90% of the vegetation goals for suited lands are currently met and will continue to be met throughout the planning horizon (DEIS page 3-26). To meet vegetation goals, even and uneven-age

treatments are expected to be above current levels. Alternative 2 environmental consequences includes a trend towards reduced barren/savanna habitat and less aspen/birch habitat. It would also increase acres of mature lowland mixed hardwood/ conifer habitat, mature northern hardwood habitat and northern white cedar habitat. Although there would be increased benefit for species associated with habitats that would increase in acreage, a diversity of habitats would be maintained across the Forest.

DEIS Chapter 3 analyzed expected environmental effects of each of the four alternatives considered in detail, including effects on recreational opportunities, scenic quality and the social and economic environments. In Alternative 2, recreationists could experience a forest setting that appears more actively managed (i.e., has more vegetative treatment activities) than the existing condition based on the increased allowable sale quantity and changes to MA vegetation goals.

The total amount of even-aged treatments would be greater in this alternative than the existing condition, and forest visitors could see less aspen and more northern hardwoods of larger diameter, and more red/white pine than in Alternative 1 (DEIS p. 3-306). All alternatives provide for a diverse range of opportunities for recreation/relaxation, personal consumption and use of forest products and commercial utilization for both residents and non-local visitors that contribute to lifestyles and quality of life (DEIS p. 3-460).

DEIS Appendix A has an explanation of the modeling process used to evaluate Plan alternatives. See also DEIS Table 3-VEG-9. In the column titled Existing Condition % of Total, note that 46% of the acres on the Hiawatha are currently forested with sawtimber-sized trees (40% in the 9.0" to 17.9" diameter size class, and 6% in the 18" diameter and larger size class). Under all alternatives, the acres in the largest diameter size class are projected to increase.

#156

COMMENT: *Regardless of which Alternative Plan is adopted to guide the management of the Hiawatha National Forest, more commitment to actually reaching the volumes of the ASQ must be administered. The economic benefits to our society, our standard of living and quality of life are improved by the increase in raw wood products removed or 'sold' off our National Forests. (#00015*)

RESPONSE: See comment #153.

#157

COMMENT: *I would also strongly advocate in favor of setting higher yearly targets for timber harvests. I am aware that these targets are not included in the Forest Plan because they are set on a yearly basis, but I would like to reiterate the importance of all the national forests in Michigan coming closer to meeting, at a minimum, their target for the year as well as coming closer to the ASQ set in the Forest Plan. (#02696*)

RESPONSE: See comment #153. Timber will be offered and ecosystem goals and objectives will be met, to the degree that each year's funding allows. Alternative 2 would increase sawtimber and pulpwood harvesting compared to 1986 to 2003 harvest levels (DEIS p. 3-73). Table 3-VEG-14 (DEIS p. 3-27) shows an increase in total harvest acres for the planning period. This increase by decade is likely to lead to increased yearly targets.

#158

COMMENT: *Many of the acres in Appendix A page A-3, Table A-2 make no sense, and the paragraph introducing it doesn't seem to support the acres displayed... In Late Seral Treatments, improvement cuts unrealistically exceed uneven-aged cuts, and worse yet, they even disappear in the second decade. Harvest acres cannot go down nearly 20 percent and still support the same ASQ, especially when the aspen and jack pine regeneration acres go down by nearly 80 percent. Either the table estimates are way off (especially in decade 2 and also in uneven-aged management in both decades) or the description of what the table is supposed to illustrate is entirely unclear. (#00768*)

RESPONSE: Refer to comment #129. This table has been clarified in the final EIS.

#159

COMMENT: *During the forest plan revision phase, NFMA requires the Forest Service to evaluate all projected outputs. The Hiawatha National Forest "considered species viability needs, social and economic needs, and land suitability when determining the range of allowable sale quantity between alternatives" (draft EIS 1-14). In order to fulfill the statute's mandate, more of an explanation of these factors and how they influenced the agency's decision-making process is required.*

Alternative 2 increases the allowable sale quantity of timber dramatically. Alternative 2 classifies 578,500 out of the total 879,000 acres of land in the Hiawatha National Forest as suitable for timber production. While all alternatives will increase sawtimber and pulpwood harvesting, Alternative 2 has the highest projected estimates for red/white pine and hardwood sawlogs, and would "provide considerably more timber products to all types of mills than historically" (draft EIS 3-73). The Forest Service's preference for Alternative 2 is an environmental hazard, especially since the draft EIS Executive Summary admits that Hiawatha is now largely a second growth forest "as a result of exploitative logging..." (ES-13). Where the Forest Service does analyze cumulative effects from logging expansion, it does so in a generally incomplete manner, concluding that "it is difficult to predict future demands for timber" (draft EIS 3.75-76) and preferring instead to focus on seemingly blind adoption of Alternative 2. (#01761)

RESPONSE: As described in the flora and fauna habitat, environmental consequences of Alternative 2 include a trend towards reduced barren/savanna habitat and less aspen/birch habitat. Alternative 2 would increase in mature lowland mixed hardwood/conifer habitat, mature northern hardwood habitat and northern white cedar habitat. Although there would be increased benefit for species associated with habitats that would increase, a diversity of habitats would be maintained across the Forest. Regardless of demand for timber, the revised Plan will establish probable management practices to move the Forest towards vegetative and other multiple-use desired conditions and objectives (page A-3).

As described in comment #147, the environmental consequences section for each resource topic covered in the FEIS discloses the cumulative effects on the environment that are likely to result from activities and resource output levels of each alternative along with direct and indirect effects.

The proposed management scheme under any of the alternatives developed through the Forest Plan revision process provide a forest-wide comprehensive strategy towards forest management far different than historic exploitative logging which occurred around the end of the 19th century and that was virtually unrestricted and unplanned.

See DEIS Chapter 2 pages 2-1 to 2-5 for a description of how the alternatives were developed, and how each alternative considered in detail responds to issues and concerns. Appendix A in the draft EIS has a detailed description of the analysis process.

#160

COMMENT: *...In the current assessment, the Forest Service has ignored the shortfall of volume in its original projections, and still insists on trying to produce even more timber for its ASQ. (#02287*)

RESPONSE: Please refer to comment #153.

#163

COMMENT: *ASQ @ 113 MMBF seems like an inappropriate number to publish. True that if a national emergency came around and products were needed, and if budgets were unlimited, and if NEPA requirements are relaxed, and if line officers were willing to make decisions to go into places they currently are unwilling to consider (like wetlands), and if the S&G's were relaxed to meet a biological capability, then sure. But why use 113 when the Hiawatha cannot even sustain half of that output in the 1st two decades of the 1986 plan?* (*#00768*)

RESPONSE: See comment #153. Page A-1 of the Forest Plan describes ASQ as the maximum volume that may be offered and sold from land identified as suited for timber production during any given decade of Forest Plan implementation. The ASQ is not a target to accomplish, but a threshold not to exceed.

It is an outcome of meeting the vegetation goals in the Plan, which are the means of achieving the desired condition and habitat goals.

#164

COMMENT SUMMARY: ***We are pleased to see that preferred alternative 2 reflects a significant increase in the suitable acres, ASQ, and the LTSY over the 1986 Plan.***

COMMENT: *Today, as a nation we import about a third of the wood we use, mostly from our neighbors to the north...Increased harvesting will increase growth rates for residual trees, improve tree vigor, and reduce mortality resulting in improved forest health and a much needed increase in available wood fiber. (#02166)*

COMMENT: *I support the efforts to effectively manage the cutting of timber from the forest lands. (I am not associated with any logging operations, but do not want to see our natural resources go to waste). (#01636)*

RESPONSE: Refer to comment #163.

#165

COMMENT: *I have a concern about Allowable Sale Quantity. I'd like to see the forest industry develop more private sources of fiber and not tap our National Forests or expect us to turn our forests into "wood gardens" for them. New growth (annually) is not the same quality if volume is considered as I have heard timbermen talk in terms of "more growth" than they harvest... sounds like propaganda. We do not need to harvest as fast as it grows. (#02251)*

RESPONSE: There is no intent to harvest timber resources as fast as they grow. The allowable sale quantity is based on acres of land suited for timber production, ecological land type capability and current conditions of vegetation types. The Hiawatha's harvest from 1980 to 1992 was 42%, which is less than half of the net growth (DEIS p. 3-70). Besides producing wood products, timber harvest is used as a tool to achieve desired vegetative conditions. DEIS Table 3-TS-5 on page 3-76 illustrates that a large portion of the wood fiber needs to meet area mill capacity are fulfilled by volume from other ownerships.

#166

Comment SUMMARY: ***The current total allowable sale quantity for timber in the Hiawatha is 70.0 mmbf of timber, increasing this total allowable sale quantity to 114.0 mmbf is unacceptable.***

I am opposed to the drastic increases in land suitable for timber production. Increasing the suitable land from 57 percent to 70 percent is unacceptable. The logic used to assess how increasing the amount of logging in the forest will affect the environment and non-motorized recreation is flawed and needs to be readdressed.

The Forest Plan should consider the fact that the projections made in the first management plan fell far short of what was expected. Volumes per acre, especially hardwoods, did not produce what was calculated. In the current assessment, the Forest Service has ignored the shortfall of volume in its original projections, and still insists on trying to produce even more timber for its ASQ. This is beyond reason! The Hiawatha will damage our public lands even more than it did during the 2 decades of the 1986 plan, by this unneeded increase in allowable cut.
(#00043, 00051-00186, 00192-00203, 00212-00214, 00225-00227, 00244-00246, 00254-00257, 00259, 00261-00263, 00265, 00266, 00268-00272, 00280, 00282-00290, 00293-00297, 00328-00334, 00336-00338, 00340-00347, 00452-00458, 00485-00489, 00777, 02287, 02619-02635, 02637-02641, 02643, 02645-02648, 02650, 02652-02660, 02662-02681)

COMMENT: *The ASQ in Appendix A looks frightening high. Imagining 1.13 billion board feet is unfathomable. The maps on pages C-2 and C-3 show an extremely high percentage of "modification" over too high a percentage of our public forest. Please provide for the obvious public need, and revise the proposed FP accordingly.* (#00775)

COMMENT: *I question the viability and suitability of commercial logging in the Hiawatha. The current total allowable sale quantity for timber in the Hiawatha is 70.0 mmbf of timber, increasing this total allowable sale quantity to 114.0 mmbf is unacceptable. I am opposed to the drastic increases in land suitable for timber production. Increasing the suitable land from*

57 percent to 70 percent is unacceptable. The logic used to assess how increasing the amount of logging in the forest will affect the environment and non-motorized recreation is flawed and needs to be readdressed. (#02226)

RESPONSE: Commercial logging is recognized as an acceptable and legitimate use of our national forests. In the Notice of Intent, the Hiawatha proposed to review and change, as necessary, lands identified as suited and unsuited for timber production (DEIS p. 3-68).

Changes to land suitability incorporated new information on ecosystem sustainability and capability. The suitability analysis reflected new and updated ecological classification information that improved suitability determinations. (for more information, see comment #150.) The NFMA provides guidance for the amount of harvesting that should occur on national forests. Section 13 of the act limits the amount of harvest to a quantity that is equal to or less than that which could be removed annually in perpetuity on a sustained-yield basis (DEIS p. 3-71).

Under the 1986 Forest Plan, the ASQ was predicted to rise from an average of 70 mmbf/ year in Decade 1 to an average of 93 mmbf/ year in Decade 2, and an average of 117 mmbf/ year in Decade 3. Volume shortfall from the Plan is recognized throughout the DEIS and is considered in the effects analysis. Timber harvest is one of many tools used to progress the forest towards desired conditions.

Comment #155 describes the effects of logging and non-motorized recreation on the environment are disclosed in the DEIS. Alternative 2 would increase in mature lowland mixed hardwood/conifer habitat, mature northern hardwood habitat and northern white cedar habitat. Although there would be increased benefit for species associated with these habitats, a diversity of habitats would be maintained across the Forest. All alternatives provide for a diverse range of opportunities for recreation/relaxation.

#167

COMMENT SUMMARY: ***Expressed opposition to logging or timber sales.*** *(#00031)*

COMMENT: ***...****I do not want logging and their associated roads. (# 00031)*

COMMENT: *The forests of the Upper Peninsula were basically all logged in the 1900s, and are just starting to return to their former beauty. I want them returned.* (*#01996)*

COMMENT: *I think our forests need to be left alone from "mgt" far more often. ...Forest Service has made mistakes that were caused by economics and hurt American forests...* (*#00006)*

RESPONSE: See comment #166. Alternative 2 effects to scenic resources would be similar to the existing condition. Overall, user satisfaction for the scenic integrity could remain high in this alternative because of the mix of early and late successional species and the appearance of a less intensively managed forest (DEIS page 3-347). The most visually sensitive areas will continue to be managed to meet the assigned visual quality objectives and the goal to maintain a natural-appearing forest will be met for these areas (DEIS page 3-345).

Economics are only a small part of the proposal to harvest timber from the Hiawatha National Forest. The proposed Forest Plan includes timber harvest as a method to achieve desired conditions. Goals of the proposed Forest Plan include vegetative conditions that represent native species in age, size and successional states to support native wildlife and fish species and other uses of the forest (proposed Forest Plan page 2-8).

#168

COMMENT: *We propose stricter limits on the timber industry to protect our national forest ecosystems. These limitations include a ban on logging in particularly sensitive areas, such as Ancient Forests and roadless areas, and strictly limited logging practices in other areas. (#02227*)

RESPONSE: There are multi-tiered limitations on timber production activities on the national forest. The first tier includes determinations of land suitability for timber production. The Hiawatha reviewed and has proposed changes in lands identified as suited and not suited for timber production, incorporating new information on ecosystems sustainability and capability. In the proposed Forest Plan (page A-2), forested lands not suitable for timber production include the following:

- Lands designated by Congress as wilderness;

- Lands withdrawn from timber production include Dukes Experimental Forest, RNAs, Grand Island NRA and wild segments of wild and scenic rivers;
- Forest lands with inadequate information;
- Forest lands not appropriate for timber management, including openings, areas not cost-effective, candidate research natural areas, special areas, semi-primitive non-motorized areas, and designated old growth.

The second tier includes protection for watershed resources and threatened, endangered, and sensitive plant and wildlife habitats. Examples of these limitations are:

- Small forest seeps and springs should be protected from ground-disturbing activities (proposed Forest Plan page 2-29).
- State of Michigan "Water Quality Management Practices on Forest Land" recommendations in riparian areas (proposed Forest Plan page 2-29).
- Equipment operation (except in emergency operations), will only occur when soils are capable of supporting equipment without incurring detrimental compaction, puddling or rutting (proposed Forest Plan page 2-30).
- All known populations of threatened and endangered plant species and wildlife nest and denning sites will be protected (proposed Forest Plan page 2-32).
- Patches of mature forest should be retained around known black-backed woodpecker and spruce grouse breeding sites (proposed Forest Plan page 2-32).

The third tier includes limitations at the project implementation phase that place site/project specific limitations on logging practices for protections as identified through site specific project analysis.

#169

COMMENT:. *We are dissatisfied with the level of accomplishment under the past plan adopted in 1986. We wish to state how important it is to manage or treat the Forest in a timely manner or goals will not be met and opportunities lost. We have yet to see an example of where the FS has caught up on planned treatments once they have fallen behind. We suggested that avenue be addressed in the plan revision. We do not believe that it has. (#02068)*

RESPONSE: See comment #153. To achieve vegetation goals, the proposed Forest Plan includes a schedule for proposed and probable management practices that increase even-aged and uneven-aged treatments over current treatment levels. The degree of actual treatment accomplishment is largely determined by funding levels.

#170

COMMENT: *We strongly support increasing the acreage mechanically thinned each year using National Fire Plan dollars. We understand that there is limited opportunity for using fuel management dollars from the National Fires Plan on the UP of Michigan may be limited, but don't overlook an opportunity to use this tool when conditions are suitable. It can increase your funds for vegetation management significantly, while reducing hazardous fuels and providing critical wood fiber for area mills...*

In summary we urge you to increase the thinning and regeneration acres to improve forest health and produce usable fiber. The non-chargeable volume portion of the TSP should reflect the real on the ground needs, probably in the range of up to 25 percent of the ASQ. (#02166)

RESPONSE: Thinning has been and continues to be an important tool for vegetation management. As described in the DEIS on page 3-8, thinning made up almost 70 percent of the Forest's harvesting between 1986 and 2004. For Alternative 2, thinning treatments show an increase over current treatment levels.

Thinning treatments are the highest of all alternatives amounting to 42% of all harvests (DEIS page 3-27). The Hiawatha uses National Fire Plan funds to plan and conduct vegetation management activities where conditions are appropriate to qualify for these funds, and as funding allows. This is expected to continue in the future. See comment #151.

#171

COMMENT: *We need to harvest our forest in a managed way. If we don't, they will become a tinderbox. Paper companies are buying pulp from Russia shipped into Green Bay. Can't we*

work with the industry for the benefit of all? (#02225)

RESPONSE: The proposed Forest Plan includes goals for sustainable harvest activities to provide commercial wood products for mills in the upper Great Lakes Region and for satisfying the demand for special forest products through environmentally responsible harvesting on National Forest System lands (proposed Forest Plan page 2-9).

#172

COMMENT: *Use of "patch" clearcut on page 3-72. By strict definition, you are obligated to regenerate the entire stand within 20 percent of rotation age when using the "patch" method. That would mean you want to make repeated entries into a larger stand, which is contrary to the longer entry periods you specify. I think you mean instead is to break up larger even-aged stands into smaller stands and treat some of them with stand clearcuts and leave others untreated until a later entry period.* (*#00768*)

RESPONSE: This comment refers to guidelines for vegetation management in Indian Wild and Scenic River Corridor (MA 8.4.1). The guideline is intended to describe limitations to clearcutting in the river corridor. However, the terminology was incorrect and will be removed in the revised Plan.

The intention was to allow minimal timber harvest, as needed to meet management area goals. In some cases, vegetation may be managed at a scale smaller than stand scale. Patches of vegetation may be clearcut to progress the area towards vegetation goals while other portions of the stand may be left untreated, increasing structural diversity within the stand.

#173

COMMENT: *It is recommended that timber harvesting be conducted in mid-to-late winter to minimize impacts to hydric soils and vegetation. (#02205)*

RESPONSE: Specific seasonal restrictions for timber harvests are established on a site/project-specific basis. The Proposed Plan has a forest-wide standard to minimize impacts to soils: "Equipment operation (except in emergency operations), will only occur when soils are capable of supporting equipment without incurring detrimental compaction, puddling or rutting." How that standard is achieved is based on site/project specific conditions.

#174

COMMENT: *Regarding product mix, we would like to see a firm commitment on the mix of forest products that the Forest sells. The preferred alternative projects a product mix of 61 percent pulpwood and 39 percent sawlogs. The sawlog volume projection does not differentiate between hardwood and softwood sawlogs. During the 17-year period between 1986 and 2003 the Forest averaged less than 10 percent sawlogs and the hardwood log volume averaged only 2 MMBF per year. To put 2 MMBF in context, our operation in Munising consumes 2 MMBF in just 17 days. With 240,000 acres in the Northern hardwood type, the Hiawatha can do better than 2 MMBF per year. We ask that the plan include a target of hardwood sawlogs and that the target be achieved.* (*#01637*)

RESPONSE: The Forest Plan is a strategic document containing goals, objectives, standards and guidelines. It would not be appropriate to include specific targets. The Plan is aimed at achieving desired ecosystem conditions. Timber outputs are estimated to be produced in the pursuit of those ecosystem conditions. At this point, it would be difficult if not impossible to predict the product mix so specifically as to guarantee species composition. The Plan contains the Forest's best estimate of both conditions to be achieved and products and services to be generated. Actual accomplishments will depend on annual funding levels. Appendix A of the Plan outlines probable goods and services.

Species Composition

#175

COMMENT: *...I would...request that care be taken not to undertake practices that would increase our already burdensome deer population...negative effect of deer browsing on young conifers is recognized as leading to the replacement of conifers with hardwoods within mixed transitional forests. I am*

concerned that some of your proposals might exacerbate this problem... I would encourage the use of management practices that maintain or increase the coniferous component of the mixed forest and hardwood dominated sections of HNF. Bird species diversity will crash if the coniferous component of mixed forest is removed. (#00030)

RESPONSE: Desired conditions in the revised Plan include: maintained or increased within stand diversity by encouraging long-lived conifers such as white pine and hemlock. Revised Plan vegetation goals include vegetative conditions that represent native species in age, size and successional states that support native wildlife (proposed Plan p. 2-8). The young aspen/birch habitat is the one most closely associated with the deer population. See DEIS pages 3-144 to 3-148. Table 3-WL-5 shows the amount of young aspen/birch habitat is expected to decline slightly from its current level under Alt. 2. This should help prevent increases in deer populations. Other factors such as weather and state hunting regulations also influence deer populations.

Aspen

#176

COMMENT SUMMARY: ***Maintain or increase the amount of aspen management.*** *(#00025, 00047, 01757, 02225)*

COMMENT: *The goal aspen acreages in Alternative 2 ranges from 29,139 to 100,430. This range is far too wide and should be reviewed with the focus on maintaining as many aspen acres as possible, and not less than the current aspen acreage of 79,300 for several reasons:*

1. *Aspen as a forest type has been declining across the Upper Peninsula, including on private non-industrial lands. The Hiawatha Forest should consider mitigating some of this decline through retention of its aspen acreage.*
2. *The Hiawatha's plan to harvest older aspen early in the plan decade is critical to retaining this important forest type. The Hiawatha must not lose focus on this objective of the plan. (#01760, 02069)*

COMMENT: *The Society disagrees with the assumption made in the draft EIS (page 3-41) that aspen "will be maintained on other ownerships in its current type" and therefore the public should not be concerned with the nearly 54,000 acres of over mature aspen on the Forest or the decline expected in the Preferred Alternative. During the past 20 years, aspen/birch forests in the UP of Michigan have decreased by 20%. Aspen levels are declining across all ownerships in Michigan according to FIA data with the decline dropping by one percent per year in the 1990's. The Hiawatha National Forest provides one of the last opportunities to maintain essential early successional landscapes in Michigan and must accept this responsibility. (#02218)*

COMMENT: *In the Preferred Alternative for the HNF plan, the Forest Service is committing to managing for within a range of 5% to 17% of the suitable timberlands in aspen forest type. This amounts to a goal of maintaining somewhere between 29,000 and 100,000 acres of aspen on the forest. The Alger Conservation District believes that range of this goal is far too wide to produce any level of accountability for the maintenance of this important forest type. This goal should be tightened up by raising the minimum acceptable level to 15% of the suitable forest lands. This would produce a range of 84,000 to 100,000 acres of aspen, a much more acceptable and credible figure. (#02206)*

COMMENT: *...(Alternative #2) includes a planned decrease of...42,000 acres of aspen management area emphasis from the existing Plan with large offsetting increases in hardwood management....A change in mix of this magnitude would compromise the promotion of high aspen stem density, which is a critical component for the protection of grouse and woodcock from predators... reconsider...this part of the Forest plan. (#00040)*

COMMENT: *Alt 2 is not now an acceptable alternative. We would like to see some improvement made in this alternative that would result in it being more productive of desired resources and wildlife habitat. Now the maximum aspen acres under Alt. 2 are 100,000. Make the aspen acreage minimum 50,000 acres and increase the maximum*

accordingly. Alt 2 is also totally lacking in the highly desired MA 3.2, even-aged management of hardwoods that would result in diverse stands of greater benefit to game and non-game wildlife. If Alt. 2 included about 100,000 acres of this it would be far more productive. (*#02067, 02068)*

RESPONSE: See comments 125 and 126. Desired conditions for vegetation presented in the revised Plan include maintaining early successional forest types such as balsam fir and aspen through management activities to meet vegetation and wildlife habitat objectives (proposed Forest Plan page 2-8).Existing conditions show aspen acres on suitable lands to be around 15%. Projections for Alternative 2 indicate a reduction in aspen acres over the next 100 years to about 12%.

Table 3-VEG-13 in the DEIS had showed this reduced level to be about 8.5%, but refinements between the draft EIS and the final EIS in the aspen goals and model resulted in an increased level of aspen maintained.

Projections show that within 10 years, larger (older) aspen will be replaced by smaller (younger) aspen. As aspen in the 9.0" to 17.9" size class are treated, management goals to avoid succession to spruce/fir and later seral species are achieved. With treatment on suitable lands and natural disturbances on unsuitable lands, aspen will be sustained across the forest. The desired range of the aspen component in each ecological land type within each MA for each age/size class is relatively narrow. See revised Plan Tables 3-2 through 3-10, Vegetation Composition and Size Goals by Ecological Land Types, for MAs 1.2 to 8.3. The broad forest-wide range for the aspen type is derived from combining all minimum values for the low end of the range, combining all maximum values for the high end of the range, and comparing the two combined values. Aspen may be managed at the extreme ends of the applicable range in small areas, but to meet overall Plan goals, the cumulative level of aspen management is expected to be in the middle of the range.

With regard to even-aged management in northern hardwoods, a minimum of 75% of the northern hardwoods stands in MA 2.3 will be managed using uneven-aged systems, which means that up to 25 percent of the northern hardwoods in MA 2.3 may be managed using even-aged systems (Plan p. 3-11). This amounts to approximately 52,000 acres that could be managed using even-aged systems. Even-aged management would also be appropriate in northern hardwood stands found in other MAs.

#177

COMMENT: *Aspen acreage from page 1-6 of the draft EIS, is vastly different from the 32,600 acre figure for Alternative 1 given on page ES-14. On page 3-198 of the draft EIS, the overall aspen acreage on the HNF is given as 105,000 acres. Further, management under Alternative 1 in Figure 3-WL-5 in the draft EIS starts at 32,000 acres for the young aspen type, which should be about 30 % of total aspen, and ends at over 50,000 acres of young aspen in 100 years, with the entire aspen type presumably larger. There is some difficulty in determining what the goals are for the aspen type and how much acreage will be lost...* (*#00239)*

RESPONSE: While Alternatives 2–4 specify both a minimum and a maximum aspen acreage, Alternative 1 specifies only a minimum limit on aspen acres. The 32,600 acres shown for Alternative 3 on page ES-14 was the minimum aspen acreage that would be maintained for all age classes. The commenter is correct that if the acres of young aspen were to reach the 50,000 plus acres shown at the end of 100 years, the total acreage must be substantially more than the 32,600-acre minimum. This is not a conflict because there was no maximum aspen acreage set for Alternative 1.The 89,000 acres of aspen on page 1-6 of the DEIS is the total acres of aspen of all age classes that occur on suited lands. The 105,000 acres of aspen on page 3-198 of the DEIS includes aspen of all age classes that occur on both suited and unsuited lands.

Pine

#178

COMMENT: *...we recommend that...jack pine management acreage should be the maximum goal of 92,937 in Alt. 3-------At Least, and that no harvested jack pine should [be] planted to red pine. (#00189*)

RESPONSE: Some refinement of the vegetation goals and model occurred between the draft

EIS and the final EIS. Alternative 2 would maintain jack pine at approximately current levels to meet vegetation goals. There is currently an excess of over-mature jack pine. On the unsuited lands, the older jack pine would succeed to other forest types, while active management on the suited lands would convert susceptible acres to younger age classes (DEIS page 3-82).

With Alternative 2, the jack pine habitat trend would experience some minor fluctuations in the early decades, but would then return to about current levels and remain there. Although some of the ELT 10/20 jack pine fluctuation would be attributed to stands converted to red pine, barren habitat, or other species, Alternative 2 has a goal to maintain about 10,000 acres of jack pine suitable for KW on the forest at all times. If this alternative were implemented, over the long-term, available habitat for other wildlife associated with jack pine, such as black-backed woodpecker, snowshoe hare and spruce grouse (Table 3-WL-3), would be greater than any other alternative, except Alternative 3.

See comment #176 regarding managing aspen. The same is true of jack pine, which may be managed at the extreme ends of the applicable range in small areas. But to meet overall Plan goals, the cumulative level of jack pine management is expected to be in the middle of the range. (Also refer to comment #126.) The middle of the range is still higher than the existing condition.

#179

COMMENT: *...It would be a good idea to cut white pine stands on a very long-term rotation, longer than the typical current maximum rotation of 120-160 years. Wildlife will definitely benefit... (#00236)*

RESPONSE: Rotation ages shown for various species in Table 2400-2 of the Plan are a guideline. Guidelines are permissions and limitations that should be implemented in most situations. Deviation does not require a forest plan amendment, but the rationale must be disclosed in the project decision documents (proposed Forest Plan page 2-1). Therefore, where there is a reason to manage white pine on a longer rotation, it would be permissible to do so with proper documentation. These ages are for suited lands. On unsuited lands (317,000 acres), including designated old growth areas, there are no rotation ages for white pine or other species. Unsuited lands would succeed to later-successional species over time. Changes in vegetation would be the result of natural succession. White pine would continue to grow until natural disturbance or natural succession results in mortality.

#180

COMMENT: *...projected [jack pine] decline when combined with the previous jack pine declines would result in the loss of over 60,000 acres of jack pine habitat on the Hiawatha since 1980...that is going backwards! The final sentence in the same paragraph says "If jack pine were to be managed near the upper limit of the goal-range, the cumulative jack pine loss could be reversed, and sharp-tail habitat would not decline. ["] We feel the upper limit should not be the upper limit of the "range", but the absolute minimum. We do not think additional acres should be converted from jack pine to red pine. (#00189*)

RESPONSE: See comment #178. Current conditions for jack pine shown in Table 3-VEG-12 in the draft EIS show a total to 63,595 acres in all seral stage/size classes on all NFS lands. As stated in comment #178, the vegetation model has been refined between the DEIS and the FEIS. Jack pine would decrease slightly in Decade 1, then increase above current levels during Decades 2 and 3 to about 69,000 acres before decreasing gradually back to about the current level and remaining there through Decade 10.

Cedar

#181

COMMENT: *As noted in the vegetation management harvest methods/practices section, 'Cedar harvest should be limited to sites where a high probability for successful regeneration' is a serious regeneration issue. The viability of successful regeneration and recruitment of cedar through patch and strip cuts as suggested in this section is questionable as demonstrated in past implementation. Any implementation should be adequately paired with considerations for*

additional seedbed preparation (techniques such as prescribed fire or scarification); deer browsing, stand maturity, and cut design. (*#02205)*

RESPONSE: Regeneration issues from past implementation have led to inclusion of the guideline presented in the revised Forest Plan. This guideline is designed to ensure that high probability exists for successful regeneration of cedar prior to harvest. Specific measures to implement cedar regeneration following this guideline would be proposed and determined on a site/project specific basis. As shown in Table 2400-1 on page 2-26, shelterwood and seed tree practices are listed for cedar.

#182

COMMENT: *I didn't see anything on the Cedar Regeneration Problem. Is it still a problem? (#02221*)

RESPONSE: See comment #181.

Hardwoods

#183

COMMENT: *...I would encourage you to increase the acreage goals of mature mixed hardwoods/conifers (p. ES 20). Mixed (boreal hardwood transitional) forests support the greatest diversity of breeding birds in North America outside of some regions of Mexico (Partners in Flight N. Am. Landbird Conservation Plan)...The American Bird Conservancy designated Hiawatha National Forest, Seney N.W.R., and Superior State Forest as an Important Bird Area (IBA). IBAs are "sites of international significance which we have a special responsibility to protect, as the loss or degradation of any one would have a lasting negative impact on bird populations"...(#00030)*

RESPONSE: Alternatives 2 and 4 would provide the greatest quantity of mature northern hardwood and conifer habitats over both short-term and long-term periods of time. Under Alternatives 2 and 4, habitat would increase rapidly in the first 20 years and then stabilize at approximately 60 percent above the existing condition (DEIS page 3-150).

#184

COMMENT: *...Increasing to 76,000 acres of uneven-aged northern hardwood forests (primarily sugar maple and basswood), already the Forest's most abundant habitat component will not help the needs of forest game and migratory songbirds.* (#00042, 02280)

RESPONSE: Species associated with mature northern hardwood are listed in Table 3-WL-6. Many of the species listed include songbirds. Uneven-aged management can produce a more developed and sustainable understory than even-aged management.

A variety of bird species, such as black-throated blue warblers, mourning warblers and hermit thrushes use the shrub and low canopy nesting habitat, which results from uneven-aged management practices. See DEIS Table 3-WL-6 for the wildlife species associated with mature northern hardwood habitats. The 2006 Plan includes other measures to maintain game species across the Forest.

#185

COMMENT: *I have no problem with hardwood management as it too is essential, but in weighing the differences between greater hardwood and aspen, wildlife is shortchanged for food and the best habitat. Is increasing the hardwood a disguise for creating more "old growth" forests?* (*#01757)*

RESPONSE: Much of the decrease in aspen and increase in hardwoods is due to natural succession. The Hiawatha is largely a second growth forest as a result of logging, fire control and planting that took place in the 1930s and 1940s. Longer-lived species like northern hardwoods (now 65 to 75 years old), are maturing and growing into larger size classes.

Some areas which emphasized even-aged management in Alternative 1, would be allocated to other management areas under Alternatives 2 and 4. Many of these acres would be allocated to MA 2.3, which focuses on uneven-aged hardwood management (DEIS page 150). Over time, succession would move these stands currently managed for early successional habitat into mature northern hardwoods. All MAs, regardless of management focus, include vegetation goals for some amount of aspen forest.

#186

COMMENT: *page ES-21 mentions the 117,000 acres of mature northern hardwoods. The author defines them as "sawtimber-sized stands greater than about 70 years old." We need additional stands of those older hardwoods preserved for tomorrow's greater recreational needs. The proposed FP shows little foresight.* (*#00775*)

RESPONSE: On suited lands, depending on management area designation, some stands of mature northern hardwoods are available for even-age and uneven-age management. The excerpt was a condensed version of information presented on page 3-148 of the DEIS that refers to sawtimber sized stands greater than size class 4.

Size class 4 is defined on page A-2 of the DEIS as between nine and 18 inches. Under the Proposed Plan, some of these hardwoods would be managed as sawtimber. The discussion of direct and indirect effects of Alternative 2 on page 3-150 indicates mature northern hardwood habitat would increase under this alternative.

Vegetation Mgmt. Direction

#187

COMMENT: *On page 2-9 of the proposed plan, the objective under the heading of Forest Products lists only "Provide firewood for home heating". This is hardly the key objective for managing vegetation in this category. The plan should clearly state that production of commercially valuable forest products is a key objective of the plan. In the same part of the plan, Goal 3 "Harvest activities occur at sustainable levels" is redundant or else should be included in Goal 2.* (*#01760)*

RESPONSE: The objective that this comment refers to has been expanded to “special forest products” in the final Plan. Goals 2 and 3 sound very similar, but there are subtle differences. Goal 2 guides the Forest to work towards satisfying demand for special forest products in an environmentally-responsible manner. Goal 3 guides the Forest to manage for a sustainable harvest levels.

#188

COMMENT: *I need to draw your attention to 2400 Veg. Management, Chapter 2 page 2-9 of the Proposed Forest Plan under "Forest Products". The Forest needs to use this opportunity to address the use, collection and harvesting of Misc. Forest Products...refer to FSM 2400 Chapter 60, under 2467 - "Sale of Special Forest Products", item 2467.01, 02, and especially 2467.03 - Policy. It sets standards/policy and it clearly makes the tie to a Forest Land and Resource Management Plan...I ask that a second look be done to give the program managers some direction to make this program better for us and forest users. (#00206*)

RESPONSE: See comment #187.

#189

COMMENT: *Page 2-9 is unclear, under Forest Products. "Commercial wood products are provided for the mills in the upper Great Lakes Region." Which mills? All of them? (#00775*)

RESPONSE: This goal statement refers to mills within the area of consideration in the Great Lakes Region. The area of consideration includes the seven counties listed in the DEIS Table 3-ECON-1 (page 3-471). Types of mills considered are listed in the DEIS Table 3-ECON-3 (p. 3-474).

Commercial wood products would be provided to those mills that are successful bidders for timber sales offered as the Forest is managed to meet ecosystem goals identified in the DEIS and Plan. This goal statement is expanded in the final Plan.

#190

COMMENT:...*vegetative goals by ELT and percent seem to be detailed and look like they can be implemented. The major concern I have is the intent of the “blanks” where no maximum or minimum goals are shown. Does this mean if a vegetation type exists in the field in that ELT but there is a blank that you must convert it into something else that shows a minimum percent? I do not think that is what you mean, but it certainly is not clear. I think that the blanks should be replaced with asterisks that explain that these vegetation*

types may exist and may be managed, just that they don't have a specific ELT goal tied to them. (#00768)

RESPONSE: This comment refers to vegetation composition and size goals shown for each management area where such goals are appropriate. In the introduction to each of these tables, there is a statement explaining that vegetation goals apply only to suited lands, and if an ecological land type had less than 1,000 acres, no vegetation goals were developed. That is the reason for the blanks.

For forest types with blank boxes, there is neither a minimum nor a maximum goal. Conversions could occur if needed to meet a goal for another forest type that is below its minimum goal, but conversions would not necessarily be pursued. These goals are expected to be achieved through the acres of proposed and probable practices in Appendix A Table A-3.

#191

COMMENT: *Pg. 2-9: Goal #2 states..."through environmentally responsible harvesting..." Shouldn't this apply to goal #1, as well? Of course it does apply, but by saying it for 2, but not for 1, it sounds like we don't give a hoot about being responsible regarding commercial wood products. (...and we all know, that's not the case!)Pg. 2-9: Objectives about home heating. I believe this was discussed at the HNF meeting in Manistique - removing this, since it just sort of hangs out there by itself. (Why highlight firewood, but nothing else?) (#00677)*

COMMENT: *2400, Veg. Mgt., pgs 2-8 & 2-9: Paragraph 4 states that "Prescribed fire....will be used as a tool...." Suggest that "will" be changed to "may" and add "where appropriate" to the end of the sentence. Prescribed fire is a nifty regeneration tool, but there's been a fair amount of discussion about markets that will not take charred wood.... (#00677)*

RESPONSE: Goal #1 statement will be revised to clarify this point. Comment #187 addresses the objective for firewood. The use of prescribed fire that the commenter is referring is part of the vegetation desired condition statement found on page 2-8 in the Proposed Plan. This is not a standard or guideline but a desired condition to use prescribed fire as a tool, while recognizing fire is only one of several appropriate tools to establish regeneration. In some situations, fire will be the optimal tool, but in other situations, another method will be more suitable. Guidelines for prescribed fire are scattered throughout the Proposed Plan.

#192

COMMENT SUMMARY: ***The Desired Future Condition of the Forest should move closer to reflecting presettlement conditions of forest types and age classes.***

COMMENT: *In particular, there should be fewer acres of early successional aspen and more from longer-lived pine and northern hardwoods. Old growth acreage should be expanded. (#02167)*

COMMENT: *The Hiawatha National Forest should be managed with an emphasis on more closely matching the presettlement forms of the forest, and age mix among the trees of the forest....Michigan's national forests, have created and maintained too many acres of aspen. (#00236*)

COMMENT: *I think that condition of HNF should move closer to reflecting pre-settlement conditions of forest types and age classes. In particular, there should be fewer acres of early successional aspen and more from longer-lived pine and northern hardwoods. Further, the pine component needs to be restored in much of the hardwood stands. The proposed range of rotation ages for white and red pine should be modified to allow for significantly older trees, reflecting the longer life of both species. Consider how the Menominee do it (must it be cut now?). And the plan should apply new scientific data to old growth management, and should include specific guidelines for monitoring old growth.* (*#01651*)

RESPONSE: Based on the Purpose and Need, moving toward pre-European conditions is outside the scope of plan revision. The Purpose and Need identified a need to manage vegetation to provide for species conservation, forest health, social and economic factors and to incorporate new science. This means that vegetation composition will be outside of pre-European settlement conditions. As described in the DEIS on page 1-7, in response to the

Notice of Intent, some reviewers believe that the pre-settlement vegetation information should not be used as a desired condition because it is a single moment in time and society's needs change with time.

Environmental consequences common to all alternatives in the DEIS on page 3-14 describes forest succession as a natural phenomenon that occurs and will continue to occur on the Hiawatha. Both tree harvesting and prescribed fire can be used as tools to restore the composition and structure that is typical of native plant communities.

Management treatments would be designed to mimic natural processes to meet vegetation composition goals. Desired conditions described in the Proposed Forest Plan include vegetative conditions that represent native species in age, size and successional states that support native wildlife and fish species and other uses of the forest and contribute toward ecosystem sustainability and biological diversity.

Early successional aspen will decrease and white pine will increase, as a result of natural succession. Later successional northern hardwoods will increase and long-lived conifers such as white pine will be encouraged in hardwood stands (proposed Plan p. 2-8). In the Proposed Plan on page 2-28, rotation ages vary by management area. Rotation ages for white and red pine is 160 years in most of the MAs and up to 200 years in MA 7.1. There would be no timber harvest in MAs 5.1, 6.3 and 8.1, and rotation ages do not apply to uneven-aged hardwoods.

Rotation ages are applicable to suitable lands which comprise about 511,000 to 624,000 acres (57% to 70%) of the Hiawatha (DEIS page 3-71). Rotation ages would not apply to the remaining 30 to 43 percent of the forest. The Plan also provides for a minimum of 51,988 acres of the suitable lands to be designated as old growth (DEIS page 3-43). With a variety of management practices by management area, at least 30 percent of the lands designated unsuited, and old growth designation, development of older trees will occur in many areas of the Forest.

Members of Hiawatha's interdisciplinary teams (IDT) completed resource assessments for old growth. Specialists reviewed the latest scientific data, information, and monitoring and evaluation reports to recommend changes to the Forest Plan (DEIS page 1-1). New ecological information and monitoring indicated adjustments to the old growth system in place under the 1986 Plan are needed (DEIS page 3-43).Management direction monitoring items shown in the Plan on page 4-10 includes monitoring for how well the Plan meets desired conditions in terms of vegetation ecological processes. This includes monitoring for how well management goals and objectives are being met for old growth.

#193

COMMENT: *Aspen acreage ranges from 21,364 acres in Alternative 4 to 154,450 in Alternative 3 (with no max in alt.1). Alternative 2, the proposed alternative varies from 29,000 to 100,000. Managing toward the low end would run counter to the goal of biological diversity addressed as goal 2 on P2-8 of the proposed plan, as well as goal 3 representing a variety of successional states. (#02069)*

RESPONSE: See comments #126 and 176.

#194

COMMENT: *Forest Plan page 2-12 states: Goal 1) Diverse, healthy, and productive, resilient habitat.... does not necessarily describe good habitat for many wildlife species. For instance, woodpeckers (black-backed especially) need "unhealthy" dead, dying, decaying standing trees to provide quality habitat.*

Forest Plan page 2-16 indicates that Forest pest management is aimed at restoring forest health to achieve resiliency. Once again I would recommend some allowance of pest infestations as long as they are not non-native invasive pests. Many species of native bark beetles, etc. pose little threat of long term defoliate of large stands. (#00665)

RESPONSE: Desired conditions described on page 2-12 of the Proposed Plan include providing habitats that support viable populations of a wide range of existing native and desired non-native species. The goals that follow the desired condition statements are intended to work together to achieve the desired condition. Healthy productive habitats in Goal 1 are intended to work in concert with Goal 2 to provide ecological conditions to

sustain viable populations along with Goals 1 and 2 on page 2-13 to contribute towards conservation of Threatened, Endangered and Sensitive species.

Page 3-80 of the DEIS describes a number of aspen, jack pine and spruce-fir habitat acres that are susceptible to loss unless active management occurs. In these cases, restoring health and achieving resiliency would maintain these habitats for the species that depend on them. Susceptibility to insect and disease would be maintained at higher levels on unsuitable lands.

There will be sufficient dead and dying trees available for cavity-dependent species. Pest management desired conditions, goals, objectives and standards (page 2-16 and 2-36 in the proposed Plan), primarily refer to non-native pests. There is no direction to eradicate native insects or diseases, but only to reduce conditions where such native pests could cause widespread damage.

Vegetation Composition

#195

COMMENT: *[page] 2-16 Add a goal – Forests are maintained in healthy condition by having a mix of species and age classes. (This (as well as desired wildlife habitat) drives the vegetation composition goals which under pin this plan) (#01641)*

RESPONSE: This goal is already addressed. See Goal 3 on page 2-8 of the proposed Plan.

#196

COMMENT: *Vegetation Management: We are pleased to see that the 'Desired Conditions" has a focus on a forest that is sustainable, resilient and free of 'undesirable non-native species'*

- *The term 'undesirable' is vague and should be defined.*
- *There should be a goal related to specific threats such as invasive species, altered fire regimes and fragmentation. This may be implied in the goals, but should be directly stated.*
- *Goal #3 under the "Vegetation Management" category is confusing as stated. It may be better to say that "vegetative conditions have representative examples of native plants and communities..." This certainly ties in directly to the protected areas/ecological community representation project that TNC and USFS staff have discussed.*
- *We are especially supportive of increased mesic conifers and the less shade tolerant species such as yellow birch and cherry.*
- *We support an increased and committed effort to reduce Fire Regime Condition Class, especially through prescribed burning and alternative silvicultural techniques.*
- *For all categories under Vegetation Management, there needs to be a significant landscape level planning goal that indicates communication and decision making in conjunction with adjacent land owners. For example, the old growth system of the Hiawatha would be much more effective at conserving the associated species if this system augmented set-asides on non-USFS lands, such as TNC preserves. (#00779)*

RESPONSE: The term undesirable non-native species is in the context of desired conditions. Undesirable non-native species are those that are invasive, toxic and/or compete with native species for growing space, light and/or nutrients. The goal for this desired condition appears on page 2-16 of the Proposed Plan. Goals for invasive species are in the Proposed Plan (page 2-16). Vegetation goals for each management area, including openings, also address the issue of improving fire regime classes and fragmentation. Fire fuels management goals are in the Plan (page 2-17).

The Proposed Plan emphasizes uneven-aged shade-tolerant species in MA 2.3. This does not preclude some management for species such as cherry and yellow birch. Refer to comments #128 and 129. DEIS pages 3-46 to 3-58 describe the design, arrangement and ecological representation of designated old growth that were considered in the Forest Plan revision process.

Cumulative effects include lands that other federal agencies, the state of Michigan, and non-profit entities manage to develop old growth characteristics. These ownerships manage about 222,000 acres of lands that will succeed into old growth in the EUP (DEIS page

3-58). The Forest will continue to collaborate with adjacent land owners to coordinate conservation efforts.

#197

COMMENT: *Regarding the maintenance of red pine plantations, the plan does not make clear if red pine will be replanted following clearcuts. The discussion on pages 2-8 of the proposed plans only mentions prescribed fire as a tool to regenerate red pine. Since this species is important to supply both pulp mills and sawmills, the plan should allow for replanting current plantations since natural regeneration of red pine often is spotty and results in lower productivity due to inconsistent stocking.* (*#01760)*

RESPONSE: Vegetation goals will result in maintaining red pine on the Forest. As described on page 1-4, Plan tools and techniques promote re-growth of harvested or other disturbed forests with a variety of regeneration practices, including tree planting, seeding and natural regeneration. Desired conditions for red pine on page 2-8 of the Proposed Plan include maintaining established red pine plantations through appropriate rotation lengths and regeneration through both the shelterwood and clearcut systems. Regeneration harvest methods for red pine are on page 2-26 of the Proposed Plan. Stand reforestation includes planting, usually following timber harvest and site preparation (DEIS page 3-15). These regeneration systems include red pine planting.

#198

COMMENT: *page 2-8 states "White pine will again become an important commercial tree species," and "Established red pine plantations will be maintained.." Any remaining old growth stands of white pine need to be preserved. Vast HNF acreage is dedicated to plantations, some of which ought to be restored to its original condition.* (*#00775*)

RESPONSE: The Proposed Plan includes 52,000 acres of old growth. This includes stands of white pine exhibiting old growth characteristics. Under Alternative 2, acres designated as old growth will be unsuited for timber management, so these stands will be undisturbed except by natural processes. It is estimated that there are only about 500 acres of true old growth on the Hiawatha National Forest (DEIS page 3-45). While there are no requirements to designate specific forest types as old growth, proposed old growth was identified based on stand structure and ecological characteristics, or how well old growth capabilities are represented within these areas (DEIS pages 3-43 and 3-44).

Also see page 3-56 for discussion of how Alternative 2 addresses ecological representation of the old growth system. Alternative 2 concentrates old growth on ecological landtypes where old growth stands include white pine and hemlock, red maple, northern hardwoods and cedar, with smaller representation of red pine and black spruce.

#199

COMMENT: *Vegetation management pg. ES-8: Under the preferred alternative #2 the amounts of min/max jack pine goal acres seems quite large. Is this due to the KW species driving management direction?* (*#0767, 00298)*

RESPONSE: Existing jack pine on suited forest lands cover 60,127 acres as shown in the DEIS Table 3-VEG-13 on page 3-25. See comment #180 regarding both short- and long-term changes in the amount of jack pines. These acres fit well within the minimum/maximum range presented on page ES-8. Jack pine is an historical component of the forest and as discussed on pages 3-137 through 3-140 is habitat for Kirtland's warbler and a host of other wildlife and plant species. See comments #125, 176 and 178. The range for jack pine was derived in the same way as the range for aspen. Again, it is unlikely that jack pine would be managed at either of the extreme ends of its range on more than a small part of the forest.

Old Growth

#200

COMMENT: *The objective under Old Growth is to "Maintain a 52,000-acre old growth system"-too small a percentage of the 895,313-acre forest.... declare our remaining old growth tracts as unsuitable for timber production.* (*#00775)*

RESPONSE: See comment #198. A range of old growth was analyzed ranging from approximately 5,500 acres in Alternative 3 to about 142,000 acres in Alternative 4. Under Alternatives 2–4, designated old growth would be classified as unsuited lands. In addition to about 52,000 acres of designated old growth, Alternative 2 includes about 308,400 acres of other lands that will complement the old growth system (DEIS pages 2-3 and 3-58). Together with lands in other ownerships, under Alternative 2 old growth lands will amount to about 15% of all lands in the EUP.

#201

COMMENT: *page 2-27 says to not issue special product permits for Old Growth areas. This is nearly an impossible guideline to implement, especially for firewood gathering. It would require all Old Growth stand boundaries to be signed as such, GIS mapping capabilities by front-liners, and a revamping of the entire permitting system from the way permits are issued today. If the stands were not signed, how would a permittee know where the OG is? Roads are not usually the boundaries of old growth stands, so the permittee would have no clue. (#00768)*

RESPONSE: The Forest Plan is a strategic document and implementation could be accomplished in various ways. For example, permittees could be given a map showing old growth areas.

#202

COMMENT SUMMARY: ***The standards and guidelines for the management of old growth and stands adjacent to old growth are inadequate.***

COMMENT: *Compared to pre-European conditions, there is very little old-growth left in the Upper Peninsula and a considerable number of rare and endangered species rely on older forest types. Notwithstanding this, there is more old growth in the UP than most other places in the Midwest. These areas provide the best core areas to build truly large old growth forest ecosystems almost all of the eastern U.S., aside from perhaps around the Smoky Mts. National Park. A large number of secondary forests in the Hiawatha have not been cut since the early 1900's and are now starting to obtain some old-growth characteristics. These "Secondary old-growth" sites need to be identified and preserve so to ensure that in the future the amount of older forests in the UP increases. Standards and guidelines for management of old-growth and stands adjacent to old-growth needs reflect this need for expansion of old-growth forest. Designating early successional stands as some kind of future old growth might be OK, but should not substitute for protecting all existing mature stands. These are the stands that will become old growth sooner than later.*

Stands located adjacent to old growth need more protection as well. Allowing timber harvests in these areas would continue to perpetuate the shockingly low amount of suitable habitat for species requiring older forests, would likely degrade existing old-growth, and fail to plan for conservation of rare and endangered species dependent on old-growth habitat. (#00778)

COMMENT: *The standards and guidelines for the management of old-growth and Stands Adjacent to old-growth are inadequate. Standards and guidelines for management of old-growth and stands adjacent to old-growth needs reflect this need for expansion of old-growth forest. Stands located adjacent to old growth need more protection as well. Allowing timber harvests in these areas would continue to perpetuate the shockingly low amount of suitable habitat for species requiring older forests, would likely degrade existing old-growth, and fail to plan for conservation of rare and endangered species dependent on old-growth habitat.* (#00043, 00051-00186, 00192-00203, 00212-00214, 00225-00227, 00244-00246, 00254-00257, 00259, 00261-00263, 00265, 00266, 00268-00272, 00280, 00282-00290, 00293-00297, 00328-00334, 00336-00338, 00340-00347, 00452-00458, 00485-00489, 00777, 02226, 02619-02635, 02637-02641, 02643, 02645-02648, 02650, 02652-02660, 02662-02681)

COMMENT: *Logging in old growth would continue to perpetuate the inadequate amount of suitable habitat for species requiring older forests, would likely degrade existing old-growth, and fail to plan for conservation of rare and endangered species dependent on old-growth habitat. These include but are not limited to Red-shouldered hawk, Northern Goshawk, and other bird species, Canada Lynx, pine marten, numerous plant species*

such as the Goblin fern, and a number of other taxa. These species lack suitable habitat across the region and the HNF is one of the best remaining landscapes for restoring these species. (*#02287)*

COMMENT: *The proposed guidelines for old growth appear to be somewhat weak, particularly for adjacent stands. While there is plenty of young forest on the HNF, there is also quite a bit of more mature stands - stands that should be, at the very least, managed for old growth qualities and characteristics. Many species need mature forests for their health existence - plants such as bottrychiums, birds such as goshawks, animals such as (dare I say it) Lynx. Mucking about with the Unsuited Base and putting Old Growth in it does raise the spectra of "The old growth is old enough - let's cut it." In other words, you must be very clear in your explanation of what is being done.* (*#01651*)

RESPONSE: Outside of designated old growth stands, a full range of management options are available to address site specific needs and concerns. Designated old growth is arranged in relatively large blocks, compared to the existing condition under the 1986 Plan. This provides for more interior habitat within designated old growth than has been available under the 1986 Plan. In addition, many stands adjacent to old growth as designated in the 2006 Plan are also unsuited, so these adjacent stands also would not be subject to timber management.

Regarding management in suited stands adjacent to old growth, there are goals for late seral vegetation types, especially in larger size classes in nearly all ecological landtypes in management areas that have vegetation composition goals identified. These larger size, late seral vegetation type goals often are for substantial percentages of the suited lands in these ELTs. Achieving these larger size, late seral vegetation goals is expected to contribute further toward habitats similar to old growth. Whether these adjacent suited lands receive active management is a site-specific decision, not a strategic one appropriate to the Plan.

The 1986 Forest Plan provided direction to maintain a minimum of 51,988 acres designated as old growth and future old growth, but did not reclassify the lands as unsuited for timber production. This implied that timber harvest would occur in old growth areas because suited lands are available to contribute to the Forest's timber volume goals. (DEIS page 1-8). Refer to comment #200.

Alternative 2 of the 2006 Plan, has 52,000 acres of designated old growth would be reclassified as unsuitable for timber production (DEIS page 2-7). Protection from harvesting, would lead to an uninterrupted progression toward late seral conditions (DEIS page 3-45).

Species viability evaluations analyzed management in adjacent stands that would move toward the vegetation desired conditions. A summary of the results of species viability evaluation outcomes for federal threatened and endangered species and for Regional Forester sensitive species is included on pages 3-165 through 3-219. More information on species viability is in the biological evaluation and in the planning record.

#203

COMMENT: *pg. 2-27, OG – Guidelines #1. Not sure I understand this. "Veg. mgt. (such as timber harvest....)" Standard #1 states that all OG stands will be classified as "unsuited" for timber. If guideline #1 is referring to use of a harvest method to achieve a goal other than "timber", this should probably be re-worded??? (i.e., Don't use the word "timber", which implies commercial harvest??) I think what guideline #1 is saying is that the only reason we'd do any harvesting in OG would be to meet some other (non-timber) objective in an OG area (perhaps to enhance a "big-tree" appearance??) or to control the spread of an NNIS?*

OG – Guideline #3, "Prescribed fires and natural prescribed fires..." What is a "natural prescribed" fire? If this is supposed to say "natural" fire, then how do you "design" it? (#00677)

RESPONSE: The definition of what "unsuited for timber production" means is in the Forest Plan glossary. That terminology is from NFMA. This definition includes conditions which timber harvests would be allowed on unsuited lands. As guidelines describe on page 2-27 of the Proposed Plan, vegetation management (such as timber harvest, prescribed fire, etc) should meet old growth objectives or control the spread of a non-native pests or pathogens that threaten the old growth character.

Natural prescribed fires are those that result from unplanned ignitions to wildland fuels that are subsequently controlled under specified environmental conditions. Identifying these specified conditions constitutes the prescription. This allows fire to be confined to a predetermined area, and produces fire behavior and fire characteristics required to attain planned fuel treatment and resource management objectives.

Vegetation Management

#204

COMMENT: *Pg. 2-28, Temp. Openings – Standard #1, "The maximum acre limits will not apply..." What is the max. acre limits? I see there are min/max opening acreages by M.A. under M.A. Direction, but aren't those "permanent"? And Guideline #2, "Openings should be separated by a stand of at least the min. stand size, normally 10 acres." 10 acres in what shape? Should this not be a linear measurement?* (*#00677*)

RESPONSE: Guideline 1 on page 2-31 of the proposed Plan that describes the maximum size of temporary openings for sharp-tailed grouse and Kirtland's warbler management has been revised. It now reads that it "...should not exceed 1,100 acres." For MA 8.3, the maximum size of temporary openings should not exceed 25 acres (proposed Plan page 3-50).

Standard 1 on page 2-28 of the proposed Plan indicates that these limitations can be exceeded in response to catastrophic events. All other temporary openings should not exceed 40 acres, in accordance with NFMA. There is no requirement for the dimensions of the minimum stand size separating temporary openings, other than the minimum size of 10 acres. Ten acres is normally considered to be the smallest size for a manageable stand, regardless of stand shape.

#205

COMMENT: *The proposed range of rotation ages for white pine (typically shown as no more than 120-160 years) does not allow for the much larger actual life span for white pine - often more than 300 years. The forest plan should allow for significantly older white pine. (#02167*)

RESPONSE: See comment #179.

#206

COMMENT: *The Vegetation Management guidelines outlined here are very positive, and can be augmented with alternative silvicultural techniques and landscape level guidelines.*

At the landscape level, guidelines should be included that deal with the arrangement of management activities in space and time.

- *Use natural forest cycles (historic return intervals) to determine rotation periods, instead of net present value (NPV) and culmination of mean annual increment, which is often done in production forestry.*
- *Because natural disturbances occur over irregular intervals over the centuries, allocate different proportions of managed forest area to successively longer rotations. This will mimic the proportion of forest maintained in different stand ages around the predetermined return interval. An example would be to have 10% of the harvested forest at 300yrs rotation, 15% at 200 years, 20% at 150 years, 35% at 100 years and 20% at 50 years if the determined disturbance interval was 100 yrs on average.*
- *We favor concentration of harvests in space and time when accompanied by higher than normal levels of internal patch heterogeneity, and structural retention. This allows for more post-harvest recovery instead of creating a regime of chronic disturbance from short rotations across the landscape.*
- *For forest types that are naturally perpetuated by low to mid level disturbances (i.e. northern hardwoods), we suggest, gap-type silviculture. The key here is to follow natural gap sizes for prescriptions. Additionally, it is important to remember that natural disturbances do leave behind structural diversity and this should be factored in.*
- *The traditional silvilcultural systems outlined in the management plan are not progressive and focus on the commodity instead of the forested system. We propose broadening the list of timber management practices to include variable retention*

harvest systems that place a stronger emphasis on natural disturbances and "what's left behind". This can facilitate communications as well by being specific on how much will be retained and in what spatial arrangement.

- *While there are prescribed fire goals associated with fuels reduction, there should also be prescribed fire goals and objectives in the Vegetation Management section that focus on restoration of ecological values. FRCC models should be used to prioritize where treatments occur.*
- *The plan should define what is meant by 'old-growth'. Is old growth determined by age of the stand, stand characteristics or something else? This is important as a 100 year old aspen stand is significantly different than a 100 year old northern hardwoods stand in terms of structural complexity, and other stand level characteristics.*
- *"Genetic improvement" is a very relative term. For example, genetic improvement for a forester may mean tall and straight trees that can be harvested for veneer. Alternatively, genetic improvement for a tree nesting bird may mean trees with significant architectural complexity. Furthermore, it is clear that phenotypes have extended consequences far beyond the host tree. Therefore, we suggest the Hiawatha National Forest pursue 'genetic diversity' instead. (#00779*)

RESPONSE: Landscape level guidelines to arrange management activities over space and time are included as both forest-wide and management area direction. The Forest Plan establishes management direction at the national forest scale. Landscape scale planning is more site-specific than the Forest Plan and is part of Plan implementation. The possible successional pathways that a forest community can take, based upon the disturbances they undergo, are still largely dictated by the landscape ecosystems in which they occur (DEIS page 3-13).

Regarding rotation age, see comment 179. A variety of factors were considered for determining guidelines for rotation ages. Each ELT/Seral stage combination was assigned a minimum age at which it could be treated with an even-aged management action using culmination of mean annual increment. Those minimum ages, shown on DEIS page A-5 were adjusted to meet goals and objectives by species for each management area (MA).

Proposed Plan Table 2400-2, shows that rotation ages vary by species and management area. Rotation ages are much longer for some MAs than for others. There are also MAs where rotation ages do not apply. Varying rotation ages by species and by MA, along with use of even-age and uneven-age systems provides for a diverse mix of tree sizes and species.

See the Glossary for the definition of selection harvest. This method frequently includes creation of canopy gaps. The Forest Plan is aimed at achieving desired ecosystem conditions. Timber outputs are estimated to be produced in pursuit of those ecosystem conditions. Harvest methods specified for each forest type in Proposed Plan Table 2400-1 are guidelines, not standards.

Guidelines are permissions and limitations that should be implemented in most situations. Deviation from a guideline does not require a Plan amendment, but the rationale must be disclosed in project decision documents (proposed Plan page 2-1). Therefore, where there is a reason to use a different harvest method than is specified in Table 2400-1, it would be permissible to do so.

Several of the MAs emphasize uneven-age management where the focus is on the uneven-age of what is left after treatment. Even-age management systems also focus on what is left. They are referred to as regeneration harvests, because a regenerating stands is left after treatment. Shelterwood/seed tree methods leave overstory trees to enhance regeneration as appropriate. Flexibility within both systems allows for a variety of management practices to achieve site-specific goals and objectives.

See page 2-17 regarding the use of fire to restore ecological values. In the Desired Conditions section, note the statement that "Prescribed fire is present on the landscape, restoring or maintaining desirable plant community attributes, processes and functions." Note also goal #1 on the same page.

The glossary has a definition of old growth forest and pages 3-43 and 3-44 in the DEIS, define old growth in more detail. Silvicultural prescriptions that incorporate genetic improvement principals are consistent with Forest Service policy. The following statements

from the Forest Service Manual are examples of how Forest Service policy provides direction for genetic improvement:

- Design silvicultural operations to upgrade the genetic quality of stands by leaving the best phenotypes (FSM 2475.03);
- Use genetically improved seed and planting stock to the full extent consistent with tree improvement plans (FSM 2472.03-2);
- Maintain a broad genetic base in reproductive material used to restock National Forest land to ensure genetic variability (FSM 2475.03-6).

Habitat complexity will be maintained/ developed on lands designated unsuitable for timber production. The Proposed Plan lists goals for diverse vegetation communities on page 2-8. The Plan recognizes that genetic diversity is an important component of forest health. Note vegetation management goals 1 and 2 on page 2-8, and wildlife goals 1 and 2 on page 2-12. **References:** USDA 2005. Science Consistency Review of the Assessment of Climate Change for the Colville/Okanogan/Wenatchee Plan Revision. USDA Forest Service, Pacific Northwest Research Station. Provided to Lisa Freedman, Director of Resource Planning and Monitoring. July 26, 2005.

2500 Watershed Management

#207

COMMENT: *No selling of water rights or bottling for sale of water from streams, rivers or lakes. (#00031*)

RESPONSE: Water rights are under the jurisdiction of the state of Michigan. Anyone interested in commercially bottling water, would have to apply to the state for approval. The Forest Service does have the authority, through special use permit, to authorize the transmission of water across National Forest System lands. This would require site/project specific public involvement and analysis. It would also have to meet goals, objectives, standards, and guidelines of the Forest Plan.

Restoration

#208

COMMENT: *Since partnerships with watershed-based organizations have become an effective method to accomplish watershed restoration goals, the Department recommends including an objective in the plan calling for continued participation in these watershed restoration partnerships. (#02205*)

RESPONSE: The 2006 Forest Plan defines an objective as a concise, time-specific statement of measurable planned results that respond to pre-established goals (363 CFR 219.3). The Forest recognizes that partnerships are desirable, but it is difficult to plan for and measure activities of organizations outside the Forest Service. Therefore, it was decided not to make this an objective in the Plan.

However, in the proposed Forest Plan, Goal 6 (page 2-10) and Goal 7 (page 2-11) references working with other government agencies. The Forest will use a variety of methods to work towards watershed goals and objectives including continued participation in partnerships with watershed-based organizations. Nothing in the proposed Forest Plan forbids joining any partnership allowable within Forest Service regulations.

#209

COMMENT: *We urge the U. S. Forest Service to continue to examine the number of roads in the Hiawatha National Forest. Road stream crossings are sources of sand and sediment and may create unnatural hydraulic conditions, which can block fish passage. While we recognize that some roads are necessary for users to gain entry into the National Forests, the direct and indirect impacts of any new road construction on aquatic resources should be thoroughly evaluated before any new road construction proceeds. If existing roads are adversely affecting aquatic resources, appropriate corrective action should be taken immediately. (#02205*)

RESPONSE: In the proposed Plan, Objective 1 (page 2-11) calls for the obliteration, relocation or improvement of at least 20 segments of roads in the riparian corridor. The Hiawatha continues to analyze and make adjustments to

the road system. Plan goals include decommissioning roads that cause resource damage (page 2-20). There are also standards and guidelines for decommissioning roads not needed for long-term access and obliterating temporary roads, stream crossings and wetlands (proposed Plan page 2-29 and 2-37).

DEIS Table 3-TRANS-4 show that there would be a net decrease in road miles for all alternatives with miles of decommissioned roads far exceeding miles of road construction. A thorough environmental analysis will be completed for each project before it can be completed. Decisions to construct or decommission roads at a specific site involves project specific public involvement and analysis. Analysis would include examination of direct, indirect and cumulative effects on aquatic resources.

#210

COMMENT: *Maintenance of current sediment basins is supported. However, with expanding work concerning habitat rehabilitation, additional sediment basins may need to be constructed in the future to remediate habitat loss due to historic logging practices or other human-made disturbances, which encourage accelerated scouring of erodible stream bank materials. (#02205)*

RESPONSE: Construction of new sediment basins is only restricted in MA 8.4 (et al) (proposed Plan page 3-57). Even within these areas, maintaining existing sediment basins is allowed on the Indian, Whitefish and Sturgeon Rivers and in the Carp River outside the Mackinac Wilderness.

Proposed forest-wide direction includes guidelines for consideration of other methods over long-term maintenance of in-channel sediment basins. However, there is allowance for sediment basins if there are no other effective options to achieve the same results (proposed Forest Plan page 2-30).

Riparian & Aquatic Habitat

#211

COMMENT: *Stream management, specifically silt and runoff affects on native fish are not included... (#00238*)

RESPONSE: Effects on native fish can be found in the Aquatic Fauna Habitat section of the DEIS (pages 3-266 to 283). Effects on habitat quality and population trends were estimated based on projected changes in riparian and aquatic habitat under each alternative. Species analyzed included lake sturgeon, brook trout, steelhead and largemouth bass. The term "sedimentation" is used to describe effects associated with silt and runoff.

#212

COMMENT: *Proposed Plan. page 2-29 and Draft EIS. pages 3-240 - 3-243: In its analysis of timber harvest under Alternative 2 in forested wetlands, the Forest Service concludes that harvest activities on the Forest are not expected to result in a loss of wetlands. Specifically, the Forest Service states (Draft EIS, page 3-243) that application of the guidelines for woodland ponds (see page 2-29 of the Proposed Plan) are "assumed to protect the ecological functions of woodland ponds by maintaining woody debris inputs, and shade and water quality necessary for pond-dependent species."*

Proposed Plan page 2-29: It is our understanding that the Forest Service proposes two types of riparian corridor buffers: (1) 100 feet (30 meters) as directed by the Michigan Department of Environmental Quality Best Management Practices and (2) 500 feet (152 meters) on designated high priority streams for aspen management. Within these corridors, streams will be buffered from all activities within the 100-foot zone and from activities that result in aspen regeneration within the 500-foot zone.

We recommend that these guidelines also consider the management of adjacent uplands for wetland inhabitants. For example, Semlitsch and Bodie (2003) indicate that adjacent upland habitats are critical for feeding, over-wintering, and nesting for some wetland-dwelling reptiles and amphibians. The authors also discuss wetland buffers that offer protection for most species of reptiles and amphibians. We suggest that, where necessary and appropriate, a buffer that minimizes habitat disturbance to adjacent uplands for the benefit of amphibians and reptiles would also contribute to the protection of wetland habitats.

References: *Semlitsch, R.D. and J.R. Bodie. 2003. Biological Criteria for Buffer Zones Around Wetlands and Riparian Habitats for Amphibians and Reptiles. Conservation Biology 17(5): 1219-1228.* (#02686)

RESPONSE: Revised Plan desired conditions include maintaining or restoring diversity and function of wetlands. Guidelines on Plan page 2-29 limit activities on lands adjacent to woodland ponds and other aquatic systems.

At the site/project specific scale, implementation of water quality management practices on forest land (BMPs) includes buffering of wetland habitats. There is also management area specific direction that includes guidelines that protect upland habitats for wetland inhabitants. Wilderness, semi-primitive non-motorized areas, old growth and candidate and research natural areas provide undisturbed wildlife habitats. Guidelines for wild and scenic river corridors include maintenance of important habitat for riparian-dependent wildlife species.

Consideration will be given to the habitat needs of riparian dependent species (proposed Plan page 3-57). Specific measures will be decided at the site/project specific level through biological evaluation.

#213

COMMENT: *I was a bit perplexed with the rather discriminatory dialogue regarding beaver and riparian systems, particularly in association to vegetation management and more specifically Aspen management in riparian corridors. With almost half the Hiawatha NF comprised of wetland community types, the beaver are and will be an intricate part of the ecologically functioning process of the riparian systems in this region of the world. Obviously the beaver do influence their environment as p3-218 describes, but to what degree riparian vegetation management influences that activity may need further discussion. As Baker describes in Michigan Mammals, the beaver's diet consist of a variety of plant types. Aspen is a rather small percentage of that food base. Therefore equating distance of vegetation management from cold-water streams has limited practicality. If beaver want to occur in a given stream system they will with or without vegetation management. The Preferred Alternative dismisses the existing riparian vegetation management and calls for a 550 feet buffer from the classified cold-water streams. With the abundance of cold-water streams in this part of the world that appears a bit over reactive. The existing Best Management Practices (BMP) standards are more that adequate and were/are effective.*

Of the 300 plus wildlife species that utilized the Hiawatha NF either residential or migrating through, approximately 75% of these species will use riparian habitat created or occupied by beaver for some portion of their life requisites. More specifically beaver create habitat for Regional Forester listed species i.e. American Bittern, Osprey; they create ponds (#00669)

RESPONSE: See comments #241, 242, 253 and 254. Beaver have both positive and negative impacts on the landscape and within riparian systems. The FEIS effects analysis discloses addition beneficial effects from beaver on the ecosystem. The Hiawatha will continue to cooperate with the Michigan Department of Natural Resources (DNR) to maintain a population and distribution according to the Watershed Management Goal #7 on page 2-11 of the proposed Forest Plan and per Michigan DNR policies. The Forest is committed to maintaining healthy wetland systems of which beaver are often an active component. Under the proposed Forest Plan, beaver will continue to be present and active across the Forest.

Although the Forest is not managing for aspen within riparian corridors of cold water streams, it is anticipated there will continue to be aspen regeneration due to natural disturbance. The 500 foot buffer will only be on high quality coldwater streams. Although the Forest recognizes this will not prevent beaver in an area, by minimizing a preferred food source, beaver will not be favored.

Early-Successional Riparian

#214

COMMENT: *The riparian zone of streams, especially small streams, are often better managed under meadow or early succession conditions which filter runoff, resist erosion and sedimentation, and conserve ground water better than mature forest cover. The guidelines that deal with stream corridors are*

far too biased toward mature forest and large woody debris. Research (much of it in Wisconsin) is showing that early successional meadows and grasslands control erosion and filter runoff better and conserve (yield) more groundwater than does forested watersheds. Further, early succession produces better fish and wildlife habitat. It may be that timber harvest, including some short-term disturbance of the forest floor, will be a good long-term practice by establishing conditions of early succession in the stream corridor. So, the arbitrary restriction against aspen within 500 feet of streams will negatively affect important wildlife values. (#02067, 02068)

RESPONSE: See comments #253 and 254. Plan goals for riparian corridors include managing for riparian-dependent resources by restoring and enhancing riparian ecological function (proposed Plan page 2-10). Plan standards and guidelines permit activities that work towards this goal. In DEIS Table 3-WS-1, large portions of existing riparian areas are in openings. Since 1986, about 250 aspen acres have been harvested in the 100-foot riparian corridor and 3,340 acres have been harvested within 500 feet of high priority streams. In Alts. 2-4, aspen decreases will occur adjacent to high priority streams where the 500-foot buffer is applicable. This will move these sections towards the desired condition of having quality, large, long-lived, tall trees that provide shade and woody debris, and lessen the risk of beaver damming these stream segments.

On low priority streams, aspen will continue to be harvested outside the 100-foot riparian corridor. Forest succession will take several decades to arrive at desired condition, therefore the short-term effects of implementing these alternatives will be similar to Alternative 1 (DEIS p. 3-231). In Alternatives 2–4, a new standard is proposed that the total combined acreage of upland openings (including clearcuts) and non-forested areas not exceed 60 percent of the total area (all ownership) of any 6th level hydrological unit code (HUC) watershed. This will improve stream stability, reduce sedimentation and provide large woody debris. (DEIS page 3-231).

#215

COMMENT: *The emphasis placed on maintaining riparian areas and water quality is good but when the buffer (which often become "no treatment") area along all streams is added to the large "no aspen" area along specified streams this is a detriment for some habitats on the forest. An example would be keeping aspen out of the riparian areas, which is the exact location we should be managing SOME aspen for species like woodcock. (#01641*)

RESPONSE: See comments #126, 214, 241, 242.

#216

COMMENT:...*draft plan p3-217 describes the riparian vegetation condition as more abundant to conifer component before logging era. EVEN without logging era windsheers, micro bursts, blizzards, porcupine, insects and disease, woodland caribou all would have contributed to the vegetation composition. The point being it is difficult at best to describe base line vegetation as there are many factors that influence it either historically or present day. Even today Northern White Cedar, White Pine, Eastern Hemlock are making significant increases in community types especially within stand features. More importantly in this part of the Lake States there is such a misconception of what regenerates in Aspen stands. Aspen seldom regenerates into a monoculture of pure aspen. Rather aspen, cherry, birch, serviceberry, red maple, balsam fir, WEEDY white pine, and hemlock are part of the species composition. Furthermore, depending on the soil type and parent vegetation, part of the successional process of an aging beaver impoundment does establish hemlock, cedar, and white pine. Restricting no vegetation management within 550 feet from most coldwater riparian zones gravely limits options and reduces potential to manage habitat for listed species either directly or indirectly.*

Direct management would include R9 listed species such as the golden winged warbler habitat. This species specifically seeks young riparian aspen community types and last time I looked the trends for this species were quite alarming. This community type alone hosts over a dozen wood warbler

species. The declining timber doodle depends and thrives in this community type and with an exciting expanding U.P. moose population beaver ponds are quite beneficial and compliment quality moose habitat.

Indirectly there is a potential loss of managing riparian vegetation for lynx, northern goshawk, and wolf as regenerating aspen/birch/cherry/fir supports their preferred prey species of snowshoe hare, ruffed grouse, and beaver respectively. (#00669)

RESPONSE: Thank you for your comment. Refer to comments #214, 241 and 242.

Sedimentation

#217

COMMENT: *Watershed protection and proper management should be given a high-priority in management planning. The UP lies between two great lakes, and has incredible water resources - some of the most amazing and rich water resources in the world. This should not only include heightened protection for Wild and Scenic Rivers, Michigan Natural Rivers and Blue Ribbon Trout Streams, but also for the tributaries, intermittent streams, springs, wetlands and forested wetlands that are part of these ecosystems. Little value was placed on headwaters of these areas in the Forest Plans. Instead, most of the emphasis on watersheds is being placed on mitigation measures, many that have little proven success. For example, best management practices, as practiced on the ground, rely on 50 or 100-foot buffers, and often ignore factors that contribute sediment just beyond the buffer. These include slope, soil types, impacts of large equipment on the zone immediate to the buffer (especially rutting and disturbance of topsoil), snow and the transport of sediment from spring melt through the action of freezing and thawing, etc.*

In-stream mitigation largely ignores what happens on the ground, relying instead on trying to repair the damage after it happens. Sediment entering streams from timber cutting, road building and other ground-disturbing activities, is often "mitigated" by sediment basins. These measures are questionable in value and do little to correct the action that got the sediment in the stream in the first place. With this type of activity brings its own set of problems, including the need for roads and landings for access, compromising wetland muck soils in the riparian zone (#00778, 02226)

RESPONSE: See comment #230. The revised Forest Plan recognizes that the use of Best Management Practices (BMPs) is just a part of the solution to controlling erosion and sedimentation on a site. On page 2-30 of the proposed Forest Plan, Guidelines 3–5 were incorporated to prevent displacement of soils. These guidelines limit equipment traffic on steep slopes, in sands during dry weather and on sand dunes.

Past sediment basin monitoring, indicates most of the sediment carried in streams comes from either eroding banks, ground water emergence, or changes in the stream channel (DEIS page 3-235). Regarding impacts related to roads, in addition to following BMPs, the Hiawatha is in the process of reconstructing road/stream crossings to reduce effects on aquatic resources (DEIS p. 3-236).

The Forest is also cognizant of impacts that occur outside established buffers. However, research indicates that the 100-foot buffer has been successful in preventing sediment from entering into streams and maintaining ecosystem function and characteristics (Castelle 1994; Frederick and Perry 2001), and is therefore an appropriate protective measure at the Forest Plan level of analysis. Additional site-specific analysis may be required to determine other measures as site-specific projects are analyzed.

There are no Michigan Natural Rivers designated on the Hiawatha. Management direction designed to protect and enhance the free-flowing condition and the outstandingly remarkable values of the designated and study wild and scenic rivers is addressed in the final EIS and revised Forest Plan. Among the protections in place to enhance water quality is the designation of river-specific MA allocation and protection of the headwaters on national forest lands within the river corridors.

Soils

#218

COMMENT: *...LTA lines need to be vertically integrated with the Ecological Land Type (ELT) and ELT Phase (ELTP) lines prior using them for Management Areas (MA) boundaries, as the LTA lines are often far away from the ELT/ELTP lines. This is supposed to be a nested ecological system that currently isn't and that anomaly causes problems for MA boundaries. Vertical integration clearly was not done in many locations (or maybe most locations), but there is still time to refine these LTA/MA lines to put them in the right place where there are obvious vertical integration problems prior to the Final revision and needs to be done with MA boundaries changed to fix those problems. (#00768)*

RESPONSE: Land-type associations (LTA) are unique non-repeating map units primarily based on landform and geomorphology. Ecological landtypes (ELTs) are groups of ecosystems with similar soils, productivities, and potential natural vegetation occurring in repeating patterns across the landscape. The Forest recognizes that theoretically the system should be nested. However, due to mapping techniques and the scale of mapping used, systems are not a perfect match.

In the field, natural systems typically grade from one type to another over some distance. There are issues with the alignment of boundaries. For the purposes of this Plan, the impact assessment was evaluated at the ELT level. Site-specific project analysis, mapping and modification of GIS vertical integration will continue in association with project level activities and within project level analyses.

#219

COMMENT: *I do not see any impact analysis based on LTAs. (#02221)*

RESPONSE: Impact analysis was completed based on ecological land-type (ELT). These were aggregated up to the appropriate MA and LTA. Although the Forest did not do a direct impact analysis based on LTA, the influence of LTAs can be seen in MAs designation.

Watershed Mgmt. Direction

#220

COMMENT: *Watershed Management: While in general, and in contrast with some other areas of the country, it does seem that the watersheds in the Hiawatha National Forest are healthy. However, it is not clear how this is determined, and if adequate monitoring has been conducted to truly know if this is the case.*

- *It is not clear what "desired fish" are. We strongly urge that management is aimed towards native fish.*
- *It is clear that beaver can have a profound impact on stream function, hydrology, and riparian area dynamics. We believe that beaver management should be linked to reference conditions of the stream's hydrology and riparian area dynamics in addition to the factors listed in goal #7.*
- *With the road and restoration projects referenced in objectives 1 and 3 how will these segments be identified? This is critical, as not all road segments are the same in terms of ecological impacts, and not all wetlands are the same in terms of hydrological function and contributions to the aquatic resources. We recommend that the Hiawatha National Forest prioritize road obliteration, relocation or improvement in cooperation with conservation groups, credible hydrologists and other governmental organizations. This prioritization should be conducted with a focus on water quality improvement, in and near stream community structure and longevity of the resulting work (i.e. using a high quality bridge to replace an undersized culvert). The goal should be a road system that does not affect water flow across the forest landscape.*
- *In the "soil resources' section, there is a great deal of emphasis on identification and inventory of soil "trouble spots". (#00779)*

RESPONSE: Monitoring of water quality and fish populations indicate that the Hiawatha's watersheds are generally in healthy conditions. Watershed desired conditions are described on page 2-10 of the proposed Plan. Many of these

conditions use diversity of aquatic species as an indicator of watershed health. Fish species of concern include lake sturgeon, brook trout, steelhead and largemouth bass. Brook trout is designated as a management indicator species.

Monitoring includes population and/or habitat trends of management indicator species (proposed Plan page 4-8). Management and monitoring of other desirable fish varies by waterbody and is done in coordination with the Michigan DNR. The Forest Plan also includes monitoring for effectiveness in maintaining and restoring healthy and productive aquatic ecosystems and how the Forest is complying with the Clean Water Act requirements (proposed Plan page 4-9).

Desired conditions include maintenance and restoration of wetland diversity and function. The proposed Plan includes monitoring to determine the extent of wetland protection and restoration. In-stream conditions are described in terms of beaver impoundments on DEIS pages 3-226 to 3-227. Environmental consequences on pages 3-230 to 3-233 use trends toward beaver dam construction to describe effects of the alternative management schemes on interactions between riparian corridors and adjacent waterbodies.

National standards for forest road analysis include participation of professionals with expertise in hydrology/geology/soils and fisheries. Forest specialists will continue to work with other public agencies and private specialists to identify road-associated restoration needs. Projects are designed on a site-specific basis to achieve Forest Plan goals and objectives. It is not practical to set goals for a road system that does not affect water flow across the forest landscape, as this goal is not achievable. The Forest road system is part of a larger county and state road system, and roads as well as many other facilities will continue to affect water flow.

The Forest Plan includes goals to minimize the effects of roads on water flow including obliterating, relocation and improvement of roads in riparian corridors and improving road crossings to facilitate flow (Plan page 2-11). In addition to monitoring aquatic ecosystems, the Plan relies on the inventory of soil conditions. At the Forest-scale, inventory is necessary to meet the desired conditions and goals of protecting soil and soil productivity.

#221

COMMENT: *...pg. 2-11, watershed mgt., and objective #6 – "Treat 10 acres/year for NNIS." Pg. 2-16, forest pest mgt., objective #2 – "Annually treat 40 acres of identified NNIS." Is the watershed objective specific to riparian areas? ("Everyplace" lies within a watershed.) Do the 40 acres of forest pest NNIS control include the 10 acres of watershed NNIS control, or is this in addition to? Or are they the same acreages under different management areas (overlap)? I'm thinking that we're looking at a total of 50 acres of control: 10 in riparian areas, 40 elsewhere. (#00677*)

RESPONSE: Watershed management desired conditions include prevention of the spread of exotic species affecting native flora and fauna in riparian and aquatic areas. The objective referred to in the comment is specifically for riparian areas. The 40 acre objective is in addition to the 10 acres of NNIS (Plan p. 2-16).

#222

COMMENT: *Proposed Plan, page 2-10, Section 2500 (Watershed Management), Desired Conditions: Paragraph 2 states that the Forest Service will provide habitat to support a "quality recreational fishing experience." We recommend this statement be broadened to include "to sustain diverse fish populations that support a quality recreational fishing experience." (#02686*)

RESPONSE: As part of the desired condition, the revised Forest Plan specifies, "quality recreational fishing experience that includes a variety of fish species" (Proposed Forest Plan pg. 2-10). To achieve this condition, the Forest will need to sustain a diverse fish population.

#223

COMMENT: *Proposed Plan. page 2-29. Watershed: Standard No.2 states "a determination of coastal zone consistency will be completed for all activities occurring within one-quarter mile from the Great Lakes high water mark." We recommend that the Final EIS or Plan provide some discussion of how "coastal zone consistency" will be determined. (#02686*)

RESPONSE: The Forest coordinated with the DEQ Quality's Coastal Zone Management Group, who reviewed the proposed Plan and DEIS. They stated that the Plan is consistent with their rules and regulations. Further coordination will be accomplished on a project level basis.

#224

COMMENT: *Most of the emphasis on watersheds is being placed on mitigation measures, many that have little proven success. For example, best management practices, as practiced on the ground, rely on 50 or 100-foot buffers, and often ignore factors that contribute sediment just beyond the buffer. These include slope, soil types, impacts of large equipment on the zone immediate to the buffer (especially rutting and disturbance of topsoil), snow and the transport of sediment from spring melt through the action of freezing and thawing, etc. In-stream mitigation largely ignores what happens on the ground, relying instead on trying to repair the damage after it happens. Sediment entering streams from timber cutting, road building and other ground-disturbing activity, is often "mitigated" by sediment basins. These measures are questionable in value and do little to correct the action that got the sediment in the stream in the first place. With this type of activity brings its own set of problems, including the need for roads and landings for access, compromising wetland muck soils in the riparian zone from spoils dumping, introducing invasive plant species to an area and perpetuating these species from the frequent maintenance required, etc.* (#00043, 00051-00186, 00192-00203, 00212-00214, 00225-00227, 00244-00246, 00254-00257, 00259, 00261-00263, 00265, 00266, 00268-00272, 00280, 00282-00290, 00293-00297, 00328-00334, 00336-00338, 00340-00347, 00452-00458, 00485-00489, 00777, 02619-02635, 02637-02641, 02643, 02645-02648, 02650, 02652-02660, 02662-02681)

RESPONSE: See comment #217.

Best Management Practices

#225

COMMENT: *The Forest Service should consider providing the following information in the Final Environmental Impact Statement: - Include all applicable State of Michigan Best Management Practices (BMPs) and Forest Service Region 9 standards for protecting soils, flora and fauna, stream and lake water quality, and wetlands for the variety of activities that take place in the HNF, including but not limited to: (1) timber harvesting, (2) re-vegetation, (3) road, trail, and boat access facility construction, repair, decommissioning and operation, and (4) mineral extraction. This information will better serve the reader's understanding of the minimum measures that should be implemented to protect these vital resources for specific projects as the Forest Plan is carried out. (#02204*)

RESPONSE: Michigan BMPs and the R9 Soil Quality Guidelines are incorporated into the revised Forest Plan where applicable. Copies of the BMPs and R9 Soil Quality Guidelines are available by request.

#226

COMMENT: *The Department has developed BMPs for water quality management practices on forestlands that contain guidelines for timber management within the riparian area. We support the proposed change to minimize aspen regeneration within 500 feet of high-priority trout streams for riparian zone management. This proposal is consistent with the Department's recently revised beaver management policy (Department Procedure 2120. 1), and recognizes that the less common resource (i.e., coldwater habitat) is given management priority when the opportunity exists. The Department does not take issue with selective cutting within the riparian area, however we discourage large-scale management for early successional tree species within the 300 ft riparian zone near small (less than 50 ft wide), high-quality trout streams. (#02205*)

RESPONSE: Thank you for your comment.

#227

COMMENT: *Watershed Management*

1. *For watershed guidelines, the word "adjacent" is vague and could be interpreted different ways. We suggest a range of values that varies with site conditions.*
2. *While Michigan's BMP's address many water quality issues, they are not sufficient for many situations. Therefore, for the rivers of greatest conservation concern, watershed assessments should be conducted to identify river segments that are most vulnerable to management and also those segments that are most important to riparian function. From these assessments you could define 'dynamic buffers' that are customized to the river, and vary based on riparian area characteristics.*
3. *Standard #1 is confusing and should be clarified.*
4. *There should be water quality monitoring outlined in this section.*
5. *Stream invertebrate communities, aquatic litter decomposition rates and water chemistry are all affected by riparian vegetation type. We recommend no vegetation conversions within the riparian zone.*
6. *Under the aquatic ecosystem section, the phrase "stabilize channel morphology" could be interpreted to conflict with the prior statement regarding enhancement of natural processes. For example, channels are often not stable due to natural inputs of coarse woody debris. Removal of this coarse woody debris would not be beneficial to the stream and would not be an enhancement of natural processes. This standard should be clarified. (#00779)*

RESPONSE: In the commenter letter, the items were bulleted. For ease of responding, the bullets were changed to numbers and the responses are numbered to correspond with the comment numbers:

1. Watershed guidelines are designed to provide programmatic direction on a forest-wide basis to ensure that areas adjacent to woodland ponds are protected. Specific measures will be determined on a site-specific basis depending on the project proposal and site conditions. Any proposal to implement actions adjacent to woodland ponds would be subject to public involvement and analysis.
2. Michigan BMPs are intended to be guidelines. As the comment suggests, buffering of particular river segments to meet watershed goals and objectives will be based on site-specific analysis. This analysis will be accomplished on a case-by-case basis as each project is proposed.
3. It is not clear from the comment which aspects need clarification. The standard states that the Forest will not take management action(s) that increase the total area of openings and areas of forests younger than 16 years (of age) that would comprise greater than 60% of the total area of any 6th level watershed. The total area includes all lands regardless of ownership.
4. Monitoring is disclosed in Chapter 4 of the revised Forest Plan.
5. The revised Plan allows management activities in riparian areas to achieve the desired conditions and meet goals and objectives for watershed management. Site-specific activities to manage vegetation in riparian areas would be subject to public involvement and analysis.
6. The comment refers to standards for stream improvement projects. The two statements are intended to work together and not be exclusive of each other. Any proposal to stabilize channel morphology would be designed in conjunction with preserving and enhancing natural stream processes. In most cases coarse woody debris are considered beneficial to natural stream processes. The Forest Plan includes guidelines for maintaining coarse woody debris in streams and lakes unless they present a hazard to people or structures or create impassible barriers to watercraft (proposed Forest Plan pg. 2-20).

#228

COMMENT: *Standards in 2500, the Michigan BMP's often do not talk in absolutes, rather in recommendations. There is no wording in the 2500 standard to reflect whether every recommendation becomes an absolute requirement or just a recommendation we*

consider in project design and implementation. It is my opinion to NOT use absolute statements and instead to analyze and determine in NEPA what levels of what practices will be implemented case-by-case. I think the Revision should be clear, not the generic sentence published. (#00768)

RESPONSE: In response to comments, the requirement for BMPs was changed from a standard to a guideline. The revised Forest Plan incorporates the State of Michigan BMPs to meet the Clean Water Act mandates. Questions about how the guidelines will be used are determined and disclosed within site (project) level analyses and decisions.

#229

COMMENT: *[page] 2-29 Riparian Standards # 2 -- The state of Michigan BMPs are not standards they are best management practices. Even the state of Michigan does not follow these BMPs as standards but rather as guidelines. These are intended as "guidelines" which are followed and bent to fit the situation. As a whole these are to be generally implemented but each individual aspect of the BMPs is not a "standard" in and of itself. Having these, as standards are inappropriate, they are intended as, and implemented by the state as guidelines. Do you want to revise the forest plan the next time a project needs a slight deviation from the BMPs? The state would answer no. (#01641*)

RESPONSE: Please refer to comment #228.

Protection

#230

COMMENT: *Watershed protection and proper management should be given a high-priority in management planning. This should not only include heightened protection for Wild and Scenic Rivers, Michigan Natural Rivers and Blue Ribbon Trout Streams, but also for the tributaries, intermittent streams, springs, wetlands and forested wetlands that are part of these ecosystems. Little value was placed on headwaters of these areas in the Forest Plans.* (#00043, 00051-00186, 00192-00203, 00212-00214, 00225-00227, 00244-00246, 00254-00257, 00259, 00261-00263, 00265, 00266, 00268-00272, 00280, 00282-00290, 00293-00297, 00328-00334, 00336-00338, 00340-00347, 00452-00458, 00485-00489, 00777, 02619-02635, 02637-02641, 02643, 02645-02648, 02650, 02652-02660, 02662-02681)

RESPONSE: Refer to comments #217 and 231. Protection of headwaters is provided by the Plan through a multi-tiered approach. As the comment suggests, the first tier is through management area designation where about 12 percent of the forest is in wilderness, semi-primitive non-motorized, candidate research natural areas, and in portions of wild and scenic rivers where disturbance is minimal.

The second tier is through determination of suitability for timber production. Alternatives range from 30 to 42 percent in lands unsuited for timber production where low disturbance levels are likely.

The third tier includes forest-wide standards and guidelines for stream and soil protection. Protection for tributaries, intermittent streams, springs, wetlands and forested wetlands is provided through implementation of Water Quality Management Practices on Forest Land (BMPs).

The fourth tier occurs at the site/project-specific level. Adjustments are made to ensure activities will meet Forest Plan goals and objectives for healthy watersheds.

Soils

#231

COMMENT: *Standards in 2500 are stated in too much of an "absolute" manner (especially the Soils standard #1). There is no detail on what the standards include (including in the glossary). To use those standards as-is, Forest Plan amendments will be constantly required, various operations will continually be shut down for "detrimental" effects, and it will be an "easy win" for lawsuits challenging those standards at all stages of planning and implementation. Examples: 1) You can ALWAYS find a "detrimental" effect on ANY project if you look long enough and hard enough. 2) "Rutting" is defined in the glossary without respect to depth, distance or intensity. 3) Any vehicle driving a woods road after a several-day rain will make a terrible set of ruts - how does that get resolved? I think the revision needs to state exactly what the 2500 Standard expectation is, and not use a sentence that is impossible to implement. (#00768*)

RESPONSE: See comment #228. Goal 1 of the proposed Forest Plan (p. 2-11), shows the R9 Soil Quality Standards (FSH 2509.18) are incorporated by reference. Details (including definitions) are included in the Handbook and are not repeated here for brevity and to allow the Plan to be more flexible to incorporate future changes to Regional standards.

#232

COMMENT: *Pg. 2-30, soil management, guideline #1: "In areas managed for timber production, whole-tree timber harvest methods should not be used on sites w/ inherently low fertility and low org. matter reserves (ELT 10/20…. etc.)" As a stand-alone statement, I agree with this, however…pg. 2-33, KW guideline #2: "Pre-commercial thinning or release of JP less than age 20 should not occur in KW mgt. areas." These two items could pose a conflict that might be difficult to resolve in the future.*

We don't currently have a lot of cogen markets up here, but this may very well change in the future. Whether trees are bundled or not, cogen material is generally whole-tree harvested.

…KW habitat occurs on ELT 10/20. When we get to the point of having to deal with "outgrown" KW habitat trees, cogen would be an excellent option, but we may not be able to do this, if we can't whole-tree harvest on ELT 10/20 lands. Conversely, if we want to avoid whole-tree harvesting here, if KW jp areas cannot be even partially released/thinned, even years before the jp reaches suitable KW height, we may have trouble marketing the wood as something other than cogen material. (#00677)

RESPONSE: The Hiawatha concurs that there could be a slight reduction in tree size. However, studies performed on the Huron-Manistee National Forest and an initial site evaluation on the Hiawatha, indicate that jack pine grown in these stands will be merchantable size by rotation age. It has also been noted that natural stands regenerating after fire are frequently stocked at much higher densities than required as Kirtland's warbler habitat. The restriction against whole tree harvesting is a guideline. At the project-level if it is necessary to deviate from the guideline, whole tree harvesting may require some form of mitigation to compensate for any additional impacts. Kirtland warbler management guidelines have been revised in the Forest Plan to allow thinning to enhance habitat.

2600 Wildlife, Fish and Sensitive Plants

#233

COMMENT: *…Many plant species that are considered rare and extremely sensitive to habitat alteration, such as Northern Holly Fern (Polystichum lonchitis), Braun's Holly Fern (P. braunii), Smith's Melic Grass (Mellica smithii), Male Fern, and others, aren't even given consideration as indicator species, although their presence may be an indication of other rarer (and possibly even listed) species being present. The Management Indicator Species list and the Regional Foresters sensitive species list should be expanded to recognize these species and their importance to the ecosystem. (#00043, 00051-00186, 00192-00203, 00212-00214, 00225-00227, 00244-00246, 00254-00257, 00259, 00261-00263, 00265, 00266, 00268-00272, 00280, 00282-00290, 00293-00297, 00328-00334, 00336-00338, 00340-00347, 00452-00458, 00485-00489, 00777, 00778, 02226, 02287, 02619-02635, 02637-02641, 02643, 02645-02648, 02650, 02652-02660, 02662-02681)*

RESPONSE: Individual plant species are not considered for management indicator species (MIS), because MIS are selected to estimate the effects of management actions on wildlife and fish populations. Species are added to the Regional Forester's Sensitive Species (RFSS) list if they occur within the Forests and:

- Are candidates for federal listing under the Endangered Species Act (ESA)
- Were de-listed under ESA in the last 5 years
- Have a global, trinomial or national rank of 1, 2, or 3 by The Nature Conservancy and Nature Serve
- Are considered "at risk" by national forests based on risk evaluations.

As of December 2003, northern holly fern, Braun's holly fern and Smith's melic grass did not meet these criteria. Male fern is recognized as an RFSS and is included in the DEIS as such on pages 3-109 and 3-115.

Wildlife

#234

COMMENT: *...wildlife habitat itself, not to mention its overall ecological importance, contributes much to recreational and esthetic values which are also very important and which may be hard to measure in dollars. (#00189*)

RESPONSE: Wildlife-related recreation was included in the economic analysis in the draft EIS (see Appendix A). However, as discussed on page 3-488, "Some outcomes, such as biological diversity .... have no monetary values or costs that have been established by USDA or the Forest Service.

While some research studies have explored the development of such values, this analysis has considered these items in a non-monetary fashion in the other resource sections of this EIS."

#235

COMMENT: *The draft EIS on pages 3-139 and 3-140 discusses the effects of the alternatives on mature lowland mixed hardwoods/ conifers on the wildlife including reference to the eastern box turtle. I can find no record of occurrence of the eastern box turtle in the Upper Peninsula of Michigan. (#00665*)

RESPONSE: The eastern box turtle was mistakenly included in the draft EIS. The species is not known to occur on the Hiawatha or in Michigan's Upper Peninsula. The final FEIS does not include the eastern box turtle.

#236

COMMENT: *Wood Turtles need to be strictly protected. Plan Standards need to not allow logging and road building within 300 meters of any tributary they inhabit. Close down roads in their habitat. Protect areas they inhabit as Special Biological Areas with express Standards explicitly protecting populations and their habitat. (#02681*)

RESPONSE: The wood turtle is not currently recognized as a federally threatened or endangered species or as an RFSS and are not given any legal protection. The species is ranked a G4, which indicates global security, although it may be rare at the periphery of its range. The state of Michigan recognizes wood turtles as a state species of special concern. If wood turtle numbers in Michigan were to decline below adequate numbers of self-sustaining populations, the state would review their status and recommend further protections as necessary.

Hiawatha National Forest staff is aware of wood turtle nesting activity on at least one of the Forest's wild and scenic rivers. As part of the WSR system, with wildlife as an outstandingly remarkable value, wood turtle habitat will benefit from protections that are in place within the corridor. The Hiawatha will continue to monitor known nesting habitat, and survey for new areas under the revised Forest Plan. Refer to the revised Forest Plan guideline on page 3-72 (2600) that pertains to wood turtles on the Indian River.

Fragmentation

#237

COMMENT: *The Forest is extremely fragmented, both between NF lands and within NF lands. Implement an alternative that does not further fragment the Forest and that restores continuity (such as ceasing to maintain and build many "wildlife openings" that contribute to inflated and deleterious populations of deer and meso-predators). [There]...should be a comprehensive analysis of what size of forest patches will remain after implementation of the plan, and what species are currently occupying these areas... (#02681*)

RESPONSE: The landbase managed by the Hiawatha is interspersed with and adjacent to land owned and managed by other federal agencies, the state of Michigan, non-profit entities and large private industrial ownerships. Management activities on these lands are beyond the scope of the Forest Plan.

Pertinent to the fragmentation discussion, an analysis of connectivity was done for Canada lynx, using all seral stages and size classes except permanent and temporary openings (E0) and all forested areas in the seedling size class. It was found that the HNF has abundant connectivity within each side of the Forest (DEIS pages 3-187 to 3-188).

The DEIS also states, "While forested stands provide connectivity, the highest quality connectivity is found on various lands throughout the forest having the lowest impact from people.

The indicator for quality connectivity is forested lands where timber harvest and other human disturbances are less likely. This includes portions of unsuited lands, riparian corridors, wilderness areas, research natural areas, candidate research natural areas wild and scenic river corridors, and stands designated as old growth."A total of 192,000 acreas of lands with a relatively low level of human disturbance were identified. These are lands where reclusive wildlife species, such as gray wolf, black bear and the very rare Canada lynx, can find refuge from many types of human disturbance (Wildlife BA page 95).

Some level of vegetation diversity across the landscape is desireable. For example, for lynx denning habitat to be functional, lynx foraging habitat must be nearby. Characterized by young or small diameter conifers, such as spruce and balsam fir or the young aspen/birch type, foraging habitat can be very different from denning habitat. Denning habitat includes an abundance of structure at ground level, including large dead wood, root wads, and tip-up mounds, characteristics of older, large diameter forests. Juxtapositioning of both of these types is needed to facilitate lynx reproduction.

On Hiawatha National Forest lands, old growth areas defined as blocks of land characterized by older larger trees, native species, and low road and trail densities (areas which provide quality connectivity) were analyzed based on their size and arrangement across the landscape. In particular, a comprehensive analysis of old growth forest patch sizes and how they connect are displayed by alternative. The results of this analysis are found in the DEIS on pages 3-46 to 3-52 and in Figures 3-OG-10 through 3-OG-13.

As discussed in the DEIS on pages 3-16 to 3-35, all action alternatives indicate less acreage in openings (2% to 3%) than Alternative 1, the no-action alternative (6%). Additionally, deer and some medium-sized predators prefer different forest types. For example, white-tailed deer prefer more open early-successional habitats such as young aspen/birch while Canada lynx and American marten generally avoid open-land habitats, preferring late-seral conditions in mature forest types.

Some openings are necessary for species viability. Permanent openings, totaling approximately 9,800 acres on MA 4.4 and MA 4.2, are necessary for perpetuation of sharp-tailed grouse populations, and would be maintained under Alternative 2 as a result of the vegetation composition minimum goals in these MAs (DEIS page 3-134 and Revised Plan, pages 3-14 and 3-17). The DEIS lists wildlife species associated with six different indicator habitats chosen for analysis (pages 3-131 to 3-153). The total acreages of these habitat types by alternative are also discussed.

#238

COMMENT: *Forest fragmentation by roads, including light duty and two track roads, may well be a greater problem overall for wildlife, than the current frequency and scale of timber harvest within the Hiawatha national forest, (#00236*)

RESPONSE: DEIS Page 3-170 acknowledges habitat fragmentation as a negative impact from ground disturbance associated with construction and maintenance of permanent and temporary roads and trails. However, forest fragmentation by land conversion on lands under other ownerships is identified as a risk factor impacting far more wildlife species than fragmentation by roads (Hiawatha National Forest Wildlife BE). Land conversion can result from many activities such as urban development, agriculture, livestock overgrazing, and timber harvest.

Habitat connectivity was identified as a national risk factor for Canada lynx. Discussions of habitat connectivity across the Forest can be found in the draft EIS under Canada lynx on pages 3-185 to 3-200. Currently about 80% (681,000 acres) of the forest is meeting the definition for habitat connectivity. In the revised Plan, impacts from general disturbance to lynx and other reclusive species such as gray wolf, would be offset at the project-level by guidelines directing that snow compacting activities be located away from better quality lynx habitat, while maintaining large areas free of human disturbance.

Other goals and guidelines would manage access. Density of trails and roads would also be managed providing areas of refugia for lynx through guidelines for seasonal restrictions or decommissioning should density levels exceed two miles per square mile.

The area of quality connectivity is 192,000 acres of low development lands, and is only a portion of the refugia available for reclusive wildlife species on the Hiawatha. In certain management areas, roads and trails could be closed by direction of the revised Forest Plan to achieve the desired conditions for secluded habitat for wildlife. Also see comment #237.

Early-Successional/Aspen

#239

COMMENT: *Young forest habitat is also crucial for several of the Forest's Threatened, Endangered or Regional Forester's Sensitive Species as well as a multitude of other wildlife species. Gray wolf, Kirtland's warbler, Canada lynx, spruce grouse, and northern goshawk all rely on young forest habitat either directly or indirectly during their life cycles. Decreases in the amounts of early successional habitat will lead to lower populations of these Threatened, Endangered or Regionally Sensitive species on the Forest. It is disappointing that little reference is given in the documentation of the importance of essential early-successional prey habitat for several of these species.*

Ruffed grouse and snowshoe hare are the top two prey species of northern goshawk with the latter the major prey of Canada lynx. Annual productivity in northeastern Wisconsin goshawks was directly correlated to regional densities of snowshoe hare and ruffed grouse (Erdman et al. 1998). Current research in Michigan has shown that goshawks favor earlier successional-stage forests (Burkman 2001). Reductions of early successional habitat proposed in the Preferred Alternative would negatively affect these species.

References*: Erdman, T.C., D.F. Brinker, J.P. Jacobs, J. Wilde, and T.O. Meyer. 1998. Productivity, population trend and status of Northern goshawk (Accipiter gentilis atricapillus, in Northeastern Wisconsin. Canadian Field- Naturalist 112(2): 17-26.*

Burkman, R. 2001. Bold and Beautiful. Birder's World 15(3): 32-35. (#02218)

RESPONSE: With one exception, all species mentioned by the commenter, their associated habitats, and the effects of the alternatives on them are documented in the DEIS. Spruce grouse are not specifically addressed in the DEIS, because they are not federally-listed as threatened or endangered, as an RFSS, an MIS, or a Michigan state T&E species.The species is found on the Forest, but is not a species at risk. Spruce grouse was inadvertently referenced on page 2-32 of the draft Plan as an RFSS. This has been corrected in the final Revised Plan.

Gray wolves primarily prey on deer and beaver, which are directly correlated with young aspen and birch habitats. The overall trend for prey habitat indicates the revised Forest Plan is likely to provide for sufficient young forest and conifer cover to provide sustainable numbers of prey species.

Populations of white-tailed deer are expected to remain at levels sufficient to maintain a viable population of wolves (DEIS page 3-205). The decrease of young aspen-birch habitat would likely be insignificant, as aspen represents only one component of prey habitat, and therefore, would not likely result in adverse effects to gray wolf (Wildlife BA page 49 and DEIS page 3-144-145).

Kirtland's warbler is exclusively reliant on young jack pine habitat and wildfire suppression since the early 1900s has reduced the creation of breeding habitat. Through management on public lands and on wildfires, the population has increased substantially since 1990 (draft EIS page 3-208). Alternatives 2–4 have goals and objectives for managing Kirtland's warbler habitat, while the existing Forest Plan does not.

Based on the SPECTRUM model output (which was revised between the draft and final EIS) over the long-term, Alternative 3 would provide the most jack pine Kirtland's warbler nesting habitat followed by Alternative 2, then Alternative 4. (Refer to the analysis of KW in the final EIS). Vegetation management desired conditions for the revised Forest Plan include maintaining jack pine at about current levels to provide habitat for Kirtland's warbler (proposed Forest Plan page 2-8).

With respect to Canada lynx, snowshoe hare are their primary prey (DEIS page 3-185). Alternatives 2–4 would provide more than 400,000 acres of snowshoe hare habitat over the short- and long-term, resulting in a sufficient quantity of prey habitat for use by lynx on the Forest (Plan Revision Biological Evaluation pages 228-229).

Ruffed grouse require aspen stands of multiple ages, with young stands providing breeding and brood habitat, while older stands provide secure nesting sites and winter browse (draft EIS page 3-155). Alternative 3 would provide the greatest amount of brood cover and winter food habitat.

Mature aspen would decrease, but it is not expected that ruffed grouse populations would be affected. Alternative 1 would provide the second highest amount of total acres of aspen/birch habitat. Brood cover would be about 50 percent greater than winter foraging cover. Both Alternatives 2 and 4 would decrease winter food habitat and brood habitat (DEIS page 3-157). See comments #125, 126, 176, 177 for discussions on aspen and changes in aspen goals from the draft EIS to the final EIS.

Primary prey species for goshawk in the Great Lakes Region are ruffed grouse, snowshoe hare and red squirrel. The Hiawatha acknowledges that northern goshawk utilize early-successional forests as foraging areas. However, early-successional forests and the prey they provide are not a limiting factor to goshawks. Nest site disturbance, habitat alteration of suitable nesting habitat and nest predation are more immediate concerns for preserving goshawk on the Hiawatha (Hiawatha National Forest Wildlife BE). Outcome ratings for goshawk species viability remain unchanged from existing conditions for all alternatives (DEIS page 3-191).

#240

COMMENT: *The declining availability of early-seral species aspen and birch habitats will have significant impacts on populations of associated forest wildlife.*

Conversely to these increases in conifer habitats, early seral species aspen and birch habitats are predicted to decline sharply across the forest in alternative 2. This declining availability of shade intolerant deciduous forest types will have significant impacts on populations of associated forest wildlife. American woodcock is probably the most important game species to be negatively impacted by the loss of aspen habitat. Since 1968, woodcock singing ground surveys in Michigan have indicated a downward trend of 1.7% per year. It is widely believed that habitat loss is the primary reason for this decline. Other species that may suffer population declines due to habitat loss include snowshoe hare, white-tailed deer, black bear, moose, gray wolf, ruffed grouse, goshawk, chestnut-sided warbler and Nashville warbler. Acreages of managed aspen or birch on suited lands should be continued at current levels (above the predicted levels) if it is desirable to maintain habitat for the species above. Where conversion of unsuited lands is planned, long lived mixed conifers (white pine and hemlock), jack pine or other opportunities should be emphasized. In managing the forest for multiple values, it is important to remember the role of prey species. Deer are the mainstay in the diet of large carnivores such as the gray wolf. Deer, woodcock, ruffed grouse, and snowshoe hare are also the primary quarry of hunters. The recreational value and economic impact of hunting within the communities near the Hiawatha National Forest are significant. (#02205)

COMMENT: *The Preferred Alternative projects that aspen acreage on HNF will decrease from the present 105,000 acres to 61,846 acres in the next ten years. This represents a 41% decrease from the current level and a 59% decrease since 1980. Furthermore, the plan calls for a 500-foot buffer around 512 miles of cool and cold water streams. This would effectively eliminate 8,000 acres of aspen from those riparian zones.*

This management prescription will have significant negative impacts on many wildlife species, both game and non-game. American woodcock, a species that is highly associated with young aspen, is probably the most important game species to be negatively impacted by the loss of this aspen habitat. The woodcock is covered by the Migratory Bird Treaty Act, and has suffered an estimated 1.7% annual decline since 1968. It is widely believed that habitat reduction is the primary cause of this decline. This plan will further exacerbate the reduction of woodcock

numbers. Ruffed grouse, while able to subsist in other habitat, thrives in landscapes containing a mix of young and mature aspen and will likely suffer population declines resulting from this plan. Other game species that will realize a decrease in habitat include the snowshoe hare, white-tailed deer, black bear and moose.

While game species are important for the human hunting experience, they are also indispensable as prey for the predatory species of Michigan. The federally endangered gray wolf is probably the most significant mammalian predator to be negatively impacted by the loss of aspen habitat. The two major prey of the wolf (white-tailed deer and beaver) are both highly associated with aspen management and have the potential to realize substantial population declines on HNF as a result of the proposed management plan. Goshawks, great-horned owls, barred owls, and Cooper's hawks all feed off ruffed grouse and snowshoe hare, which will almost assuredly decline as a result of this management plan.

In total, there are an estimated 85 vertebrate species that utilize aspen habitat, all of which will be impacted by the long-term decline of this forest type. (#02206)

RESPONSE: There are more than 292 terrestrial vertebrates that are known to use the Hiawatha during part of their life cycles (DEIS page 3-130). This great diversity of species necessitates a variety of wildlife habitats be available on the Forest. Inevitably, trade-offs will occur.

The analysis completed during Species Viability Evaluation (SVE) and subsequent analysis in the Biological Evaluation (BE) and DEIS, do not support the commenter's assertion of significant impacts to species utilizing early seral vegetation (DEIS pages 3-146; 3-156; 3-201; 3-205; BE and BA (prey sections for gray wolf and Canada lynx).

Higher goals for late seral stage forest will result in lower goals for early successional types, such as aspen. Under Alternative 2, aspen acreage will decrease, but not to 61,846 acres in 10 years, as the commenter suggests. Aspen currently accounts for about 12% (105,000 acres) of the Forest. Based on model results, Alternative 2 would decrease to 10% or 86,000 acres after 10 years (DEIS page 3-156). This is at a level above the 1986 Forest Plan minimum goal of 76,626 total acres of aspen (DEIS page 3-25).

Alternative 2 does have a lower goal for aspen acreage than Alternatives 1 and 3. However, the desired range of 7% to 18% aspen for Alternative 2 (updated between draft and final EIS) does not require or direct a decrease from the existing condition. If aspen is managed for at the higher end of the desired range, aspen habitat could actually increase across the Forest under Alternative 2. This would occur at the project level at the direction of the District Ranger. See comments #125, 126, 176 and 177 for more discussion on aspen.

Wildlife goal numbers 1 and 2 (page 2-12) in the revised Forest Plan are designed to provide ecological conditions to sustain viable populations of native and desired non-native species; to achieve objectives for management indicator species, and to provide diverse, healthy, productive and resilient habitats for aquatic and terrestrial wildlife.

A number of at risk species (i.e. federally-listed threatened and endangered species, RFSS) require late seral or old growth type habitat components. Restoration of these habitat components (i.e. mature northern hardwoods, interior forest conditions) comes at the expense of early-successional habitats and may have negative impacts on species like white-tailed deer, American woodcock, snowshoe hare and ruffed grouse that are associated with these habitat types. However, the species viability evaluation did not raise a viability concern for these species.

In this respect, the revised Forest Plan provides a balance between competing demands for use of the resources on the Hiawatha. Despite the expected overall reduction in early-successional habitat types, the aspen-emphasis management area (MA 1.2) and most other management areas include goals for maintaining aspen, which will continue to provide habitat and hunting opportunities for species that prefer aspen habitats. Additional early successional habitat types will continue to be created over time through natural disturbance processes.

Although it is acknowledged that declines or increases of specific habitat types can positively or negatively affect different wildlife species, there are often factors other than

habitat availability that are greater threats to a given species long term success. For example, the draft EIS states that incidental take, competitor competition and human disturbance (i.e. from recreational pursuits), are the greatest risks of significant adverse impacts to Canada lynx (page 3-201) and gray wolf (page 3-205). Thus, declines in early seral aspen and birch are not limiting factors for these species (DEIS page 3-195, 3-205).

The DEIS also notes that there were no negative changes in outcome ratings for Regional Forester's Sensitive Species viability from current conditions in Alternative 2.

Wildlife-related recreation opportunities were considered in the revised Forest Plan. The DEIS discusses differences in the alternatives on page 3-465. Generally, all alternatives will provide potential recreational opportunities.

Refer to comments #241 and 242 for responses to the 500-foot high priority stream buffer. Also refer to comment #239 for information on early seral vegetation.

#241

COMMENT: *The Society strongly recommends the elimination of the guideline restricting aspen regeneration within 500 feet of designated portions of cool and coldwater stream systems, tributaries and spring ponds (Draft Plan page 2-29). This proposed guideline is excessive and ecologically unsound.*

Species such as the declining American woodcock and golden-winged warbler, both listed as High Priority birds on the Partners in Flight Watch List by the US Fish and Wildlife Service are associated with [young forest riparian] habitats (Pashley et al. 2000). Guidelines to manage forested riparian areas that preclude the removal of substantial over story vegetation will unnecessarily limit development of important early successional habitat important to woodcock populations (Dessecker and McAuley 2001). Implementation of this guideline would be expected to reduce key woodcock habitat on this Forest by at least 6,000 acres.

***References**: Dessecker, D.R. and D.G. McAuley. 2001. Importance of early successional habitat to ruffed grouse and American Woodcock. Wildlife Society Bulletin. 29(2): 456-465. Pashley, D.N., C.J. Beardmore, J.A. Fitzgerald, R.P. Ford, W.C. Hunter, M.S. Morrison and K.V. Rose'nberg. 2000. Partners in Flight - Conservation of the Land Birds of the United States. American Bird Conservancy. 92 pp. (#02218)*

RESPONSE: The proposed guideline is neither excessive nor ecologically unsound. The revised Forest Plan directs that vegetation management practices in the riparian corridor will be prescribed to maintain or improve riparian-dependent resources and encourage long-lived species.

The Hiawatha's riparian zone is still exhibiting the effects from 19th century logging activities, which converted long-lived tree species such as white pine and hemlock to short-lived species such as aspen and paper birch. These practices have affected the riparian corridor's ability to provide long-lived large woody debris to stream channels. This debris provides continued stability and complexity, which is important to maintaining productive stream habitat.

Of particular concern, is the loss of large conifer tree trunks (boles) because they retain their structural integrity over hundreds of years. Aspen boles are undesirable as large woody debris (LWD), because they last a short time in the water and provide only short-term habitat stability and complexity.

Aspen in riparian corridors has been steadily declining on the Hiawatha since the late 1950s. As the riparian corridor recovers, there has been an increase in mid- to late-seral tree species, which is moving the Forest towards the desired condition of having older seral species in riparian areas that contribute LWD to the streams and increase shading.

Limits on aspen is the focus of riparian restoration on the 504 miles of high priority streams because of benefits to aquatic life resulting from lower water temperatures and persistent structure from non-aspen windfalls in the stream course.

Under the revised Plan, aspen could be managed in riparian areas on non-priority streams, which includes about 1,277 miles of cold, cool and warmwater streams on the Forest. This equates to 11,281 acres or 61% of the aspen within riparian corridors on the Hiawatha (DEIS pages 3-226 and 3-227). Therefore, opportunities for managing woodcock would be available on the majority of

the Hiawatha's streams. Riparian aspen adjacent to ponds and lakes would also have the potential to provide young aspen (See comment #242 for information regarding the high priority stream buffer).

The effects of the alternatives on American woodcock and golden-winged warbler were analyzed in the DEIS under the young aspen/ birch section (page 3-145). Starting on DEIS page 3-130, the wildlife analysis utilized a coarse filter approach to track habitat trends of species with similar life requisites. For the woodcock and golden-winged warbler, young aspen varies by alternative, and opportunities would be present to manage riparian aspen for these species.

#242

COMMENT: *The impact to the wildlife associated with aspen reduction in the proposed HNF management plan cannot be fully understood without also discussing the effect of beaver ponds on the wildlife community. It is well known that beavers produce positive impacts for a wide variety of species. Reducing aspen acreage in riparian areas will have a negative impact on game species such as black ducks, mallards, wood ducks, hooded mergansers and blue-winged teal. Non-game including American bittern, great blue heron, and about twenty species of amphibians will also realize reduced habitat potential. Each of the above bird species is covered under the Migratory Bird Treaty Act. There are nearly 80 vertebrate species that are commonly associated with beaver ponds in Upper Michigan, which could be negatively impacted by this management plan.* (#02206)

RESPONSE: Beaver can be a major factor in the function of riparian and aquatic ecosystems. Beaver damming has both positive and negative effects on a variety of wildlife species. Reducing young aspen acreage in riparian areas will promote and maintain productive stream habitats. The revised Plan provides direction for removing beaver dams to protect ecologically sensitive areas. It also provides direction to work with the Michigan DNR to manage beaver abundance and distribution that sustains important wetland ecosystems but minimizes adverse effects on high quality coldwater fish habitat, rare species and road and trail stream crossings (DEIS page 3-232).

The reduction of aspen acres in riparian areas potentially affects approximately 7,159 acres (39%) of the 18,440 available over a 50-year period. For the short-term (15-20 years), it is assumed that existing young aspen stands in riparian corridors will remain available. For long-term projections (greater than 20 years), the application of the riparian corridor guidelines will be used with the assumption that the 500-foot buffer will be effective in reducing the incidence of damming where applied and that aspen stands on unsuited lands will continue to succeed to late seral species (DEIS page 3-224).

Over the 50-year time-frame, natural events such as windstorms, would provide disturbance to regenerate aspen. Additionally, beavers would persist in these riparian areas for variable lengths of time, potentially beyond 50 years, before they succeed out of suitable habitat. (Wildlife BA page 49).

It is noted that beaver are a desireable species on the landscape and under the revised Forest Plan, beaver will continue to be present and active across the Forest. The Hiawatha will continue to cooperate with the Michigan DNR to maintain a population and distribution of beaver according to Watershed Management goal 7 of the revised Forest Plan.

As noted in comment #241, the revised Plan would not prohibit aspen management within the riparian corridor on non-priority streams.

#244

COMMENT: *...Alternative 2 also appears to propose the elimination of even-aged hardwoods. This would result in the loss of critical young forest habitat, which is needed by wildlife. Further, a reduction of the mast crop would be detrimental to many species, including whitetail deer. To further increase uneven-aged northern hardwoods would also not bode well for wildlife. The Forest currently has too much uneven-aged hardwood. To increase this type of habitat just doesn't make sense. (#00671*)

COMMENT: *I would propose amend the Preferred Management Alternative and Forest Plan to restore the nearly 43,000 acres of even-aged northern hardwood management emphasis that has been eliminated (MA's 3.1 and 3.2). By restoring this management*

emphasis, the Forest Service will promote the regeneration of oak, ash, and cherry forests, which provide critical young forest habitat and mast production for wildlife. (#00040, 00042, 00630, 02280)

RESPONSE: Refer to comment #127.

#246

COMMENT SUMMARY: ***I'm writing in support of more aspen cutting and early successional habitats in our Federal Forests. "Early Forests" are not only critical to deer and game birds but many non-game species as well.*** (#00001, 00002, 00004, 00010, 00013, 00040, 00660)

COMMENT: *The goal aspen acreages in Alternative 2 range from 29,139 to 100,430. This range is far too wide and should be reviewed with the focus on maintaining as many aspen acres as possible, and not less than the current aspen acreage of 79,300 because wildlife populations have developed which depend on aspen, including American woodcock. This bird's population has plummeted, apparently from decreasing management of early seral species such as aspen. (#01760)*

COMMENT: *I have concerns regarding the aspen acreage management or lack of aspen acreage management. It has been obvious that the reduced management of early aspen species has affected to the woodcock and other wildlife habitats. Please consider maintaining a higher level of aspen acreage for harvesting. (#02054)*

COMMENT: *Alternative 2 proposes a decline of 42,000 acres (27% decreases) of aspen emphasis areas that promote high stem density. This is a critical component to protect species from predators. Therefore, I respectfully request the US Forest Service reconsider this component of the plan.*

I respectfully request the US Forest Serve consider raising the minimum range for aspen habitat to 5% to provide for ruffed grouse and woodcock habitat and hunting opportunities as well as regenerating the 10s of 1000s acres of over mature aspen habitat that currently exists on the Hiawatha Forest. This habitat is critical for these species. (*#00040, 00042, 000630, 00631, 02280*)

COMMENT: *A 48% decrease in aspen emphasis areas will result in greater predation of wildlife. Wildlife would be better served by raising the minimum range of aspen habitat to 5%, and regenerating the over mature aspen habitat currently in the Forest. This would result in greater populations of wildlife, more hunting opportunities for current and future generations of hunters, and greater use of the Forest now and in the future. (#00671*)

RESPONSE: See comments 239 and 240. While MAs 1.1 and 1.2 in the 1986 Plan emphasized aspen, these areas have been managed for a variety of species. Early successional forest types such as aspen are expected to decrease as a result of natural succession. However, some will be maintained through management activities to meet vegetation and wildlife habitat objectives (revised Forest Plan page 2-8). In the 2006 Plan, MA 1.2 emphasizes aspen management and many other species. Additionally, most other MAs, except those designated unsuited for timber production, also include aspen goals to provide wildlife habitat and hunting opportunities. Early successional areas will continue to be created through timber harvest and natural processes such as blow-downs and fires.

#247

COMMENT: *...The draft EIS identifies the management of aspen and jack pine as a main planning issue and then, without rational explanation, largely abandons the goals for aspen management and related early seral stage goals in other types of the current forest plan in favor of a plan that differs little from the old growth agenda in Alternative 4. This change in plan direction will have a direct impact on white-tailed deer, ruffed grouse, snowshoe hare, woodcock and other wildlife species that inhabit the early seral stages of the forest and especially the aspen type. This change will substantially impact both the hunting public and the gray wolf and Canada lynx that rely on the same prey base. The decline in acreage of forest openings by 50% from Alternative 1 under the proposed alternative and any of the other alternatives will also have a negative impact. The decline in suitable habitat for these species is not merely my opinion—the decline in habitat and*

its potential impact on these species is clearly noted qualitatively in the wildlife section of the draft EIS. However, I believe that the impact of Alternative 2 has been understated, and that the aspen management direction and openings retention policy of Alternative 1, if fully implemented, would provide a superior alternative for the management of the aspen type and openings and their associated wildlife. (#00239)

RESPONSE: Vegetation management was identified as influential in assessing species viability and habitat availability in the DEIS on pages 1-6 and 1-7. Components of this issue include the amount and distribution of aspen and jack pine, old growth, late seral species and determining the ecological conditions needed for species viability. Aspen and jack pine management were identified as the primary need for change issues.

Both Alternatives 2 and 4 emphasize management of uneven-aged hardwoods, thus the expected changes of some habitat types such as aspen and mature northern hardwoods are quite similar for both alternatives; however, expected changes of other habitat types such as jack pine are very different.

Under Alternative 2, MA 1.2 emphasizes aspen management. Most other MAs, except those designated unsuitable for timber production, also include goals for aspen to provide wildlife habitat and hunting opportunities. Additional early successional areas will continue to be created on the Forests through natural processes such as blow-downs and fires.

Canada lynx, wolves and other predators on the HNF use a variety of habitats to find prey. Therefore, impacts to predators from the decrease in aspen acreage are not dramatic. Under the revised Forest Plan, there would more than 400,000 acres of foraging habitat for lynx under all alternatives (DEIS, page 3-193). This quantity was determined to be sufficient for lynx on the HNF over both the short- and long-term. The overall trend of prey availability indicates that all alternatives are likely to provide young forest and conifer cover in sufficient quantities for gray wolves.

It is documented in the DEIS that Alternative 1 provides the most aspen habitat and would provide the most benefits to species dependent on this forest type (DEIS, page 2-6). The goals of Alternative 2 are to provide habitats for a mix of early and late successional species, with less aspen and more uneven-aged hardwood management. The 33,000 acres of minimum forest openings planned under the 1986 Plan was not achieved. Rather, about 19,000 acres of permanent and temporary configurations exists on the Hiawatha.

Existing acreage in openings is described by the pine barren savanna habitat in the DEIS on page 2-133. Pine barren, savanna and open-land are interchangeable terms used to describe opening complexes that are characterized by herbaceous and shrub cover, with scattered live and dead trees, within a matrix of forest land that is typically dominated by jack pine. Barren/savanna habitat was historically maintained with frequent fires, but effective fire suppression programs have reduced the extent and diversity of barren/savanna habitat (DEIS p. 3-134). Intensive vegetation management using prescribed burning and mechanical treatments are required to maintain all of the openings.

Of the 19,000 acres of barren/savanna on the Forest, about 11,000 acres is permanent openings. The remaining acreage consists of temporary openings, after a fire or harvest, and in the process of reforestation to young jack pine seedlings/saplings at various stocking densities. Temporary and permanent open habitats can move around on the landscape as areas are burned, harvested and reforested. Currently the HNF is annually restoring or enhancing about 400 of large openings (HNF Monitoring and Evaluation Report 2005).

The expectation is that this level of management would continue with the implementation of the revised Forest Plan. Alternatives 2–4 have minimum vegetation goals for openings that would approximate the existing acreage of permanent openings on the HNF. In Alternative 2, the maximum goal would allow for maintaining up to 17,390 acres, about 58% above the current level of management for permanent forest openings. The Forest Service's interdisciplinary approach to resource management would help ensure that openings are maintained or created across the HNF in areas critical to sharp-tailed grouse and other openland species (BE pages 81-92).

The Monitoring and Evaluation Plan (revised Forest Plan, Chapter 4) requires that population and/or habitat trends for

Management Indicator Species (MIS) are consistent with HNF expectations.

Two of the MIS (sharp-tailed grouse and ruffed grouse), were chosen, in part, due to their relationships to openlands and young aspen/birch. Should populations or habitat quantities not meet expectations, line officers would have the ability to adaptively manage resources to address the challenges, since vegetation goals are desired conditions rather than standards. Refer to comments #240, 249 and 258 for additional information.

Grasslands/Openings

#249

COMMENT: *Among all habitat types, GRASSLAND BIRDS are the most rapidly declining suites of birds. Loss of habitat due to fire suppression and succession has drastically reduced the number and size of open land across the state of Michigan. Several grassland bird species are undergoing acute population declines. Priority species include state listed species such as Short-eared Owl, Northern Harrier, LeContes Sparrow, Henslow's Sparrow, Sharp-tailed Grouse, Dickcissel, Upland Sandpiper, etc. It is extremely important that land management plans include the active management of existing grasslands on the Hiawatha National Forest, not only for game species, but non-game species as well. The Upper Peninsula is an important region for several species, which are rare in the Lower Peninsula. Several areas on the W-HNF are good candidates for ongoing active management, including "Schware Wildlife Opening", "Eight Mile", and "Highbridge" and "Baldy Lake". Parts of these areas are undergoing severe encroachment by shrubs and trees, lessening their size and altering their structure.*

Two factors are very important in creating and maintaining grasslands: Size and heterogeneity:

1. *It is extremely important that shrubs and trees occur on these lands at <5% (less than five percent). An excess of shrubs and trees create habitat for "Shrubland species", and grassland habitat is thus further minimized. More shrubs and trees also create perches for Brown-headed Cowbirds, which are nest parasites. Fire and mowing, at appropriate intervals and times of year, should be considered.*
2. *Size of the opening is also very important. The bigger the better. Several grassland species are "area-sensitive" (for example Short-eared Owl and Northern Harrier) and need large (>100acre) openings for breeding and foraging. Maintaining large (>100 ha), contiguous tracts reduces edge, provides habitat heterogeneity, and to decreases nest depredation. I believe this should definitely be a priority at "Schware Wildlife Opening", "Eight Mile", "Highbridge" and "Baldy Lake". (#00451)*

RESPONSE: The 2006 Forest Plan would permit openings of up to 1,100 acres for sharp-tailed grouse and associated species. This is sufficient for area-sensitive species such as short-eared owl, northern harrier, sharp-tailed grouse and associated species. Management Area 4.4 focuses on large openings and early seral habitats. Vegetation objectives for MA 4.4 include a goal range of 13% to 23% of the acreage in permanent openings.

Habitat for species that prefer openland/ savanna type habitats will be provided, especially within this MA. Management Area 4.2 also provides open habitats for these species. Pages 3-133 to 3-137 in the DEIS discuss the analysis of openland habitat for wildlife by alternatives.

#250

COMMENT: *The plan states that the maximum size of temporary openings for sharp-tailed grouse and Kirtland's warbler management should not exceed 550 acres. Why? This seems a needless restriction. First, all openings are temporary unless maintained by disturbance. We think that a little investigation will show that some of the very best examples of these vegetative conditions have exceeded 550 acres in size. Fire created habitat has exceeded this acreage with good results. This restriction makes as much ecological sense as restricting mature stands to no larger than 550 acres in size. Some people point out the benefit of connectivity for mature habitats, well it is just as important and maybe more so for there to be corridors of connection for opening and early succession habitats as well and we do not see this in the plan. (#02068*)

RESPONSE: The proposed Plan had a 550-acre maximum size for areas managed for sharp-tailed grouse and Kirtland's warbler (revised Forest Plan guideline, page 2-31). Based on further analysis and informal consultation with the U.S. Fish and Wildlife Service (USFWS), the final Revised Plan allows a maximum of 1,100 of temporary openings for managing sharp-tailed grouse and Kirtland's warbler.

In addition, the 1,100-acre temporary opening guideline may be exceeded by harvesting adjacent blocks after the appropriate stocking density (determined in consultation with the USFWS) is achieved, and after the third-year stocking review.

Regarding connectivity, within Hiawatha National Forest lands, open habitats are distributed across the landscape and over time can move in response to fire, harvest and reforestation. Outside of HNF lands and between the east and west units of the Forest, Michigan DNR (MDNR) has an active program of creating/maintaining habitat for open land species in the central portion of the eastern Upper Peninsula through prescribed fire, jack pine clearcuts and mechanical means.

Between the MDNR and Seney Wildlife Refuge, there is a large complex of open lands and unmanaged wetland/ridge habitat. Combined with the habitat managed on the HNF, these areas reduce the level of species isolation (DEIS page 3-165).

#251

COMMENT: *While I applaud the Forest Service for wanting to manage for a diversity of species, the scale and manner of managing for them–thousands of acres of stated clear-cut or even-age logging and thousands of acres of unstated salvage logging–is not one I support. The forest has a natural process of creating gaps, openings, blow downs and other major disturbance actions to create that habitat naturally, without mechanical intervention. Wildfire also plays a role in recycling the forest... (#02681*)

RESPONSE: The vegetation management goals of Alternative 2 provide for a mix of early and late-successional species, with less aspen and more uneven-aged hardwood management that emphasizes managing for saw logs. Open habitats were historically maintained with frequent fire, but effective fire suppression programs have reduced the extent of these habitat types and have resulted in a larger role for management in providing openings

The HNF has responsibilities under the Endangered Species Act, specifically section 7(a)1, that require proactive conservation of listed species by carrying out programs aimed at their recovery. For some listed species on the HNF, active management includes the creation of permanent and temporary openings beyond those created by natural disturbances.

Temporary and permanent open habitats can move around on the landscape as areas are burned, harvested and reforested. On the HNF, large permanent herbaceous open-land habitat is augmented by adjacent large blocks of temporary open-land that is in the process of reforestation following harvest.

#252

COMMENT: *...On page 103 of the Biological Evaluation, the last comment is "Consider maintaining large permanent openings up to 1200 acres (needs discussion)" Our comment is the discussion should be to set up 1200 acres as the lower limit, and up to 3000 acres! (#00189*)

RESPONSE: Please see comment #250

Beaver

#253

COMMENT: *Competing values need to be examined closely when implementing practices on the landscape on a case-by-case basis. There is little doubt that beavers can negatively impact trout systems. It is also well known that beavers produce positive impacts for a wide variety of species. Data from Michigan radio collared wolves indicate that some packs are highly dependent upon beaver for a substantive part of their diet (Sitar & Weise, personal communication). Data from Isle Royale National Park indicate that wolves regularly prey on beaver to the degree that they play an important role in regulating local beaver populations (Shelton & Peterson 1983). Nearly 80 vertebrate species are commonly associated with beaver flooding including threatened, endangered and species of special concern. Both the positive and negative impacts of the proposed reduction of*

aspen along select watercourses need to be considered. (#02205)

RESPONSE: See comment #242 paragraphs 1, 2, 5, 6. Areas of riparian aspen within the buffers could continue to remain suitable beaver habitat for some time after the revised Forest Plan is implemented. Over this 50-year time frame, natural events, such as windstorms would provide disturbance to regenerate aspen. Additionally, beavers would persist in these riparian areas for variable lengths of time, potentially beyond 50 years before they succeed out of suitable habitat. Consequently, we predicted that there would be an inconsequential decrease in beaver numbers across the HNF. (Wildlife BA p. 49).

Forest-wide guidelines for reducing riparian aspen habitat are not expected to reduce beaver populations to the point where wolves would be adversely affected by loss of prey. This is because the guideline would potentially affect about 7,159 acres (39%) of the 18,440 available over a 50-year period.

#254

COMMENT: *The Society strongly recommends the elimination of the guideline restricting aspen regeneration within 500 feet of designated portions of cool and coldwater stream systems, tributaries and spring ponds (Draft Plan page 2-29). This proposed guideline is excessive and ecologically unsound. Beaver are an important "keystone" species that provides habitat for marsh species that may enhance diversity for the region over the long term (Crow et al. 1994). Guidelines that place unnecessary artificial mid to late successional 1000 foot corridors along streams reduce habitat opportunities for wildlife species associated with young forest, riparian habitats. There is little justification or need for this guideline except for the statement that the existing 200 foot zone "has not deterred beaver dam construction in nearby channels, because beaver have been found to forage up to 500 feet away from a stream". It is highly unlikely that in the short time the 200-foot zone has been in place, habitat changes have progressed far enough to warrant a fair determination of its effect. Data provided in the draft EIS show that approximately 90 percent of high priority streams on the Forest are NOT being impacted negatively by beaver at this time. This high figure does little to justify placing an additional 6,163 acres of aspen near high priority streams off limits to regeneration. The current plan allows land managers with the flexibility to deal on a case-by-case basis with riparian concerns.*

It is also doubtful whether the implementation of this broad-brush guideline will obtain its objective of further reducing beaver populations. This guideline fails to allow consideration of historic site use, stream width, stream gradient, and the water holding capacity of soils to determine if beavers would even utilize these sites.

The "unwanted" beaver may represent crucial prey for top carnivores like the Federally Threatened gray wolf (Crow et al. 1994). Snags in flooded beaver ponds also provide important habitat for the black backed woodpecker, a species on the Regional Forester Sensitive Species List. Periodic flooding of sites by beaver is important for maintaining rare northern sedge meadow communities (Curtis 1959). None of these potential effects of this guideline are discussed in the draft EIS.

References: *Crow, T.R., A. Haney and D.M. Waller. 1994. Report on the scientific roundtable on biological diversity convened by the Chequamegon and Nicolet National Forests. Gen. Tech. Rep. NC-166. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station. 55 pp.*

Curtis, J. T. 1959. The vegetation of Wisconsin: An ordination of plant communities. University of Wisconsin Press, Madison. 657 pp. [reprinted in 1987] (#02218)

RESPONSE: It has been estimated that pre-settlement northern Michigan contained less than one-half of the amount of aspen compared to what currently exists in the eastern Upper Peninsula (Cleland et al. 2001).

The increase in aspen acreage compared to the pre-logging era, as well as other beaver forage (alder) in and around the riparian corridor are two likely triggers that have influenced the increase in the number of beaver dams located in stream channels (DEIS page 3-227). Reducing young aspen acreage in riparian areas will eventually promote and maintain productive stream habitats, reduce

the long-term potential for beaver impoundments on 504 miles of coldwater brook trout and steelhead habitat, help protect the soil-hydrologic function of wetland areas, and will benefit bald eagle.

DEIS page 3-224 cites research that identified determinants, such as stream width and stream gradient, that affect the success of beaver dam placement and long-term beaver dam stability. DEIS page 3-227 data shows that about 90% of the Forest's high priority stream miles have no beaver impoundments. This also shows that 92% of all stream miles are not affected by beaver.

Thus 10% of high priority streams are impounded by beaver, while only 8% of all streams are affected by beaver. Many impoundments are found close to young aspen stands. By encouraging fewer acres of young aspen in riparian corridors, fewer beaver dams will be encouraged. There is a discussion of the impact of beavers on sedge meadows on page 3-243 in the draft EIS. The impact of the revised Forest Plan to beaver as a prey species for gray wolf is discussed in the wildlife BA and in comments #253 and 241.

Game Species

#255

COMMENT: *It is only Alt. 3 that gives adequate priority to wildlife game species. The priority given to non-game wildlife in all the Alternatives seems to exceed that given to game animals. At the same time the value to the Forest user is much greater for the game species, especially deer and grouse. For example Alt. 2 gives emphasis to non-game on over 470,000 acres. Game is given priority on only 275,000 acres. With Alt. 3, game is given some priority on about 523,000 acres while still giving priority to non-game wildlife on over 250,000 acres. This seems like a more realistic and logical balance based on demand and economic importance. (#02068*)

RESPONSE: There are differing opinions about how the Forest's vegetation should be best managed. Comments range from a desire for vegetation goals that would emphasize older-aged late seral forest to those emphasizing more early seral conditions. Components of this issue include the amount and distribution of aspen and jack pine, old growth, late seral species and determining the ecological conditions needed for species viability.

Desired conditions of the revised Plan are to provide a balance of healthy, sustainable, and resilient forest lands with a variety of plant and animal species habitats, timber products, and settings conducive to recreation activities while contributing to the conservation and recovery of federally-listed threatened, endangered and sensitive species.

Any appearance of favoring non-game species over game species is unintended and simply not one of the goals of the revised Plan. The revised Plan emphasizes a mix of early and late successional habitats, providing for both game and non-game species, with less aspen and more uneven-aged hardwood management that emphasizes managing for saw logs. Alternative 3 emphasizes more early seral species such as jack pine, aspen and non-forested areas and less emphasis on managing for saw logs. The economics of hunting is discussed in the DEIS page 3-465.

#256

COMMENT: *...Sharp-tailed Grouse...Under Future Ecological Conditions (Forest Plan Projection, Biological Evaluation-page 102) is the statement "Still maintaining less opening than historic even at 20% in the 4.4 Management Area" We feel that, if historic openings were greater, you should mimic those historic conditions by creating and maintaining more than 20%. This would benefit not only Sharp-tails but many other species and, at relatively small economic loss of timber crops. (#00189*)

RESPONSE: Currently, there are about 19,000 acres (2.2%) of barren/savanna openings on National Forest lands within the Hiawatha National Forest. Barrens/savannas occur generally on ELT 10/20, which makes up about 16% of the land within the Forest boundary.

Based on analysis of General Land Office Survey notes, about 18% of the lands classified as ELT 10/20 or about 3% of all lands within the Forest boundary were classified as non-forested barrens or regenerating stands prior to settlement. Thus, comparing current conditions to historic conditions there has only been about a 2% decrease of this land type.

Based on model outputs, Alternative 2 would provide about the same sharp-tail nesting and foraging habitat as Alternative 1 (DEIS page 3-162). The SVE indicated that under Alternative 2 there would be a 4,500-acre reduction in allowable breeding habitat from the 1986 Plan MA 4.4 vegetation goals, but would allow about 1,000 acres over current to be developed. The SVE also indicated that sharp-tailed grouse would benefit from an increase in the maximum size of temporary openings. Consequently, in the final Forest Plan, the size limit for temporary openings was increased to 1,100 acres in areas managed for sharp-tail grouse.

Historic conditions are not necessarily the same as what is currently desired on the landscape. As described in the DEIS on p. 1-7, in response to the Notice of Intent, some reviewers believe that the pre-settlement vegetation information should not be used as a desired condition because it is a single moment in time and society's needs have changed.

Desired conditions described in the proposed Forest Plan on page 2-8 include vegetative conditions that represent native species in age, size and successional states that support native wildlife and fish species and other uses of the forest and contribute toward ecosystem sustainability and biological diversity. Harvest activities will create temporary openings, which augment permanent wildlife openings. Succession and natural disturbances will combine to be the primary driving force of the vegetation on unsuited lands. (proposed Plan page 2-8).

#257

COMMENT: *...We believe that, the Alt. 2, 4.4 vegetation management areas shown on the map appear to be the best for both Sharp-tails and KW. However we...recommend that, in the East Unit, the acreage shown in Alt. 3, along the South Strongs Rd. be added to Alt. 2, but designated as 4.4 rather than 4.1 as shown in the Alt. 3 map. In the 1950's and earlier, this was a "hot spot" for Sharp-tails and is more suited as 4.4 management areas. (#00189*)

RESPONSE: Management area boundaries were identified and configured based on many considerations, including species viability. We believe the area you are referring to is allocated to MA 4.2 in Alternative 2. As with MA 4.4, open lands management for sharp-tail grouse could occur in this MA. Vegetation goals allow for 2–6% of the MA to be managed as permanent openings. This area's allocation did not change from the 1986 Plan.

#258

COMMENT: *The draft EIS acknowledges the expected decrease in ruffed grouse, a MIS, but does not fully document the resulting losses to wildlife species, especially those very important to one of the primary users of the Forest, the hunting public. If implemented on the HNF, the preferred alternative can be expected to reduce ruffed grouse populations by over 13,000 birds annually once habitat conversions occur. Obviously, this important information should be included in the draft EIS. Instead the draft EIS simply states, "Both Alternative 2 (Preferred) and Alternative 4 would decrease winter food habitat and brood habitat", No numeric projections are provided even though this is one of the Forest's four proposed Management Indicator Species, questioning also the ability of the Forest to conduct useful monitoring of the Plan in the future. (#02218*)

RESPONSE: Desired conditions for vegetation will result in a decrease of early successional forest types, such as aspen, as a result of natural succession. However, some will be maintained through management activities to meet vegetation and wildlife habitat objectives.

A reduction in the emphasis on early successional forest may have an impact on populations of ruffed grouse. In the draft EIS Tables 3-VEG-8 and 3-VEG-12, aspen accounts for 12% of total Forest acres. Aspen vegetation goals were modified between the DEIS and final EIS. As a result, total aspen will be higher than projections in the proposed Forest Plan, and will approach minimum levels indicated under Alternative 1.

It is envisioned that minimum total aspen under the revised Plan will be approximately 75,000 acres. Habitat for ruffed grouse will gradually decrease over time under the revised Forest Plan. Refer to comments #125, 126, 176 and 177.

#259

COMMENT: *There are...several birds and other wildlife that need young forest to thrive. Woodcock which have been in a 20+ year steady decline is... on- [going]. All studies done to date show that while hunting has little...impact on woodcock numbers, habitat is key. (#00047*)

RESPONSE: Aspen is valuable habitat for woodcock, ruffed grouse and other early successional wildlife species. In addition, many forest users seek aspen habitat for hunting and wildlife viewing. For discussions of aspen trends, refer to comments #239–242.

The effects of the alternatives on American woodcock were analyzed at a coarse filter level in the DEIS in the section on young aspen/ birch (page 3-144). Because this species is not federally-listed as threatened or endangered, is not a Regional Forester's sensitive species, a management indicator species, or a Michigan state threatened or endangered species, additional analysis was not warranted.

#260

COMMENT: *The draft EIS on page 3-152 notes that white-tailed deer may be limited by available winter habitat without recruitment of white cedar. It should also be noted that recruitment of white cedar (and northern hardwoods for that matter) would not occur at sufficient levels unless the numbers of white-tailed deer decrease (Cote et al. 2004).*

Reference: *Cote, S. D., T. P. Rooney, J. Tremblay, C. Dussault, and D. M. Waller. 2004. Ecological Impacts of Deer Overabundance. Anu. Rev. Ecol. Evol. Syst. 35: 113-147. (#00665*)

RESPONSE: Cedar regeneration sometimes fails as the young trees reach a height where the tops protrude above the snow and are browsed by deer. The revised Plan includes guidelines for managing deeryards and production of mast (revised Plan page 2-31). This will provide more favorable conditions for deer wintering and foraging and potentially reduce negative effects on regenerating conifers. White-tailed deer densities vary throughout the Forest. In many areas, cedar recruitment is not affected by deer browsing.

#261

COMMENT: *We also have other concerns in Area 2.3. Here we feel that not enough is being done in this area to promote deer survival and to increase deer numbers. The HNF Plan authors envision a late successional, old growth forest with deer out of the picture.*

As this is the largest management area at 208,874 acres, it seems that one would also be managing it for whitetail deer. In Area 2.3, a deer management plan is needed that would involve regeneration of aspen stands as well as management of deeryards. (#02206)

RESPONSE: Suited uses for MA 2.3 are listed in the DEIS on page 3-8. These are: to provide quality sawlogs for lumber and veneer to the regional economy; to manage northern hardwoods for wildlife habitat for species such as northern goshawk, red-shouldered hawk, American marten and redback salamander and to provide dispersed and developed recreation.

Habitat for deer is not listed as a suited use for this management area. However, there are vegetation goals (1%–15%) for early aspen in MA 2.3. This goal range will provide managers with opportunities to regenerate aspen and create habitat for white-tailed deer and other early seral-dependant wildlife.

This management area also has vegetation goals for mid-seral hardwoods managed under the even-aged silvicultural system. There are also approximately 21,000 acres of ELTs 70 and 80, which are managed primarily for lowland conifers, but also have aspen goals. These areas would provide browse and thermal cover for deer. (Proposed Plan page 3-10)

Other management areas focus on habitats more suited to deer such as MAs 1.2 and 4.5. These two management areas comprise almost 162,000 acres.

MA 1.2 focuses on managing aspen for fiber production to the regional economy; providing habitat and hunting opportunities for wildlife species such as deer and grouse; and providing dispersed recreation. MA 4.5 emphasizes vegetation management for upland and lowland habitat for deer and other wildlife species associated with more remote, older coniferous forests. These forests also provide winter cover for white-tailed deer.

#262

COMMENT: *Preferred Alternative 2 represents the best long-term management options for a winter deer range and forest stand composition attributes. Appropriate consideration of deeryard complexes in the planning processes for old growth designation, forest type conversions, silvicultural stand manipulations, and desired forest conditions should be taken.*

Increasing mature lowland mixed hardwoods/conifers acreage by 31% (28,000 acres) during the next 100 years, primarily on ELTs 70B, 80A and 80B is positive. Additionally management for increased acreage (39,000 acres over 100 year) of lowland conifer and cedar stands in ELTs 70B and 80B, mesic to wet sites, has positive long-term implications for deer winter range. Care should be given to silvicultural planning efforts where these increases can be implemented in delineated deeryard complexes. (#02205)

RESPONSE: Thank you for your comment. The DEIS emphasizes the importance of this type for white-tailed deer and snowshoe hare, but it is also important for a variety of species. Wildlife that use mature lowland mixed forests are diverse and include threatened and endangered species and other rare animals on the Forest (DEIS page 3-152).

#263

COMMENT: *Management for late seral species such as white pine and eastern hemlock through planting, silvicultural manipulation, and succession are important in winter deer range management as dominant cover types as well as viable components within northern hardwood stands. Increasing the hemlock habitat acreage should be emphasized wherever appropriate conditions warrant. This is particularly important in MA's where management for thermal cover and browse juxtaposition should be emphasized. (#02205*)

RESPONSE: Thank you for your comment. It should be noted that later successional northern hardwoods will increase under the revised Plan. The desired condition will emphasize within stand diversity. Under this direction, long-lived conifers, such as white pine and eastern hemlock will be emphasized. Considering the distribution of northern hardwoods on the forest, this direction will occur within white-tailed deer range.

#264

COMMENT: *Deer are a major threat to wildflowers, forest regeneration, many birds and small mammals, and can impact nutrient cycling through vegetation shifts. The USFS should work directly with the Michigan Department of Natural Resources and credible conservation organizations to determine how the Hiawatha can plan forest projects in a way that will not provide additional food or habitat for these invasive natives. Furthermore, it is important that deer habitat and food sources not be created near species and ecological communities of concern that are affected by deer. (#00779)*

RESPONSE: The Hiawatha does work with the MDNR to manage several wildlife species populations and their habitats, including deer. Since deer are the main prey species for gray wolf, the state has established management direction for deer populations in relation to wolves.

As mentioned in the Wildlife Biological Assessment on page 39, "The 1997 State wolf plan does not emphasize increasing deer, but promotes maintaining 'healthy populations' of this species. Rather than promoting high deer populations for wolf alone, goals are designed to balance a variety of factors, including compatibility with habitats and ecosystems, sustainable harvests for hunters, observation opportunities (aesthetics), and conflicts with humans such as vehicle accidents and crop damage."

Economically and ecologically, white-tailed deer is an important member of the Hiawatha's faunal community. White-tailed deer densities vary throughout the Forest. In many areas, browsing to the herbaceous layer is not prevalent. The ID team approach used by the Hiawatha helps ensure that where there are ecological communities of concern, potential adverse impacts are considered and mitigated as necessary when designing and implementing projects.

Site-specific projects that have the potential to enhance deer habitat will be evaluated to determine the effects to rare

plants and communities. The Hiawatha's species viability evaluation also acknowledged and considered the effects of the deer herbivory on rare plants.

Bear

#265

COMMENT: *The revised plan should also make some mention about repeated nuisance bear concerns on Grand Island and try to encourage bear hunting on the island to help reduce and/or eliminate that problem. In abundant media coverage about nuisance bear activity on Grand Island during 2004, hunting was not mentioned once by forest service personnel as a possible solution to the problem. (#01630)*

RESPONSE: Grand Island falls within the Michigan DNR Gwinn Management Unit for black bear. Hunters with permits for the Gwinn Unit, may hunt on Grand Island. No special regulations are in effect for Grand Island, but because of limited access, bear hunting has not attracted the same interest as on the mainland.

The Plan acknowledges bears within Grand Island NRA (revised Forest Plan, MA 8.5 page 3-103). Wildlife Guideline 1 states, "a strategy should be developed for managing the conflicts between visitors and bears." Under Hunting, Fishing and Trapping, Guideline 1 states, "the Forest should consult with the Michigan Department of Natural Resources to address hunting bears with dogs." The Forest has consulted with the Michigan DNR regarding bear management options, including increased access opportunities for bear hunters.

#266

COMMENT: *The HNF Plan skirts the issue of wildlife management of Grand Island. Under guidelines in the Plan it states "a strategy should be developed for managing conflicts between visitors and bears". The number of visitors to Grand Island will only increase as the years go on, putting more pressure on the existing wildlife. Sharing the same area of the bears' best food source and shrinking the area in which they live, eat and roam is only going to cause progressive problems. Currently, it appears that more consideration is being placed on visitors' invasion of bear territories, that on respect for the bear and its habitat.*

The Alger Conservation District is concerned that if Grand Island were allowed to develop commercially, this would adversely affect the wildlife on the island, especially the bears. We feel that the Island should remain a low impact, "leave no trace" recreation area. (#02206)

RESPONSE: Desired conditions for recreation opportunities provide a variety of high-quality outdoor recreational opportunities that are designed to meet the niche, meet recreation demands and settings, minimize user conflicts, while sustaining natural resources. Suited uses for Grand Island include providing a range of recreational opportunities while protecting threatened and endangered species and other natural and cultural resources.

While desired conditions for Grand Island feature recreation-related activities, other land designations provide different settings for forest users and wildlife. For example, wilderness areas provide remote, undisturbed areas and secluded recreational settings where natural processes function without human interference.

Currently, management direction follows the Grand Island Record of Decision (ROD). Design criteria described in the ROD are used to determine consistency with the rustic, natural and historic character of the island. In addition, a Grand Island Strategic Plan that will further address wildlife management issues will be developed and implemented in this planning period as directed on page 2-6 of the proposed Plan.

There are no immediate plans for further commercial development of Grand Island. Increased visitor use has been accompanied by an increase in education and by efforts to modify visitor behavior that affects bears. Bear boxes and poles for food storage are available at all established campsites. Research was conducted in 2005 to determine the number and genetic relationships of bears inhabiting Grand Island.

Population parameters will be a factor in determining whether active management of bears is required. See comment #413 for additional information.

Threatened, Endangered and Sensitive Species

#267

COMMENT: *The Biological Evaluation discusses the future predicted outcomes for the TES species on the forest. Several conservation measures are discussed for each species. Within the BE it indicates that the future of many of the species discussed "could be raised to historical if conservation measures are implemented" (this wording is direct from Blanding's turtle). Then the draft EIS indicates that under alternatives 2-4 the outcome rating would be historical. Does this mean that the HNF is committed to implementing all the conservation measures for each species? I would recommend there be some clarification on this point. If the outcome ratings in the draft EIS are due to conservation measures being implemented, then it should be noted that these are required elements. This situation is similar for the Red-shouldered Hawk where the outcome rating (C) is based on implementation of all conservation measures (proposed changes). The draft EIS should include the required conservation measures to achieve these identified outcomes by alternative. (#00665)*

RESPONSE: The DEIS is clear on this point on page 3-175 under Direct and Indirect Effects. This section states future outcomes take into consideration management direction in the alternatives that emphasize maintaining or improving habitats, or required mitigations designed to eliminate or reduce potential negative impacts. This section also states determinations indicating potential impacts reflect the uncertainty associated with programmatic, landscape level analyses and potential changes to habitats. The Hiawatha is committed to implementing the management direction in goals, objectives, standards and guidelines in the revised Forest Plan.

In the Alternative 2 section on page 3-175, the following is stated, "management direction, emphasizing protections of various aquatic, shoreline and riparian habitats under Alternative 2, was responsible for the three species showing positive changes in outcome ratings from current conditions."Blanding's turtle, among other species, benefited from a variety of standards and guidelines affecting riparian and wetland habitats. For example, implementing the 500-foot buffer on each side of high priority streams will protect about 7,200 acres of riparian habitat on the Forest.

#268

COMMENT: *...the FWS concurs that the federally listed species identified in the Draft EIS constitute an accurate listing of the species known to be present within the project area. We have no specific comments regarding federally listed species on the Forest at this time. We believe that the standards and guidelines in the Proposed Plan (Alternative 2) will promote the conservation and recovery of the threatened and endangered species on the Forest. (#02686)*

RESPONSE: An open dialog with the U.S. Fish and Wildlife Service during Plan development, contributed to the conservation measures included in the alternatives.

#269

COMMENT: *Formal consultation under Section 7 of the Endangered Species Act is required on the Hiawatha Forest Plan since it clearly will have profound impacts on listed species. The potential impact of these forest plans, governing every action on every acre of the Hiawatha for up to 15 years, warrants formal consultation. (#01761)*

RESPONSE: Informal consultation occurred throughout the development of standards, guidelines, goals and objectives in the Revised Forest Plan. Formal consultation has occurred with the U.S. Fish and Wildlife Service, as directed under Section 7 of the Endangered Species Act. The U.S. Fish and Wildlife Service also commented on the revised Forest Plan.

An excerpt from their letter is found in comment #268, where it is stated they believe the standards and guidelines in the proposed Forest Plan (Alternative 2) will promote the conservation and recovery of the threatened and endangered species on the Forest.

#270

COMMENT: *...We note that the Biological Evaluation (BE) Results show Current and Future results to be in the "D" category [for sharp-tailed grouse], and we feel the Plan should provide for the future results to be in the "C" category. (#00189*)

RESPONSE: Historically sharp-tailed grouse habitat was maintained or provided by fire and existed in pine barrens and jack pine sites. Currently, the Hiawatha does not have the same extent of open lands in the pine barrens as in pre-settlement times due to forest planting, succession and the lack of fire (HNF BE pages 101-102).

Since fire suppression efforts are expected to continue, the natural creation of open habitats will not likely approach historic levels. The creation and maintenance of openings will depend largely on management activities. Revised Plan direction allows openland conditions similar to what currently exists (HNF BE page 102).

#271

COMMENT: *The draft EIS mentions that there are 26 known RFSS species within the Hiawatha. (draft EIS 3-174). The Forest Service concludes that, under Alternative 2, no negative changes in outcome ratings for RFSS will occur (3-175) without providing thorough detail on how this conclusion was reached. Additionally, in its environmental effects analysis, the Forest Service neglects to include an evaluation of impacts on RFSS from past actions under previous forest management, and how the Proposed Plan would mitigate and monitor such effects.... (#01761*)

RESPONSE: The Hiawatha completed an extensive species viability evaluation process to evaluate the potential effects and to develop conservation measures for rare species. The Biological Evaluation (BE) analyzes in detail the ecological conditions and outcome ratings for the 26 RFSS animals on the HNF and rationale as to how viability determinations were reached.

The BE includes the current conditions, environmental consequences of the alternatives and direct, indirect and cumulative effects analyses by species. Proposed conservation measures are listed for each species, which may include mitigation measures or monitoring opportunities. Much of the detailed analysis in the BE was summarized in the EIS.

#272

COMMENT: *ES-9 Species Viability; since it was stated there is not a Regional guide, why incorporate the RFSS list? We oppose the Lynx from Canada, and the Kirtlands Warbler...The [lynx] prefers the boreal forest, and is specific to the snowshoe hare as prey. The SVE evaluation has a pessimistic out look for the Lynx as well as the Kirtlands warbler...MIS includes the American Marten, which requires the boreal forest much like the Canada Lynx; how much of this forest type is intended to be created and how long will it take? (#00298, 00767)*

RESPONSE: The commenter is referring to the Comparison of Alternatives Table, which states that the existing Forest Plan (Alternative 1) does not include RFSS species and does not have specific direction for Canada lynx or for Kirtland's warbler. All action alternatives updated and improved upon these items.

Canada lynx and Kirtland's warbler are federally-listed species and the Hiawatha has a legal obligation to manage for them. A component of vegetation management, a significant issue in the DEIS, is ecological conditions needed for species viability (DEIS p. 1-6 to 1-7). The Forest Service Manual requires forests to address the viability of Regional Forester Sensitive Species to avoid impacts that may cause a trend towards listing.

For Alternative 2, outlooks for both the Canada lynx and Kirtland's warbler are unchanged from current conditions based on the SVE outcome ratings shown and analyzed in the Wildlife BE. The Hiawatha is located in the transition zone between boreal forest and northern hardwoods at the southern edge of the range for lynx. Ideal boreal forest conditions are not continuous across the Upper Peninsula, however, some portions of the U.P. are considered lynx habitat due to the periodic presence of lynx and the existence of some boreal forest cover (DEIS page 3-184).

Currently, the Hiawatha manages for late-successional forest, including northern hardwoods and mixed hardwood/conifer forests, habitats that would benefit various

wildlife species. Under the revised Forest Plan, there are vegetation goals for late seral that when combined with natural processes would result in an increase in late seral vegetation over the next 100 years.

#273

COMMENT: *With the many reported sightings of the Eastern Cougar, the Forest Service should work to include this important species in its management plan, and quit claiming that the animal doesn't exist here. Cougar are known to inhabit the Upper Peninsula; recently DNA testing of a cat stuck by a motorist on November 2nd, 2004 supports the findings of the Michigan Wildlife Habitat Foundation that cougars are present in the Upper Peninsula. The Hiawatha needs to develop a recovery/management plan to allow this Federally Endangered Species to grow in numbers and establish a sustainable breeding population.* (#00043, 00051-00186, 00192-00203, 00212-00214, 00225-00227, 00244-00246, 00254-00257, 00259, 00261-00263, 00265, 00266, 00268-00272, 00280, 00282-00290, 00293-00297, 00328-00334, 00336-00338, 00340-00347, 00452-00458, 00485-00489, 00777, 00778, 02287,02619-02635, 02637-02641, 02643, 02645-02648, 02650, 02652-02660, 02662-02681)

RESPONSE: The Hiawatha National Forest coordinated with the U.S. Fish and Wildlife Service (USFWS) throughout the plan revision process regarding the species appropriate for inclusion in the BA. The USFWS provided an updated list of threatened and endangered species for the HNF on April 29, 2005. The USFWS concurred that the federally-listed species identified in the Draft EIS and in the BA constituted an accurate listing of the species known to be present within the project area. The list of species did not include the eastern cougar. (Also see comment #268.)

Canada Lynx

#274

COMMENT: *No need to manage for an animal that is not there. (#00024*)

RESPONSE: In 1983, the lynx was listed as threatened in Michigan, and since 1987, has had full protection in Michigan as an endangered species. On March 24, 2000, the U.S. Fish and Wildlife Service (USFWS) listed the contiguous U.S. distinct population segment of the Canada lynx as federally threatened in several states, including Michigan. The Canada lynx is one of six federally-listed species on the Hiawatha. Because of its status under the Endangered Species Act, the Hiawatha is required to protect and manage for Canada lynx.

As discussed in the DEIS on page 3-184, the Hiawatha is located on the southern edge of lynx range. Canada lynx are quite rare in the Upper Peninsula, and are considered dispersing individuals, not a resident population. They have been sighted on the Hiawatha, most recently in 2003.

#275

COMMENT SUMMARY: ***Management of the Canada Lynx should be taken for more seriously and legitimate surveys conducted.*** *(#01948*)

COMMENT: *The Forest Service and US Fish and Wildlife Service have worked more on proving that the species is not found in the Hiawatha than working on providing necessary habitat and encouraging the return of the species. Standards and Guidelines developed for this species fail to take into consideration this species extreme sensitivity to habitat alteration, habitat fragmentation, and disturbances like roads, ATVs, snowmobiles, and logging operations. Stricter standards and Guidelines need to be developed.* (#00043, 00051-00186, 00192-00203, 00212-00214, 00225-00227, 00244-00246, 00254-00257, 00259, 00261-00263, 00265, 00266, 00268-00272, 00280, 00282-00290, 00293-00297, 00328-00334, 00336-00338, 00340-00347, 00452-00458, 00485-00489, 00777, 02226, 02287, 02619-02635, 02637-02641, 02643, 02645-02648, 02650, 02652-02660, 02662-02681)

RESPONSE: As discussed in the DEIS on page 3-184, the first formal surveys for furbearers and large carnivores were initiated in Michigan in 1996. Additionally, the Hiawatha implemented the National Lynx Survey Protocol from 2000 to 2003, during which time no lynx were detected.

Both the Forest Service and the USFWS acknowledge that Canada lynx occur sporadically within the Hiawatha, as noted in the DEIS on page 3-184 and in the Wildlife BA. In 2000 when the USFWS listed the Canada

lynx as federally threatened, Michigan was included in their range. (See comment #274.)

The Forest's conservation measures, including management goals, objectives, standards, guidelines and monitoring, address lynx conservation for all alternatives in two important ways:

1. The measures of all alternatives promote the proactive conservation of lynx and its habitat by maintaining or enhancing extensive areas of suitable habitat and by maintaining or enhancing the ecosystems on which this species depends.
2. Conservation measures of all alternatives identify actions to reduce or, where possible, eliminate adverse effects or risks to the species and its habitat (DEIS p. 3-201).

The 2006 Plan takes an interdisciplinary approach to protect threatened, endangered and sensitive species including Canada lynx. Not only do specific goals and guidelines for Canada lynx provide for and promote lynx prey, foraging and denning habitat, connectivity and management of snow compacting activities (see 2600 Wildlife Management section, Chapter 2 in the 2006 Forest Plan), direction for all federally-listed species and other resource areas also provide for and promote lynx. For example, vegetation management guidelines specify the retention of reserve trees, live tree islands and snags in harvested stands, a practice that over time would enhance denning habitat on the Forest.

A guideline in recreation management specifies that motorized trails and routes should be located or relocated away from wilderness boundaries and semi-primitive non-motorized management areas. When implemented, this guideline would serve to further decrease human disturbance in quality lynx habitat (revised Forest Plan page 2-24).

#276

COMMENT: *Hiawatha and Ottawa National Forests lands are some of the most remote in the Great Lakes region. They provide habitat for rare and endangered animals such as Canadian lynx and potentially Hine's Emerald Dragon Fly. The Forest Service has provided no evidence that the proposed forest plans will meet current and future recovery needs for these species. In fact, the draft EIS remains unclear on how optional monitoring guidelines will create standard reporting on species.* (#00679-00716, 00718-00734, 00765, 00769-00773, 00780-00857, 00862-01180, 01182-01372, 01374-01603, 01762-01949, 01951-01997, 02249, 02250, 02683, 02685)

RESPONSE: For a discussion of lynx recovery needs, see comment #277. In regard to Hine's emerald dragonfly recovery, under the Revised Forest Plan, the Hiawatha will adopt the signed federal recovery plan for this species (DEIS page 3-207; proposed Forest Plan page 2-32; Wildlife BA).

The recovery plan offers information on the biology/ecology of Hine's emerald dragonfly, identifies potential threats and conservation measures, and provides an implementation schedule to encourage recovery. Additionally the Hiawatha will continue to monitor Hine's emerald dragonfly populations, as directed in the recovery plan. In reference to monitoring guidelines, monitoring and evaluation requirements have been established in Chapter 4 of the 2006 Plan.

The level and intensity of monitoring and analysis will vary with the budget, information gained during previous years and other forest priorities. Chapter 4 of the 2006 Plan describes the monitoring and evaluation strategy that will be used, including how various species and their habitats will be monitored. Table 4-3 details the monitoring actions that will be accomplished, and the frequency and reporting of the monitoring evaluation.

#277

COMMENT: *The Hiawatha NF identifies 6 federal threatened or endangered species, yet fails to provide sufficient protections and evidence that the proposed forest plan will meet current and future recovery needs of these species. Defenders is especially concerned about the Forest Service's confused position concerning the threatened Canada lynx. In both the Proposed Forest Plan and draft EIS, the Forest Service suggests that federal recovery plans for the lynx will be implemented and all nest and denning sites will be protected (or, protection will be "promoted", according to the Proposed Plan, 2-13), only to then make cursory conclusions regarding what it perceives as a lack of lynx presence in the Upper Peninsula. (3-198). It is*

unclear how such recovery plans could be implemented if the Forest Service has not sufficiently studied the numbers of these threatened animals. To date, the Forest Service and the U.S. Fish and Wildlife Service have worked more on proving that the species is not found within the Hiawatha than working on providing necessary habitat and encouraging recovery. These shortcomings are contrary to Endangered Species Act's mandate that requires agencies to conserve and recover threatened and endangered species.

The Forest Service acknowledges in the draft EIS (draft EIS 3-184) that in 2003 a lynx was captured in a trap in Mackinac County. It remains largely unknown whether lynx are residents, rather than sporadic dispersers, throughout the Upper Peninsula. What is known is that the scope of lynx travel throughout the area is vast. It seems as if the draft EIS operates on as of yet unknown facts, preferring instead to conclude that any lynx discovered in the Upper Peninsula of Michigan is "believed to be [from] dispersing populations from Canada rather than resident populations." (ES-24).

Such conclusions ignore historical data and continue an apparent long-term effort by state and federal agencies to dismiss and ignore lynx presence in the region. Rather than conclude that all proposed alternatives are likely to adversely affect lynx, but that those adverse effects are not likely to impede recovery, the Forest Service must provide more analysis of the effects of the proposed plans.

The biology of the lynx has been reviewed at length in a number of recent documents, including the Federal Register listing notice, the Biological Assessment of the Effects of National Forest Land and Resource Management Plans and Bureau of Land Management Land Use Plans on Canada Lynx ("National BA"), Ecology and Conservation of Lynx in the United States ("Lynx Science Report), and the Canada Lynx Conservation Assessment and Strategy ("LCAS"). All of the requirements and recommendations in these documents must be specifically incorporated into the Revised Plan. A principal conclusion evident in these documents is that the lynx is a wide-ranging species that interacts and interchanges with each other as part of a larger "metapopulation." This means that maintaining corridors and linkages that provide connectivity between isolated populations is essential. See, e.g., LCAS at 33.

Habitat connectivity at a landscape level means that the Forest Service must provide a sufficient quantity and arrangement of vegetation for the movement of lynx. The Plan must determine whether the vegetation in the Forest will provide a sufficient quantity and arrangement of vegetation to facilitate lynx movement, as would occur pursuant to a "plan" in an "identified" linkage area, and such will be impossible until maps of these areas are provided. See LCAS at 101 (defining Habitat Connectivity). Knowing and mapping the location of these areas is a relevant factor for ensuring lynx viability and conservation.

At a minimum, the Forest Service should adopt, as mandatory and enforceable standards, the Standards and Guidelines for the lynx as set forth in the Canada Lynx Conservation Assessment and Strategy. Ruediger, Bill, et al., Canada Lynx Conservation Assessment and Strategy (2nd edition, August 2002). To this end, the Forest Service should ensure Lynx Analysis Units (LAUs) reflect the most up-to-date scientific and commercial data. Once established, the Forest Service should manage these areas to provide for the protection and conservation of lynx and their habitat. In addition, the following management practices from the Canada Lynx Conservation Assessment and Strategy should be implemented:

- *Within LAUs, moderate the timing, intensity, and extent of management activities, if necessary, to maintain all required habitat components in lynx habitat, to reduce human influences on mortality risk and inter-specific competition, and to be responsive to current social and ecological constraints relevant to lynx habitat.*
- *Limit disturbance within each LAU on National Forest lands as follows: if more than 30% lynx habitat within an LAU is currently in unsuitable condition, no further reduction of suitable conditions shall occur as a result of vegetation management activities by the National Forest.*
- *Management activities shall not change more than 15% of lynx habitat within an LAU on National Forest lands to an*

unsuitable condition within a 10-year period.

- *Within an LAU on National Forest lands, maintain denning habitat in patches comprising 15% of the area that is capable of producing stands with the characteristics listed below. Where less than 15% of forested lynx habitat within an LAU provides denning habitat, defer those management actions that would delay achievement of denning habitat structure.*
- *Denning habitat: Variety of forested habitats with large woody debris, including both down logs and root wads, in sufficient amounts to provide escape and thermal cover for kittens.*
- *Following a disturbance such as a blowdown, fire, insect, or disease that could contribute to lynx denning habitat, generally do not salvage harvest when the affected area is smaller than 5 acres unless needed to protect human health and safety or to address high scenic integrity objectives. Where larger areas are affected retain a minimum of 10% of the affected area per LAU on National Forest lands in patches of at least 5 acres to provide future denning habitat. In such areas, defer or modify management activities that would prevent development or maintenance of lynx foraging habitat.*
- *In LAUs on National Forest lands allow no net increase in groomed or designated over-the-snow trail routes unless the designation effectively consolidates use and improves lynx habitat through a net reduction of compacted snow areas.*
- *Generally, maintain total open road and snow compacting trail densities (all roads and trails and land ownerships) within LAUs below 2 miles/square mile. If open road and snow compacting trail densities exceed 2 miles/square mile in an LAU, identify those with potential for access restrictions or decommissioning, and carry out this management prescription when practical.*
- *If the option exists within LAUs, designate or authorize new snow-compacting trails for activities such as snowshoeing, snowmobiling, or dog sledding on unplowed roads or trails where undesignated or un-authorized snow-compacting activities regularly take place. This authorization will be through the permit system.*
- *Where a designated trail for snow-compacting activities, such as snowshoeing, snowmobiling, or dog sledding, is desired within LAUs and no currently used road or trail is available, the proposed route must be shown to:*
  1. *Move recreational use away from more sensitive or better quality lynx habitat;*
  2. *Concentrate use and/or;*
  3. *Be located within the outer boundaries of a currently used road and trail system.*
- *Effectively close to access trails, temporary roads, and Class 1 roads that intersect or branch off a newly designated or authorized snow-compacting trail and are not planned as part of the trail system and are not being used for other management purposes. Obliteration of the road is preferred to ensure that passage does not seem feasible and is not attempted. In some cases, Class 2 roads may be required to be blocked roads on a seasonal basis when not being used for management purposes.*
- *Access to a newly designated or authorized, snow-compacting trail would usually be by higher standard roads (Class 3, 4, and 5). In order to concentrate recreational use on the designated route, the access should not become a de facto trail, offering an easy link to other trail systems or undesignated trails.*
- *Dirt and gravel roads under the jurisdiction of the National Forest and traversing lynx habitat on National Forest lands (particularly those that could become highways) should generally not be paved or otherwise upgraded in a manner that is likely to lead to significant increases to lynx mortality or movement and dispersal. If above described dirt and gravel roads are upgraded or paved in order to meet human health and safety or other environmental concerns and essential management needs, conduct a thorough analysis on effects to lynx and its habitat to determine minimum road design standards practical (including measures to minimize traffic speeds), to minimize or avoid foreseeably contributing*

to development or increases in human activity, and to otherwise avoid adverse impacts to lynx and its habitat.

By providing inadequate standards to protect the threatened lynx, the Forest Service violates NEPA's implementing regulations that prohibit agencies from engaging in actions that will either limit the choice of reasonable alternatives or have adverse environmental impacts. 40 C.F.R. §1506.1(a).

Regarding LAUs, they are the smallest scale of management unit for lynx. LAUs are for analysis purposes. They merely represent hypothetical lynx home ranges. The Plan should not limit application of lynx Standards and Guidelines to the Lynx Analysis Units ("LAUs"). To restrict or apply Standards and Guidelines only to LAUs is to continue the habitat fragmentation and decline that has led to listing of the lynx. Lynx Conservation and Assessment Strategy ("LCAS") at 71. The LAU is approximately the size of a single lynx home range. LCAS at 72. A much larger scale for management goals, standards, and guidelines is needed to accomplish population recovery or any substantial habitat management. The scale should be large enough to encompass a population or portion of a population.

Defenders applauds the draft EIS's discussion of trapping mortality, but instead of hastily concluding that such illegal take is impossible to regulate (draft EIS 3-200), the Forest Service must provide more of an analysis of this problem and how it plans to monitor and minimize take of this threatened species. (#01761)

RESPONSE: The Hiawatha's position concerning the threatened Canada lynx is quite clear in both the draft EIS and the revised Forest Plan. Both the Forest Service and the U.S. Fish and Wildlife Service (USFWS) acknowledge Canada lynx occur sporadically within the Forest as noted in the DEIS (page 3-184) and in the Wildlife BA.

This conclusion is based on both historic and current information and the latest Canada lynx research. Pages 70–74 of the wildlife BA contain a detailed discussion with many references, of the population status and distribution of Canada lynx in North America, Michigan, and on the Hiawatha. In 2000 when the USFWS listed the Canada lynx as federally threatened, Michigan was included in their range. Because of its threatened status under the Endangered Species Act, the Hiawatha is required to protect and manage for Canada lynx. (Refer to comments #274 and 275.)

Since listing this species, the USFWS has not designated critical habitat, and no federal recovery plan has been developed. In the absence of a federal recovery plan, the Canada Lynx Conservation Assessment and Strategy (LCAS) serves as a tool for conferencing, consultation and evaluation of the effects of proposed plans until existing forest plans were revised. Conservation measures in the LCAS were addressed during the development of the revised Plan, and applicable conservation measures were incorporated into the Plan's goals, objectives, standards and guidelines.

The commenter made special note of two other documents: the "National BA" and "Ecology and Conservation of Lynx in the United States." Both documents and the LCAS were used extensively during revision, and are referenced frequently in the BA.

The affected environment and environmental consequences to Canada lynx (analysis of effects) of implementing the revised Forest Plan are analyzed in detail in the Wildlife BA. The BA also analyzes connectivity habitat and quality habitat linkages. Connectivity habitat for lynx would be abundant and well-distributed under the Revised Plan. In addition, revised Plan general management direction (BA, section 1.6.1, Resource Protections), and specific direction under Canada lynx goals and guidelines would benefit Canada lynx habitat connectivity.

Quality habitat connectivity would also be present under the revised Plan, providing a landscape configuration conducive to east/west and north/south linkages. The revised Plan has designed connections between old growth blocks and between old growth and unsuited lands, such as wilderness, river corridors, RNAs and cRNAs. Quality connectivity would provide large blocks with the potential for a low level of human disturbance and a suitable level of habitat continuity, which would favor reclusive species such as lynx (Wildlife BA). For additional discussion, see comment #237.

Lynx analysis units (LAUs) were defined for those portions of the Forest considered lynx habitat as directed under the LCAS. Under the

revised Plan, LAUs will not be used. Rather, analysis for lynx will be conducted at the scale appropriate for the project being proposed.

Unlike management under the 1986 Plan, the revised Plan does not limit application of lynx standards and guidelines to just LAUs. Lynx standards and guidelines apply across all Hiawatha National Forest lands. The LAUs are currently being used appropriately in project-level analyses and not in the management direction of the Forest Plan revision (DEIS pages 3-185 and 3-190).

Regarding trapping mortality, the overall determination "may affect, and likely to adversely affect" Canada lynx was based, in part, on the potential for incidental trapping mortality related to public access on the HNF under all alternatives. Page 3-200 of the DEIS also states, "Under all alternatives, the Forest would continue to cooperate with the USFWS and the MDNR to reduce incidental take of lynx. These activities will serve to decrease incidental take on both the Hiawatha National Forest and non-Forest lands."

State and various federal agencies, including the MDNR, Hiawatha National Forest and the USFWS will continue to provide information to the public regarding techniques to avoid the incidental trapping of lynx.

The wildlife BA explains this information is likely to increase the potential that an incidentally trapped lynx is released successfully, and does not result in mortality. The BA continues and states, "For example, the lynx captured on the Hiawatha National Forest in November 2003 survived and was released by the MDNR after having been notified by the trapper. Goals and guidelines that emphasize placement of trails and open routes for snowmobiles in locations that avoid lynx habitat would benefit lynx by decreasing the chance of lynx being attracted to trap baits.

Management areas emphasizing non-motorized use would provide for lynx refugia. All of these measures are beneficial to lynx and reduce the likelihood of impacts, but they do not eliminate them."

#278

COMMENT: *We are concerned about the lack of seriousness, which the forest has taken the recovery of the lynx. Just because the species might not be in a certain locale right now doesn't mean, that if the habitat is right, that it shouldn't be considered for recovery. The lynx is impacted by logging, especially winter logging, which makes paths through the deep snow which facilitate the lynx's competitors. (#00778)*

RESPONSE: For a discussion of lynx recovery needs, see comment #277. Snow compacted by human activities on roads and trails, as well as naturally crusted snow from thaw/freeze events likely contribute to the distribution of carnivores that compete with lynx in the Upper Peninsula. Snowmobiles, although not the only human use, are likely to be the primary activity resulting in snow compaction, not winter logging activities (DEIS 3-197). Freeze/thaw events likely result in crusting and compacting of the snow column, which hardens and increases the load bearing capacity of the snow. Naturally crusted and compacted snow occurs over a much larger area than the snow routes compacted by human activities (Wildlife BA).

The Wildlife BA states, "Management direction would help to maintain the competitive advantage of lynx when and where it stills exists. The Revised Plan, by design, would accommodate snow compacting activities, such as snowmobiling, snowshoeing, skiing and dogsledding, away from better quality lynx habitat, while striving to maintain areas free of human-caused compaction. Density of compacted trails and roads would be limited to two miles per square mile through guidelines for seasonal restrictions or decommissioning. These conservation measures could reduce the potential for human-related impacts across the Forest, but would be especially effective in management areas with an emphasis on remote habitat for wildlife." The 2006 Forest Plan continues to allow access to people and thereby facilitate competitor access into lynx habitat at an unknown level. Therefore, adverse impacts to Canada lynx are anticipated under the revised Forest Plan due to winter human access.

Gray Wolf

#279

COMMENT: *The Plan and FEIS must fully examine the impact of the extremely high road densities found on the Forest and the Forest Service's acknowledgement that road*

mortality is a threat to wolves. Forestwide Standards and Guidelines should indicate a specific allowable road density for the gray wolf that is scientifically supported. The absence of accurate information on road densities will make it impossible to determine which, if any, of the alternatives, including the preferred alternative, provide the most protection for wolves from road encounters. (#01761)

RESPONSE: The Wildlife BA examines and discusses the effects of forest roads and forest road densities on gray wolf. Standards and guidelines in the revised Forest Plan direct implementation of signed federal recovery plans for threatened and endangered species.

Management direction includes implementing the 1992 Eastern Timber Wolf Recovery Plan, which contains road density standards needed to achieve recovery plan objectives. The revised Forest Plan does not propose adding more high standard roads (maintenance level 3, 4, and 5 roads) to the road system on the Forest, nor does it significantly change the density of maintenance level 1 and 2 roads. For additional information on road densities on the HNF see the DEIS, p. 3-495.

#280

COMMENT: *U.S.F.S. take the incentive to de-list the wolf to the same category as the coyote. 325+ & counting is too many for the U.P. of Michigan to bare. (#00024)*

RESPONSE: Due to the increased numbers of wolves in the Eastern distinct population segment (DPS), the fulfillment of numerical delisting criterion for two populations (Minnesota and Wisconsin-Michigan), and the establishment of state management plans for the species, the U.S. Fish and Wildlife Service (USFWS) published in April 2003 a final rule to reclassify the Eastern DPS of gray wolf from endangered to threatened (68 FR 15804 - 15875).

This notice also promulgated a special rule under section 4(d) of the Act that allowed states, tribes or their designated agents to "take" gray wolves in Michigan and Wisconsin under certain situations.

In July 2004, the USFWS published a proposed rule to remove the Eastern DPS of gray wolf from the list of threatened and endangered species (69 FR43664-43692). In October and December of 2003, lawsuits were filed in Oregon District Court and Vermont District Court, in opposition to the establishment of three gray wolf DPSs and the reclassification of the Eastern and Western DPSs from endangered to threatened by the USFWS.

On January 31, 2005, and August 19, 2005, the Oregon District Court and the Vermont District Court ruled against the USFWS and vacated the April 2003 final rule in entirety, indicating their belief that the USFWS could not reclassify large areas of historical gray wolf range based on wolf recovery in smaller core recovery areas.

These rulings returned gray wolves to endangered status in the lower 48 states, except in Minnesota where they were reclassified to threatened in the late 1970s.

#281

COMMENT: *Wolves are just assumed to be able to tolerate logging, but that isn't well documented. Just because they continue to live in an area that has been logged, doesn't mean that they are benefited by the logging. (#00778)*

RESPONSE: The HNF does not assume that the gray wolf is able to tolerate logging. The Wildlife BA addresses the importance of prey to the gray wolf in the eastern Upper Peninsula. The term "habitat generalist" applies to the gray wolf, because it is capable of utilizing almost any habitat that supports appropriate prey species, which includes primarily white-tailed deer and beaver, as well as other small animals such as snowshoe hare.

Deer, beaver and hare utilize young forest habitats that are often regenerated using logging practices. Although wolves may use areas that have been harvested, nowhere in the DEIS, or revised Forest Plan does it state that wolves benefit from logging activities. Wolves favor areas with low human disturbance.

Logging activities allow increased human access to wolf habitat and may disturb denning wolves. Conversely, the gray wolf is a highly mobile species with a very large home range. Animals, such as wolves, that utilize large areas are capable of eluding human disturbance by moving to areas where human disturbance

occurs at low intensity and frequency. These would include many acres on the HNF where logging would not occur. The wildlife BA contains a thorough analysis of effects of human activities, including logging, on the gray wolf.

Species Viability

#282

COMMENT SUMMARY: ***The forest service it has done little to prove that management indicator species, regional forester sensitive species, federal and state listed species, etc., are viable.***

COMMENT: *Although the Forest Service claims it is Monitoring and Evaluating management indicator species, regional forester sensitive species, federal and state listed species, etc., it has done little to prove that these species are viable. Species such as Northern Goshawk, Red-shouldered Hawk, and American Bittern are all extremely sensitive to habitat alteration. However, the Forest Service has done little or nothing to prove that these species are maintaining minimum viable populations as required by federal law. The Species Viability Evaluation done in the Draft EIS is very inadequate.* (#00043, 00051-00186, 00192-00203, 00212-00214, 00225-00227, 00244-00246, 00254-00257, 00259, 00261-00263, 00265, 00266, 00268-00272, 00280, 00282-00290, 00293-00297, 00328-00334, 00336-00338, 00340-00347, 00452-00458, 00485-00489, 00777, 00778, 02278, 02619-02635, 02637-02641, 02643, 02645-02648, 02650, 02652-02660, 02662-02681)

COMMENT: *By merely using two prongs (amorphous "outcome ratings" for threatened and endangered species and Regional Forester Sensitive Species and species of interest habitat availability) to evaluate species viability, (draft EIS 1-8), the Forest Service violates NFMA, attempting to weaken its regulations by doing little to prove these species are viable. Merely mentioning that a panel of Hiawatha biologists used a "Species Viability Evaluation" to determine outcome ratings of 4 "wildlife species of concern" under each alternative is an unclear and inadequate assessment. Instead of generalized claims of habitat sufficiency, the Forest Service must provide the public clear information regarding its process for determining "outcome ratings". The Forest Service must also provide sufficient population data in order to establish species population stability. (#01761)*

RESPONSE: The 1982 planning regulations (36 CFR 219) require that forest plans guide management to maintain the viability (continued existence) of populations of plant and animal species on national forest lands.

The Hiawatha National Forest used a Species Viability Evaluation (SVE) process to determine if changes to management direction (in regard to species viability) were necessary through the forest plan revision process. SVE involves evaluating the ecological conditions that are required by selected species in order to persist in their range on the national forests.

On the Hiawatha, 57 wildlife and aquatic species and 66 plant species were evaluated based on the following factors: habitat, population, life history, habitat and population trends and projections, and threats to species viability. Species evaluated included federally threatened and endangered species and Regional Forester Sensitive Species (RFSS).

A brief summary of the SVE process and outcomes for federal threatened and endangered species (T&E) and RFSS are included in the DEIS on pages 3-165 through 3-167 and in Tables 3-WL-10 and 3-WL-12. The SVE process is described in detail in Appendix A of the BE. In addition, detailed analyses of species viability are shown for each species in the BE.SVE outcome ratings were used as important components in the process of analyzing impacts of the alternatives in the draft EIS. However, they were not the only factors used to determine effects on any given species. An unchanged outcome did not mean that alternatives would have no impacts.

For many RFSS and T&E species, expected changes to habitat conditions would have either negative or positive impacts (or both) from the array of proposed and probable management activities and programs. However, these impacts would not be great enough to result in changed outcomes. For some species, this may be because Forest Plan goals, objectives, standards and guidelines would ensure management emphasis on improving habitats, or because mitigations would be adopted to eliminate or reduce potential negative impacts (DEIS page 3-167).

Diversity

#283

COMMENT: *[Manage for] diverse forest and diversity of wildlife. (#02606*)

RESPONSE: The USDA Forest Service mission is to sustain the health, diversity and productivity of the nation's forests and grasslands to meet the needs of present and future generations. Providing biological diversity on a landscape scale for the persistence of native and desired non-native species is part of the intent of the Forest Plan revision process.

Direction in the 2006 Forest Plan includes managing for a diverse forest and a diversity of wildlife species. Desired conditions in the revised Plan include providing habitats that support viable populations of a wide range of existing native and desired non-native wildlife and plant species.

Aquatic and terrestrial wildlife habitats on NFS lands contribute to ecosystem sustainability and biological diversity of the Great Lakes region (proposed Plan page 2-12). Vegetation Management goals in the revised Forest Plan include: "diverse, productive, healthy and resilient native vegetation communities, vegetation conditions that contribute toward ecosystem sustainability and biological diversity, and vegetative conditions that represent native species in age, size and successional states that support native wildlife and fish species and other uses of the forest." (proposed Forest Plan page 2-8)

The overarching concept of biological diversity was incorporated into the wildlife resources analysis for the revised Plan (DEIS pages 3-130 to 3-154). Six key habitats were analyzed for trends in quantity, an evaluation that is applicable to a wide variety of wildlife species, such as those listed for each habitat in the DEIS. Monitoring trends in these habitats over time would be useful as indicators for the well-being of many species of wildlife.

#284

COMMENT: *The proposed plan fails to comply with the National Forest Management Act's diversity provision…*

…The "diversity of plant and animal communities," or ecological communities, cannot be maintained without maintaining the individual species that make up those communities. To help ensure the diversity of ecological communities is maintained, each national forest has been required since 1982 to "maintain viable populations of existing native and desired non-native vertebrate species in the planning area." 36 C.F.R. § 219.19….

…"Forest Planning shall provide for the diversity of plant and animal communities and tree species consistent with the overall multiple use objectives of the planning area. Such diversity shall be considered throughout the planning process. Inventories shall include quantitative data making possible the evaluation of diversity in terms of its prior and present condition." 36 C.F.R. § 219.26.…The Proposed Plan does not guarantee the viability of native species, therefore cannot be said to provide for the diversity of plant and animal communities that are comprised of those species. (#01761)

RESPONSE: All alternatives in the DEIS meet the minimum management requirements of 36 CFR 219.27. These requirements guide the development, analysis, approval, implementation, monitoring and evaluation of forest plans, including: resource protection, vegetation management, silvicultural practices, even-aged management, riparian areas, soil and water protection and diversity.

The Hiawatha provides habitat for native and desirable non-native plants and animals, as mandated by 36 CFR 219.19. As discussed in comment #282, the Forest evaluated 66 plant species and 57 wildlife species using the Species Viability Evaluation process.

Viability outcome ratings for threatened and endangered species and Regional Forester Sensitive Species were either unchanged from current conditions or had positive changes under Alternative 2, the preferred alternative (Tables 3-WL-10 and 3-WL-12 in the DEIS). Thus, the revised Plan would not lead to a loss of viability of these species. Management direction in the revised Forest Plan emphasizes habitat diversity and wildlife species diversity as discussed in comment #283.

Management Indicator Species

#285

COMMENT: *We strongly support the restoration of aquatic and terrestrial habitats. While we support the inclusion of brook trout (Salvelinus fontinalis) as an indicator species for aquatic ecosystem, brook trout are primarily a headwater and coldwater resident species and will not adequately reflect environmental conditions required by important anadromous species, primarily lake sturgeon (Acipenser fulvescens) (#02686)*

RESPONSE: There was no attempt to develop a list of MIS representing the full range of ecosystems, communities or habitat types on the Forest. The species that were selected were the ones that may be most influenced by plan decisions. It was felt that lake sturgeon would not be an appropriate MIS for several reasons.

As noted in the DEIS on pages 3-266 through 3-268, most factors that led to the demise of river-spawning sturgeon on the Forest are no longer in play or have diminished. None of the alternatives will have an effect on lake sturgeon viability. On a forest-wide basis, the viability outcome evaluation for sturgeon determined that suitable ecological conditions will remain patchy, and populations isolated in the foreseeable future, regardless of the alternative selected.

Abundance of sturgeon within the existing range (Indian Lake/Indian River) is expected to stay the same or increase, and opportunities to reintroduce sturgeon to good-quality historical habitats will continue. Additionally, four of the five rivers that have suitable habitat for lake sturgeon spawning have Wild and Scenic designation (Carp, Indian, Sturgeon and Whitefish). This assures that they will be remain free-flowing and accessible to existing or potential future spawning runs of sturgeon.

The four designated wild and scenic rivers will continue to have protection favoring long-term enhancement of sturgeon habitat.

#286

COMMENT: *We recommend that American woodcock be added to the list of "Associated Species" for ruffed grouse on page B-1 of Appendix B to the Forest Plan. (#02686*)

RESPONSE: The lists of associated species for each of the four MIS in Appendix B were not intended to be all-encompassing. However, after reviewing the list and considering the habitat requirements for American woodcock, we concur with the commenter and have added the species to the list.

#287

COMMENT SUMMARY: ***...We also urge Forest Service to add more species to the MIS program and require specific population monitoring protocols to assess their status over time...*** *(#00775)*

COMMENT: *It would place wildlife in grave danger by cutting back the management indicator species by more than 75%. This is not sound science and endangers the overall ecosystem. (#01978)*

COMMENT:...*I feel that 4 MIS is not enough. At the very least bald eagles and white tailed deer should be added as MIS. (#00235)*

COMMENT: *Why are there only 4 management indicator species (MIS)? Each species represents a habitat type; are there only four habitat types in the Hiawatha? By monitoring one species in each habitat does the Forest Service believe it can actually tell what is going on in the forest? One species abundance, distribution, etc. cannot be used to link ecosystem change to management activities as the survival of a species is influenced by a large array of ecological factors. Trying to interpret what effects management activities are having on the environment is difficult as a result of "ecological noise" (meaning confounding uncontrolled factors like weather, disease, predation, inter and intra-specific competition, etc.). The Hiawatha needs to use several more species, representing a wider range of habitats, if it ever is to approach a valid method of assessing management indicator species.* (#00043, 00051-00186, 00192-00203, 00212-00214, 00225-00227, 00244-00246, 00254-00257, 00259, 00261-00263, 00265, 00266, 00268-00272, 00280, 00282-00290, 00293-00297, 00328-00334, 00336-00338, 00340-00347, 00452-00458, 00485-00489, 00777, 00778, 02226, 02619-02635, 02637-02641, 02643, 02645-02648, 02650, 02652-02660, 02662-02681)

COMMENT: *Further, the Proposed Plan violates NFMA because the Forest Service has under-designated MIS. At best, the Forest Service managed to give a cursory explanation as to what factors contributed to how it made its final decision that, under all alternatives, only 4—as opposed to the current plan's 22—management indicator species exist within the Hiawatha. The Forest Service even admits this lack of oversight, stating "There was no attempt to develop a list of MIS representing the full range of ecosystems, communities, or habitat types on the Forest, but rather species were selected that may be most influenced by plan decisions". (draft EIS 3-154). The Forest Service then qualifies this neglect by arguing that the use of management indicators is "not designed to be an all-encompassing biological monitoring program" (draft EIS 3-155) and by making bold conclusions—absent remedial considerations—that monitoring even a mere 22 MIS is cost-prohibitive. In doing so, the Forest Service disregards NEPA's mandated cumulative affects analysis as well as NFMA's requirement that national forests maintain and protect the "diversity of plant and animal communities".*

The draft EIS and Proposed Forest Plan do not provide clear information as to whether the Forest Service conducted MIS surveys. While the 4 species are selected to represent a variety of habitats, they are not nearly representative of the varied habitats on the Hiawatha, much less the rest of the species on the forest the MIS are supposed to serve as an "indicator" for. These species do not fulfill the role intended for MIS. The draft plan, therefore, fails to meet NFMA's wildlife monitoring and data obligations. Only four species are listed as MIS and there is no requirement for the Forest Service to collect population data on even this minimal number of species. Under this approach it will be impossible to measure the impacts of proposed actions as they are carried out by the Forest Service throughout the life of the Revised Plan. A more appropriate approach is described in "Conservation Planning for US National Forests: Conducting Comprehensive Biodiversity Assessments," Barry R. Noon, Dennis D. Murphy, Steven R. Beissinger, Mark L. Shaffer, and Dominic Dellasala, BioScience, December 2003/ Vol. 53 No. 12. The final plan should include all sensitive species as MIS and include a specific monitoring strategy for the wildlife, including MIS and other identified species. (#01761)

RESPONSE: Peer-reviewed and published research concluded that using MIS to evaluate the effectiveness of management activities has limitations and qualified functionality (e.g. Nemie et al. 1997, Landres et al. 1988).

Although the concept of MIS has a storied history, the problem of population change for MIS is confounded with factors other than Forest Service management in many vertebrate groups. For example, resident game species respond to winter severity, hunting pressure, disease and cyclic population phenomena, as well as habitat conditions resulting from F.S. management. Therefore, we have focused on four key MIS, while supplementing this effort with other monitoring, such as the tracking the quality and quality of six key habitats (DEIS pages 3-131 through 154).

In addition, monitoring plans still call for evaluating other species directly, such as sharp-tailed grouse lek counts, breeding bird survey (BBS), eagle nest surveys, and Kirtland's warbler nesting surveys. MIS population trends in relation to habitat change, will be monitored in cooperation with state fish and wildlife agencies, to the extent practicable. However, it is also important to note that the 2004 planning rule permits the Forest Service to monitor habitats for MIS, rather than populations (Federal Register/Vol. 70, No. 3/January 5, 2005).

There are considerably more than four terrestrial and aquatic habitat types on the Hiawatha National Forest. The rules and regulations pertaining to management indicator species (36 CFR 219.19) do not require the Forest Service to select a particular number of MIS, nor do they require the Forest Service to select MIS for each habitat or vegetative community on national forests. Rather, the regulations require that forests identify and select "*certain vertebrate and/or invertebrate species present in the* [Forest Planning] *area*" as MIS, and state the reasons for the selection of those species.

The Hiawatha selected four MIS. A screening process, designed in accordance with Region 9 direction and requirements and set fourth in 36 CFR 219.19, was utilized to select

four species from an initial list of 30 potential MIS. The initial list consisted of the 23 MIS identified in the 1986 Forest Plan, plus seven additional species identified by HNF wildlife biologists. Each of the 30 potential MIS was evaluated against four criteria and follow the direction given for "ideal" MIS provided by Region 9.

If any of the four criteria were not met, a species was considered unsuitable as a MIS. The four criteria are:

- Habitat and population information is known regarding habitat use, threats, and limiting factors.
- Sampling protocols are in place sufficient to develop population estimates and trend information, and past and current data for the Forests exists.
- There is a direct cause and effect relationship from our management actions and changes in populations or their habitat on our Forests.
- Changes in its population likely represent changes in other species with similar habitat requirements.

In theory, changes in the populations of MIS are believed to be related to the effects of management activities on the biological community; therefore, species most influenced by Plan decisions were selected. Unfortunately, there are very few species for which this relationship can be strongly established. Thus, the use of MIS is much reduced in the revised Forest Plan when compared to the 1986 Plan.

Management indicator species are not the only species that will be monitored by the Hiawatha. Along with species designated as MIS, threatened and endangered species and Regional Forester's Sensitive Species will be monitored during the implementation of the revised Forest Plan. These monitoring efforts will contribute to an evaluation of the health of the communities to which these species belong.

Additionally, six vegetative communities have been designated as indicator habitats and will be monitored at a variety of scales to evaluate FS management, ongoing restoration efforts and succession. Monitoring indicator habitats (see proposed Forest Plan, Monitoring and Evaluation, Chapter 4) together with MIS will provide the basis for addressing requirements to maintain viability in the planning area of all native and desired non-native species. Additional information regarding MIS selection is in FEIS Appendix E.

#288

COMMENT: *The NFMA regulations define the following five categories of management indicator species that, "shall be represented where appropriate:" (36CFR219.19):*

1. *Endangered and threatened plant and animal species identified on State and Federal lists for the planning area.*
2. *Species with special habitat needs that may be influenced significantly by planned management programs.*
3. *Species commonly hunted, fished, or trapped.*
4. *Non-game species of special interest.*
5. *Additional plant or animal species selected because their population changes are believed to indicate the effects of management activities on other species of selected major biological communities or on water quality.*

While the draft EIS emphasizes the role of MIS in indicating the effects of management activities, the regulations include this as only one of five categories, two of which were arbitrarily ignored, and one which was not adequately addressed.

It is possible that the Forest Service considered all these categories as potential MIS, but I can find no evidence of such analysis in the draft EIS, and the outcome suggests a decision that was arrived at in an arbitrary manner. (#01650)

RESPONSE: The selection of the four MIS complies with the requirements of the National Forest Management Act (NFMA 36 CFR 219.19(a)(1)) and direction provided by the Forest Service Manual (FSM 2621.1). These regulations describe the categories of species that are appropriate to be considered for MIS. The regulations do not direct that one or more species must be selected from each category.

The screening process used during forest plan revision is included in the planning record and has been incorporated in Appendix E in the Final EIS. See comment #287.

#289

COMMENT: *draft EIS page 3-131 discusses indicator habitats and species. One of the major reasons for choosing the 4 MIS is that they occupy habitats that may undergo sufficient vegetative management. Those not selected as indicators because they lack "sufficient intensity of vegetation manipulation" are a concern to me. Many species that are listed both at the state and federal level are there in part due to passive changes in habitat quality (often due to fire suppression). Many areas of marsh, sedge meadow and other non-forested habitats are slowly shrinking due to the encroachment of woody vegetation. The Blanding's turtle for instance needs open areas over sandy soils that are steadily being lost due to encroachment of woody vegetation.*

The draft EIS page 3-135 indicates that Blanding's turtles avoid open land habitat. Sure, they are an aquatic turtle with terrestrial forays for mating and nesting, but use open land habitats, sandy soils, open, a necessary requirement for perpetuation of the species. Ross and Anderson 1990 indicate that nests are located long distances from shrub and tree vegetation in areas with up to ~24% bare soil, and primarily grasses and sedges (50%), and other herbaceous species (~25%).

MIS Using a cyclic, lek-breeding species as a MIS for open land, early successional habitats should be reconsidered (see Bergerud and Gratson, 1988). Species that utilize the open lands with smaller, more uniformly distributed breeding territories should make it easier to determine a quantitative monitoring value to evaluate the effects of management on habitat quality for this habitat type.

***References**: Bergerud, A. T. and M. W. Gratson. 1988. Adaptive Strategies and Population Ecology of Northern Grouse. University of Minn. Press. Minneapolis, MN. Ross, D. A. and R. K. Anderson. 1990. Habitat movements, use, and nesting of Emydoidea blandingii in central Wisconsin. J. of Herp. 24(1): 6-12. (#00665*)

RESPONSE: One of the considerations in the selection of MIS for the HNF did involve those instances where there was a direct cause and effect relationship from our management actions and changes in populations and habitats for various species on the Forest. As indicated in comment #287, there were four primary considerations used in the screening process that resulted in the MIS selected for the HNF. The Final EIS will provide additional information in this regard as edits to page 3-131 and to Appendix E.

The commenter included Blanding's turtle (*Emydoidea blandingii*) in the same paragraph where discussion was offered regarding species that are listed both at the state and federal levels. It is important to note that Blanding's turtle is not listed as a federally threatened or endangered species. It is not a federal candidate or species proposed for listing. Furthermore, the state of Michigan does not list the species as threatened or endangered.

Sharp-tailed grouse is identified as an MIS based on the screening process outlined in comment #287. Although this species represents open-land and early successional stages of jack pine ecosystems, there were other factors considered before this species was selected as an MIS, such as the availability of reliable monitoring data and identification as a key issue on the HNF.

Aquatic Fauna Habitat

#292

COMMENT: *Exotic trout or other game fish should not be stocked. Emphasis should be on protecting native fish species. (#00778*)

RESPONSE: Desired conditions in the revised Plan (page 2-10) include healthy watersheds that provide high quality wildlife and fish habitat that allows for the conservation of both native and desired non-native species. The Forest will provide habitat to support a quality recreational fishing experience that includes a variety of fish species and access to lakes and streams. The diversity and abundance of native and desired non-native aquatic flora and fauna are maintained or restored in a manner that is consistent with the ecological capability of the water body.

Exotic species are not spreading or adversely affecting native flora and fauna in riparian and aquatic areas. Populations of desired game fish will continue to be maintained per Watershed Management goal 6. This goal states, "Desired fish populations in

lakes and streams are achieved through cooperation with the Michigan Department of Natural Resources (MDNR) and U.S. Fish and Wildlife Service." However, the HNF does not control stocking programs in the eastern Upper Peninsula. This responsibility is under the purview of MDNR.

Wildlife Management

#293

COMMENT: *Proposed Plan. page 2-12. Wildlife: We recommend that Goal No.2 be expanded to include providing ecological conditions that not only "sustain viable populations" but also allow for restoration of native species. (#02686)*

RESPONSE: Restoration of native species is addressed in the revised Forest Plan as recovery for federal threatened and endangered species. Desired conditions for wildlife, fish and sensitive plant habitat management state that management activities contribute to the conservation and recovery of federally-listed threatened, endangered and sensitive species (Revised Forest Plan p. 2-12). All the goals listed on page 2-12 would work towards achieving this desired condition.

Restoration of native species is addressed in Goal 1 under the Federal Threatened and Endangered Species and Regional Forester Sensitive Species section of the Forest Plan. The Plan also has a goal directed at restoring lake sturgeon to the Whitefish and Sturgeon Rivers on the Forest.

#294

COMMENT: *Wildlife, Fish and Sensitive Plant Habitat Management: We support the stated Desired Conditions in general, but are concerned with providing habitat for non-native species desired or not.*

A. *It is not clear how the Hiawatha will prioritize stream enhancement and/or restoration activities. This prioritization should be the first objective for the 'wildlife' section. It is suggested that this be done in collaboration with The Nature Conservancy, who has identified aquatic target rivers and streams that are the best examples of those stream types in the Great Lakes ecoregion.*

B. *In the Federal Threatened and Endangered species section, we suggest explicitly aiming for four or more populations of the listed rare plants to insure for genetic diversity and increased viability. Additionally, it is unclear what a 'population is'.*

C. *The Hiawatha has one of the highest numbers of Federal and Regional Forester Sensitive Species for Region 9. This should be stated in the plan and accommodated with many more conservation assessments, restoration programs, monitoring, threat abatement (i.e. invasive treatment and deer reduction) and outreach to the public. Many of these species have specific needs that are not covered under habitat based forest management plans alone.*

D. *Non-vascular species such as lichens and mosses are not addressed, but should be, with inventories first followed by management plans and/or conservation assessments.*

E. *The Hiawatha is also home to many rare plant communities such as Wooded Dune and Swales and Altars. These are not addressed in the plan revision. (#00779*)

RESPONSE:

A. Under Alternative 2, there are objectives for inventorying the Forest to identify areas where soil-hydrologic function is impaired by past management activities. There are also objectives to improve road and trail crossings in streams and wetlands as needed, and to obliterate, relocate or improve 20 segments of roads and trails in the riparian corridor. The net result of these activities will be restoration of soil-hydrologic functions in several wetlands (DEIS p. 248).

Prioritization of these activities would be based on condition assessments referred to in objectives 4 and 5 of the Proposed Plan. Fish/watershed monitoring described in Chapter 4 of the Proposed Plan provides additional basis for subsequent prioritization of stream enhancement and/or restoration activities. Partnerships have been and will continue to be an important element to the Forest's watershed management program.

B. The objective referred to in the comment sets a minimum by establishing at least one new population of: Downy sunflower (*Helianthus mollis),* Prairie dropseed *(Sporobolus heterolepis),* Douglas hawthorn *(Crataegus douglasii*) and Lakeside daisy *(Hymenoxys herbacea).* This does not preclude the option for the Forest to achieve more than stated in this objective, if appropriate. All element occurrences of plant species of concern are protected by mitigation measures applied during project implementation, thus assisting in their conservation (DEIS page 3-111). A population is all the individuals of one species in a given area.

C. As stated on page 3-107 of the DEIS, the Hiawatha harbors more threatened and endangered plants than any other Eastern Region (Region 9) forest. The Hiawatha does not stand out as having more threatened and endangered wildlife than other forests in Region 9. All known populations of threatened and endangered plant species and wildlife nest and denning sites will be protected.

As stated in comment 293, the U.S. Fish and Wildlife Service believes that the Proposed Plan (Alternative 2) will promote conservation and recovery of threatened and endangered species on the Forest. The intent of the Forest Plan is to describe outcomes and not be prescriptive as to how those outcomes would be achieved. This allows for flexibility to respond to recovery plans and input from the USFWS on a site/habitat/ species specific basis. Specific species needs would be addressed at the site/project-scale in conjunction with formal and informal consultation between the Hiawatha and the USFWS and in collaboration with the Michigan DNR.

D. Species addressed in the DEIS and Forest Plan include species of concern. Fir clubmoss is addressed as a sensitive species in the DEIS (Table 3-PLANT-2). All threatened, endangered and sensitive plants were addressed in the Biological Evaluation (March 2005). Six mosses and five lichens were addressed (BE pages 517, 541, 681 and 682). Working towards vegetation goals presented in the Proposed Plan, will maintain/enhance conditions for native mosses and lichens.

E. Rare plant communities are addressed in terms of protections provided for TES species. Micro-sites associated with rare plant habitats are most likely associated with species of concern. These plant communities are addressed at the site/ project-specific scale.

#296

COMMENT: *Proposed Plan. page 2-34: We recommend that following the Piping Plover subsection, the Forest Service add a Lake Sturgeon subsection and incorporate a guideline that promotes management of the Whitefish, Sturgeon, and Carp Rivers for the protection and enhancement of lake sturgeon.*

Proposed Plan. page 3-57. Aquatic Ecosystem Management: We recommend that the guideline under this section be expanded to include management of habitat for other desirable native species (e.g., anadromous, cool water, and warm water). These species (or habitat management) could contribute to a diverse and self-sustaining aquatic community capable of supporting desirable recreational fisheries. Moreover, we suggest that the Forest Service coordinate with all involved agencies, including MDNR, the Tribes, and FWS. (#02686)

RESPONSE: The lake sturgeon goal listed in the revised Forest Plan on page 2-14 directs the Hiawatha to cooperate with MDNR to restore lake sturgeon in the Whitefish and Sturgeon Rivers. The Whitefish, Sturgeon and Carp Rivers are also designated federal Wild and Scenic Rivers, and have additional protection designed to maintain their free-flowing character and preserve or enhance outstandingly remarkable values such as fisheries.

Wild and scenic river desired conditions (under Recreation Management, proposed Forest Plan page 2-3 and goals (proposed Plan page 2-7) provide additional management direction for the protection and benefit of lake sturgeon. Page 3-57 in the proposed Plan lists general standards and guidelines applicable to all wild and scenic and study rivers. Specific management direction related to the types of desirable fish species is listed under each river's management area.

For example, the Indian Wild and Scenic River (MA 8.4.1), has desired conditions for quality resident trout populations (Forest Plan page 3-66). The Whitefish Wild and Scenic River (MA 8.4.3), has desired conditions for anadromous species, resident trout species in its upper reaches and warm-water species downstream (revised Forest Plan page 3-83).

One of the basic management principles (revised Forest Plan page 1-4) for the HNF is to coordinate management activities with appropriate local, state or tribal governments as well as other federal agencies. Currently, the MDNR is the lead agency for Michigan's fish production program, which is responsible for rearing, transporting and stocking fish into the state's fishable waters, including those on national forest lands.

#297

COMMENT: *[page] 2-31 Structural; Guideline 1 should not allow for the maximum of both "A and B" to be implemented. Even on the Allegheny where the I-bat is being managed for, the trees in reserved clumps or islands count toward the reserve tree goals. In combination these guidelines potentially occupy too much of the site and actually prevent the accomplishment of other objectives in vegetation management especially for demanding habitat requirements like KW. At a minimum the word "and/" should be dropped. These guidelines seem to ignore the FIA snag data presented in the EIS. (#01641)*

RESPONSE: Structural guidelines 1A and 1B refer to live trees, not snags. These guidelines do not preclude trees in reserved clumps or islands from counting toward reserve tree goals. Using A and/or B allows the most flexibility for HNF managers to apply appropriate guidelines to accomplish vegetation objectives depending on site-specific conditions and wildlife species being emphasized.

#298

COMMENT: *In guideline 2 A. The word "live" should be dropped. 5 live den (cull) trees per acre is 10% of the growing stock on an acre and this type of management is only going to lead to high grading of stands. Again FIA snag and cull tree data is being ignored on the Forest as a whole. Does the FIA data indicate we have a habitat problem in the forest as a whole requiring this detail of a prescriptive guideline? See additional snag data presented at the end of this letter. (#01641*)

RESPONSE: This comment refers to structural guidelines for uneven-aged managed stands. Live den trees are desirable as current wildlife habitat and as future snag recruitment. The number of leave trees specified is a maximum, an upper limit that provides flexibility for managers to implement appropriate techniques according to local conditions. The FIA data presented in the DEIS are averages from plot data obtained across the HNF. Live tree and snag guidelines in the revised Forest Plan were developed to consider the range of snag conditions expected to be encountered across the HNF, from low numbers to high numbers. Leaving den trees is not expected to hinder achieving objectives for uneven-age management.

#299

COMMENT: *[page] 2-33 Goshawk ---- Guideline 1 is a poor guideline. 1) It is standard operating procedure in that we are always looking for better information for all of our management. 2) The way it is written infers that only wildlife biologists can recognize best available science. Which wildlife biologists? FWS? USFS? Defenders of W/L Or only certain biologists? (#01641*)

RESPONSE: The guideline was changed to specify Hiawatha National Forest wildlife biologists as the responsible individuals.

#300

COMMENT: *Wildlife, Fish and Sensitive Plant Habitat Management. While it is understood that land managers are under strong pressure to assist the deer herd through providing winter cover and browse, and that the USFS is a multi-use agency, guideline #2 in the vegetation management section could directly conflict with many of the other goals of the Hiawatha (such as found in guideline #3 of the same section). Therefore, we suggest great care in placement of the thermal cover and changing the guideline to include a statement about landscape context, important forest regeneration objectives and other species*

considerations. In the Sensitive Plant Management section, it appears that non-native species are approved for use on projects. This option should be eliminated and all seeding should be with native plants. (#00779)

RESPONSE: The Forest Plan is a programmatic document that guides all natural resource management activities and establishes management goals and objectives, allocates land to various management emphases, and provides standards and guidelines for implementation. The 2006 Plan strives to achieve a balance between competing resource values. Consequently, there is no intent for all goals, objectives, standards and guidelines to apply to every acre of the entire Forest. Revised Plan guidance provides general direction for the Forest; subsequent project level ("sub-plan") decisions will take into account site characteristics and other situations unique to the project area, such as placement of thermal cover. Non-native plant species that are not invasive, toxic, or would not out-compete native species, may be appropriate to use for planting or seeding operations depending on site-specific conditions.

#301

COMMENT: *No snag guidelines? I guess I'm OK without them as long as you are not cloaking them in some guide that is not available for comment. (#00768*)

RESPONSE: Guidelines for snags can be found in the revised Forest Plan on page 2-31, Section 2600 Wildlife, Fish and Sensitive Plant Habitat Management, under the heading, "Structural."

Threatened and Endangered Species

#302

COMMENT: *Standards and Guidelines for the management of threatened and endangered are completely inadequate. Guidelines are difficult to enforce. Standards need to be developed to compliment each guideline. Why are standards and guidelines not listed for the management of Bald Eagle, Grey Wolf, and Hine's Emerald Dragonfly? These are federally listed species and need to be considered in all management actions.* (#00043, 00051-00186, 00192-00203, 00212-00214, 00225-00227, 00244-00246, 00254-00257, 00259, 00261-00263, 00265, 00266, 00268-00272, 00280, 00282-00290, 00293-00297, 00328-00334, 00336-00338, 00340-00347, 00452-00458, 00485-00489, 00777, 02226, 02287, 02619-02635, 02637-02641, 02643, 02645-02648, 02650, 02652-02660, 02662-02681)

RESPONSE: Federally-listed species are considered in all management actions. Several standards and guidelines listed on page 2-32 of the Forest Plan apply to all federal threatened and endangered species and Regional Forester Sensitive Species. Two examples indicate the broad scope of these protections. Standard 1 on page 2-32 states that signed federal recovery plans for threatened and endangered species will be implemented. Standard 2 states that all known populations of threatened and endangered plant species and wildlife nest and denning sites will be protected.

The 2006 Plan takes an interdisciplinary approach to protect these species. Desired conditions, goals, objectives, standards and guidelines for several resource areas apply to wildlife species protection. For example, The Watershed Management section (revised Forest Plan pages 2-29 and 2-30) has additional standards and guidelines to protect wetland habitat which would benefit bald eagle. A full listing of desired conditions, goals, objectives and standards and guidelines that apply to each threatened and endangered species can be found under each species' discussion in the Wildlife BA.

#304

COMMENT: *page 2-23; the KW Guideline 2 is totally out of line...Without precommercial thinning or release of jack pine, you cannot achieve the small openings that the habitat requires. What if a fire goes through a jack pine area and regenerates it to 9000 trees per acre? It becomes a hazard for insects, disease and subsequent fire. In addition, jack pine needs to be thinned before age 6 just to prepare the site for KW habitat, let alone timber stand improvement. These sites need more consideration than a blanket "should not" statement. (#00768)*

RESPONSE: See comments #132 and 139. Kirtland's warblers typically occupy jack pine stands, with a stocking density of 1,100 or

more trees per acre, interspersed with small openings, and totaling approximately one-quarter acre per one acre of forested area. Jack pine stands do not routinely need to be thinned before age 6, or at any time, in order for the site to be prepared for Kirtland's warbler.

Data obtained from wildland fires in Michigan's Lower Peninsula, indicated that high jack pine stem densities did not hinder KW occupancy. In fact, the number of singing male KWs observed in stands with densities exceeding 6,000 stems per acre were greater than those stands that were created through planting a consistent 1,100 stems per acre.

However, in areas that have adequate stem densities but lack the requisite number of openings, tree thinning is an indicated remedial activity that can enhance KW habitat. Therefore, KW Guideline 2 on page 2-33 of the draft EIS, has been changed to indicate that thinning can occur in areas managed for KW, provided that the thinning maintains or enhances the stand for the species.

#305

COMMENT: *[page] 2-33 KW guideline 2 should be dropped. There is no reason to dictate management practices (prescriptions) or lack there of (no thinning)– rather identify the habitat need as done in #1 then implement prescriptions needed to accomplish the habitat. KW management guidelines should apply only to the 10000 acres identified as being managed for KW not to the entire MA in which habitat may occur. (#01641)*

RESPONSE: Kirtland's warbler guideline 2 in the DEIS has been changed to indicate that thinning can occur in areas managed for KW, provided that the thinning maintains or enhances the stand for the species. This change clarifies the intent of direction for this federally-endangered species. The guidance in the revised Plan does not identify specific areas to be managed for KW, but establishes that nesting areas for threatened and endangered species will be protected (revised Forest Plan, page 2-32, standard 2). For KW, this would apply to all areas on the Forest, regardless of designation as a KW management area that might occur at a project-level scale. See comments #302 and 304.

Snags

#306

COMMENT: *Snag guidelines are more prescriptive than needed. FIA data presented in the EIS would indicate that there are adequate snags on the forest in most forest types. Following is a later version of FIA data Years 2000 - 2003 analyses which is sorted based on stands with harvest history. This data needs more work to determine statistical validity but it appears to show that while there is a substantial decrease in total number of snags within stands that were harvested the number of snags in the larger size classes is not substantially different. The raw data behind this chart is available. [Table appears in letter]* (#01641)

RESPONSE: The FIA data presented in the DEIS are averages from plot data obtained across the Forest. Live tree and snag guidelines in the revised Plan on page 2-31 were drafted to consider the range of snag conditions expected to be encountered across the HNF, from low numbers to high numbers.

The guidelines provide HNF managers with the flexibility to apply appropriate guidelines to accomplish vegetation and wildlife objectives depending on site-specific conditions. The snag data provided in the DEIS suggest that various forest types are providing snags for wildlife. Snag guidelines in the 2006 Plan will help to ensure that adequate numbers of snags are also retained in the future.

2800 Minerals & Geology

#307

COMMENT: *I do not want the forest opened up to oil and gas exploration. No surface mining of minerals. (#00031*)

RESPONSE: Oil, gas and mineral development are part of multiple use management on national forest system lands. The USDA Strategic Plan Framework (Revised 2004-2008) includes goals to contribute to meeting the Nation's need for energy (proposed Forest Plan page 1-3). Processing requests for oil, gas and mineral permits would be within ecological capabilities, resource management direction and to meet identified Forest and

public needs (Revised Forest Plan page 2-15). There are about 275,000 acres (30% of the total net federal ownership) of leasable federal mineral ownership within the Hiawatha.

About 14,500 acres (5%) of federal mineral ownership have been withdrawn from entry due to current Congressional designations. In addition, about 65,000 acres (24%) have been identified as areas where surface occupancy is not allowed due to sensitive resource protection (DEIS page 3-506).There is low potential for oil and gas development leasable lands. Current exploration has not resulted in economic quantities of oil or gas. No areas are currently under lease on the Forest.

Alternatives 2–4 restrict surface occupancy in old growth areas and wild and scenic river corridors. This further reduces acres available for surface occupancy (DEIS page 3-506). Any future exploration or surface occupancy would be subject to site/project specific public involvement and analysis.

#308

COMMENT: *I think...[mining] should be banned from this national forest [sic]. (#00006*)

RESPONSE: Please see comment #307.

#309

COMMENT: *There is a low potential for oil and gas development on the leasable lands within the Hiawatha Forest and no areas are currently under lease on the Forest. However, I would still like to urge you to take all possible precautions when deciding which acres are made available to oil and gas leases and also strongly recommend that as few acres as possible are made available for these leases. (#02696*)

RESPONSE: Please see comment #307.

#310

COMMENT: *When mineral leases are put up for sale, they should designate in advance those areas where surface disturbance will not be allowed. These designations should pay particular attention to both the ecological needs and the recreation experience of the affected surface area. Do not allow leases for sulfide mining anywhere on the forest. (#02167)*

RESPONSE: Please refer to comment #307.

#311

COMMENT: *Standards for Mining and Geology promote mineral exploration and exploitation are not acceptable to us...Currently there is a large and growing movement to ban or strictly regulate Metallic Sulfide mining because of potential pollution from acid mine drainage. We oppose such damaging activities on our national forests, and believe that they would better serve the people as protected forests. For existing mines, the mining companies should be required to acquire high quality forestland and donate it to the national forest as compensation for the environmental damage already done. (#00778*)

RESPONSE: Please see comment #307.

3400 Pest Management/ 5100 Fire Management

#313

COMMENT: *The issue of beech bark disease was not even mentioned in [the] 500+ page draft EIS. When I made this point at your Forest Plan meeting I was told that this was a "strategic" document and that it was not an appropriate venue to address a specific forest pathogen. We take issue with this conclusion... The disease is spreading at a rate of about six miles per year... According to FIA data, there are 138 million beech trees in Michigan with a total volume of 1.7 billion board feet. The Hiawatha National Forest has 240,000 acres in the Northern Hardwoods type. Beech is a component of the stand on most of those acres. There is no doubt that beech bark disease will cause widespread mortality on the Hiawatha National Forest in this planning cycle. Given the drastic effect that this pathogen will have and the imminent nature of the threat, it is irresponsible not to address the issue in the Forest Plan. The Forest should be making plans now on how to prepare stands for the infestation. There are silvicultural treatments that may slow the rate of spread and possibly increase the percentage of trees that survive... This is a "big picture" issue and it needs to be addressed in the plan. (#01637*)

RESPONSE: The final EIS has incorporated additional analysis for non-native invasive insects and diseases. The revised Forest Plan includes guidelines to use integrated pest management methods to minimize the effect or prevent the spread of insect and disease infestations (Plan page 2-36).

Integrated Pest Management (IPM) is an effective and environmentally sensitive approach to pest management that relies on a combination of common-sense practices. IPM programs use current, comprehensive information on the life cycles of pests and their interaction with the environment. This information, in combination with available pest control methods, is used to manage pest damage by the most economical means, and with the least possible hazard to people, property and the environment. IPM follows a four-tiered approach that includes the following steps (www.epa.gov):

- Set an action threshold, a point at which pest populations or environmental conditions indicate that pest control action must be taken.
- Monitor for pests and identify them accurately, so appropriate control decisions can be made in conjunction with action thresholds.
- As a first line of pest control, prevent pests from becoming a threat.
- Once monitoring, identification and action thresholds indicate pest control is required, and preventive methods are no longer effective or available, evaluate the proper control method both for effectiveness and risk.

Through Forest Plan implementation, landscapes and sites on the Hiawatha where beech bark disease is a threat will be identified and the IPM approach will be applied. The Forest Plan is a strategic document and the Hiawatha is working on a forest-wide strategy to address threats to forest health.

#314

COMMENT: *Threats to forest health, diversity and sustainability due to disease and invasive insect species are discussed in the proposed forest plan. However, the certain alteration of forest composition or complete extirpation of tree species posed by Beech Bark Disease, Oak Wilt, and Emerald Ash Borer is not adequately addressed. Consideration of these threats in the desired future makeup of the forest, in particular how to fill the tree species void left in the wake of these forest pathogens needs to be considered in the planning process. As an example, what contingency plans exist to deal with total loss of hard mast producing species of beech, red and white oak from the forest landscape? Are there other viable species alternatives that can be introduced? The future condition and viability of the forest depends upon how these concerns will be addressed. (#:02205)*

RESPONSE: Refer to comment 313. Guidelines for pest management also include promoting spatial diversity of vegetation and age classes guided by the ecological characteristics of the landscape to reduce the risk of insect and disease damage (Plan page 2-36). This fits into integrated pest management as a prevention measure. Integrated pest management will be applied to Oak Wilt and Emerald Ash Borer, as well as other pests.

#315

COMMENT:...*Sierra Club...said that they [FS] are planning on cutting trees to increase visibility of Lake Superior from the highway. Given all the diseases attacking various species of trees in our area, or ones that may move into our area, I wonder about the reasoning behind cutting down trees that are healthy...I think it is important to cut as few trees as possible until we know what is going to happen with the emerald ash borer, the beech bark disease, oak wilt and any other introduced problems we may have. (#00191*)

RESPONSE: See comment #100. This comment relates to a site-specific project analysis and is beyond the scope of Forest Plan revision.

#316

COMMENT: *Neither the Plan nor EIS addresses the potential impact of the invasion of non-native insects or diseases if not identified and dealt within a timely manner. These are very real threats and failure to address methods to resolve or highlight the authority to address them could make the time-line to do so longer than you have. (#02069*)

RESPONSE: See comments #313 and 314. The revised Plan includes monitoring for insects and disease to determine if population levels are compatible with objectives for restoring or maintaining healthy forest conditions and to determine effectiveness of treatments for managing undesirable occurrences of insect and disease outbreaks. This will ensure they are dealt with in a timely manner.

#317

COMMENT: *Non-native insects, especially the emerald ash borer (EAB) and Asian long-horned beetle, represent serious and imminent threats to ecosystem stability on the Hiawatha. In addition disease, fire and storms are perturbations, which commonly result in significant timber volume loss of a more or less catastrophic nature on the forest. The plan should address these potential impacts through a description of how the Hiawatha National Forest plans to use the opportunities provided by the Healthy Forest Initiative and Healthy Forest Restoration Act to quickly and decisively address forest health issues either before or as soon as they occur. (#01760*)

RESPONSE: See comment #313. The Healthy Forest Restoration Act and the Healthy Forest Initiative are tools to implement the Forest Plan and are beyond the scope of plan revision.

Non-native Invasive Species

#319

COMMENT: *Unlike the Ottawa National Forest, it appears that HNF needs more detailed planning with regards to invasive species. (#01651*)

RESPONSE: The DEIS addressed non-native invasive species (NNIS) starting on page 3-85 and in the Aquatic Habitat Section on page 251. The Forest has adopted an NNIS management strategy, which includes direction to develop various products and to implement individual actions to combat selected NNIS. The strategy leads to reduction of NNIS by accomplishing yearly noxious weed control targets, public education and partnerships that result in some level of NNIS reduction and/or control (DEIS page 87).

The proposed Plan includes goals and objectives for discouraging spread and controlling existing non-native invasive species (Plan page 2-16). The vast majority of non-native invasive plant populations on the Hiawatha occur on roadsides, in skid trails, at landings, on temporary roads, or on other disturbed areas (DEIS page 3-86). During this planning period, locations of non-native invasive species will be identified and mapped (Plan page 2-16). Implementation of the Forest Plan to meet objectives to control non-native invasive species will require site-specific proposals and analysis at the project scale.

#320

COMMENT: *...feel that all available measures should be used to prevent spread of non-native invasive species. Alt. 4 moves in this direction by having a lower amount of road construction and by decreasing motorized lake access. We suggest that where practicable, use be made of volunteer groups as manpower in helping eradicate...[non-native invasive species.] (#:00045*)

RESPONSE: See comment #319. Prevention of the spread of non-native invasive species is high priority on the Forest. A suite of available methods are considered on a project/site-specific basis. This includes using volunteers and partnerships as appropriate.

Pest/Fire Management

#321

COMMENT: *Forest Pest Management: We are very supportive of any actions that reduce the threat of invasive and non-native species in the Hiawatha National Forest.*

- *For goal number one, change "discourage" to "eliminate" or a similar stronger word.*
- *Add "Complete Invasive/Exotic Species Management Plan" to the Goals list.*
- *While it is understood that management teams need a specific objective, the concept of treating a certain number of acres of invasive is only superficially useful from an ecosystem management perspective. This is one reason we suggest development of an invasive/exotic species management plan. Also, treatment alone will not eliminate the*

invasive threat in many cases. Treatment needs to be followed up by monitoring and adaptive management. Furthermore, where 'best management practices" are not known for a particular species in a specific situation, treatments should be set up as research plots so that the best methods can be identified. (#00779)

RESPONSE: Since European settlement, non-native invasive plants and earthworms have been intentionally and unintentionally introduced into the analysis area (DEIS page 3-86). In many cases, factors that influence the spread of these species are not within the control of the Hiawatha National Forest. Total elimination of the spread of non-native invasive species (NNIS) is likely not achievable.

As described in the response to comment #319, the Forest has adopted an NNIS management strategy. The next step is identifying and mapping where concentrations of these species occur. That appears as Objective 1 on page 2-16 of the proposed Plan.

Under all alternatives, NNIS occurrences would be monitored to help form short- and long-term management plans and to help detect and respond to changing infestation patterns (DEIS page 3-88). The proposed Plan includes monitoring of NNIS to determine how effective the Forest is at treating and controlling the spread of NNIS (Plan page 4-9). The Forest will apply adaptive management principles based on past performance to adjust control methods as appropriate.

#322

COMMENT: *Strengthen goals, objectives, standards, and guidelines for management of pests and fire. There should be guidelines that are clearer regarding the management of pests and fire per page 2-16 of the proposed plan and 2-17 to reduce the risk of wildfires and disease. (#02054*)

COMMENT: *page 2-16 of the proposed plan, which addresses Forest Pest Management, "Goals and Objectives," should be strengthened. "Fire Management" on pages 2-17 should have some clear guidelines regarding the timing of vegetation management activities to prevent or reduce the impact of, or quickly react to, infestation, fires or windstorm. (#01760*)

RESPONSE: Pages 2-16 and 2-17 of the Proposed Plan are part of the forest-wide management direction section that describes desired conditions, goals and objectives. Guidelines for pests and fire management are described in the standards and guidelines section of the Proposed Plan. More specific direction would not allow for flexibility in response to unplanned events.

Specifics regarding fire management are contained in the Hiawatha's Fire Management Plan. This document is updated annually to reflect current conditions, opportunities, and National directions including the Healthy Forest Restoration Act, Healthy Forest Initiative, and National Fire Plan. Each activity will require site specific documentation and analysis through the NEPA process.

#324

COMMENT: *Dale Bosworth, Chief of the USFS, has stated that fire and fuels, invasive species, loss of open space, and unmanaged recreation are the biggest threats to the national forest system. For the UP, we agree that these threats are significant and would like to see a greater direct focus on abatement of these threats. For example, with invasive becoming such a threat to many plant communities and forest regeneration, development of a comprehensive invasive plan should be a goal stated in the revision. (#:00779*)

RESPONSE: See comments 319 and 321.

Social and Economic

#325

COMMENT: *It seems the trend in recent years has been toward short-term financial gains where our National Forest are concerned...Our National Forests should not fall within the consideration of money-making schemes [road building, cutting trees for timber, and allowing the use of ATVs].* (#01950)

RESPONSE: Funding for forest activities, facilities and programs is generally appropriated by Congress annually and allocated within constraints to the Forest Service. The funds the Forest Service receives are used to achieve the desired conditions identified in the Forest Plan.

Twenty-five percent of the receipts from national forest activities are returned to the state and distributed to the counties to support schools and roads. Some receipts are retained on the national forest unit where they were collected and are used to provide enhanced recreation opportunities and/or to accomplish work within timber sale areas. The remainder of the receipts are returned to the Treasury.

#326

COMMENT: ...*To the local economy, Forest Service related contributions represent only 1.4% of employment and 1.5% of labor income. The table on 3-489 DEIS shows a small financial and economic PNV gain for Alternate 4 over that shown in Alternate 2, but the whole story is not told because non-market and passive use values are excluded from the table. Non-monetary values of the Forest are far greater in terms of water, soil, biodiversity/species preservation and aesthetics than any dollar amount from timber production. Any alternative must weigh the ultimate costs of increasing any of the threats to the Forest against increased timber production and recreational use. (#00547*)

RESPONSE: As explained in the DEIS on pages 3-470 through 3-471, "While the passive values associated with the Forest as a whole are no doubt considerable, and the Forest Service recognizes the tremendous value of these kinds of items, they are extremely difficult to accurately measure, particularly on the per acre basis which would be needed in order to make a comparison among alternatives." For this reason, non-monetary values are discussed qualitatively in other sections of the final EIS such as flora and fauna habitat, watershed, scenic quality and social environment.

Recreation (General)

#327

COMMENT: ...*Economically the Upper Peninsula is transitioning from jobs, which remove natural resources to those that depend upon them remaining intact. Tourism and ecotourism are a growing part of the Upper Peninsula's economy... (#01948*)

RESPONSE: In developing the Forest Plan, the Hiawatha recognized the value of providing for a diverse array of both consumptive and non-consumptive uses which contribute support for a variety of job opportunities in the local economy. A diversity of opportunities contributes to economic stability. National forests are also charged with providing for multiple uses which includes maintaining healthy forests and habitats. The management areas in the Proposed Forest Plan were designed to provide a broad array of recreational opportunities including tourism, ecotourism, developed and dispersed recreation, wilderness, roaded opportunities, off-highway uses and snowmobiling.

#328

COMMENT: ...*I know the future economic growth of our area will rely greatly on increases in eco-tourism.... We are one of the last remote wildernesses in the Midwest. Our motel guests seek that solitude and visit in the hopes of seeing a wolf, bald eagle or lynx...Please consider all economic impacts of your decision. (#02222*)

RESPONSE: See comment #327. The Revised Plan has many provisions designed to maintain the values of remoteness and solitude.

#329

COMMENT: ...*a managed, increased outdoor public recreation infrastructure in the Hiawatha forest will provide increased Long term [sic] funding support. (#00011*)

RESPONSE: See comment #327.

#330

COMMENT: *Using a moderate Pay to Use [sic] system would allow additional support for the recreational infrastructure. (#00011*)

RESPONSE: Most National Forest system lands are open and free of charge for public use and enjoyment. However, user fees may be charged at some areas such as campgrounds and some dispersed recreation areas. Implementation of fee programs is an administrative decision rather than a land use decision, and is therefore outside the scope of this analysis.

#331

COMMENT: *I also did not see anything in the plan that discusses what the economic effect of implementing Alternative 2 would be. Not only would this plan be detrimental to the logging industry, but the reduction in suitable habitat for grouse, woodcock and deer would likely also reduce the number of people that come to the area for these recreational pursuits.... Continued reduction in habitat, and hence bird numbers, will also reduce the numbers of hunters making that trek. (#00660)*

RESPONSE: An analysis of the economic effects of all the alternatives can be found in the DEIS on pages 4-483 to 4-491. The effects of the alternatives on hunting are included in the Recreation Opportunity Spectrum section of the DEIS. See comment #093.

Cross Country Snowmobile

#332

COMMENT SUMMARY: ***Restricting OHV and cross-country snowmobile access will reduce local revenue.*** (#00002, 00231, 00241, 00314, 00423, 00505, 00519, 00522, 00523, 00536, 00667, 00743, 01373, 01616, 01682, 01696, 01746, 02112, 02215, 02199 – 02203, 02207, 02243, 02244, 02281, 02295, 02309, 02363, 02533)

COMMENT: *On behalf of the St. Ignace Chamber of Commerce, I would like to go on record opposing the proposed closure of all cross-country travel within the Hiawatha National Forest. Closure of all cross country trails in the Hiawatha National Forest would be devastating to snowmobile travel in our area and would have a very negative affect on the winter tourism industry. ...We respectfully request that this matter be reconsidered with small business, small communities and winter tourism in mind. (#02223)*

COMMENT: *...Snowmobilers who annually visit the Upper Peninsula have voiced concerns about their ability to use the forest roads, pipelines and power line easements to travel from one designated trail to another, or to access nearby communities for necessary services. Changing this policy will have a negative financial impact on these communities... (#00543)*

COMMENT: *The snowmobile industry including dealers, parts suppliers, repair facilities and accessory retailers rely on this seasonal business. Plus, the restaurants and bars prosper greatly during the sparse winter months from tourist income. This trade keeps the small business owners doors open. (#01726)*

COMMENT: *I believe that by drastically restricting the use of the forest to snowmobiling, that tax revenues, [sic] that are collected by the local businesses from people like me that visit and snowmobile in the Upper will drastically be reduced and further hurt Michigan's economy... (#00614)*

COMMENT: *This cross-country travel allows snowmobiles access to public land and its businesses. This access is very good for the economy of the entire state of Michigan and particularly the upper peninsula of Michigan. The Upper peninsula depends a great deal on the tourist dollars that the snowmobile industry brings. The snowmobile industry supplies millions of those dollars each year to the economy of Michigan's Upper Peninsula, this in turn creates jobs and as an end result more tax revenues for the entire state. (#01670, 02292)*

COMMENT: *Winter recreation is an economic driver to the economy of Michigan's Upper Peninsula. Continue reasonable winter access to the Hiawatha National Forest is of paramount importance if Michigan is to compete on a level playing field with our nearby neighbor Canada. (#02188)*

COMMENT: *...the revenue gained by snowmobiling in northern Michigan is the one bright spot left in the Michigan economy. (#01699)*

COMMENT: *Snowmobilers spend millions of dollars in the upper peninsula of Michigan helping to support the business in small villages and towns that may otherwise be on hard times during the long winter months. We ask that you consider all aspects of recreation and the economic impact on the surrounding communities before making revisions to the Hiawatha National Forest Plan. (#00465)*

COMMENT: *Increased ATV, Snowmobile access to the forest system will improve Citizen support, as well as economic growth of the surrounding areas. (#00011)*

COMMENT: *If you keep closing all trails and roads to visitors you will lose all money being spent winter & summer. People will quit going north for recreation. (#02568)*

COMMENT: *Please reconsider closing all areas unless posted open. We need any and all possible resources to keep tourists coming to our area. This could have a very high tourism impact. (#01666)*

RESPONSE: See comments #068, 104 and 109. An analysis of the demand for and supply of recreational opportunities was conducted as part of the analysis process. Details of the analysis are contained in the project record. See comment #327 on importance of diverse recreational and job opportunities.

While snowmobile demand as displayed by snowmobile permits only showed a small increase over the last five years (DEIS page 3-323), use is expected to grow by 106% over the next 50 years (DEIS page 3-462). In addition, monitoring found that snowmobile use was one of the top five recreational activities on the Hiawatha (DEIS page 3-455). The tables on pages 2-10 and 3-329 of the DEIS show snowmobile travel is important and permitted on roads and/or trails in all alternatives.

Alternative 1 represents the 1986 Forest Plan direction. The increased opportunities in Alternatives 2–3 would better accommodate the projected growth in snowmobile use during the planning period (DEIS page 3-463). Alternative 4 would reduce snowmobile opportunities from the current condition (DEIS page 3-464). The Hiawatha's groomed snowmobile trails are part of the state's extensive groomed snowmobile trail system (DEIS page 3-323). County roads in the seven counties within the Hiawatha also provide snowmobile opportunities.

The Hiawatha is well-aware of the economic value of snowmobile use. Estimated snowmobile use was projected under each alternative. The economic impact of all recreation activities were grouped and estimated in terms of jobs and income potentially supported and are discussed under recreation on pages 3-471 through 3-478 of the DEIS. Details of projected use by recreation activity under each alternative are available in the project record.

Aspen

#333

COMMENT: *Those of us who work in the forest products industry are very concerned about the level of aspen acreage that may or may not be harvested due to the wide range of acreage numbers you have set in the plan. Our mills are dependent on this source of fiber and so are our communities, in which you live also. Please consider maintaining a higher level of aspen acreage for harvesting. (#02054)*

RESPONSE: See comment #125. Aspen goals were revised in the FEIS and 2006 Plan. Actual acres of aspen maintained are likely to be near the middle of the range. The table on page 2-6 and Table 3-VEG-7 in the DEIS, show the acreage variation between alternatives is considerable for aspen management. For decades 1 and 10, Alternative 1 is projected to provide 16 and 18 mmbf of aspen and jack pine pulpwood; Alternative 2 is projected at 31 and 10; Alternative 3 at 29 and 16; and Alternative 4 at 28 and 7. All alternatives are projected to provide less than 1 mmbf of sawlogs from these species. Alternatives 2–4 would provide more than the current Forest Plan (Alternative 1) in decade 1, but would all decrease to much less than Alternative 1 by decade 10. See comment #176. To meet overall Plan goals, the cumulative level of aspen management is expected to be near the middle of the range.

#334

COMMENT: *It is my understanding that the lumber, paper and forest companies cannot secure enough aspen here in the U.S. and so Canada is flooding our market with aspen products, (OSB board) for the building industry. Why not cut more of ours on a rotational basis to benefit the economy of Michigan and that of the U.S... (#01757)*

RESPONSE: The Plan is aimed at achieving desired conditions. ASQ is an outcome of meeting the vegetation goals in the Plan, which are the means of achieving desired conditions and habitat goals (comments #153, 163, 174, 206). See comment #335 regarding economic impacts. The demand and supply of wood products was considered in the analysis of alternatives. Details of the demand and supply analysis are contained in the project record.

#335

COMMENT: *The goal aspen acreages in Alternative 2 range from 29,139 to 100,430. This range is far too wide and should be reviewed with the focus on maintaining as many aspen acres as possible, and not less than the current aspen acreage of 79,300 for several reasons:*

Forest products industry relies on aspen as a key raw material for pulp mills, OSB mills and sawmills. Less aspen, in the long term, will contribute to a weak industry and destabilization of the communities whose economics depend on the forest products industry for employment and taxes. (#01760)

RESPONSE: Refer to comments #125, 176 and 334. To meet overall Plan goals, the cumulative level of aspen management is expected to be near the middle of the range. The economic impact of harvest levels under each of the alternatives is addressed on pages 3-470 through 3-478 of the DEIS. The analysis of economic effects considered the mix of products and species under each alternative and its related economic effect. Details of the analysis are contained in the project record. Estimated timber harvest levels under all alternatives would support higher levels of economic activity in the form of jobs and income over current harvest levels. This would contribute to increased stability within the forest products industry.

Regarding the range of acres in the aspen goal, see the response to comment #176. To meet overall proposed Forest Plan goals, the cumulative level of aspen management is expected to be near the middle of the range.

#336

COMMENT: *Aspen acreage ranges from 21,364 acres in Alternative 4 to 154,450 in Alternative 3 (with no max in alt.1). Alternative 2, the proposed alternative varies from 29,000 to 100,000.*

C. A market for aspen was created by state of Michigan promotion, as well as expectations from the Hiawatha's 1986 plan. That industry and local communities will be negatively impacted if management tends to low end. (#02069)

RESPONSE: See comment #335. Regarding the range of acres in the aspen goal, see comments #125 and 176. To meet overall Plan goals, the cumulative level of aspen management is expected to be near the middle of the range.

Allowable Sale Quantity/ Timber Production

#337

COMMENT: *What is the cost and revenue projection for these [timber] harvest (the direct use benefits). Remember that values for a project are derived from Use Values, Option Values, Inheritance Values and Existence Values. All should be considered in the cost-benefit analysis of a project or plan. (#01651*)

RESPONSE: The cost and revenue projections for each alternative are discussed in the DEIS on pages 3-475 through 3-477. Details of the analysis are available in the project record. Non-market values are addressed in the DEIS on pages 3-470 through 3-471. While the Forest Service recognizes that the non-market values associated with the Hiawatha's resources are considerable, analysis methods to quantify them in an economic analysis are not readily available or agreed on. Such values are described and considered qualitatively within the social and economic sections (DEIS pages 3-436 to 3-478). Effects to each resource and its associated values are discussed throughout Chapter 3 of the DEIS.

#338

COMMENT: *Increasing the annual amount of timber harvested in the national forests has a direct economic bearing on local communities. This funding will increase jobs as well as revenues generated for counties. (#02696*)

RESPONSE: Table 3-ECON-11 on page 3-485 of the DEIS displays the effect of timber harvest on jobs by alternative. Table 3-ECON-13 on page 3-486 displays the effect of timber harvest on labor income. Table 3-ECON-14 on p. 3-487 displays the effect of timber harvest on payments to counties by alternative.

#339

COMMENT: *For local forest economies it is necessary to actually produce the plan's harvest goals. To emphasize concern for local forest economies, language could be inserted stressing the need to adhere to the harvest plan to prevent damage to the local economy. (#02205*)

RESPONSE: The Forest Plan shows the maximum potential the Hiawatha can achieve within the bounds of management direction. In other words, the Allowable Sale Quantity is an outcome of achieving vegetative goals set in the Forest Plan and it is an upper limit established by the land allocations and standards and guidelines of the selected alternative.

All desired conditions and outputs in the Forest Plan are dependent on adequate funding to plan and implement the work. If Congress does not appropriate enough money and other funding sources can not supplement appropriated dollars, management intensity or production levels will be lower than those displayed in the final Forest Plan.

#340

COMMENT: *ASQ is too high...If there is a need for more timber production for local timber dependent businesses the private sector, owning 56% of these productive timberlands should provide it... (#00547*)

RESPONSE: The demand for and supply of timber products from all land ownerships were considered during the analysis process. Details of the demand and supply analysis are contained in the project record. The National Forest system is mandated to provide for multiple uses. In developing the revised Forest Plan, the Hiawatha recognized the value of providing for a diverse array of uses, thus supporting a diversity of job opportunities within local communities.

Management areas in the proposed Forest Plan were designed to provide a wide range of both consumptive and non-consumptive uses. While timber harvest in support of local and national demand for these products is one objective for timber management activities, it should also be remembered that removing trees is a tool that is used to achieve other resource objectives such as the improvement of wildlife and fisheries habitat.

#341

COMMENT: *No audit of the logging operations has been done in the Forest Plan. The last audit done in 1997 showed that the Hiawatha losses [sic] around $1,000,000 a year on its timber program. Subsidized logging in our forests is unacceptable. I do not support commercial logging in the Hiawatha.* (#00043, 00051-00186, 00192-00203, 00212-00214, 00225-00227, 00244-00246, 00254-00257, 00259, 00261-00263, 00265, 00266, 00268-00272, 00280, 00282-00290, 00293-00297, 00328-00334, 00336-00338, 00340-00347, 00452-00458, 00485-00489, 00777, 00778, 02619-02635, 02637-02641, 02643, 02645-02648, 02650, 02652-02660, 02662-02681)

RESPONSE: Financial auditing of the timber program or other resource programs is an administrative action. Refer to pages 4-1 to 4-11 of the Proposed Forest Plan for information on the purpose of monitoring and what items are appropriate. The timber program is the one of the few resource programs that generates funds. However, like other resource programs, funding may be necessary to accomplish the desired conditions and move towards the goals identified in the Plan. Timber sales can provide non-valued benefits that would not show up in a financial audit. For example, timber sales are mechanisms for accomplishing road construction, reconstruction and maintenance; habitat improvements; fuel reduction; healthy forests; visual enhancements; watershed restoration; etc. The Forest Service has a mandate for multiple use management.

#342

COMMENT: *...timber growing in our country's national forests is valuable not only because of its recreational appeal and commercial uses, but also because these renewable resources are a cornerstone of the local economy in many ways. Sound management of the forests, especially harvesting timber to an extent that maximizes the health of the forests, is vitally important to using these acres in the most productive and far-sighted manner; and...if no federal timber were sold, Michigan would stand to lose $540,347 in 25% and PILT Payments.....ensure that the Forest Service act upon their commitments, financially through 25% and PILT Payments and, by implementing the new forest plans, utilizing the new rules, and which will be developed by,*

among others, the citizens of Michigan. (#00037, 00038-00039, 00049, 00050, 00208-00210, 00548)

RESPONSE: Refer to comment #339.

7700 Transportation System

#343

COMMENT: *Please leave our forest access the way it is presently. (#00016, 01723, 01747)*

RESPONSE: Recreation access was identified as one for the two significant issues identified in the DEIS (page 1-5). In the Notice of Intent, the Hiawatha proposed to provide direction for motorized and non-motorized access including opportunities for future loops and connected trails and provide forest-wide direction for off highway vehicles (OHV) use (DEIS page 1-10). See comments #051 through #076 concerning recreation access. In all alternatives, motorized recreation provides pleasure to a large segment of the population by providing access to the Forest, contact with nature, and opportunities for families and groups to enjoy short and long distance travel within the Forest and other areas (DEIS page 3-326).

Goals for access include providing a road system that is structurally adequate, safe, environmentally sound and appropriately located to provide transportation that is responsive to public and management needs (proposed Forest Plan page 2-19).

#344

COMMENT: *Carmen Project Area: You are restricting the use of boundary areas on either side of the trail by blocking the road access to all except the handful that use the trail. While I am in favor of much of the road closings, I am not in favor of the U.S.F.S. permitting the special interest [sic] group of horses, hikers & bikers to shut down 42 miles of user land. (#00024)*

RESPONSE: This comment refers to a site-specific project analysis and decision that was completed with public involvement and an opportunity for appeal. The purpose of road closures in the Carmen project area was to bring the number of road crossings in line with the desired condition for managing the resources and the North Country National Scenic Trail. This comment is outside the scope of the revised Forest Plan and final EIS.

#347

COMMENT SUMMARY: ***I think...[new roads] should be banned from this national forest*** *[sic]. (#00006)*

COMMENT: *It doesn't make sense to build more roads, mostly for timber production, when 1,840 miles of FS roads need repair and present a public safety issue and possibly damage to the under- lying soils. Roads are an invitation to NNIS, fires and unmanaged recreation, especially motorized. (#00547)*

RESPONSE: Table 3-TRANS-4 on page 3-497 of the DEIS shows that the miles of road decommissioning exceeds road construction in all alternatives, resulting in a net decrease in road miles. Road construction/reconstruction activities will take place to ensure roads are safe. The final EIS analyzes and discloses the effects of roads on NNIS, fire, recreation (managed and unmanaged) and soils. See Chapter 3 of the FEIS for more information.

#349

COMMENT: *We are concerned the Hiawatha may not have sufficiently comprehensive and accurate maps to meet its obligations to maintain accurate maps and data on its extensive road and trail system. An independent analysis of roads and trails on the Superior National Forest indicated massive data shortcomings, gaps, inaccuracies, and failures. See generally, Snetsinger, S.D and P.H. Morrison, An Analysis of Roads and Roadless Areas on the Superior National Forest, Minnesota. Pacific Biodiversity Institute, Winthrop, Washington (2004) ("Superior Road Analysis")....*

We are concerned the Hiawatha may suffer similar shortcomings, which would put it in violation of the following requirements if the final road and trail maps are not complete and accurate:

- *Obligations to maintain a current continuing "comprehensive and appropriately detailed inventory of all National Forest System lands and renewable resources." 16 U.S.C. § 1603.*

- *The continuing obligation to maintain accurate, effective, current data, maps, and related material "appropriate for planning and managing the resources under his administrative jurisdiction." 36 C.F.R. § 219.12(d).*
- *Obligations with regard to the transportation and road atlases, the minimum road system, unneeded roads, and related requirements due to the inadequate and inaccurate data on which those determinations are made, specifically the need to identify an accurate minimum road system needed to "ensure that the identified system minimizes adverse environmental impacts associated with road construction, reconstruction, decommissioning, and maintenance" as required by 36 C.F.R. § 212.5(b)(1), and failing to identify unneeded roads for decommissioning as required by 36 C.F.R. § 212.5(b)(2).*

Inaccurate road and trail data would undermine the analyses in the Forest Plan Revision EIS, project level NEPA analyses conducted pursuant to the Plan, any ESA Section 7 consultation on the Plan or subsequent projects, and obligations to conserve and recover lynx under the ESA, and maintain the diversity of plant and animal communities. (#01761)

RESPONSE: The Hiawatha completed its Forest-Wide Roads Analysis Procedure (RAP) on January 13, 2003 in compliance with the Transportation Final Rule and Administrative Policy, dated January, 2001 and with Forest Service publication FS-643. The Forest is producing project-level RAPs for every project involving roads on the Forest. For the last 10 years, the Forest has been conducting an accelerated data gathering and mapping program for Forest roads.

This has become a high priority. The Forest currently has a comprehensive, detailed system (infra/GIS) to track and store road data. Road locations are either photo rectified or located in the field using global positioning system (GPS) technology. The Forest conducts road inventories for every project, and has found very few user-developed roads during each inventory. These unclassified roads are of limited extent and therefore statistically insignificant. The Forest fully updated the road system inventory database prior to starting forest plan revision.

Transportation system standards and guidelines shown on page 2-37 of the proposed Forest Plan include decommissioning of classified and unclassified roads not needed for long-term access. Roads will be decommissioned to maintain road density guidelines; to eliminate undesired access, to improve watershed health or to protect sensitive areas (DEIS page 3-497). Specific measures to analyze and minimize adverse effects would be designed on a site/project specific basis.

#351

COMMENT: *It appears to me that paving of 2235 is going against Alt. 2. Paving 2235 is further fragmenting the Forest and that is not good. (#02221*)

RESPONSE: This comment refers to an ongoing site-specific project analysis which has not had a decision made and is outside the scope of Forest Plan revision.

#352

COMMENT: *Let the timber cutters build and maintain these roads, give them [a] road plan and let them go. (#02225*)

RESPONSE: For timber-related activities, most road maintenance/construction/ decommissioning of ML 2 roads is completed by logging companies (DEIS page 3-494). For ML 3–5 roads, the Hiawatha assesses a fee to help defray the costs of road maintenance. All maintenance/ construction/decommissioning of National Forest roads must meet applicable Forest Service standards and mitigated to minimize adverse environmental impacts.

#353

COMMENT: *...The Forest Service must provide for the revegetation of all roads which are not designated a permanent part of the National Forest Transportation System within 10 years after a contract, lease, or permit. 16 U.S.C. § 1608(b); 36 C.F.R. § 219.27(a)(11)(1982); 36 C.F.R. § 223.37; Forest Service Manual ("FSM") 7701.2 (2001). Temporary roads are authorized and must be "decommissioned at the conclusion of the authorized activity." FSM 7703.2(1) 7711.1(5). Road decommissioning*

consists of "activities that result in the stabilization and restoration of unneeded roads to a more natural state." FSM 7705, FSM 7710.5.

The Plan must ensure that all temporary roads will be decommissioned and revegetated in a timely manner. The decommissioning of these roads must be done in such a way as to prevent their illegal use by members of the public, including individuals who access these "closed roads" on snowmobiles and/or ORV/ATVs. All roads not identified as part of the permanent road system should be decommissioned, obliterated, and recontoured upon completion of the project for which they are created. In the alternative, temporary roads that are not to be obliterated after completion of the project which they are attached to need to be included in Forest Service road maps as they have the same impacts as other roads. (#01761)

RESPONSE: All applicable laws and regulations pertaining to temporary roads will be followed. Temporary roads will be obliterated and reclaimed for natural resource purposes in accordance with R-9 soil standards (proposed Forest Plan page 2-37). Methods for obliterating/decommissioning would be determined on a site/project specific basis and will be analyzed in the project level RAP.

Road Density

#355

COMMENT: *Both the Proposed Forest Plan as well as the draft EIS fail to establish adequate road density guidelines. There are insufficient provisions in the Proposed Forest Plan's "Procedure for Adding New Roads" to consider the environmental impacts before decisions to add new roads are made. FSM 7703.2(3) states that Forest Service managers can only add new roads when management objectives and environmental impacts have been carefully considered. Further, the potential for increased road density is too high, and it is unclear whether or not the Forest Service considered expansion of areas with zero road density.*

Defenders appreciates the Forest Service's goal of decommissioning roads that exceed the maximum miles allowed, but remains troubled by the assertion that, under the preferred Alternative 2, "the miles of roads on Management Area 4.4 nearly double...and [are] now over the maximum miles by 55 miles" (draft EIS 3-499). While the draft EIS concludes that inevitably new roads will be built while others are decommissioned, it is unclear as to how the Forest Service will implement these activities. This lack of clarity violates NEPA because it disables the public from assessing if and how the Forest Service has safeguarded the decommissioning process when up to 132 miles of roads will be constructed to allow access areas for timber harvests (draft EIS 3-499). Further, all road densities must be consistent with the Lynx Conservation Assessment Strategy and nationwide Lynx Biological Opinion and Conservation Agreement. (#01761)

RESPONSE: See comments #347 and 350. To better manage the road system, the Hiawatha established road density guidelines, which set a maximum road density for each management area (DEIS page 3-492). Road density guidelines are established for each MA where roaded conditions meet MA goals and objectives (Table 3-TRANS-3, DEIS p. 3-496).

The DEIS erroneously stated that Wild and Scenic Rivers (WSR-MA 8.4 et al) do not have road densities assigned because they are Congressionally-designated as roadless areas. They are Congressionally-designated, but they are not "roadless areas." Road density guidelines are not listed for Wilderness (MA 5.1), Wild and Scenic Rivers (MA 8.4 et al), Grand Island National Recreation Area (MA 8.5), and MA 7.1 because each of these MAs have specific guidelines for roadless or roaded conditions as applicable.

Some of the MAs have exceeded Forest Plan maximum road density guidelines and will require some roads to be decommissioned to achieve desired road density levels (DEIS page 3-494). Specific methods and environmental impacts for implementation of road construction and decommissioning will be considered on a site/project specific basis and will include public input. This plan is a strategic plan. In those cases where another publication contains procedures for actions such as adding roads to the system, these procedures are not repeated in the draft EIS or proposed Forest Plan. Consideration for

expanding areas with zero road density occurred in evaluation of portions of wild and scenic rivers, roadless/wilderness and in non-motorized MAs with semi-primitive non-motorized ROS objectives.

Miles of road in MA 4.4 nearly double with Alternative 2 because the land area of MA 4.4 also nearly doubles. Since 1986, the Hiawatha has decommissioned 193 miles of roads (DEIS page 3-494). In Table 3-TRANS-4 (DEIS page 3-497), Alternative 2 would construct 128 miles of road and decommission 231 miles of road in decade 1 for a net decrease in road miles of 103 miles over the next ten years.

The 2006 Forest Plan also includes road/trail system standards and guidelines for Canada lynx (proposed Forest Plan page 2-33).

#356

COMMENT: *...Planning roads on a forest wide basis, can lead to a road network, a fair deal less dense that than the current network, at the same time providing, plenty of mobility and access... (#00236*)

RESPONSE: Transportation and access are planned on a forest-wide basis. The transportation system is designed to consider the environmental, social and health concerns of the public. Roads will be maintained at a level commensurate with the planned use (DEIS page 3-491). See comments 347 and 349.

Road system planning has been done at the forest-level many times dating back to when the first Forest Plan was done. While in some cases, doing transportation planning at the forest-level can cut down on overall miles of road, there are local factors which may lead to an increase in road miles and density. For example, avoiding wetlands may cause the use of longer and less direct routes than would be used if dry routes were available.

#357

COMMENT: *The road density on the forest is too high. Road closure decisions should be based on a forest-wide assessment of needs, with justification for the numbers of roads that will be kept open. Decisions to close roads should be following through and monitored. (#02167*)

RESPONSE: See comments #347, 349, 350 and 356. All alternatives will result in a net decrease in road density. The revised Forest Plan provides direction for transportation management. Decisions to leave open, close, or decommission particular roads are made at in project (site-specific) level.

#358

COMMENT: *In general, the road density in the Hiawatha is too high to provide habitat for many rare and endangered species and the high density of roads degrades non-motorized recreation. The Forest Plan fails to take this into consideration. It fails to develop a plan to reduce road density. It fails to address the fact that non-motorized areas have many low-standard roads left open to allow for non-motorized use. A strategic plan needs to be developed to manage the road system of the Hiawatha. Simply designating a trail system based on the level a road is ranked fails miserably in establishing a regulated system.* (#0004300051-00186, 00192-00203, 00212-00214, 00225-00227, 00244-00246, 00254-00257, 00259, 00261-00263, 00265, 00266, 00268-00272, 00280, 00282-00290, 00293-00297, 00328-00334, 00336-00338, 00340-00347, 00452-00458, 00485-00489, 00777, 00778, 02226, 02619-02635, 02637-02641, 02643, 02645-02648, 02650, 02652-02660, 02662-02681)

RESPONSE: See comments 052, 060d, 347, 349, 350 and 356. The 2006 Forest Plan incorporates recovery plans for federally-listed threatened and endangered species. Some of the recovery plans include road density guidelines for areas of potential habitat to achieve recovery plan objectives. The effects to rare and endangered species have been analyzed in the final EIS, the biological evaluation and biological assessment.

Transportation Management Direction

#368

COMMENT: *Plan calls for "decommission an average of 5 miles per year". Why close/obliterate existing roads (many barely passable anyway)? Takes away access to OUR forest for the average person but particularly for seniors - on foot or otherwise... (#02177*)

RESPONSE: Transportation system standards and guidelines shown on page 2-37 of the proposed Plan include decommissioning of classified and unclassified roads that are not needed for long-term access. Roads needed for access would not be considered for decommissioning. Actual decommissioning is determined on a site specific basis. These project-level assessments have separate public involvement efforts and are beyond the scope of Forest Plan revision.

Other Disclosures

#369

COMMENT: *While it is inevitable that some unmanageable adverse environmental effects may occur, the Forest Service's cursory conclusion that loss or disturbance of wildlife near or on routes, trails, and throughout recreational facilities "…. would be avoidable only by complete elimination of all travel routes, facilities and recreational use" (DEIS 3-508) appears to be a flawed, and certainly incomplete analysis. (#01761*)

RESPONSE: As long as there are interactions between humans and wildlife, some level of disturbance will occur. This does not necessarily mean that there are adverse effects on life sustaining processes for a particular species. Complete analysis of potential effects to flora and fauna habitats can be found in the DEIS on pages 3-107 to 3-218. More detailed effects to plants and wildlife can be found in the Biological Evaluation which is incorporated by reference and is available for review at the Supervisor's Office.

Management Areas

#370

COMMENT: *ES-7 [Executive Summary page 7] shows a reduction in acreage allocation to MA6.4 and a substantial increase in acreage allocation to MA 8.3. The discussions which lead to that allocation did not nor does the EIS present any justification for such an increase. There are no T&E species (or anything else) driving that allocation of land and these acreages should be restored more in line with current allocation especially in light of the fact that the Forest has not demonstrated the ability or willingness to affect treatments in MA 8.3. Changing acreage allocations would require a revisit of the veg. composition objectives for these two management areas. Two additional factors need to be considered relative to this allocation as well: 1) the original intent of the 8.3 MA was for seclusion dependant w/l like the wolf which has made a good comeback in the last 20 years mostly associated with large deer herds on the southern half of the UP not associated with the "secluded" lands provided by MA 8.3. 2) The total number of acres in ROS semi primitive (provided by these and other MAs) needs to be reviewed. --- (this may have been done and I missed it) but moving planned acres from MA 8.3 to 6.4 would not have an impact on ROS. (#01641*)

RESPONSE: In the Notice of Intent, the Hiawatha proposed to review and change management areas to align them with land type associations (LTAs), to incorporate ecological land types (ELTs) and to incorporate other new information. The Forest would use the same management area desired conditions, however the allocation of land to any given management area would change between alternatives. The DEIS page 2-3 contains a description and the emphasis of Alternative 2.

The table on page 2-14 of the DEIS shows much of the increase in acres in MA 8.3 in Alternative 2 compared to Alternative 1 are not only from MA 6.4, but also from other MAs. Page 3-243 explains that the Forest identified the need to realign MAs to incorporate ecological land types and to apply new information on ecosystems and sustainability.

Each alternative was designed to respond to comments and significant issues by providing a range of scenarios for applying Forest Plan MA direction (DEIS page 2-1). An interdisciplinary team of resource specialists evaluated MA allocations. Key considerations included:

- Percent of a management area in an LTA
- Ecological land type composition (as a measure of ecological potential)
- Current vegetation conditions
- Wildlife and plant species viability considerations

- Forest health, ecological restoration and game species

The team aligned MAs with LTA boundaries where feasible. Considerations when allocating MA 8.3 included habitat needs for viability of the federally-listed gray wolf and Canada lynx (Species Viability Evaluation Analysis). Both species require seclusion habitat and lower road density. While wolf populations have increased, the Forest Service still has an obligation under Section 7 (a) (1) of the ESA to conserve listed species.

MA 8.3 has vegetation goals and road density guidelines that are very similar to MA 6.4. The major difference is MA 8.3 has a guideline to close ML-2 roads when not necessary, creating more seclusion habitat. Timber harvest, both uneven-age and even-age, should meet vegetation goals and move this MA toward desired conditions. The acres in MA 8.3 ranges from a low of 34,616 in Alternative 3 to a high of 163,040 in Alternative 4.

Pages 2-13 and C-3 show how Alternatives 1 and 2 allocate the Fibre area to different MAs. As explained on page 3-47 of the proposed Forest Plan, suited uses of MA 8.3 are to manage for older, secluded forests. These types of ecosystems provide a variety of benefits, not solely the benefit of remote habitats. Older secluded forests play an important role in biological diversity, providing for a suite of plant and animal species. A detailed analysis of ROS objectives is provided on pages 3-293 to 3-309 of the DEIS. Table 3-ROS-5 on page 3-303 of the DEIS displays the total ROS acres and percentages by alternative.

#371

COMMENT: *In the Proposed Plan some of the Management Area descriptions discuss OHV and snowmobile travel in the roads paragraph under Desired Condition. However, some of the MAs do not mention this type of use in that paragraph. It was confusing to me whether this use was available or prohibited. I understand reading in another area about the description of each Management Area may have clarified that for me I feel this information should be consistent throughout the document. People search out specific interest areas in the Management Area descriptions. (#02216*)

RESPONSE: See comments #052 and 060d for additional information on non-motorized MA allocations and uses. All management areas that have a motorized Recreation Opportunity Spectrum designation would allow use of OHVs and snowmobiles within the constraints of the standards and guidelines governing their use (Table 2600-6, page 2-22 of the Plan).

Some management areas, such as MAs 6.4 and 8.3, where motorized use is allowed do not mention OHV and snowmobile use in the desired condition statements because the primary emphasis of these areas is for other resources such as wildlife seclusion. That does not preclude the use of these types of vehicles; however these management areas would not be the primary focus for recreation planners to develop facilities and trails to serve these uses. It is not the intent of a desired condition statement to discuss all desirable or undesirable uses, but rather to paint a picture of how that area would look in the future.

MA 5.1 does not include any motorized use in the desired condition discussion, as the Wilderness Act prohibits motorized use in wildernesses. The Recreation Opportunities standards and guidelines for MA 5.1 indicate that recreation use is semi-primitive non-motorized. An indication of whether an MA is non-motorized or closed to motorized use may be found in the Desired Condition section, the 2300 Recreation Management section, or the 7000 Transportation System section.

#372

COMMENT: *General public is not interested in or aware of LTA's relevance to the planning process... (#00298, 00767*)

RESPONSE: Landtype associations (LTAs) are one ecological unit in widely-accepted nested national ecological classification. While the general public may not be aware of LTAs, the use of this system provides forest managers a way to classify the landscape and manage land within its ecological capability.

LTAs are ecological mapping units that describe common ecosystem characteristics (page D-6 of the Forest Plan). They are an important management tool, because they identify geographical areas that respond the same to ecological changes. For example, the group of LTAs on page 3-5 of the Forest Plan has wet, fine soils causing shallow rooting.

This makes trees more susceptible to windthrow. As discussed on page 1-12 of the DEIS. The Hiawatha used LTA information to align management area boundaries with LTA boundary delineations.

#373a

COMMENT: *I supported the continued use of 1986 MAs as opposed to Land Type Associations (LTAs), which clearly was rejected based on the configuration of all three new alternatives. I feel Alternative 2 MA boundaries need correction or adjustment. (#00768)*

RESPONSE: Most management area boundaries were aligned with landtype associations (LTAs). The LTA delineations are "top down," that is, derived from general landform information.

As the Forest continues ecological mapping and project implementation on the ground and LTA boundaries are updated, adjustments may be made in the MA boundaries. This commenter completed a very thorough review of the preliminary management area GIS map.

Many of the small "polygon area" errors discussed in the comments are inherent in any data set and do not affect the analysis. Every effort will be made to clean up the data as errors are discovered or as data is updated.

#373b

COMMENT: *Type of Change: (One map attachment TMB-1 in the Lily Lake vicinity)*

COMMENT: *I agree with the moving of the MA 2.3 - MA 8.3 boundary away from FR2246 roughly ¼ mile to the bluff at the edge of the hardwoods as done in Alternative 2. Type of Change: Boundary location issue (one map attachment TMB-2 in Dukes vicinity.) (#00768)*

RESPONSE: Thank you for your comments.

#373c

COMMENT: *The Dukes RNA is misdrawn on the MA map for all alternatives.*

1. *The entire western boundary has been GPS'ed following the on-site markings, and is farther west than shown (see attachment).*
2. *The establishment report indicates the RNA boundary is two chains (132 feet) north of FR2915, not on the road as drawn (see attachment).*
3. *The western boundary is not GPS'ed yet but needs to be drawn closer to the hemlock-hardwood edge rather than through the hardwoods. If the 3 changes above are made, the acreage is much closer than the Revision map. (#00768)*

RESPONSE: Adjustments to the GIS management area layer have been made based on the most current information.

#373d

COMMENT: *Boundary errors (two map attachments TMB-3 and TMB-4 in by AuTrain Lake and Hickey Creek vicinity)*

1. *The Hickey area is one on the forest boundary as opposed to an inclusion.*
2. *The AuTrain error shows land as water.*
3. *All the polygon errors I've seen have not been pointed out. There is the need for a good cleaning of the layer.*
4. *The MA layer should be available as a clean single-line concept rather than being cluttered with the ownership, stand and waterbody lines making the "big picture" hard to see. (#00768)*

RESPONSE: Editing of data to clean up isolated small polygon corrections is ongoing.

#373e

COMMENT: *Boundary location issue (one map attachment TMB-5 in Shingleton Fen north vicinity)*

The Shingleton cRNA is identified in the DEIS as having the same boundaries and acres in the 1986 Plan and the three new alternatives. This clearly is not true, as the attached map shows the current plan's boundary in green, and the new boundary is enlarged. The 3 new alternatives are about 110-120 acres larger, all in the northwest and western zone. (1.) While I can accept the boundary being moved northward to FR2251, it is totally out of line to move it over ¼ mile north of FR2251 into the productive hardwoods. That road interrupts any natural hydrologic function. The boundary needs to be moved to be coincident with FR2251 until it

meets the section 1 E/W line. (2.) On the west, my opinion is that the boundary has been extended too far to the west. (#00768)

RESPONSE: The boundary for this candidate RNA was not changed from that established as part of the 1986 LRMP. The boundary delineation was established from the candidate RNA records in the 1986 planning record.

#373f

COMMENT: *Boundary location issue (one map attachment TMB-6 in Scotts Marsh West vicinity)*

The boundary between MA 8.3 and MA 4.2 in Alt 2 should be moved between ¼ and ½ mile to the east over a roughly 3 mile stretch as shown in the attached map, to the purple line. Although this is not the LTA line, you have set plenty of precedent to deviate from LTA for other reasons.

These are productive sites, need management, and should not be encumbered with restrictions that are typically imposed on MA 8.3 areas. The same applies on the north end of the map in the private "80" zone. I do not propose moving the MA 8.1 boundary on the south end where the purple line encroaches.

Boundary location issue and MA designation (one map attachment TMB-8 in Herman Lake north vicinity).

A dogleg of MA 8.3 drops down to FR2254 along LTA lines. You have already removed and even longer dogleg of that LTA south of FR2254. That concept should be enlarged so the MA 8.3 boundary stops at the upland bluff not too far from the Indian River (purple on the attached map). Then "erase" and the "side" boundaries, making a continuous MA 2.3 polygon from the wilderness area to FFH-13 and beyond. (#00768)

RESPONSE: As noted in comment #373a, LTA boundaries were developed "top down." Deviations from the LTA boundaries were made for special areas with defined boundaries such as wilderness, wild and scenic rivers, etc. However, there was no attempt at the forest scale to refine LTA boundaries. They may be refined and boundaries adjusted when site-specific projects are proposed that entail more detailed analysis. To achieve vegetation goals and desired conditions, vegetation management will be required in MA 8.3.

#373g

COMMENT: *MA designation (one map attachment TMB-7 in Straights Lake area). An isolated MA 4.4 polygon should be MA 6.2 for consistency (see attached map). Polygon isn't large enough to manage Kirtland's Warbler either. (#00768)*

RESPONSE: Changes have been made in the final mapping.

#373h

COMMENT: *MA designation (one map attachment TMB-9 in Big Island Lake south vicinity). The 300' buffer along the south end of the wilderness is MA 2.3 but should be MA 6.2. in order to be consistent with that zone of the forest. (#00768)*

RESPONSE: This adjustment has been made in the appropriate GIS map layer.

#373i

COMMENT: *Boundary and MA designation (two map attachments TMB-10 and TMB-11 in Big Island Lake north vicinity). Several sliver polygons along the north wilderness boundary are MA 2.3 but should be MA 8.3 by simply ignoring the LTA line in that zone. Why manage isolated pockets?*

Boundary and MA designation (one map attachment TMB-12 in Big Island Lake northeast vicinity)

An isolated MA 2.3 polygon should either be connected to the Boot Lake MA 2.3 polygon or else simply absorbed into the adjacent MA 4.2 to the east. Why manage isolated pockets? (#00768)

RESPONSE: These minor adjustments have been made in the appropriate GIS map layer.

#373j

COMMENT: *Boundary and MA designation (one map attachment TMB-13 in Boot Lake west vicinity). An inclusion of MA 8.3 into the Boot Lake MA 2.3 polygon should be sliced off at a narrow neck and simply absorbed into the larger MA 2.3 around it. Also this map shows many typical polygon errors found in all the Alternative maps (a cluster of 4, and several isolated ones). (#00768)*

RESPONSE: The location of MA 8.3 is correct. It is associated with the Shingleton Fen LTA boundary. Editing of data to clean up isolated small polygon corrections is ongoing.

#373k

COMMENT: *Boundary and MA designation (one map attachment TMB-14 in Cherry Lake vicinity)*

1. *The boundary between MA 2.3 and MA 4.2 needs to move to the north (red line on attached map), as that zone has stronger soil and has higher potential for supporting late seral conditions.*
2. *The small polygon east of island lake campground might as well be absorbed into MA 7.1. Why manage isolated pockets? (#00768)*

RESPONSE: The MA coincides with the boundary between the Wetmore Outwash II LTA and the Steuben segment LTA and is correctly mapped. Both MAs have late seral vegetation goals. Editing of data is ongoing.

#373l

COMMENT: *Boundary and MA designation (one map attachment TMB-15 in Line Lake). An isolated MA 4.5 polygon should be MA 2.3. Why manage isolated pockets? Especially in places like that? Just for the sake of LTA? (#00768)*

RESPONSE: Changes have been made in the final mapping.

#373m

COMMENT: *Boundary and MA designation (one map attachment TMB-16 near Wetmore Lake). Two isolated MA 2.3 polygons should be MA 4.2. Why manage isolated pockets? If keeping MA 2.3 polygons, then they both should be drawn larger, moving the boundary south to the top of the bluff. (#00768)*

RESPONSE: Changes have been made in the final mapping.

#373n

COMMENT: *Boundary location issues (four adjacent maps starting near Munising TMB-17 and continuing with TMB-18/TMB-19 to the CCI Basin TMB-20). The boundary line between MA 2.3 and MA 4.2 was clearly roughed in and needs refinement before the final Revision. Clearly the line is a random one through the woods that can be more reasonably ties to on-site features. This series of maps is an effort to help you do that task.*

- *Move line to top of morainal ice-contact bluff.*
- *Move line onto M-94 from ice-contact margin to 8-mile corner.*
- *From 8-mile corner, go around sections 1 & 2 either on the north then west, or else south then west.*
- *Between Joes Lake and 16-mile lake, make the entire parcel 2.3 – the land can support that decision and the old growth should be in 2.3 not in 4.2 MA.*
- *South of Lake 17, the line should be moved to the east-west conifer edge, which is also the flat vs. rolling topography line, then follow the rolling hardwoods/flat pine edge to CCI land. (#00768)*

RESPONSE: See comment #373f. The MA boundary coincides with the boundary between the Munising disintegration moraines (MA 2.3) and the Wetmore outwash (MA 4.2). These may be refined and boundaries adjusted when site specific projects are proposed and LTA boundaries are revised.

#373o

COMMENT: *Boundary and MA designation (one map attachment TMB-21 in Pole Lake west vicinity) The Alt 2 S&G call for "usually" winter harvests in MA4.5, however this area is a tough chance in winter (very long plows. 1) If winter logging can be waived, I'd accept MA 4.5, but if not then 2) the area should be split between MA 2.3 and MA 4.5 as the attached map shows (dashed line) with the uplands as being 2.3 MA. (#00768)*

RESPONSE: There is no standard or guideline that would prevent winter logging. The desired condition statement indicates that timber harvest will generally occur in the winter. This is primarily due to the abundance of high water table in this area associated with the AuTrain-Whitefish lowland LTA.

#373p

COMMENT: *Boundary and MA designation (three map attachments TMB-22, TMB-23, TMB-24 in Stella Lake vicinity). This area is mostly private with isolated federal 40's and 80's, some with access and some without.*

1. *On the edges where federal ownership meets private are many slivers of polygons caused by LTA interacting with ownership to create isolated MA's – these need to be eliminated and slivers absorbed into the larger MA near it.*
2. *The isolated 40's and 80's have the same MA splitting problems. Obviously the MA 8.4 has to stay. I think that any smaller polygons that are partially 8.4 should go entirely 8.4. Any that are 2.3 or 4.2 should go to 4.5 MA for deer yard management. Maybe they will not support commercial harvest, but non-commercial habitat improvement sure is possible out in many of them and is far more justifiable in 4.5 than the other MA's. It also would tie 4.5 in with Rapid River 4.5 MA to the south. (#00768)*

RESPONSE: Editing of data to clean up isolated small polygon corrections is ongoing.

#373q

COMMENT: *Boundary and MA designation (one map attachment TMB-25 in Moses Creek vicinity). There is a dogleg of MA 4.5 to the north, between MA 1.2 and MA 8.4. Although drawn on LTA lines, I felt the area is more upland with pines and aspen (north of the red line on map) and may be more appropriate for management as 1.2 MA. (#00768)*

RESPONSE: The boundary coincides with the boundary between the Nahma lowlands LTA (MA 4.5) and the Isabella remnant moraine (MA 1.2) and is correctly mapped. Both MAs 1.2 and 4.5 management direction have vegetation goals for aspen and pines. Management of either species is appropriate for either MA.

#373r

COMMENT: *Boundary and MA designation (one map attachment TMB-26 in East Lake vicinity). There is a MA 4.2 polygon sliver between M-94 and the river corridor. It should either be physically connected to the 4.2 farther north or absorbed into MA 4.4 to the east. (#00768)*

RESPONSE: Changes have been made in the final mapping.

#373s

COMMENT: *Boundary and MA designation (one map attachment TMB-27 in Mormon Creek vicinity). There are two MA 4.5 areas that should be physically connected to each other but are currently separated by the Mormon Creek MA 4.2. No reason to split them and complicate future analysis... (#00768)*

RESPONSE: The MA boundary coincides with the boundary between the Nahma lowlands LTA (MA 4.5) and the Steuben outwash/ moraine (MA 4.2) and is correctly mapped.

#374

COMMENT: *Vegetation composition goals – general comment applicable to most MAs. The vegetation composition goals need to be checked to make sure the calculations were correct. I did most of these on the fly inside of an ID team meeting and never had the chance to go back and double check my calculations. I'd be glad to show Jean or someone how the calculations were made so they can be rechecked...Also in many management areas we chose to only show a percent in some of the older – larger size classes. That is ok but a low minimum percentage should be shown also in the smaller, younger size classes, or you are potentially setting the vegetation up for becoming all a single age class without recruitment of younger forests to replace desirable habitat in future years. Think long term....Another thing missing in the description of veg goals is the foot note about the % of openings being based upon the acreage in suited land but openings are not suited land and certain percentage of suited lands were not to be converted to openings. Ted knows about this needed comment and the commitment the ID team had made concerning it. (#01641)*

RESPONSE: Vegetation goals have been reviewed and modified for accuracy between the draft and final revised Plans. The footnote regarding how to calculate the openings was omitted in the draft Plan and has been added in the final revised Plan.

#375

COMMENT: *I do not understand the reasons for some of the MA changes. Why was MA 9.1 dropped? Why were these lands placed in this protective category in the first place? Why did most of the Betchler Marsh area go from 8.1 to 6.4? What made it valuable enough to be 8.1 in the first place? MA 2.2 was dropped and 2.3 added. What is the difference between the two except order of purpose for the MA? Are purposes stated in order of importance? I was once told they were not.*

In the legend on the large colored map accompanying the Proposed Plan, definitions of the MAs are different from the MA definitions in the Forest Plan for MAs 2.3, 4.2, 4.5, 6.1, 6.2,6.3,7.1 and 8.3. In some cases the general purposes have been abbreviated for the legend that I understand. I question the differences in order of purpose and omissions and additions. (#00547)

RESPONSE: Lands allocated to MA 9.1 in the 1986 LRMP (Forest Plan) were deemed "not needed to attain the planned goals and objectives during the immediate planning period but offering potential opportunities beyond this planning horizon" (1986 FEIS Appendix C, Pg C46). To consolidate and align management areas with LTA boundaries, these scattered and generally small allocations were dissolved into other MAs.

In the 1986 LRMP, MA 8.1 included a variety of special areas other than RNAs or candidate RNAs such as lighthouses, wildlife emphasis areas, and other special areas. The Betchler candidate RNA was a 248 acre parcel nested in the larger Betchler Marsh area. Both areas were allocated to MA 8.1 in the 1986 Plan. The area outside of the Betchler candidate RNA was allocated to this management area as a wildlife emphasis area, with an exception in the management direction to allow timber harvest.

The 2006 Plan clarifies the direction in MA 8.1 by retaining only RNAs and candidate RNAs and focusing the management direction on maintaining the ecological and scientific values for those areas. The Betchler Marsh area, outside of the candidate RNA, was allocated to MA 6.4. The purpose of MA 6.4 is to manage for wildlife habitat, which was the original intent for the Betchler Marsh area and remains the intent in the 2006 Plan.

As part of the candidate RNA analysis as discussed starting on page 3-287 in the DEIS and in Appendix D in the DEIS, the boundary of the Betchler candidate RNA was expanded from 248 acres to 421 acres, to better maintain the tamarack ecosystem for which this candidate RNA was proposed.

In the 1986 LRMP, MAs 2.1 and 2.2 were both primarily focused on quality hardwood sawlog management. MA 2.2 provided for more developed recreation than MA 2.1. Part of our goal in developing the revised Plan was to be less prescriptive and more strategic. Because the management emphasis was so similar, the two MAs were combined and re-named MA 2.3 to eliminated confusion. There is no area allocated to MA 2.1 and MA 2.2 in Alternatives 2–4. The 2006 Plan has no section on "purposes" as did the 1986 LRMP. Each MA has a "suited use" which is not listed in order of importance.

Management area descriptions on the maps are summarized for brevity on the map legend. The suited uses and desired conditions are further explained in the revised Plan for each MA and the intent is that the summary in the legend reflects those descriptions.

#376

COMMENT: *Throughout the proposal, under most MAs, a maximum size of temporary openings is indicated, usually 25 acres. No unnatural openings should occur in semi-primitive, wilderness, old growth or W&S areas. HNF personnel seem to be building into the Plan, a lot of latitude for themselves....The suitable size for a "temporary forest opening" is zero acres. (#00775*)

RESPONSE: Only MA 8.3 has a guideline limiting the maximum size of temporary openings to 25 acres. Temporary openings would not occur in MAs where timber harvest is not permitted such as wilderness, wild-classified sections of wild and scenic rivers, designated old growth, candidate and designated research natural areas.

Most MAs have a maximum limitation of 40 acres in accordance with NFMA. However, a guideline allows a maximum of 1,100 acres for management for the federally-listed Kirtland's warbler and sharp-tailed grouse. A guideline in MA 4.4 to limit the size of temporary openings was deleted because it conflicted with the 1,100 acres maximum in the forest-wide direction.

Current science, as discussed on page 308 of the Biological Evaluation indicates that Kirtland's warblers require stands larger than 1,000 acres. Even-aged silvicultural techniques that create temporary openings are an important tool to regenerate aspen that provides habitat for early seral dependant species as well as regenerate even-aged stands of jack pine on the outwash sand LTAs to provide habitat for Kirtland's warbler and associated species.

Management areas for wilderness (MA 5.1), semi-primitive non-motorized (MAs 6.1, 6.3) and wild and scenic rivers (MA 8.4 et al), do not mention temporary openings with the exception of MA 8.4.1 – Indian WSR. The Forest Plan would permit temporary openings not to exceed 5 acres in scenic segments with retention VQO or 10 acres in recreational segments with partial retention VQO in Indian WSR. As explained on page 3-52 of the Forest Plan, WSRs do not have vegetation management goals and on page 3-55, openings may be managed to achieve other objectives.

#377

COMMENT: *There are twenty-one management areas within the H.N.F. Only eleven of the management areas have specified t/r densities. The other ten are defined "not specified." Because of this I have used a "specified average" of the eleven. That specified road average ratio is 3.2:1. The specified trail ratio is 1:1 - there are 1,399 square miles in the H.N.F. - 1,399 x a ratio of 1:1 = 1,399 miles of motorized trail density. - 1,399 x a ratio of 3.2:1 = 4,477 miles of system roads density Note: these are recommended maximum densities.* (#00029)

RESPONSE: See comment #355. Table 7700-2 in the draft Forest Plan displays the maximum densities for roads and trails. Some MAs do not have specified road densities, as roads are not compatible with the goals of the area. Management Area 5.1 (wilderness), is an example. Also refer to Table 3-TRANS-3 on page 3-147 of the draft EIS. The table shows the maximum miles of roads allowed by management area by alternative.

Management areas without road density guidelines are not included in this table. For Alternative 2, which is the alternative displayed in the draft Forest Plan, the total maximum miles of road are 4,132. This figure is 345 miles less than your recommendation of 4, 477 miles. Alternative 3 with 4, 216 miles, is the closest to the commenter's recommendation.

Tables 2300-3 and 2300-4 in the draft Forest Plan display the maximum miles of motorized trails. Table 3-REC-4 on pages 3-328 and 3-329 of the draft EIS displays the maximum miles of designated OHV and snowmobile trails by alternative. Alternative 2 specifies 75 maximum miles of OHV trails and 340 for snowmobile trails, quite a bit less than the commenter's recommended 1,399.

Again Alternative 3 has the highest maximum miles. The commenter's calculations differ primarily due to the average density being applied to the entire forest, including areas not suited for roads or motorized trails such as wildernesses and wild segments of wild and scenic rivers.

#378

COMMENT: *The National Forest Management Act requires each forest plan to contain standards and guidelines for each management prescription for each management area, which provide important boundaries on the actions of the agency in implementing the plans. Each management prescription should contain its own standards and guidelines, and they should be clear, appropriately detailed so that the public can have a good idea of what is being planned, and enforceable. Vague, broad statements, which include terms, like "should" or "may" or "at the discretion of' are unenforceable. These kinds of standards and guidelines do not provide any boundary on agency action and do not comply with the requirements of the law.* (#00043, 00051-00186, 00192-00203, 00212-00214, 00225- 00227, 00244-00246, 00254-00259, 00261-00263, 00265-00266, 00268-00272, 00280, 00282-00290, 00293-00297, 00328-00334, 00336-00338, 00340-00347, 00452-00458, 00485-00489,

00777, 00778, 02226, 02619, 02619-02635, 02637-02641, 02643, 02645-02648, 02650, 02652-02660, 02662-02674, 02676-02681

RESPONSE: The National Forest Management Act states that standards and guidelines be specified for particular purposes during forest planning, but does not provide any detail or definitions related to the terms. It further states that regulations for Forest Plans will be promulgated.

Forest Plan revision is being conducted under § 219.14(e) of the 2004 planning regulations that allow continued use of the provisions of the 1982 planning regulations. The 1982 planning regulations at 219.11 (c) state that the Forest Plan shall contain, "Multiple use prescriptions and associated standards and guidelines for each management area including proposed and probable management practices..." Although not defined in the Act or regulations, standards are generally interpreted as actions that "must" occur, while guidelines "may" be met. The Glossary (Plan and DEIS) has definitions of "standard, guideline, goal and objective" as they relate to forest planning.

#379

COMMENT: *Timber management guidelines for the management areas are vague; making it difficult to judge the likelihood of reaching the stated desired future conditions. (#02167*)

RESPONSE: Due to the diversity of vegetative types and conditions in the Hiawatha, it is desirable to permit a broad array of activities and techniques. Being too prescriptive in the Forest Plan could prevent the use of innovative solutions developed in the future. As projects are developed to implement the Forest Plan, specific design features will be developed. The effects of these projects will be analyzed consistent with the National Environmental Policy Act and the public will have a chance to participate and comment on these specific proposed actions.MAs have detailed vegetation goals for each ELT and seral stage. Implementation of these goals will move the landscape toward the desired condition. Objectives in Appendix A, pages A-3 and A-4 describe management practices and vegetation objectives for each ELT to achieve desired conditions.

#380

COMMENT: *It would seem like a focus on watershed health in Great Lakes as affected by Hiawatha is a best management approach. (#02691)*

RESPONSE: The forest-wide desired conditions, goals and objectives related to Watershed Management on pages 2-10 AND 2-11 are designed to maintain watershed resiliency during management activities designed to meet other resource objectives (DEIS page 3-227). Pages 3-219 through 3-253 in the draft EIS discuss how the Forest Plan would provide for watershed health.

#380a

COMMENT: *The permissible vegetation management in the MAs through which the Scenic Byway passes need review. The Forest along the Byway should not be managed for timber production as is possible in 2.3 and 6.2. (#00547)*

RESPONSE: Management area allocation is largely unchanged from the 1986 Forest Plan. For example, some management areas were combined such as MAs 2.1 and 2.2 to create MA 2.3 and the facilities that comprise MA 7.1 were adjusted.

The Forest Plan sets MA direction and allocates lands for various potential activities and uses. Site specific analysis, public involvement and a decision is required before ground disturbing activities occur on the Forest. Thus, even though portions of the Scenic Byway lie within MA 2.3 and 6.2, the allocation of the management area does not commit activities to occur.

During Forest Plan revision, an analysis of the lands suited for vegetative treatments was completed and lands within the Scenic Byway were not excluded. To complement the scenic byway, vegetative treatments for forest health, or scenic vistas or other objectives may be proposed or enacted in the future. The ability to accomplish vegetative treatments that compliment the byway on suited lands is part of multiple use management and can be fully consistent with the desired condition and management of the scenic byway.

Vegetation Management

#381

COMMENT: *ES-7 [Executive Summary page 7] Discussions I have heard from Forest staff have "over sold" the intended change of MA 3.1 and 3.2 to MA 2.3. While there are no MAs assigned to even aged hardwood management there must continue to be even aged hardwood management on the Forest in order to maintain highly desirable shade intolerant species like cherry, birch and oak and intermediate species like ash, red maple and even hemlock in places. Percentages of even aged vs. uneven aged management calculated in the vegetation analysis of the management situation are appropriate and should not be changed. (#01641*)

RESPONSE: The desired condition statement for MA 2.3 includes the species mentioned as a component of the vegetation composition for this MA. While the desired condition for this management area emphasizes shade-tolerant species, the management direction also recognizes that some uneven-aged management will be necessary to maintain shade intolerant species.

The 2006 Plan vegetation goals (page 3-10) show the desired amount of mid-seral species. Based on guideline 1 on page 3-11 of the Plan, up to 25 percent of this MA could be managed under even-aged management. On page 3-27 of the DEIS, shelterwood treatments would be used to regenerate late seral types of hardwoods, pine and hemlock to achieve vegetation composition goals.

#382

COMMENT: *[page] 3-9 The Desired Conditions and /or the vegetation Composition Goals section should have something about stand structure of uneven aged northern hardwoods. The multi layered structure of uneven aged stands is an extremely important component of this system and it will not redevelop for a very long period without treatments (selection harvests) because most of these stands are very dense, young, small crowned, and healthy trees. (#01641*)

RESPONSE: The third paragraph on page 3-9 of the DEIS under Desired Conditions states, "Trees from seedling to sawtimber size grow within the same stand." This indicates that a multi-layered structure is desired.

#383

COMMENT: *[page] 3-11 Someone needs to run another quick check on the 75% number specific to MA 2.3. I had run these numbers for the Forest as a whole but don't think I did them specific to the MA2.3. Need to compare the NH types against the NH types, which likely would be managed as even aged. The 75% sounds about right but I don't think anyone ever actually calculated the number to make sure it is realistic when considering the ELTs and the mix of species desired. (I just was on the Allegheny and the management they are doing as even aged is pretty neat in terms of keeping less tolerant hardwoods in the system. The cherry component the Hiawatha has, is a result of the cut, burn and run treatments that those stands received 100 years ago and some similar treatments will be needed to keep that component for W/L needs. The small clear cuts put in on the old Addis Lakes sale in Comp 25 (I think) on Munising are good examples of maintaining black cherry. (#01641*)

RESPONSE: We have verified that the guideline to manage for a minimum of 75% as uneven-aged management is accurate to meet the vegetation goals for species composition for this MA.

#384

COMMENT: *page 3-47 states the suited use of MA 8.3, semi-primitive lands, "to supply forest products to the regional economy." It is absurd to log over 100,000 additional acres under the guise of managing "for older forests that provide remote habitat." The best way to manage for older forests is to leave them alone. (#00775*)

RESPONSE: As stated on page 3-48 of the Forest Plan, timber harvest operations would generally be small scale with infrequent entries. Older forests will not last forever. Regenerating some areas over time would establish a variety of age classes that can replace the older stands as they start to die or if they are destroyed by insects, disease, fire or windthrow.

Thinning will improve the vigor of the remaining trees as competition for resources will be reduced. Vigorous trees will live longer and be more resistant to insects, disease, windthrow and fire. It is important to note that the vegetation goals apply only to lands classified as suited for timber production.

Under the 2006 Plan, 41% of the land in MA 8.3 is classified as unsuited for timber production. Timber harvest on unsuited lands does not occur as part of the Forest timber program. This MA is also an important area as refugia and denning sites for seclusion wildlife species such as gray wolf and Canada lynx.

While the vegetation goals on page 3-49 of the revised Plan emphasize late seral, larger size classes, there is a desire to keep some mid and early seral species as components in this MA. Those cover types provide habitat and a food source for prey species such as snowshoe hare and white-tailed deer.

Roadless/Wilderness

#385

COMMENT: *...The Hiawatha and Ottawa National Forests have amazing wilderness potential that is being overshadowed by a push for timber production and irresponsible use of All Terrain Vehicles (ATV) and snowmobiles. (# 00679-00716, 00718-00734, 00765, 00769-00773, 00780-00857, 00862-01180, 01182-01372, 01374-01603, 01762-01949, 01951-01997, 02222, 02249, 02250, 02683, 02685)*

RESPONSE: The Forest Service's mission is, "to achieve quality land management under the sustainable multiple-use management concept to meet the diverse needs of people" (Forest Service Mission Statement). Elements within this mission are to provide for healthy forests, and outdoor recreation opportunities (both motorized and non-motorized) and wilderness.

During forest plan revision, the Hiawatha was required to complete a roadless inventory and evaluate any qualifying areas for potential wilderness recommendation. DEIS Appendix C outlines the roadless inventory process, criteria, and findings for the Forest. Page 2-15 of the DEIS summarizes the outcome of the roadless inventory and wilderness evaluation.

The Chief of the Forest Service has identified unmanaged recreation, especially impacts from unmanaged OHV use, as one of four key threats facing national forests and grasslands today. Concern has been expressed about use of unplanned roads and trails, erosion, lack of quality OHV opportunities, water degradation and habitat destruction from OHV activity.

In response to this issue, in January 2004, the Chief chartered two national teams to develop policy and tools to address this issue effectively at the field level. Final results from these teams are not yet available; however, a Draft OHV Policy for National Forest System Lands was released for 60-day public review and comment on July 7, 2004 (USDA, July 2004). The comment period ended on September 13, 2004.

The USDA Forest Service Strategic Plan for Fiscal Years 2004-2008 also identified managing motorized recreation as one of the primary outdoor recreation opportunity goals, stating "... it is critical that we improve management of off-highway vehicle access and use on NFS lands to preserve high-quality experiences for all recreational users" (DEIS page 3-322). The managed use of OHVs is recognized as an acceptable use of national forest lands.

Cross country travel (travel off of designated routes) by OHVs is not permitted on the Forest to help reduce the likelihood of resource damage in sensitive areas, to eliminate noises and intrusions in areas away from roads and to reduce conflicts between recreationists (DEIS page 3-325). No change in this policy was proposed in any of the alternatives.

The intent of Alternative 2 (and the other alternatives as well) for allowing additional miles of motorized and non-motorized trails to be developed, is to provide a more useable trail/route system on the Forest through the creation of loops and connections between the existing trail/routes, services and facilities, and to achieve the desired condition for recreation access on the Forest (proposed Plan page 2-3). The management allocations to manage OHV use on the Forest and the effects of this management direction (and that of the other alternatives) is found in Chapter 3 of the DEIS.

#386

COMMENT: *Alternative 2 fails to provide new recommendations for new wilderness eligibility. DEIS 2-15. All of the limited roadless areas remaining, and all acres that fit the definition of eastern wilderness as discussed in the comments of Northwoods Wilderness Recovery, should be identified as potential Wilderness Areas and recommended for designation now before they are rendered unsuitable by increased road building, fragmentation, and the loss of other potential wilderness from extensive timber harvesting. Without thorough explanation, however, the Forest Service has given the designation of potential wilderness the lowest priority in both the DEIS and the Proposed Plan. This is particularly unjustified since the Hiawatha has only tiny slivers of Wilderness Areas.*

The lack of any recommendations for wilderness designation fails to meet the burgeoning need for wilderness documented by agency data and studies. The entire inventory and evaluation process runs contrary to clear Congressional intent for the inclusion of deserving wild areas in the National Wilderness System and limits Congress's opportunity to consider these special areas for permanent preservation...

... 36 C.F.R. § 219.17(a) (1) combined with its sub-part, (a)(I)(i), states: "During analysis of the management situation, the following areas shall be subject to evaluation: (i) Roadless areas including those previously inventoried in the second roadless area review and evaluation (RARE II), in a unit plan, or in a forest plan, which remain essentially roadless and undeveloped, and which have not yet been designated as wilderness or for nonwilderness uses by law. In addition, other essentially roadless areas may be subject to evaluation at the discretion of the Forest Supervisor."

...The FEIS does not offer an adequate range of alternatives for wilderness and fails to seriously consider a maximum wilderness alternative in violation of NEPA. In the final plan a full and fair study and recommendation of suitable unroaded areas for wilderness designation is needed. (#01761)

RESPONSE: As referenced in the DEIS, "Federal agencies are required by NEPA to rigorously explore and objectively evaluate all reasonable alternatives and to briefly discuss the reasons for eliminating any alternatives that were not developed in detail (40 CFR 1502.14). Public comments received in response to the Proposed Action provided suggestions for alternative methods for achieving the purpose and need.

Some of these alternatives may have been outside the scope of the proposed changes, duplicative of the alternatives considered in detail, or have components that would cause unnecessary environmental harm. Therefore, a number of alternatives were considered, but dismissed from detailed consideration for reasons that were cited.

Seven alternatives were considered during the initial analysis process. Some of the alternatives considered were developed internally and some were proposed by outside groups. Some alternatives had similar themes, so they were combined" (DEIS page 2-15).

Nothing in NEPA requires an alternative for "maximum wilderness." In addition, "The National Forest Management Act (NFMA) requires that a broad range of reasonable alternatives be developed and analyzed during the planning process. There are four proposed alternatives in the Draft Environmental Impact Statement (draft EIS).

Each alternative has a different approach to managing the Hiawatha National Forest's resources for the next 10 to 15 years. Each of these alternatives is a potential forest plan that can be implemented if selected" (DEIS p. 2-1).

During Forest Plan Revision, the Forest completed a roadless inventory and evaluated any qualifying areas for potential wilderness recommendation, in accordance with the Forest and Rangeland Renewable Resources Planning Act of 1975. The Forest followed the requirements for inventory and evaluation of roadless areas in accordance with 36CFR 219.17, Forest Service Manual 1923, and Forest Service Handbook 1902.12.

The Eastern Region, Regional Forester issued a letter dated August 1997 to provide clarification of this same manual and handbook direction and to provide for consistency in the interpretation and

application of manual and handbook direction across national forests in the Eastern Region.

The Fibre area is the only area that met the roadless inventory criteria. Appendix C (DEIS) outlines the roadless inventory process, criteria, and findings for the Forest. Page 2-15 of the DEIS summarizes the outcome of the roadless inventory, wilderness evaluation, and the rationale why the Fibre area is not recommended for wilderness designation.

It is also important to note that this is not the first inventory conducted on the Forest for areas that meet the criteria for roadless, nor the first wilderness evaluation. The Forest was inventoried previously under RARE I and RARE II and in the development of the original Forest Plan in 1986. That inventory identified eight roadless areas, six of which were designated as Wilderness in the Michigan Wilderness Act (1987). The two remaining areas were inventoried as part of the revision process, one of which still retains roadless characteristics (Fibre).

The previous inventories were conducted in compliance with applicable laws, regulations and Forest Service Manual and Handbook direction. Based on this fact, it is neither unreasonable nor unlikely that no new areas meeting roadless characteristics were identified in the latest inventory.

#387

COMMENT: *Under Wilderness, on page 2-7, why are some of our largest remaining unprotected old growth stands not being recommended for wilderness? (#00775*)

RESPONSE: See comment #386. The Hiawatha has approximately 500 acres of "old growth" stands. These stands are scattered across the Forest and do not in themselves meet the criteria for inventoried roadless areas.

#388

COMMENT: *We have millions of acres of wilderness in the United States and its okay…. It's time to say, "that's enough!" To do otherwise is irresponsible and wrong, unless we as a society can demonstrate reduced consumption and reduce global demand for wood products…. (#00388)*

RESPONSE: The Forest Service's mission is, "to achieve quality land management under the sustainable multiple-use management concept to meet the diverse needs of people" (Forest Service Mission Statement). Elements within this Mission are providing for healthy forests and outdoor recreation opportunities, both motorized and non-motorized and wilderness.

As part of Forest Plan Revision, the Forest is required to complete a roadless inventory and evaluate any qualifying areas for potential wilderness recommendation. The Fibre area is the only area that met the roadless inventory criteria. Appendix C (DEIS) describes the roadless inventory process, criteria, and findings for the Forest. Appendix C also describes the process, criteria and findings for wilderness evaluation and the analysis of the Fibre area.

Page 2-15 of the DEIS summarizes the outcome of the roadless inventory and wilderness evaluation. The Hiawatha has 37,020 acres of designated wilderness, which comprises about 4% of the total Forest area.

#389

COMMENT SUMMARY: ***I believe that the criteria used to evaluate proposed wilderness areas is far stricter than that in the legislation setting up criteria for eastern Wilderness Areas.***

Region 9 should review that criterion so that it conforms to the legislation and to legislative intent, and then the Hiawatha National Forest (ONF) can redo its wilderness evaluation. (#01651)

COMMENT: *We appreciate the review of potential Roadless areas in the Hiawatha, but have serious concerns about the criteria used to evaluate these areas. The use of the Recreation Opportunity Spectrum (ROS) and the Regional Guidance (The 1997 letter from the Region 9 Forester are not part of the primary criteria set in the Forest Service Handbook (1909.12 Chapter 7, 7.11) for identifying roadless areas. The Roadless criteria used falsely limits the number of roadless areas in the Hiawatha. Further, we do not believe the Forest has the statutory authority to make such restrictions to the roadless inventory and ask that the roadless inventory be redone using the FSH 1909.12 Chapter 7.1 criteria.*

In particular I would like to see the Betchler Marsh and lands adjacent to the Big Island Lake Wilderness Revaluated for Roadless. By using the Regional Guidance and the ROS criteria the Hiawatha eliminates large roadless areas that have some natural qualities that are degraded, making it nearly impossible for these areas to be restored to a state where they meet Wilderness potential. Also, the criterion excludes smaller high quality natural areas from being protected. This creates a system that restricts areas from being restored to Wilderness.

The need for Wilderness areas in the Upper Midwest is growing fast, as recreation is increasing at a dramatic rate and development is fragmenting the existing natural areas. The Hiawatha needs to explore the potential for actively developing and planning more roadless and wilderness areas. (#00043, 00051-00186, 00192-00203, 00212-00214, 00225-00227, 00244-00246, 00254-00257, 00259, 00261-00263, 00265, 00266, 00268-00272, 00280, 00282-00290, 00293-00297, 00328-00334, 00336-00338, 00340-00347, 00452-00458, 00485-00489, 00777, 00778, 02226, 02619-02635, 02637-02641, 02643, 02645-02648, 02650, 02652-02660, 02662-02681)

RESPONSE: See comment #386.

#390

COMMENT: *We agree with the need for analysis for additional Wilderness. However, guidelines developed by Region 9 are arbitrary and not consistent with the Wilderness Act. For example, the Wilderness evaluation suggests that the cars and snowmobiles can be heard throughout the Fibre area, limiting opportunities for solitude. These noises are infrequent and not a valid argument to disqualify areas from Wilderness designation.*

The intent of the Eastern Wilderness Act was to create a set of criteria that recognized eastern conditions and were therefore less restrictive than those in the Wilderness Act, not more restrictive. As the Hiawatha has applied criteria, it appears more difficult for roadless areas to qualify as suitable for Wilderness. This contradicts the intent, and the language, of the Wilderness Act. (#00043, 00051-00186, 00192-00203, 00212-00214, 00225-00227, 00244-00246, 00254-00257, 00259, 00261-00263, 00265, 00266, 00268-00272, 00280, 00282-00290, 00293-00297, 00328-00334, 00336-00338, 00340-00347, 00452-00458, 00485-00489, 00777, 02619-02635, 02637-02641, 02643, 02645-02648, 02650, 02652-02660, 02662-02681)

RESPONSE: See comments #386 and 389.

#391

COMMENT: *There are many remote areas across the Hiawatha that should qualify for consideration as additions to the Wilderness system. These include, but are not limited to the Fibre, Betchler March, Remote Habitat Area, lands bordering Rock River, Canyon and Big Island Lake Wilderness Areas, and lands bordering all designated and study Wild and Scenic Rivers. Hiawatha lands are perhaps the most remote lands in the Great Lakes region and most of this National Forest should be analyzed for its Wilderness values. Why was the Fibre area the only area analyzed for Wilderness? Meeting the Roadless criteria is not a necessity for Wilderness Designation.*

I disagree that the Fibre is not a suitable Wilderness area. It is a large roadless area, retains a natural quality, offers opportunity for solitude, and represents habitat for rare and endangered animals such as Canada Lynx and potentially Hine's Emerald Dragon Fly. (#00043, 00051-00186, 00192-00203, 00212-00214, 00225-00227, 00244-00246, 00254-00257, 00259, 00261-00263, 00265, 00266, 00268-00272, 00280, 00282-00290, 00293-00297, 00328-00334, 00336-00338, 00340-00347, 00452-00458, 00485-00489, 00777, 00778, 02226, 02619-02635, 02637-02641, 02643, 02645-02648, 02650, 02652-02660, 02662-02681)

RESPONSE: See comments #386 and 389. Note, we do not know where the "Remote Habitat Area" is. We believe that you mean "Betchler *Marsh Remote Habitat Area.*" The Betchler Marsh area was reviewed as part of the Roadless Area Inventory, as were the other areas identified. These areas did not meet the roadless inventory criteria in accordance with 36CFR 219.17, Forest Service Manual 1923, and Forest Service Handbook 1902.12.

Management Area 5.1

#392

COMMENT: *Round Island, Mackinac and Delirium Wildernesses do not need any management plans other than to be left alone. (#00775*)

RESPONSE: The National Forest Management Act (16 U.S.C. 1600) gives the Hiawatha authority to conduct wilderness management planning by establishing a Forest Plan. The Forest Plan is implemented by developing implementation schedules for each wilderness that include projects and activities designed to achieve and comply with Plan management standards and guidelines (Forest Service Manual 2322).

Resources and other elements to be addressed in these schedules include: recreation (including visitor education), forest cover, forage, fish and wildlife, federally-listed threatened or endangered flora or fauna, domestic livestock, soil and water (including weather modification), minerals, historical and cultural resources, fire, land ownership, insect and diseases, air quality, other agency use, the trail system (including trailheads), signing, communication, and research (Forest Service Manual 2322.03, 2b). The Forest Plan says the need for these management plans will be evaluated (page 2-7).

#393

COMMENT: *Wilderness areas do not serve the general public. Please note walking trails that are not used by vehicles will grow up in 5-10 years so you can't walk them. Please ask the people that prefer Wilderness hunts, if they walk in on vehicle trails? (#02225*)

RESPONSE: Wilderness is designated by Congress and recreation is not the sole use of these areas. Refer to Suited Uses section on page 3-21 of the draft Forest Plan.

Management Areas 6.1

#394

COMMENT: *Further analysis needs to be considered in regards to highly restrictive designations existing or proposed in MA's such as semi-primitive, special interest areas, and additional RNA designations. Many of these areas were not fully analyzed in the previous plan and were "arbitrary and capricious" designations due to the settlement agreement catering to the Wilderness advocates such as the Sierra Club et al.; further analysis of these areas as to demonstrated need and the Healthy forests will show that a return to pre-1986 plan roaded natural designations is justified. (#00298, 00767)*

RESPONSE: Refer to comments #052 and 060d for additional information. A variety of uses and ecological conditions are needed on the Hiawatha to be consistent with the Multiple Use/Sustained Yield Act. The alternatives were designed to achieve multiple use objectives in different ways.

As stated in the Notice of Intent to Revise the Forest Plan, the only changes to ROS objectives that were proposed are for the Delias Run/Boot Lake and Buck Bay areas to change from semi-primitive non-motorized emphasis to semi-primitive motorized objectives. The effects of the various alternatives on recreation using ROS class opportunities, including semi-primitive, can be found on pages 3-293 through 3-342 of the DEIS. Forest Plan revision requires evaluation of any candidate Research Natural Area" (DEIS page D-2). Appendix D of the DEIS describes what was done to evaluate the candidate RNAs and any changes that resulted from this evaluation. The effects of semi-primitive ROS objectives and RNAs for each alternative are described in Chapter 3 of the DEIS.

#395

COMMENT: *We would like to see a further analysis of the 6.1, 6.2 and 6.3 designations. Both 6.1 and 6.3 designations are the restrictive SPNM designations what was the rationale for two separate MA areas? The SPM or roaded natural MA's should also have access to the Lake Superior shoreline. With the abundance of Wilderness areas on the Hiawatha we oppose any further de-facto wilderness areas such as remote habitat, non-motorized, old growth, (and any RNA or aspiring RNA areas outside of the designated Wilderness areas.) With the current low use of RNA areas there is no demonstrated need for more of these super-de-facto wildernesses.*

Current Forest direction allows research forest wide with out the need to contact the God of RNA's. A simple statement in Forest literature that would request research data to be shared with the USFS on a voluntary basis should be adequate, and should be a given if true scientific work is being done.

ROS (Boot Lake, Buck Bay Creek and Delias Run) Redesignation from SPNM to SPM; we would prefer to have the designation change back to the pre-1986 ROS inventory of Roaded Natural. The 1986 restrictive designations were probably driven by anti-access groups in the settlement agreement. (#00298, 00767)

RESPONSE: Refer to comments #052, 060d and 394. Management Areas 6.1 and 6.3 differ in ecological types, soil types and land types as well as providing habitat for different species with some overlap. Remote habitat, non-motorized areas, old growth, and RNAs have different suited uses than wilderness and are part of the multiple uses provided by the Hiawatha.

While it is true that research can occur on many areas of the Forest, RNAs were established to preserve a wide spectrum of relatively unaltered representative areas with special or unique characteristics of scientific interest and importance that in combination, form a national network of ecological areas for research, education and maintenance of biological diversity (draft EIS page D-1).

For this reason, recreational and management activities in RNAs are designed to be low to maintain the relatively unaltered condition.

#396

COMMENT: *There are roads in SPNM areas, which are not closed and have been routinely used for years for motorized recreation... MA 6.1 encompassing Grant's Creek has a well-used road and numerous user created roads and trails which are ruining the area. MA 6.3 on Naomikong and Menekaunee Points has a well-used road and a two-track used by OHVs. Why has this been allowed to continue in these SPNM areas?*

According to the figures on page 3-303, DEIS only 6% of the Hiawatha is for non-motorized recreation, and in some cases these areas are, in reality, used for motorized purposes. There should be a better balance between SPM and SPNM recreation needs. (#00547)

RESPONSE: See comments #052 and 060d for additional information. The 1986 Plan used regional ROS criteria to identify the desired management objectives across the Forest, some of which reflect existing condition and others which remain management objectives to achieve (DEIS page 3-293).

As explained on page 3-301 of the DEIS, existing facilities that exceed the ROS objective are permitted until they can be managed to meet the intended ROS objective. As stated on page 1-6 of the proposed Forest Plan, "The final determining factor in carrying out the intent of the Forest Plan is the level of funding, which dictates the rate of implementation of the Plan." Areas referenced in the above comment have not yet achieved the desired condition for the MAs.

In the Notice of Intent to Revise the Forest Plan, the only proposed change to ROS objectives were for the Delias Run/Boot Lake and Buck Bay areas. These areas were proposed to change from a semi-primitive non-motorized (SPNM) emphasis to semi-primitive motorized (SPM) ROS objectives. In Alternative 1, Boot Lake, Buck Bay and Delias Run would continue to be managed toward SPNM objectives. In Alternatives 2-4 these areas would be managed toward SPM objectives.

The effects of various alternatives on recreation using ROS class opportunities, including semi-primitive, can be found on pages 3-293 through 3-342 of the draft EIS. Table 3-ROS-5 identifies the range by percent of ROS objectives across the alternatives.

Alternative 1 is continued implementation of the 1986 Forest Plan and would manage toward a ratio of 6% SPNM and 1% SPNM emphasis and 19% managed as SPM. Alternative 2, the proposed Forest Plan, would manage the Forest toward a ratio of 7% SPNM objectives and 22% SPM. Alternative 3 would manage toward 7% SPNM objectives and 11% SPM objectives. Alternative 4 would provide the greatest over percentage of SPNM management objectives (8%) between alternatives and manage toward 31% SPM objectives.

Management Area 6.2

#397

COMMENT: *As a resident adjoining the proposed 6.2 designation at Salt Point, I suggest that the area be re-designated 6.1 in keeping with the plan's change to less "spot" designation and more sensible area designations. (#00238*)

RESPONSE: The area which you are referring to was designated as MA 7.1 in the 1986 LRMP (Alternative 1) as part of Forest Plan Amendment 5. This management area emphasizes developed recreation, such as campgrounds and picnic areas.

It was inadvertently mapped as MA 6.2 in Alternative 1 in the map accompanying the draft EIS. The Forest modified the MA 7.1 boundaries to encompass only the developed recreation sites. Once this was done, the areas that were removed from the 7.1 were re-allocated. In this case, this area was allocated to MA 6.2 which emphasizes semi-primitive recreation rather than developed recreation.

The area was not allocated to MA 6.1 (non-motorized) because Forest Highway 42 (also known as the Whitefish Bay Scenic By-way) runs through this area.

#398

COMMENT: *The small 6.2 areas northwest of the narrows between Lake Superior and the Whitefish Bay Scenic Byway should be unsuited. (#00547*)

RESPONSE: DEIS page F-1, identifies lands that are unsuited for specific reasons. If the areas do not meet any of these criteria, they are suitable for timber production.

Management Area 6.4

#400

COMMENT: *page 3-34, on MA 6.4, states the proposal to provide even and uneven-aged timber products to the regional economy. Then it mentions the species that would ... benefit, even though they'd benefit more by having their habitat undisturbed. Logging is not compatible with a "semi-primitive" experience. (#00775*)

RESPONSE: The Hiawatha is charged with multiple use management. This MA is designed to provide a mixture of uses, not to maximize any single resource. Forest composition and structure, such as young aspen and hardwoods, will benefit wildlife requiring early seral species such as deer and snowshoe hare (page 3-35 of the revised Plan) and provide a prey base for species such as gray wolf and Canada lynx. As explained on page 3-35, many roads may be closed to provide non-motorized opportunities and for wildlife habitat protection, when not needed for management activities. While active timber sales may not be compatible with recreation use, in this MA, timber harvest activities would be scheduled to avoid impacts to wildlife habitat areas and recreation use (proposed Forest Plan p. 3-35).

Management Area 8.1

#401

COMMENT SUMMARY: ***I am opposed to RNAs and would certainly not want to see any additional areas.***

Research can be done any time anywhere, and with the gravity of the world supply/ demand for timber issue, I consider them a luxury, irresponsible and wrong. (#00388)

COMMENT: *We are still opposed to any RNA designations outside of designated Wilderness areas and would not like to see these exceed minimum size requirements such as 80 to 160 acres at the most, the forest plans state that (SIA) areas could meet an alternative to RNA designations, the draconian (de-facto wilderness) restrictions required by RNA designations are not justified in light of past usage on the Forests (ex. Hays Tower no documented use), others very low use over the previous Plan period; any areas to be designated "Special and Unique" should meet a very stringent criteria*

... Note that the USFS could not meet the criteria in the case of the Walkinshaw wet lands case USFS vs. Oceana drain commissioner in "special and unique" proofs; in regards to representative" areas on the Forests the entire Forests would easily meet this criteria and therefore the entire Forests could be classified as a aspiring RNA area ...Is the Forest Service intending to remove the

"valid existing rights" of the general public as to access to the Forests; note the case of Ms. Stupak-Thrall vs.Veneman et al.

Non Significant Issues pg. ES-12: cRNA evaluation; We consider 20,373 acres a significant issue...[we oppose] designations [of RNAs] in perpetuity of any lands outside of existing Wilderness. Due to the low use of existing RNA's for research, its stated primary use, there is no demonstrated need for any further RNA designations. (#00298, 00767)

RESPONSE: Research natural areas (RNAs) are part of a national network of ecological areas designed in perpetuity for research and education and/or to maintain biological diversity on the National Forest System lands.

The areas identified in the DEIS and Proposed Forest Plan are carried forward from the 1986 Forest Plan (LRMP). As discussed in the Notice of Intent, designation of RNAs is outside the scope of the Forest Plan revision. As part of the revision, the Forest reviewed existing candidate research natural areas based on new information and technology since the 1986 LRMP. Each of the candidate RNAs on the Hiawatha is an ecological representation that is unique. Boundaries of some candidate RNAs were adjusted based on new information such as delineation of ecological land types, and new technology for more accurate mapping using Geographic Information Systems software. Many of the candidate RNAs and RNAs are wetland areas that provide habitat for federal and state listed plants or have unique ecological value.

RNAs can only be designated by the Chief of the Forest Service through an establishment process. Prior to recommendation of candidate RNAs for RNA status, each candidate will be thoroughly evaluated (with public involvement) and an establishment report will be prepared. Candidate RNAs are an administrative classification until such time as a detailed site specific evaluation is completed, and are not designated "in perpetuity."

#402

COMMENT: *We appreciate the review of the Candidate Natural Research Areas (cNRA). I am unsure of why so little action was taken to upgrade these areas to Natural Research Areas. Were other areas reviewed to assess if they should be considered as Candidate Natural Research Areas?* (#00043, 00051-00186, 00192-00203, 00212-00214, 00225-00227, 00244-00246, 00254-00257, 00259, 00261-00263, 00265, 00266, 00268-00272, 00280, 00282-00290, 00293-00297, 00328-00334, 00336-00338, 00340-00347, 00452-00458, 00485-00489, 00777, 02619-02635, 02637-02641, 02643, 02645-02648, 02650, 02652-02660, 02662-02681)

RESPONSE: As discussed in the Notice of Intent, designation of research natural areas (RNAs) is outside the scope of the Forest Plan revision. As part of the revision, the Forest reviewed existing candidate research natural areas based on new information and technology since the 1986 LRMP. To designate RNAs an establishment report must be completed and approved by the Chief of the Forest Service. The areas reviewed as candidates are listed on page 3-286 and in Appendix D of the draft EIS.

#403

COMMENT: *...we strongly urge that all Candidate RNA's [sic] be processed into defined, accepted RNA's [sic]. These areas, containing sensitive flora and/or fauna or unusual terrain, should have the benefit and protection of the formal RNA designation before any further damage occurs. (#00045*)

RESPONSE: See comments #401 and 402.

#404

COMMENT: *Refer to Ottawa DEIS 3-133 thru 3-142 and Appendix D and I, reference to FSM 2360, FSM 2372, and FSM 4063, reference made to 36 CFR 294.1a; the Ottawa was the only 1 of the 3 forests to address the SIA alternative to RNA designations in all of their proposed plans; we believe that all forests should have considered this option as an alternative to the highly restrictive "RNA option", which has been equated to the "Kiss of Death" to the multiple use ideals on the Forests; (#01642*)

RESPONSE: Research natural areas and special interest areas (SIAs) have different objectives. See comment #401 for the purpose of RNAs. SIAs are designed for recreational experiences where education and interpretation of unique or special natural resource values are emphasized.

Public use, education, interpretation and enjoyment are promoted in SIAs, where they do not harm the value of the SIA. RNAs promote scientific understanding, while SIAs promote public understanding. Scientific studies must be designed to avoid any confounding factors that might jeopardize the validity of the research study; public use can cause noise, disturbance, compaction, and other effects that might mask any cause/effect relationships being tested in the study.

#405

COMMENT: *I assume you realize that the "Dukes Expansion cRNA does not physically touch the existing Dukes RNA (about a 150-foot east-west gap). (#00768*)

RESPONSE: Forest Road 2915 separates the cRNA and the established Dukes RNA. The Dukes RNA establishment report indicates a buffer on the north side of this road.

#406

COMMENT: *The Lake Stella Bog cRNA is mapped at 80 acres in the draft revision. In the absence of any map or description indicating the contrary, I agree with the Lake Stella Bog cRNA that size and shape (which is as posted on the North Central Experiment Station website). If additional non-federal acreage could be acquired adjacent to that land, I think that would be an appropriate expansion. If it can be "attached" through the acquisition of new lands, think the 200-300 acres of federal ownership near the MA 8.4 about 1 mile to the northeast would also be a good addition. Although not mapped or otherwise shown in the revision, I would oppose any boundary that exceeds sections 13, 14, 23, 24 and 26. (#00768*)

RESPONSE: Any acquisition of lands would be guided by the goals for Land Ownership on page 2-19 of the Proposed Plan.

Management Area 8.4

#407

COMMENT: *The W&S corridors, as depicted on page 3-51, are too narrow. The Recreation Management Guidelines on page 3-53 can be better met with wider corridors, especially where tributaries flow toward W&S Rivers. This would help facilitate the guidelines to "protect the environment" and "protect water quality."*

Logging ought be forbidden within the entire W&S area, except where trees fall over roads and major trails. Coarse woody debris can get into rivers on its own. Sawing or pushing trees into W&S Rivers is unsightly and causes impact to the terrain, sedimentation and threats to sensitive plants.

Prescribed fire, openings and salvage are also mentioned. Why would we need a simulated fire within a W&S corridor?

The issue ought be raised when it ever arises, rather than inserting riders into the document. (#00775)

RESPONSE: As explained on pages 3-370 and 3-398 of the DEIS, wild and scenic river (WSR) boundaries were designed considering ecological conditions and protection of the outstandingly remarkable values (ORVs). Pages 3-359 and 3-360 explain that the boundaries are variable widths. Important portions of key tributaries are included within the boundaries as are more of the areas that contain the outstandingly remarkable values. An easily locatable boundary was also a consideration.

Nothing in the Wild and Scenic Rivers Act precludes vegetative treatments within the scenic and recreational designated segments. As explained on page 3-380 of the DEIS, vegetation management activities to achieve the desired condition(s) and protect or enhance the outstandingly remarkable values of the river corridor would be allowed.

Vegetation goals are not specified for the river corridor, and the direction is to conduct vegetation management to enhance the outstandingly remarkable values and generally move toward late seral condition based on ecological capability. Long-lived tree species would be emphasized within 500 feet of the river's major cold-water tributary and its branches within the E. Branch Tahquamenon River corridor. On the Whitefish and Sturgeon Rivers, larger and long-lived species are also emphasized, especially along the riparian area, although early successional species would still occur to enhance visuals and/or other resource/outstandingly remarkable values.

As explained on page 3-381, timber management activities would not occur within wild segments. Insect and disease outbreaks would only be controlled when needed to prevent unacceptable damage to resources on lands outside the river boundary or an unnatural loss of resources due to exotic (e.g. non-native invasive species) pests. Otherwise, natural ecological succession would continue to guide the visuals of the corridor segment.

River log drives associated with the turn of the 19th century logging activities altered the natural structure of the rivers and riverbanks and amount of large woody debris in the Hiawatha's WSR. Habitat improvements, such as streambank stabilization and addition of large woody debris are permitted to speed up the recovery, and provide habitat for fish and other aquatic species.

These activities are guided by visual quality objectives for each river segment of the Proposed Plan (page 3-52) and standards and guidelines. (Proposed Plan, pages 3-56 to 3-58; 3-72 and 3-73; 3-80, 3-86 and 3-92.) Any proposed project would be analyzed to determine the effects to the river's outstandingly remarkable values and the free-flowing condition.

Prescribed fire may be used to simulate the effects of historical wildfires, which did burn into some of the outwash plains land type areas that are now WSR corridors. Prescribed fire would be used to reduce fuels, mimicking the role that wildfire played in the ecosystem in the past, before fire suppression began. Any project proposing a prescribed fire would be analyzed on a site-specific basis to disclose the effects to the river's ORVs.

#408

COMMENT: *Under 2700 Land Uses sections... No special use permits ought be allowed in W&S corridors, wildernesses or semi-primitive areas. Please refrain from incorporating special use permits and utility corridors into our FP. (#00775*)

RESPONSE: Special use permits authorize and manage a variety of uses on National Forest lands. They are allowed in wildernesses in accordance with Section 4 and Section 5 of the Wilderness Act of 1964. Nothing in the WSR Act precludes issuing special use permits for a variety uses if they do not have a direct and/or adverse affect on the free-flowing condition of the river or on the outstandingly remarkable value. Special uses for WSR are analyzed in the DEIS pages 3-417 through 3-422.

#409

COMMENT: *Proposed Plan, page 2-7. Wild and Scenic Rivers: Goal No.2 states "components of the aquatic and terrestrial ecosystem degraded by past human activities are restored."*

Historically, lake sturgeon used several of the Lake Michigan tributaries within the Forest for spawning. Lake sturgeon may need active management in rivers where they occur or may need to be restored to other river systems in order to meet this stated goal for the Forest. We recommend incorporating an objective for Goal No.2 that directs aquatic ecosystem management actions that will restore and maintain populations of lake sturgeon in the Carp, Whitefish, and Sturgeon Rivers during this planning period.

There is currently strong interest by the State, Tribal and Federal fisheries agencies in restoring and maintaining healthy spawning populations of lake sturgeon to waters where they were historically present, including the Whitefish and Sturgeon rivers (where they are considered extirpated) and the Carp River (where they are in low abundance) within the Forest. Actions may be needed to explicitly protect, enhance, or restore important habitat needed for adult lake sturgeon staging and spawning, for incubation of eggs, and for rearing of juveniles. The Forest Service should coordinate with the various State, Tribal and Federal agencies in managing for the successful rehabilitation and recovery of this species in those rivers within the Forest.

Proposed Plan. page 3-75. Ecological section: Under the Ecological description for Management Area 8.4.2 (Carp River), the Plan should indicate that lake sturgeon are thought to persist at low levels in the Carp River. We also request that the Forest Service evaluate whether special guidelines, in addition to the management goals and objectives in other sections, are necessary for lake sturgeon in the Carp River.

Proposed Plan. page 3-83. Ecological section: Under the Ecological description for Management Area 8.4.3 (Whitefish River), the

Plan should indicate that several native aquatic species, such as lake sturgeon, have been extirpated from the Whitefish River. Furthermore, there is interest in restoring lake sturgeon to this river. We also request that the Forest Service evaluate whether special guidelines, in addition to the management goals and objectives in other sections, are necessary for lake sturgeon in the Whitefish River.

Proposed Plan. page 3-88. Ecological section: Under the Ecological description for Management Area 8.4.4 (Sturgeon River), the Forest Service erroneously states that the Sturgeon River supports "large runs of lake sturgeon." There is currently no known spawning population of lake sturgeon persisting in this river (though there is a large run in Lake Superior's Sturgeon River in Houghton and Baraga Counties). We suggest that the Plan indicate that several native aquatic species, such as lake sturgeon, have been extirpated from the Sturgeon River. We also request that the Forest Service evaluate whether special guidelines, in addition to the management goals and objectives in other sections, are necessary for lake sturgeon in the Sturgeon River. (#02686)

RESPONSE: Management direction for the Indian and Carp Rivers was amended to the 1986 Forest Plan and was brought forward into the revised Forest Plan. Some reorganization of the management direction was done to reduce redundancy with the other river management direction in MA 8.4 et al. However, no changes to the prescribed management for the Indian and Carp Rivers were made during Forest Plan Revision. Items within the Management Plans that have been accomplished were not carried forward into the Revised Forest Plan.

The Hiawatha has coordinated in the past with MDNR, tribes and other federal agencies in the implementation of the fisheries program and will continue to do so. Several places in the plan provide direction to coordinate with other entities (Proposed Plan pages 2-2, 2-10,2-13).

The Ecological sections on pages 3-75, 3-83 and 3-88 of the Forest Plan are part of the desired condition for the rivers that describe future conditions, not the current (existing) condition. An objective was added to the Proposed Forest Plan in the 2600 Section to address the goal of restoring sturgeon populations. Because forest plans are permissive, no additional guidance other than the goals and objectives is necessary.

Page 3-266 of the DEIS explains that lake sturgeon is a threatened species and its current abundance and distribution are only a small fraction of historical occurrence. Page 3-267 states that recent inventories in the Sturgeon and Whitefish Rivers did not find spawning sturgeon. Also, the Carp, Sturgeon and Whitefish Rivers have been identified as candidates for rehabilitation of lake sturgeon.

We are unaware of any sturgeon being confirmed recently on the Carp river. We agree there is no known spawning population on the Sturgeon River. The section referred to is part of the description of the “desired condition” for the river. This section has been edited in the 2006 Plan.

Management Area 8.4.3

#410

COMMENT: *My land is on the West Bank of the Whitefish River. Does the plan in any way influence the use of the riverfront? Does the plan include confiscation of the land in the future for Federal use? Can I still boat, fish and hunt on the property now and in the future? (#00549*)

RESPONSE: The Forest Plan applies only to lands within the National Forest System that are administered by the Hiawatha National Forest. Condemnation of lands within WSR corridors is extremely rare.

The landownership percentage on the river precludes condemnation as per Section 6 of the WSR Act. Generally, management of private lands within designated and study river corridors is directed by state and local laws and zoning. The Forest Service (as required in the Wild and Scenic Rivers Act), has developed recommended zoning requirements for use by local zoning authorities.

These recommendations are included in Chapter 3 of the DEIS. Adoption of these recommendations by local governments is voluntary; however, the recommendations are complementary to protection of the river, its free-flow and the outstandingly remarkable values. Any proposed project (on national forest or private lands) is subject to the

permitting under Section 7 of the Wild and Scenic Rivers Act; Section 10 of the Rivers and Harbors Act (administered by the Army Corps of Engineers); Section 404 of the Clean Water Act and Section 451 of the Natural Resources and Environmental Protection Act (administered by the Michigan Department of Environmental Quality) and would be reviewed for effects to the free-flowing condition of the river and the outstandingly remarkable values as part of the permitting process.

The Plan imposes no restrictions on boating, fishing and hunting on your property within the Whitefish WSR now and into the future. It should be noted however, that the state of Michigan has jurisdiction of the water and regulation of the fishery.

Management Area 8.5

#411

COMMENT: *Recreation is also of great importance for this National Forest. In fact, it is fast becoming a popular destination for many people in the Midwest for activities such as camping, backpacking, hiking, fishing, hunting, skiing, snow shoeing, nature photography, etc. Along with conducting assessments for roadless and Wilderness values, the Forest Service should also analyze lands for potential National Recreation Areas.* (#00043, 00051-00186, 00192-00203, 00212-00214, 00225-00227, 00244-00246, 00254-00257, 00259, 00261-00263, 00265, 00266, 00268-00272, 00280, 00282-00290, 00293-00297, 00328-00334, 00336-00338, 00340-00347, 00452-00458, 00485-00489, 00679-00716, 00718-00734, 00765, 00769-00773, 00777, 00780-00857, 00862-01180, 01182-01372, 01374-01603, 01762-01949, 01951-01997, 02249, 02250, 02619-02635, 02637-02641, 02643, 02645-02648, 02650, 02652-02660, 02662-02681, 02683, 02685)

RESPONSE: National Recreation Areas (NRAs) are Congressionally-designated. Grand Island was purchased and designated as a National Recreation Area in 1990. The Hiawatha conducted a Recreation Supply and Demand Analysis which indicated that supply of recreation capacity greatly exceeds current and projected demand. In the Need for Change documents and in the Notice of Intent, the Hiawatha did not identify any changes necessary regarding additional NRAs.

#412

COMMENT: *On page 3-104, regarding Grand Island, why is Vegetative Management mentioned when it states that there are no VM objectives for the island? ...We do not require openings on the public portions of Grand Island. (#00775*)

RESPONSE: There are no vegetation goals for Grand Island (proposed Forest Plan page 3-100). In the enabling legislation establishing Grand Island (section 3 (b) (4) is included the following: "To permit timber management only as a tool to enhance public recreation, scenic quality, game and non-game wildlife species, and the protection and enhancement of threatened, endangered, or sensitive species."

The standards and guidelines the commenter is referring to provides direction on how to implement the intent of the legislation relative to vegetation management.

Temporary openings may be desirable to enhance recreation (scenic vistas for example) or provide habitat for wildlife species. Management direction for Grand Island was carried over from the 1986 LRMP with editorial changes only.

#413

COMMENT: *The proposed management and development of Area 8.5 (Grand Island National Recreation Area) is another area we wish to comment on. The proposal to alter Grand Island from its current pristine landscape to its development into a resort area would change the whole atmosphere of the Grand Island experience.*

The Island is only 5 minutes by motorboat and 15 minutes by kayak from the mainland and these areas within sight of the island are in constant commercial development. There are numerous motels, stores along with equipment rentals within easy access before or after leaving the Island. Grand Island does not need this kind of development and there is no sound reasoning for this kind of development on Grand Island. The allowable development proposed by this plan would be a negative and drastic move.

The proposed 8 bus trips per day on Grand Island to drop off hikers seem excessive. Perhaps limiting the trips to 4 per

day would accommodate visitors and still allow the island to retain its un-trafficked atmosphere. (#02206)

RESPONSE: Congress passed Public Law 101-292 establishing the Grand Island National Recreation Area in 1990. After extensive public involvement, including a citizen advisory committee, the Record of Decision was signed in 1994. This established the management direction for Grand Island.

The Forest did not identify the management direction for Grand Island as an area that was necessary to change during revision. Management direction for Grand Island was carried over from the 1986 LRMP with editorial changes only.

Any developments proposed would be required to be evaluated through site specific analysis with full public involvement and disclosure.

Monitoring & Evaluation

#414

COMMENT: *Is the required monitoring always done? The monitoring plan looks good but is useless if not carried out. To read, on page 3-344 DEIS, that visual quality monitoring has not been done across the Forest is dismaying. (#00547)*

RESPONSE: The DEIS p. 3-344 states that VQO monitoring has been done on the Forest, "A visual quality *inventory* [highlight added] was not conducted across the Forest; therefore, it is not known how many acres of Forest currently meet the visual quality objectives and how many acres are being managed toward the objectives.

Forest Plan monitoring and evaluation reports and conversations with sale administrators and biologists indicate that vegetative treatments and fisheries habitat improvement projects have been monitored and mitigation has been applied to management activities to meet the prescribed VQOs.

Additionally, based on observations and assessments by the landscape architects and other staff, the Forest's scenic quality has been managed to meet the assigned VQO in areas visible from the main roads, at recreation sites and trails, and as seen from lakes and streams commonly used by recreationists.

In other areas, especially in areas of uneven-aged vegetative treatments (primarily hardwood and mixed conifer-hardwood forests), VQOs are generally being met and the goal of providing a "naturally appearing forest" is generally achieved. Areas of insect and disease outbreak and pine species management present the biggest challenge to manage within VQOs and to provide "naturally-appearing forest."

It is important to understand that VQOs are objectives to be managed toward through time and in accordance with management activities, and are not necessarily reflected by existing conditions.

VQO monitoring has occurred. Monitoring as described in Chapter 4 of the revised Forest Plan will be done to measurement frequency shown in Table 4-3. The Proposed Plan includes objectives for increasing the amount of National Forest system lands that meet visual quality objectives (VQO) and identified in the VQO map (Forest Plan Appendix C).

Additionally, the Proposed Revised Forest Plan states, "Monitoring tasks are scaled to the Forest Plan program or project to be monitored. Each of these entails different objectives and requirements. Monitoring is not performed on every single activity, nor does it need to meet the statistical rigor of formal research. Budgetary constraints will affect the level of monitoring that can be done in a particular fiscal year. If budget levels limit the Forest's ability to perform all monitoring tasks, then those items specifically required by law would be given the highest priority.

#415

COMMENT: *NFMA establishes minimum monitoring and evaluation requirements that the Forest Service must follow. 36 CFR 219. The Forest Plan must contain monitoring and evaluation requirements that will provide a basis for a periodic determination and evaluation of the effects of management practices, which Forest Service holds employees accountable. The DEIS's monitoring and evaluation requirements, however, remain incomplete and far too discretionary.*

Although the Proposed Forest Plan loosely mentions that monitoring guidelines will be maintained (4-3), in the DEIS it remains unclear exactly how these guidelines are transformed into standards. This evasive approach violates NEPA because it effectively eliminates the public's ability to assess the suitability of the agency's proposed monitoring and evaluation program. (#01761)

RESPONSE: The Monitoring Items listed in Table 4-3 of the Proposed Forest Plan shows how the Forest will comply with monitoring and evaluation requirements. This table presents the monitoring question to be answered, measurement frequency, evaluating/reporting frequency, and precision and reliability class as required.

#416

COMMENT: *The plan should provide adequate monitoring requirements to ensure that the plan will not result in damage to the forest. This should include requirements for in-the-field monitoring of an adequate range of forest species, including species mentioned above. These requirements should be mandatory and frequent.* (#00043, 00051-00186, 00192-00203, 00212-00214, 00225-00227, 00244-00246, 00254-00257, 00259, 00261-00263, 00265, 00266, 00268-00272, 00280, 00282-00290, 00293-00297, 00328-00334, 00336-00338, 00340-00347, 00452-00458, 00485-00489, 00777, 00778, 02619-02635, 02637-02641, 02643, 02645-02648, 02650, 02652-02660, 02662-02681)

RESPONSE: See comment #415.

#417

COMMENT: *On page 4-6 of the proposed Plan, the question is asked, "How effective is Forest management in managing OHV use?" From what I have seen, not very effective, and with more OHVs every year it is going to get worse. This problem must be addressed in the most forceful manner. It is destroying the Forest. (#00547*)

RESPONSE: Management direction for OHV use is addressed in Section 2300 of the revised Forest Plan. It includes a desired condition statement for recreation access, goals, objectives, standards and guidelines — much of which is based on the implementation and monitoring that has occurred through the implementation of the Forest Plan. The comment references one of the monitoring questions that will be measured on an annual basis. Monitoring data will provide critical information about what management practices are working and what kinds of adjustments need to be made.

#418

COMMENT: *The plan should include specific guidelines for monitoring old growth objectives, including the monitoring of old-growth dependent species, so that long-term trends can be assessed. (#02167*)

RESPONSE: Monitoring of old growth objectives is included with monitoring of vegetation ecological processes (Plan p. 4-10). The American marten is an MIS that will be monitored to determine relationship between habitat and population trends. The Proposed Plan includes monitoring for how management indicator species, wildlife diversity, and threatened and endangered species are influenced by Forest Plan implementation.

#419

COMMENT: *..the list of monitored species needs to include frogs, bats, snakes, salamanders, and perhaps other groups of species that occur on the forest. (#02681*)

RESPONSE: Brook trout is a management indicator species that will be monitored under the Forest Plan (proposed Forest Plan p. 4-8). Post project monitoring would also occur.

Prior to implementing management activities, surveys should be conducted for federally-listed species and Regional Forester sensitive species where suitable habitat exists (proposed Forest Plan p. 2-32). Monitoring also includes wildlife diversity to determine to what extent the Forest is contributing to the conservation of threatened, endangered and sensitive species (proposed Plan p. 4-10)

#420

COMMENT: *Monitoring is a major step in ecosystem management. We would like to see, at a minimum, stated monitoring goals related to the aforementioned threats [fire and fuels, invasive species, loss of open space, and unmanaged recreation] and direct links from monitoring results to management decisions. This effort should be formalized, going beyond institutional knowledge' and 'anecdotal information'. (#00779*)

RESPONSE: Required monitoring includes determining to what extent the Forest is meeting goals for managing undesirable occurrences of fire (Plan page 4-6). Forest-wide objectives include identification and mapping of non-native invasive species (NNIS) on the Forest. Forest Plan monitoring includes determining effectiveness of prevention and treatment measures at controlling spread of NNIS (Plan page 4-9).

Loss of open space applies primarily to the effects of land development, subdivision and housing on other ownerships within and surrounding the Forest that can result in associated pressures on forest resources.

Monitoring of this effect can be identified as a component of several resource areas (including transportation, fire and fuels, recreation use, social and economic) rather than as a single resource component. Monitoring of recreation motor vehicles, snowmobiles, and watercraft access (Plan pages 4-6, 4-10, and 4-11) will provide indications of how effective Forest Plan direction is at managing recreation uses.

Glossary, Editorial and Outside the Scope

#421

COMMENT: *The three forests need to work together on the uniform glossary: some examples are the engine size for ATVs 50cc to 50cc? OHV over 800cc? What is a high clearance vehicle/street legal vehicle? The use of the term ORV, outstanding remarkable values seems redundant and rather subjective in regards to the Wild&Scenic rivers and misleading, the rivers are wild or scenic or recreational or a combinations of those values or they should not be designated as such.*

General usage of the ORV term off-road-vehicle would give a Wild river advocate a coronary or stroke. "Solitude" is another subjective term relative only to the individual and their values, and cause for a non-sharing attitude, and to "contrived" user conflicts. (#00298, 00767)

RESPONSE: The terminology of "outstandingly remarkable value(s)(ORV)" is specific to Wild and Scenic River management and is specifically referenced in law in the National Wild and Scenic Rivers Act. The classification of designated or study rivers as "wild, scenic or recreational" relates to the level of access provided and/or amount of modification that is evident along the shorelines, and again is specifically referenced in the National Wild and Scenic Rivers Act.

To change reference to these with regard to wild and scenic river planning and/or management would not be consistent with the law. We agree that uniform glossary and terminology would be helpful and less confusing; however, since there are differences in the types of vehicles that are permitted and managed for between some forests and other public agencies (e.g. the State) some inconsistencies will remain. See comment #117 for additional information.

The terminology of "solitude" and how it was used for Roadless Area Inventory is addressed in DEIS Appendix C. Additional information that defines "solitude" with regard to roadless and wilderness is found in the Project Record (*Indicators of Wildness: Using Attributes of the Land to Assess the Context of Wilderness*; Gregory Aplet, Janice Thompson and Mark Wilbert; The Wilderness Society, 1999).

#422

COMMENT: *Appendix D: Some more specific silvicultural terms need to be added to the appendix. Examples: clear cut with reserves, shelterwood with reserves. Doug Born had had other concerns about this hopefully he has gotten those comments in. (#01641*)

RESPONSE: Silvicultural terms are defined in Forest Service Manual and Handbook direction and incorporated by reference in the DEIS/FEIS and Proposed Forest Plan.

#423

COMMENT: *The Forest Service should consider providing the following information in the Final Environmental Impact Statement: Coordination letters from resource agencies especially U.S. Fish & Wildlife Service, Michigan Department of Natural Resources, and the Michigan Historic Preservation Officer. This information would provide an interested reader with a sense of whether there were areas of debate between agencies or whether federal and state agencies concurred with the Forest Service's direction. (#02204)*

RESPONSE: All correspondence regarding forest plan revision are part of the Planning Record. A list of cooperating and consulting agencies, commenters and other planning collaboratives will be included in the FEIS.

#424

COMMENT: *Appendix C error – page C-3 "West" map label printed as "East". (#00768)*

RESPONSE: Your suggestion(s) have been reviewed and incorporated where appropriate.

#425

COMMENT: *(1) [page] 2-8 Third paragraph (and all other place where shade intolerant trees are listed, like 2-27 guideline 4) oak should be listed so as to prevent the incorrect notion that oak will self perpetuate in an unevenaged system. Forth paragraph last sentence should read ...fires...tool to establish regeneration and control composition in these types.*

(2) [page] 2-10 Goal 5 I think it is intended as Water DO.

(3) [page] 2-11 Objective 6 is this 10 acres additive to the 40 listed on pg 2-16? If these types of annual targets are appropriate as objectives then the Forest needs to add lots of "targets" in the vegetation composition area, like xxxx acres of reforestation, yyy acres TSI, zzzzz acres of regeneration harvests etc.

(4) [page] 2-14 KW objective 1 either remove the reference to 10/20 or add ELT 60 as the 670 acres will come form a combination of ELTs and cannot be confined to only the 10/20 ELT. (#01641)

RESPONSE: Your suggestion(s) have been reviewed and incorporated where appropriate.

#426

COMMENT: *...Errata #1...said, "Enclosed is the corrected page 2-24"...but the page was numbered 2-34...You might want to correct... (#00044)*

RESPONSE: Your suggestion(s) have been reviewed and incorporated where appropriate.

#427

COMMENT: *ES-21 [Executive Summary page 21] The last sentence of the paragraph on ruffed grouse does not seem to follow logic relative to alt 4 providing better winter habitat than alt 2. Is this correct? (#01641)*

RESPONSE: See the Wildlife Section of the FEIS for a detailed discussion about the effects of the alternatives on ruffed grouse.

#428

COMMENT: *...the Latin name for Yellow Rail is Coturnicops noveboracensis. You might want to modify Table WL-1 on p 23 of the executive summary accordingly. (#00030)*

RESPONSE: Your suggestion(s) have been reviewed and incorporated where appropriate.

#429

COMMENT: *Forest Plan - page 2-8] Paragraph 5 - last sentence doesn't make sense. "Others will be allowed to succeed to older age and long-living cedar." (Perhaps just end at "older age."???) (#00677)*

RESPONSE: Your suggestions have been reviewed and incorporated where appropriate.

#430

COMMENT: *...Pg. A-2 of the forest plan. The table is referred to as "A-1", but titled "F-1", and the 5th word of the paragraph should be "for", not "or". ("Land identified as suitable FOR...." (#00677)*

RESPONSE: Your suggestion(s) have been reviewed and incorporated where appropriate.

#431

COMMENT: *Bubble on page 1-7 could be moved to more accurately cover the 2 units of the HNF. (#00665*)

RESPONSE: Your suggestion(s) have been reviewed and incorporated where appropriate.

#432

COMMENT: *Glossary clarification – "CDS" is defined as the stand-information database. CDS is being replaced over time with FSVeg (Field Sampled Vegetation) database, which now contains all the plot information (CDS no longer contains plot data). (#00768*)

RESPONSE: Your suggestion(s) have been reviewed and incorporated where appropriate.

#433

COMMENT: *Glossary error – "Size-density" is defined in the "0" class as "seedlings. That is incorrect. The DEIS correctly defines it on page 3-24 as "open lands (upland and lowland). Also, DEIS table on 3-24 and the glossary title both correctly use the term "Size Class" but the glossary sub-definitions switch that around to "Class Size" which is an error. (#00768*)

RESPONSE: Your suggestion(s) have been reviewed and incorporated where appropriate.

#434

COMMENT: *I do like the mini-maps tied with each MA (However if a MA doesn't exist on the east-side or the west-side, that "half" of the forest map shouldn't even be displayed, in my opinion, on that page). The quality of these maps is adequate for brief MA review as long as larger maps are available for details not on the mini-maps. (#00768*)

RESPONSE: Your suggestions have been reviewed and incorporated where appropriate.

#435

COMMENT: *...the reach of Whitefish W&SR into the Dukes area is missing on page 3-82 even though mapped on page 3-51 earlier. (#00768*)

RESPONSE: Your suggestions have been reviewed and incorporated where appropriate.

#436

COMMENT: *In regards to the Old Growth designations, the DEIS maps are of little use in the text book copy and should be mapped on the ½ inch to mile USFS maps and could serve a dual purpose to also show the suited and non-suited lands on the Forest. (#00298, 00767)*

RESPONSE: Your suggestions have been reviewed and incorporated where appropriate. Maps in the revised Forest Plan will include maps of a larger scale. Additional maps or maps at a different scale can be requested.

#437

COMMENT: *The map readability in the entire map "package" is not good. They all need to be enlarged, cleaned up and made more readable for the Final. Examples: I needed a magnifying glass to see specks of MA color where slivers and inclusions occurred. There are a bunch of specks and blobs on pages 3-3 and 3-4 (as well as the colored maps) that just clutter up the map and make it hard to read and see the big picture. You didn't even use 8.5" by 11" standard page size in the map packet. If you are going to restrict yourself to an undersized 7.75" by 9.75" dimension, at least fill up that dimension instead of having lots of border and lots of "Great Lake" edge on top & bottom... (#00768*)

RESPONSE: Your suggestions have been reviewed and incorporated where appropriate. The revised Forest Plan will include maps of a larger scale. Additional maps or maps at a different scale can be requested.

#438

COMMENT: *Any meaningful input regarding the proposed plans and DEIS was very difficult to provide without maps of all the forest resources, including roads and trails. It is acknowledged that the programmatic direction of the forest plan will not make site-specific decision on the disposition of particularly roads. However, even simple comments pertaining to the suitability of allocation of management areas, ROS classifications, proposed Wilderness, Roadless*

Areas, or road density issues are hampered without the knowledge of the location of existing roads and trails. (#02286)

RESPONSE: While maps of the existing transportation system were not provided in the DEIS and proposed Forest Plan, they were available upon request. In addition, the Forest recreation map, that is available from any Forest office, shows the majority of the transportation system for most questions and general information.

#439

COMMENT: *Any meaningful input regarding the proposed plans and DEIS was very difficult to provide without maps of all the forest resources, including roads and trails... (#00433*)

RESPONSE: See comment #438.

#440

COMMENT: *Wild & Scenic Rivers (CRMP); We would like to see the (ORV)- - outstanding remarkable values not used. It is listed in anachronisms or glossary but general usage in most cases refers to "off road vehicles", by most people. (#00298, 00767)*

RESPONSE: See comment #421.

#441

COMMENT: *In guideline 3, A the word beneficial should be dropped and substituted so the guideline reads, "Two to ten snags...additional snags are essential to rare species...." More is always beneficial for any resource so the word beneficial makes this guideline too easily manipulative. This guideline should probably apply only to T&E and s species not to someone's interpretation of "rare". (#01641*)

RESPONSE: Your suggestion(s) have been reviewed and incorporated where appropriate.

#442

COMMENT: *[page] 2-26 Table 2400-1 footnote * drop word during Type to be regenerated either... (#01641*)

RESPONSE: Your suggestion(s) have been reviewed and incorporated where appropriate.

#443

COMMENT: *Pg. 2-9, OG: Goal #3, first sentence, removes "that". (old growth [sic] tracts vary from small, isolated....) (#00677*)

RESPONSE: Your suggestion(s) have been reviewed and incorporated where appropriate.

#444

COMMENT: *2600, Wildlife, etc., pg. 2-13. T&E objective #2: un-italicize "and Lakeside daisy". (Should "downy", "prairie", and "lakeside" is lower-case?) (#00677*)

RESPONSE: Your suggestion(s) have been reviewed and incorporated where appropriate.

#445

COMMENT: *There are problems with the writing of the plan itself:*

--Not all the numbers add up correctly

--The paragraphs seem thrown together and are difficult to understand

--Acronyms are hard to decipher

--Overall the document is hard to understand - the organization is poor and proofreading was obviously lacking (#00187)

RESPONSE: Your suggestion(s) have been reviewed and incorporated where appropriate.

Outside the Scope

#447

COMMENT: *...do not open...[the land] up to private interests for hunting, camping, roads etc. (#00031*)

RESPONSE: National Forest System lands are generally open for hunting, fishing and camping. Jurisdiction to issue hunting permits and regulate game populations is held by the state of Michigan.

#448

COMMENT: *I think grazing should be banned from this national forest. (#00006)*

RESPONSE: This comment is beyond the scope of Forest Plan revision. The Hiawatha National Forest does not have a grazing program.

#449

COMMENT: *Too much regulation already! (#01736*)

RESPONSE: This comment is beyond the scope of Forest Plan revision.

#450

COMMENT: *...Changing the area around Bay View Campground into a Timber Management area is not positive. This is part of the Scenic Byway and undermines the very purpose of the Scenic Byway as it exists right now and as is proposed in the new Scenic Byway plan. This is a recreation area. Timber cutting is not what the public would want to see here. (#00187*)

RESPONSE: See comments #397 and 380a, for additional information.

#451

COMMENT: *Should the summer home group on Highbanks Lake be aware of any impacts in the area [?] (#00005)*

RESPONSE: Thank you for your comment; however, it is beyond the Forest's ability to distinguish what management direction analyzed in the Draft EIS or proposed in the revised Forest Plan are of interest or concern to the permittees of this summer home group.

BART STUPAK
1ST DISTRICT, MICHIGAN

2352 RAYBURN HOUSE OFFICE BUILDING
WASHINGTON, DC 20515–2201
PHONE: (202) 225–4735
FAX: (202) 225–4744
http://www.house.gov/stupak
(Email through Website)

SCOTT SCHLOEGEL—*CHIEF OF STAFF*
TOM BALDINI—*DISTRICT DIRECTOR*

10 02696

Congress of the United States
House of Representatives
Washington, DC 20515–2201

COMMITTEE:
ENERGY AND COMMERCE
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LAW ENFORCEMENT CAUCUS, *CO-CHAIR*
NORTHERN BORDER CAUCUS, *CO-CHAIR*
RURAL CAUCUS
ASSISTANT WHIP

June 27, 2005

David Maercklein-Forest Planner
Hiawatha National Forest
2727 N. Lincoln Road
Escanaba, MI 49829

Dear Mr. Maercklein:

I am submitting comments regarding the proposed Land and Resource Management Plan (Forest Plan) and Draft Environmental Impact Statement for the Hiawatha National Forest which was released on March 18th, 2005.

I understand the importance of sustaining the natural habitat of our national forests and also for the Forest Service to strike the appropriate balance between conservation, recreation and economic interests when considering how to manage these important national treasures.

I commend the Hiawatha Forest Service employees for their work in developing this Forest Plan and making themselves available for public meetings throughout the area. The issues of particular interest to me in the Forest Plan are the potential for increased timber output, recreational access, and the issuance of leases for oil and gas drilling.

Timber Output:

As part of the Forest Plan revision process, a suitability analysis was conducted to determine how much land in the Hiawatha National Forest is appropriate for timber production. Of the four alternatives, I believe that Alternatives 2 and 3, which determines that 578,461 and 623,771 acres respectively are suitable for timber management are the preferred options.

It is imperative that harvesting is permitted in parts of the Hiawatha where it is biologically and physically possible to do so and also where it is required to meet the objectives of the plan. This would allow for the use of pest management techniques, will reduce the spread of non-native invasive species, as well as permit a healthy timber output.

The Forest Plan also proposes different alternatives for the Hiawatha Forest's allowable sale quantity (ASQ). Of the four alternatives mentioned for ASQ, I would recommend Alternative 3, which would increase the ASQ from 1,100 Million Board Feet (MBF) to

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1,160 MBF. This is a small, but necessary step forward considering the timber shortage in the national forests is impacting the pulp and paper industries, loggers, and truckers throughout the State of Michigan. I encourage you to adopt this alternative instead of Alternative 1, which leaves the ASQ equal to the figure in the last forest plan. Moreover, I strongly urge you not to consider Alternative 4, which actually decreases the ASQ from the previous plan.

However, I would also strongly advocate in favor of setting higher yearly targets for timber harvests. I am aware that these targets are not included in the Forest Plan because they are set on a yearly basis, but I would like to reiterate the importance of all the national forests in Michigan coming closer to meeting, at a minimum, their target for the year as well as coming closer to the ASQ set in the Forest Plan.

Increasing the annual amount of timber harvested in the national forests has a direct economic bearing on local communities. This funding will increase jobs as well as revenues generated for counties. The Forest Service returns 25 percent of gross revenues of timber sales to the counties where the timber sales are located. These funds are used for local schools and roads. Our local economies and the investments made in the mills, equipment and transportation by the forest product industry depend upon the national forests working toward higher timber harvests in the years to come.

OHV Trails:

I would encourage the adoption of Alternative 3 when determining the appropriate number of miles in the forest permitted for OHV use. This alternative would designate 85 miles of land throughout the forest for possible trail us. This is approximately 70 miles more than in Alternative A, which is identical to the miles of trails that were permitted for use in the previous plan. Moreover, alternative 4 is not striking a proper balance between recreation and other interests because it designates only 50 miles for OHV trails.

However, I would also encourage the Forest Service to permit trails to remain "open unless designated/posted closed" which is proposed in Alternative 1. It is imperative that the National Forest balance public access with protection of our environmental resources. To only permit OHV use on trails that the Forest Service determines should be "open" greatly hinders the ability of recreational users. Moreover, I am concerned that if this rule is implemented many trails will be left off the "open" list due to oversight.

However, if the "closed unless posted open" rule is established, it is crucial that the Forest Service establish some type of policy during hunting seasons that would permit individuals to use their OHV in areas where these vehicles are not typically permitted if they are not physically able to access their favorite hunting areas and deer blinds on foot.

Snowmobile Use:

I would also encourage the National Forest to adopt Alternatives 1, 2 or 3 when determining the maximum miles of trails to be used for snowmobile use in the Hiawatha Forest.

Alternative 1 indicates that forest roads would be open to snowmobile use unless they are posted close. As I indicated above, I believe this is the best policy for guaranteeing that the Forest strikes a compromise between all interests.

However, if the Forest Service chooses to adopt the "closed unless posted open" alternative", I would encourage you to adopt Alternatives 2 or 3 which allow for 340 or 415 miles of groomed trails and designated routes available for snowmobile use. This is preferable to the other two alternatives which only permit 244 or 305 miles. Moreover, Alternatives 2 or 3 permit 2,100 miles of maintenance level 2 roads and 373 miles of maintenance level 3-5 roads, while Alternative 4 does not permit snowmobiles on roads that are not part of the designated trail system. Alternatives 2 and 3 provide a compromise for all users of the Hiawatha Forest.

Furthermore, when determining whether cross country travel is permitted in the Hiawatha, I would encourage you to adopt Alternative 1. This allows recreational users to traverse from one groomed trail to another and also permits them to go cross country to gain access to a village for food, gas or lodging.

Lake Access:

I strongly support the alternatives that would permit visitors to operate non-motorized and motorized watercraft, as well as personal water craft (PWC) while taking in the beautiful scenery of the Hiawatha National Forest.

I support Alternative 2 which is a compromise between the interests of non-motorized boaters and those that utilize motorized watercraft and PWC.

It is important for the Forest Service to promote an inclusive, multiuse policy while also striking a balance between the different types of boaters that visit the forest when considering how to manage our National Forests. Alternative 2 allows for a compromise by permitting some PWC use, while restricting PWC use elsewhere within the national lakeshore.

Oil and Gas Leases:

I would also like to address the section of the proposed Forest Plan that deals with oil and gas leases. As you know, I have long been concerned with this type of drilling in environmentally sensitive areas.

There is a low potential for oil and gas development on the leasable lands within the Hiawatha Forest and no areas are currently under lease on the Forest. However, I would still like to urge you to take all possible precautions when deciding which acres are made available for oil and gas leases and also strongly recommend that as few acres as possible are made available for these leases.

I hope you will take my concerns and recommendations into account when making your decision regarding the many different uses in the Forest Plan. Thank you for your consideration.

Sincerely,

BART STUPAK
Member of Congress

BTS/ll

4

United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
Custom House, Room 244
200 Chestnut Street
Philadelphia, Pennsylvania 19106-2904

TAKE PRIDE IN AMERICA

IN REPLY REFER TO:

June 24, 2005

ER 05/265

Mr. Randy Moore
Regional Forester
Eastern Region Office
U.S. Forest Service
626 East Wisconsin Avenue
Milwaukee, Wisconsin 53202

Dear Mr. Moore:

The Department of the Interior (Department) has reviewed the March 2005 Draft Environmental Impact Statement (EIS) and Draft 2005 Land and Resource Management Plan (LRMP or Forest Plan or Plan) for the Hiawatha National Forest (Forest) in Alger, Cheboygan, Chippewa, Delta, Luce, Mackinac, Marquette, and Schoolcraft Counties, Michigan. Please give the following comments careful consideration in completing the documents.

GENERAL COMMENTS

The U.S. Fish and Wildlife Service (FWS) and U.S. Forest Service have coordinated for over a year and a half in the development of the Draft EIS and LRMP.

In addition to reviewing those documents, the FWS also reviewed the Biological Evaluation (BE), which was available only by request and was not provided on the Forest Service website along with the Draft EIS and LRMP. We also note that none of the appendices to the EIS could be accessed through the hotlinks provided on the Forest Service web site. It would have been helpful to reviewers if the BE and the EIS appendices had been provided on the website. It would have also been helpful if single consolidated files, in addition to the chapter-by-chapter files, had been provided on the web site for both the EIS and LRMP. Such files allow users with high-speed internet connections to download the files to their hard drives and review the documents much more easily, including being able to quickly do word searches of an entire document for topics of most interest. Users can also easily make a CD-ROM copy of the document file, if needed. As the Forest Service depends heavily on the use of the internet for the distribution of Forest Plans, EISs, and associated documents, we encourage the Forest Service to make it a standard practice to provide such documents in single consolidated files.

DETAILED COMMENTS

FEDERAL THREATENED AND ENDANGERED SPECIES

During the Forest planning process, the FWS and Forest Service coordinated extensively with respect to federally listed species conservation and management issues. Based upon this

coordination and a review of its files, the FWS concurs that the federally listed species identified in the Draft EIS constitute an accurate listing of the species known to be present within the project area. The FWS is coordinating with the Forest Service on section 7 consultation for the revised Forest Plan in accordance with the Endangered Species Act of 1973, as amended. Following the final decision on the selected plan alternative, the Forest Service will conduct a Biological Assessment of the selected alternative, make a determination of effects to federally listed species, and contact the FWS regarding that determination. Section 7 consultation will conclude prior to the issuance of the Record of Decision for this project.

We have no specific comments regarding federally listed species on the Forest at this time. The FWS will continue to work closely with the Forest Service regarding endangered species issues through the section 7 consultation process. We believe that the standards and guidelines in the Proposed Plan (Alternative 2) will promote the conservation and recovery of the threatened and endangered species on the Forest. We greatly appreciate the leadership the Forest Service provides for management of listed species and we commend its proactive consideration of listed species in the Forest Plan revision process.

MIGRATORY BIRDS

We support the Hiawatha National Forest's efforts to protect the wide range of natural habitats native to this region and the full complement of breeding and migratory birds that reside in these habitats. We appreciate the fact that the Forest Service utilized Partners in Flight as one of the data sources for developing associations between bird species and indicator habitats.

We recommend that American woodcock be added to the list of "Associated Species" for ruffed grouse on page B-1 of Appendix B to the Forest Plan.

FISHERIES AND AQUATIC RESOURCES

We believe that Alternative 2 should benefit the fisheries and aquatic resources on the Forest. This alternative emphasizes the restoration and enhancement of lake and stream ecosystems on the Forest and should help maintain water quality, reduce non-native invasive species, and enhance and maintain aquatic systems.

There is currently strong interest by the State, Tribal and Federal fisheries agencies in restoring and maintaining healthy spawning populations of lake sturgeon to waters where they were historically present, including the Whitefish and Sturgeon rivers (where they are considered extirpated) and the Carp River (where they are in low abundance) within the Forest. Actions may be needed to explicitly protect, enhance, or restore important habitat needed for adult lake sturgeon staging and spawning, for incubation of eggs, and for rearing of juveniles. The Forest Service should coordinate with the various State, Tribal and Federal agencies in managing for the successful rehabilitation and recovery of this species in those rivers within the Forest.

Proposed Plan, page 2-7, Wild and Scenic Rivers: Goal No. 2 states that "components of the aquatic and terrestrial ecosystem degraded by past human activities are restored." We strongly support the restoration of aquatic and terrestrial habitats. While we support the inclusion of brook trout (*Salvelinus fontinalis*) as an indicator species for aquatic ecosystem, brook trout are

primarily a headwater and coldwater resident species and will not adequately reflect environmental conditions required by important anadromous species, primarily lake sturgeon (*Acipenser fulvescens*). Historically, lake sturgeon used several of the Lake Michigan tributaries within the Forest for spawning. Lake sturgeon may need active management in rivers where they occur or may need to be restored to other river systems in order to meet this stated goal for the Forest. We recommend incorporating an objective for Goal No.2 that directs aquatic ecosystem management actions that will restore and maintain populations of lake sturgeon in the Carp, Whitefish, and Sturgeon Rivers during this planning period.

Proposed Plan, page 2-10, Section 2500 (Watershed Management), Desired Conditions: Paragraph 2 states that the Forest Service will provide habitat to support a "quality recreational fishing experience." We recommend this statement be broadened to include "to sustain diverse fish populations that support a quality recreational fishing experience."

Goal No. 6 in this section states that the Forest Service will cooperate with the Michigan Department of Natural Resources (MDNR) and FWS to achieve desired fish populations. We recommend including an objective under Goal No. 6 that directs the Forest Service to cooperate and coordinate with MDNR and FWS in efforts to rehabilitate or restore lake sturgeon in the Whitefish, Sturgeon, and Carp rivers during this planning period.

Proposed Plan, page 2-12, Wildlife: We recommend that Goal No. 2 be expanded to include providing ecological conditions that not only "sustain viable populations" but also allow for restoration of native species.

Proposed Plan, page 2-14, Lake Sturgeon: We recommend the goal for lake sturgeon include cooperation with Tribes and FWS, in addition to MDNR, to restore lake sturgeon in the Whitefish and Sturgeon rivers. Please note, all fisheries agencies around Lake Michigan work together through the Great Lakes Fishery Commission's Lake Michigan Committee to prioritize and implement restoration for various fish species of common interest, including lake sturgeon.

Proposed Plan, page 2-23, Great Lakes and Inland Lakes Access: We recommend that the guidelines in this section be expanded to address access to river waters, where appropriate. Specifically, we suggest that Guidelines No. 2 and No. 7 thru No. 11 be evaluated to determine if they should have comparable riverine access components added.

Proposed Plan, page 2-29, Watershed: Standard No. 2 states that "a determination of coastal zone consistency will be completed for all activities occurring within one-quarter mile from the Great Lakes high water mark." We recommend that the Final EIS or Plan provide some discussion of how "coastal zone consistency" will be determined.

Proposed Plan, page 2-29, and Draft EIS, pages 3-240 – 3-243: In its analysis of timber harvest under Alternative 2 in forested wetlands, the Forest Service concludes that harvest activities on the Forest are not expected to result in a loss of wetlands. Specifically, the Forest Service states (Draft EIS, page 3-243) that application of the guidelines for woodland ponds (see page 2-29 of the Proposed Plan) are "assumed to protect the ecological functions of woodland ponds by maintaining woody debris inputs, and shade and water quality necessary for pond-dependent species." We recommend that these guidelines also consider the management of adjacent

uplands for wetland inhabitants. For example, Semlitsch and Bodie (2003) indicate that adjacent upland habitats are critical for feeding, over-wintering, and nesting for some wetland-dwelling reptiles and amphibians. The authors also discuss wetland buffers that offer protection for most species of reptiles and amphibians. We suggest that, where necessary and appropriate, a buffer that minimizes habitat disturbance to adjacent uplands for the benefit of amphibians and reptiles would also contribute to the protection of wetland habitats.

Proposed Plan, page 2-29: It is our understanding that the Forest Service proposes two types of riparian corridor buffers: (1) 100 feet (30 meters) as directed by the Michigan Department of Environmental Quality Best Management Practices and (2) 500 feet (152 meters) on designated high priority streams for aspen management. Within these corridors, streams will be buffered from all activities within the 100-foot zone and from activities that result in aspen regeneration within the 500-foot zone. We suggest that the Forest Service also consider the needs of amphibians and reptiles that inhabit streams and riparian corridors. For example, Semlitsch and Bodie (2003) indicate that adjacent upland habitats are critical for feeding, over-wintering, and nesting for some stream-dwelling reptiles and amphibians. The authors also discuss stream buffers that offer protection for most species of reptiles and amphibians. We suggest that, where necessary and appropriate, a buffer that minimizes habitat disturbance to adjacent uplands for the benefit of amphibians and reptiles would also contribute to the protection of stream habitats.

Proposed Plan, page 2-34: We recommend that following the Piping Plover subsection, the Forest Service add a Lake Sturgeon subsection and incorporate a guideline that promotes management of the Whitefish, Sturgeon, and Carp Rivers for the protection and enhancement of lake sturgeon.

Proposed Plan, page 3-57, Aquatic Ecosystem Management: We recommend that the guideline under this section be expanded to include management of habitat for other desirable native species (e.g., anadromous, coolwater, and warmwater). These species (or habitat management) could contribute to a diverse and self-sustaining aquatic community capable of supporting desirable recreational fisheries. Moreover, we suggest that the Forest Service coordinate with all involved agencies, including MDNR, the Tribes, and FWS.

Proposed Plan, page 3-75, Ecological section: Under the Ecological description for Management Area 8.4.2 (Carp River), the Plan should indicate that lake sturgeon are thought to persist at low levels in the Carp River. We also request that the Forest Service evaluate whether special guidelines, in addition to the management goals and objectives in other sections, are necessary for lake sturgeon in the Carp River.

Proposed Plan, page 3-83, Ecological section: Under the Ecological description for Management Area 8.4.3 (Whitefish River), the Plan should indicate that several native aquatic species, such as lake sturgeon, have been extirpated from the Whitefish River. Furthermore, there is interest in restoring lake sturgeon to this river. We also request that the Forest Service evaluate whether special guidelines, in addition to the management goals and objectives in other sections, are necessary for lake sturgeon in the Whitefish River.

Proposed Plan, page 3-88, Ecological section: Under the Ecological description for Management Area 8.4.4 (Sturgeon River), the Forest Service erroneously states that the Sturgeon River

supports "large runs of lake sturgeon." There is currently no known spawning population of lake sturgeon persisting in this river (though there is a large run in Lake Superior's Sturgeon River in Houghton and Baraga Counties). We suggest that the Plan indicate that several native aquatic species, such as lake sturgeon, have been extirpated from the Sturgeon River. We also request that the Forest Service evaluate whether special guidelines, in addition to the management goals and objectives in other sections, are necessary for lake sturgeon in the Sturgeon River.

SUMMARY COMMENTS

We believe the standards and guidelines in the Proposed Plan (Alternative 2) will promote the conservation and recovery of the threatened and endangered species on the Forest. We have no specific comments regarding federally listed species on the Forest at this time, but anticipate continued cooperation between the Forest Service and FWS regarding endangered species issues through the section 7 consultation process. We also believe Alternative 2 will benefit the fisheries and aquatic resources of the Forest by emphasizing the restoration and enhancement of lake, stream, and coastal Great Lakes ecosystems. However, we believe that lake sturgeon should play a more prominent role in management of specific rivers and that some additional measures should be taken to protect physical and biological attributes of aquatic systems.

For continued consultation and coordination with the FWS on the above matters, please contact Ms. Jessica Hogrefe (project biologist) or Mr. Craig Czarnecki (Field Supervisor), U.S. Fish and Wildlife Service, East Lansing Field Office, 2651 Coolidge Road, Suite 101, East Lansing, Michigan, phone: (517) 351-2555.

We appreciate the opportunity to review the document and provide comments.

Sincerely,

Michael Chezik
Regional Environmental Officer

cc:
Mr. Tom Schmidt, Forest Supervisor
Hiawatha National Forest
2727 North Lincoln Road
Escanaba, Michigan 49829

L. MacLean, FWS, Ft. Snelling, MN

References

Semlitsch, R.D. and J.R. Bodie. 2003. Biological criteria for buffer zones around wetlands and riparian habitats for amphibians and reptiles. Conservation Biology 17(5):1219-1228.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF

JUN 2 7 2005

B-19J

Thomas A. Schmidt, Forest Supervisor
USDA – Forest Service
Hiawatha National Forest – Forest Plan Revision
2727 N. Lincoln Road
Escanaba, Michigan 49829

RE: Draft Environmental Impact Statement for the Proposed Land and Resource Management Plan for the Hiawatha National Forest, Alger, Cheboygan, Chippewa, Delta, Luce, Mackinac, Marquette and Schoolcraft Counties, Michigan. EIS No. 20050127

Dear Mr. Schmidt:

In accordance with Section 309 of the Clean Air Act and the National Environmental Policy Act (NEPA), the U.S. Environmental Protection Agency (U.S. EPA) has reviewed the Draft Environmental Impact Statement (DEIS) for the Proposed Land and Resource Management Plan (proposed Forest Plan) for the Hiawatha National Forest in Michigan. The proposed Forest Plan establishes management direction for 895,313 acres of HNF resources and is based on the Preferred Alternative (Alternative 2) identified in the DEIS.

The Hiawatha National Forest (HNF) consists of the West Unit and East Unit located in the central and eastern portion of Michigan's Upper Peninsula. The HNF touches three Great Lakes (Superior, Michigan and Huron) and contains five Congressionally designated wild and scenic Rivers (Indian, Carp, Whitefish, Sturgeon, and East Branch Tahquamenon). Wetlands and their associated habitat comprise over 39 percent of the HNF managed land. The HNF supports a variety of uses including recreation and timber production. There is a mix of public and private lands within the 1,294,600 acres proclamation boundary. Through implementation of the proposed Forest Plan, the Forest Service intends to meet the objectives of federal laws and regulations, provide the public a variety of resource uses, recreational experiences, goods and services while managing ecosystems to provide for long-term sustainability.

The challenges the Forest Service is confronting while managing the HNF under the multiple-use concept are well documented in the DEIS. The DEIS identifies a variety of issues driving the need for revising the current 1986 Forest Plan. Two issues and their associated sub-issues: (1) Vegetation Management (Vegetation Composition and Structure,

Species Viability, and Old Growth) and (2) Recreation Access (Great Lakes and Inland Lakes Access, and Motorized and Non-Motorized Trails) are identified as significant driving issues.

The U.S. Forest Service evaluated four feasible alternatives in the DEIS. All alternatives meet the DEIS purpose and need and adhere to the concepts of multiple-use and ecosystem management. Alternative 1, the No Action alternative, represents continuing management as stipulated under the 1986 Forest Plan with minor revisions. Alternative 2, the DEIS Preferred Alternative, emphasizes managing vegetation both for a mix of early and late seral species within the ecological capability of the land, and for uneven-aged hardwood sawlog management. Alternative 2 also responds to comments about motorized and non-motorized lake access and settings, and provides for more off-highway vehicles (OHV) and snowmobile loop and connected trails. Alternative 3 emphasizes managing vegetation for higher timber product outputs and less old growth forests and highlights more hunting and motorized recreational opportunities. Alternative 4 emphasizes less commodity production, more old growth characteristics and more restriction on motorized access. We believe that this range of alternatives is responsive to comments received from the public during the scoping phase.

The U.S. EPA commends the Forest Service for its thorough treatment, in the DEIS, of an extensive array of natural resources and forest uses, all of which need to be evaluated in the context of the Forest Plan. We support the management direction for protection of watersheds, in part, through restoration and management of riparian corridors and their associated vegetation, intermittent and perennial streams, lakes and wetlands, and through the use of 500-foot vegetative buffers on high priority streams. Protection and restoration efforts of these resources will help maintain and enhance water quality and habitat in the Great Lakes basin. U.S. EPA supports vegetative management that promotes vegetative conditions that represent native species in age, size and successional states including old growth forests that support native wildlife and fish species, including populations of threatened and endangered species, and Regional-Forester designated sensitive species. We also support adaptive management and restrictive use approaches for managing natural resources that are adversely impacted by recreational activities, especially those associated with OHV, personal water craft (PWC) and snowmobile use. Because DEIS Alternative 2 best incorporates these principles while balancing the multiple-use demands placed upon the Hiawatha National Forest, EPA concurs with the selection of Alternative 2 as the Preferred Alternative.

EPA has no objections to the Forest Service's proposed Forest Plan for the Hiawatha National Forest. We have rated the DEIS an "LO" - Lack of Objections. We have enclosed an explanation of our rating. To further substantiate plans for the Hiawatha National Forest, the Forest Service should consider providing the following information in the Final Environmental Impact Statement:

- Include all applicable State of Michigan Best Management Practices (BMPs) and Forest Service Region 9 standards for protecting soils, flora and fauna, stream and lake water quality, and wetlands for the variety of activities that take place in the

HNF, including but not limited to: (1) timber harvesting, (2) re-vegetation, (3) road, trail and boat access facility construction, repair, decommissioning and operation, and (4) mineral extraction. This information will better serve the reader's understanding of the minimum measures that should be implemented to protect these vital resources for specific projects as the Forest Plan is carried out.

- Coordination letters from resource agencies especially U.S. Fish & Wildlife Service, Michigan Department of Natural Resources, and the Michigan Historic Preservation Officer. This information would provide an interested reader with a sense of whether there were areas of debate between agencies or whether federal and state agencies concurred with the Forest Service's direction.

Thank you for the opportunity to review the DEIS and the Proposed Land and Resource Management Plan. If you have any questions, please contact Virginia Laszewski of my staff at (312) 886-7501.

Sincerely,

Kenneth A. Westlake, Chief
NEPA Implementation Section
Office of Science, Ecosystems, and Communities

Enclosure (1)

cc: Randy Moore, Regional Forester, USDA Forest Service, Eastern Region, 626 E. Wisconsin Ave., Milwaukee, WI 53202

SUMMARY OF RATING DEFINITIONS AND FOLLOW UP ACTION*

Environmental Impact of the Action

LO-Lack of Objections
The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC-Environmental Concerns
The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impacts. EPA would like to work with the lead agency to reduce these impacts.

EO-Environmental Objections
The EPA review has identified significant environmental impacts that must be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU-Environmentally Unsatisfactory
The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS sate, this proposal will be recommended for referral to the CEQ.

Adequacy of the Impact Statement

Category 1-Adequate
The EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alterative and those of the alternatives reasonably available to the project or action. No further analysis or data collecting is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2-Insufficient Information
The draft EIS does not contain sufficient information for the EPA to fully assess the environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

Category 3-Inadequate
EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

*From EPA Manual 1640 Policy and Procedures for the Review of the Federal Actions Impacting the Environment

10 02205

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
LANSING

JENNIFER M. GRANHOLM
GOVERNOR

June 27, 2005

Mr. Thomas A. Schmidt
Forest Supervisor
Hiawatha National Forest
2727 N. Lincoln Road
Escanaba, MI 49829

Dear Mr. Schmidt:

Thank you for the opportunity for the Michigan Department of Natural Resources (Department) to review the Hiawatha National Forest's (HNF) Draft EIS and Proposed Forest Plan. It is obvious that a great amount of work and dedication is being put into plan revision.

In general, we are pleased with the strategic directions outlined in the document. Some of the revision topics detailed are strategies that the Department has been promoting for State land management in the form of sustainable ecosystems, watershed health, recreation and natural areas. Aligning management units with ecological boundaries, considering connectivity, patch size and cumulative effects on species viability are strategies that should help all large landowners to achieve biodiversity and sustainability goals.

Preferred Alternative 2 represents the best long term management options for a winter deer range and forest stand composition attributes. Appropriate consideration of deeryard complexes in the planning processes for old growth designation, forest type conversions, silvicultural stand manipulations, and desired forest conditions should be taken.

Management for late seral species such as white pine and eastern hemlock through planting, silvicultural manipulation, and succession are important in winter deer range management as dominant cover types as well as viable components within northern hardwood stands. Increasing the hemlock habitat acreage should be emphasized where ever appropriate conditions warrant. This is particularly important in MA's where management for thermal cover and browse juxtaposition should be emphasized.

Increasing mature lowland mixed hardwoods / conifers acreage by 31% (28,000 acres) during the next 100 years, primarily on ELT's 70B, 80A and 80B is positive. Additionally management for increased acreage (~39,000 acres over 100 year) of lowland conifer and cedar stands in ELT's 70B and 80B, mesic to wet sites, has positive long term implications for deer winter range. Care should be given to silvicultural planning efforts where these increases can be implemented in delineated deer yarding complexes.

As noted in the vegetation management harvest methods/practices section, *'Cedar harvest should be limited to sites where a high probability for successful regeneration'*, is a serious regeneration issue. The viability of successful regeneration and recruitment of cedar through patch and strip cuts as suggested in this section is questionable as demonstrated in past

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implementation. Any implementation should be adequately paired with considerations for additional seedbed preparation (techniques such as prescribed fire or scarification); deer browsing, stand maturity, and cut design.

Threats to forest health, diversity and sustainability due to disease and invasive insect species are discussed in the proposed forest plan. However, the certain alteration of forest composition or complete extirpation of tree species posed by Beech Bark Disease, Oak Wilt, and Emerald Ash Borer is not adequately addressed. Consideration of these threats in the desired future makeup of the forest, in particular how to fill the tree species void left in the wake of these forest pathogens needs to be considered in the planning process. As an example, what contingency plans exist to deal with total loss of hard mast producing species of beech, red and white oak from the forest landscape? Are there other viable species alternatives that can be introduced? The future condition and viability of the forest depends upon how these concerns will be addressed.

Conversely to these increases in conifer habitats, early seral species aspen and birch habitats are predicted to decline sharply across the forest in alternative 2. This declining availability of shade intolerant deciduous forest types will have significant impacts on populations of associated forest wildlife. American woodcock is probably the most important game species to be negatively impacted by the loss of aspen habitat. Since 1968, woodcock singing-ground surveys in Michigan have indicated a downward trend of 1.7% per year. It is widely believed that habitat loss is the primary reason for this decline. Other species that may suffer population declines due to habitat loss include snowshoe hare, white-tailed deer, black bear, moose, gray wolf, ruffed grouse, goshawk, chestnut-sided warbler and nashville warbler. Acreages of managed aspen or birch on suited lands should be continued at current levels (above the predicted levels) if it is desirable to maintain habitat for the species above. Where conversion of unsuited lands is planned, long lived mixed conifers (white pine and hemlock), jack pine or other opportunities should be emphasized. In managing the forest for multiple values, it is important to remember the role of prey species. Deer are the mainstay in the diet of large carnivores such as the gray wolf. Deer, woodcock, ruffed grouse, and snowshoe hare are also the primary quarry of hunters. The recreational value and economic impact of hunting within the communities near the Hiawatha National Forest are significant.

The Department has developed BMPs for water quality management practices on forest lands that contain guidelines for timber management within the riparian area. We support the proposed change to minimize aspen regeneration within 500 feet of high-priority trout streams for riparian zone management. This proposal is consistent with the Department's recently revised beaver management policy (Department Procedure 2120.1), and recognizes that the less common resource (i.e., coldwater habitat) is given management priority when the opportunity exists. The Department does not take issue with selective cutting within the riparian area, however we discourage large-scale management for early successional tree species within the 300 ft riparian zone near small (< 50 ft wide), high-quality trout streams.

Competing values need to be examined closely when implementing practices on the landscape on a case by case basis. There is little doubt that beavers can negatively impact trout systems. It is also well known that beavers produce positive impacts for a wide variety of species. Data from Michigan radio collared wolves indicate that some packs are highly dependent upon

beaver for a substantive part of their diet (Sitar & Weise, personal communication). Data from Isle Royale National Park indicate that wolves regularly prey on beaver to the degree that they play an important role in regulating local beaver populations (Shelton & Peterson 1983). Nearly 80 vertebrate species are commonly associated with beaver floodings including threatened, endangered and species of special concern. Both the positive and negative impacts of the proposed reduction of aspen along select water courses need to be considered.

We urge the U. S. Forest Service to continue to examine the number of roads in the Hiawatha National Forest. Road stream crossings are sources of sand and sediment and may create unnatural hydraulic conditions which can block fish passage. While we recognize that some roads are necessary for users to gain entry into the National Forests, the direct and indirect impacts of any new road construction on aquatic resources should be thoroughly evaluated before any new road construction proceeds. If existing roads are adversely affecting aquatic resources, appropriate corrective action should be taken immediately.

The Hiawatha National Forest in the eastern and central UP does not currently contain any State designated Natural Rivers. However, it does contain five federally designated Wild and Scenic Rivers with proposals for adding an additional five segments (Sturgeon, Whitefish, Indian, East Branch of the Tahquamenon, and the Carp). We encourage the completion of the studies for designating these additional river segments.

Maintenance of current sediment basins is supported. However, with expanding work concerning habitat rehabilitation, additional sediment basins may need to be constructed in the future to remediate habitat loss due to historic logging practices or other human-made disturbances which encourage accelerated scouring of erodible stream bank materials.

The Department would like to maintain flexibility in conducting surveys on lakes and streams within the National Forest. For example, some surveys will be accomplished in time frames designed to minimize disturbance to nesting birds. However, there may be some cases where the Department needs to seek a variance to meet sampling requirements for certain fish species.

The "Vegetation Management" section for the proposed alternative is similar to the Department's interim guidelines for mesic conifer management in the western UP. We feel that this is an appropriate strategy for discouraging beaver activity in coldwater riparian corridors and encouraging the recruitment of large woody debris. It is recommended that timber harvesting be conducted in mid-to-late winter to minimize impacts to hydric soils and vegetation.

Since partnerships with watershed based organizations has become an effective method to accomplish watershed restoration goals, the Department recommends including an objective in the plan calling for continued participation in these watershed restoration partnerships.

The Department is concerned with the potential control and designated use of inland lakes by the USFS that are not totally surrounded by USFS land. Michigan law recognizes the right of riparians to certain uses, including boating, and these rights attach to the entire surface of a may be adversely impacted by restrictions on those rights. Additionally, the State of Michigan has regulatory authority over all waters within the territorial boundaries of the State under Part

801, Marine Safety, of the Natural Resources and Environmental Protection Act. Therefore, any use and access restrictions must comply with State law.

The intent to make all roads "closed unless posted open" is a concern to both OHV and snowmobile users. This is a reversal from the past and may create animosity from recreational users. Many snowmobilers use un-plowed roads on the HNF in conjunction with the designated trail system for short day or weekend trips. Posting the roads closed may eliminate recreation from this area of the forest. In addition, the preferred alternative would also prohibit cross-country travel for snowmobiles. This becomes an issue where there is a break in the designated trail system, such as at Whitefish River in the Rapid River area. This is also an issue of "similar management", where the Department objects to this new policy application in the Upper Peninsula, preferring that the USFS off road travel policy reflect the same approach as utilized by the Department for both snowmobiles and OHV. In as many ways as is possible, travel and utilization of the State and National Forests should be seamless to users.

For local forest economies it is necessary to actually produce the plan's harvest goals. To emphasize concern for local forest economies, language could be inserted stressing the need to adhere to the harvest plan to prevent damage to the local economy.

The Department appreciates the attention and commitment to protection of Michigan's forests as addressed in the proposed Hiawatha National Forest Plan. The priorities and goals identified for risk reduction, especially in wildland/urban interface areas, is outstanding. However, the stated goal *"natural fires are allowed to occur within prescribed parameters ....."* gives the State of Michigan cause for concern. We would encourage the Hiawatha National Forest to closely coordinate any such plans with Department fire staff. Such language in fact does appear in the final plan.

The planning process was very open, transparent, thorough and provided many opportunities for public input.

Again, thank you for the opportunity to participate in the planning process.

Sincerely,

Rebecca A. Humphries
Director
517-373-2329

Keith J. Charters
Chair
Natural Resources Commission

cc: Statewide Council
Mr. Dennis Fox, Chief of Staff, DNR
Mr. Dennis Fedewa, Chief Deputy, DNR
Ms. Mindy Koch, Resource Management Deputy, DNR
Ms. Lynne Boyd, DNR

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING

JENNIFER M. GRANHOLM
GOVERNOR

STEVEN E. CHESTER
DIRECTOR

July 15, 2005

Mr. Dave Maercklein
Forest Planner
Hiawatha National Forest
2727 N. Lincoln Road
Escanaba, Michigan 49829

Dear Mr. Maercklein:

Subject: Federal Consistency Determination, Review of General Management Plan
Hiawatha National Forest, Michigan

Staff of the Land and Water Management Division have reviewed this phase of the project for consistency with Michigan's Coastal Management Program (MCMP), as required by Section 307 of the Coastal Zone Management Act, PL 92-583, as amended (CZMA). Thank you for providing the opportunity to review this proposed activity.

A determination of consistency with MCMP requires evaluation of a project to determine if it will have an adverse impact on coastal land or water uses or coastal resources. Projects are evaluated using the permitting criteria contained in the regulatory statutes administered by the Department of Environmental Quality. These statutes constitute the enforceable policies of the Coastal Management Program.

The MCMP enforceable policies are based on the regulatory statutes of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA). The MCMP primary enforceable policies from NREPA include:

- Part 17, Michigan Environmental Protection Act
- Part 31, Water Resources Protection
- Part 91, Soil Erosion Control and Sedimentation Control
- Part 301, Inland Lakes and Streams
- Part 303, Wetland Protection
- Part 305, Natural Rivers
- Part 323, Shorelands Protection and Management
- Part 325, Great Lakes Submerged Lands
- Part 351, Wilderness and Natural Area
- Part 353, Sand Dune Protection and Management
- Part 361, Farmland and Open Space Preservation
- Part 365, Endangered Species Act
- Part 761, Aboriginal Records and Antiquities

Provided all required permits are issued and complied with, no adverse impacts to coastal resources are anticipated from this phase of the project as described in the information you forwarded to our office. Upon issuance of all necessary permits, this project will be consistent with MCMP.

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www.michigan.gov • (517) 241-1515

This consistency determination does not waive the need for permits that may be required under other federal, state or local statutes. Please call me if you have any questions regarding this review.

Sincerely,

Annette Nealey for

Chris Antieau
Great Lakes Shorelands Section
Land and Water Management Division
517-373-3894

cc: Ms. Catherine Ballard, DEQ

STATE OF MICHIGAN

JOHN ENGLER
GOVERNOR

DEPARTMENT OF HISTORY, ARTS AND LIBRARIES
LANSING

DR. WILLIAM ANDERSON
DIRECTOR

October 13, 2005

JOHN FRANZEN
USDA FOREST SERVICE
HIAWATHA NATIONAL FOREST
2727 N LINCOLN ROAD
ESCANABA MI 49829

RE: ER-2785 Hiawatha National Forest Land Management Plan Revision (USDA-FS)

Dear Mr. Franzen:

Under the authority of Section 106 of the National Historic Preservation Act of 1966, as amended, we have reviewed and accept Hiawatha National Forest Land Management Plan Revision.

The State Historic Preservation Office (SHPO) is not the office of record for this **undertaking**. You are therefore asked to maintain a copy of this letter with your environmental review record for this undertaking. If the scope of work changes in any way, or if artifacts or bones are discovered, please notify this office immediately.

If you have any questions, please contact Brian Grennell, Environmental Review Specialist, at (517) 335-2721 or by email at ER@michigan.gov. **Please reference our project number in all communication with this office regarding this undertaking.** Thank you for this opportunity to review and comment, and for your cooperation.

Sincerely,

Brian D. Conway
State Historic Preservation Officer

BDC:JRH:BGG

STATE HISTORIC PRESERVATION OFFICE, MICHIGAN HISTORICAL CENTER
717 WEST ALLEGAN STREET • P.O. BOX 30740 • LANSING, MICHIGAN 48909-8240
(517) 373-1630
www.michigan.gov/hal

Commenter Names and Numbers

00001	Richard Petersen
00002	Doug & Tina Riley
00003	Dennis Palmer
00004	Roger Brown
00005	Bob Nelson
00006	B. Sachau
00007	John Muehlhausen
00008	Marley P. Walker
00009	Denny Mattison
00010	Ken Shannon
00011	AJ Lee
00012	Andy
00013	Richard Petersen
00014	Marc LaBeau
00015	John K. Stenvig
00016	Tom Coyne
00017	Rex Cole
00018	Steve Lieburn
00019	Bill Kwarciany
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00021	Lloyd A. Lessard
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00504 CKrupp9656
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00647 Bob Grul
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00649 William Suggitt
00650 Mike Murray
00651 Timothy Ford
00652 Laird E Johnston
00653 William Santina
00654 Curt Wells
00655 Marie Grogitsky
00656 Laurie Appel
00657 Mike Burnett
00658 Keith Wayburn
00659 Bob & Louise Hayden
00660 Rod Weirauch
00661 Paul & Patricia Keech
00662 Curt M Nutkins
00663 Charles F Reuter
00664 John R Burleson
00665 Joel A. Flory
00666 Thomas A. Barnes
00667 Larry & Elaine Gingrich
00668 Roger Schaus
00669 Kevin R. Doran
00670 Marvin Koski
00671 Ed Zlotocha
00672 Debbie DeWildt
00673 Perry Dingman
00674 David Lubbinge
00675 Norm VerHage
00676 David Lofthouse
00677 Lauri LaBumbard
00678 Gary Zimmer
00679 Deborah Zuckerman
00680 Cathy Pardee
00681 Diane Gonzales
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00709 Andrea Beauchamp
00710 Andrea Vander Kolk
00711 Bambi Murphy
00712 Sherry Letavis
00713 Deann Alex
00714 Stephen Williams
00715 Kathleen Chiang
00716 Kay Schultetus
00717 Kathleen Koja
00718 Beth Biland
00719 Claudia McPherson
00720 Barbara J Kirchner
00721 Lynn Dodson
00722 Donald Robinson
00723 Katherine Androsian
00724 Robert Buchalski
00725 Leslie Malcolmson
00726 Susan Elliker
00727 Annette Gilson
00728 Gail Walter
00729 Barbara Tonsberg
00730 Nancy Warren
00731 Victoria Humphrey
00732 Mike Pirkl
00733 William McMullin
00734 Donald Garlit
00735 Steve Hansen
00736 Charles W Bissell Jr
00737 John Svoboda
00738 Donald E page
00739 David Hebert

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00741 Phillip Oppenheiser
00742 Craig Steven Fredenburg
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00746 Michael & Lamees Fory
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00748 Walt Kessler
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00750 James W Crawford
00751 Steve Pearson
00752 Judson Abernathy
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00754 Mark Rudolph
00755 Ron C Dawes
00756 Mark Donham
00757 Michael Dutkavich
00758 Lloyd P Price
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00761 Larry Vanderwoude
00762 Margo Chisholm
00763 Mike A Jones
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00773 Pamela Unger
00774 Dee Muriel
00775 Frank Jeff Verito
00776 Tobit K. Poland
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00779 Randy Swaty
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00789 Joanne Hailey
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00794 Rochelle Willis
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00809 Jim Rodrigue
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00811 Samuel Dewalle
00812 Tony Arnold
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00814 Laura Kaufman
00815 Gerladine McElliott
00816 Suzanne Kral
00817 Jerry Stewart
00818 George Rains
00819 Ward Manchester
00820 Larry Jones
00821 Don Mertz
00822 William Kaplowitz
00823 Maryellen Hyttinen
00824 Julia Macmillan
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00826 Carron Artz
00827 Targol Mesbah
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00831 Carmen Klucsor
00832 Scott Taylor
00833 Judy Rolando
00834 Russell & Ms Judith Carey Weisz
00835 Elizabeth Juras
00836 Marsha Seeley
00837 Pamela Murdock
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00868 Joanna Cadorette
00869 Christi Sizemore
00870 Robin McCallum
00871 Cynthia Marugg
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00875 Jean Lutz
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00885 Lawrence Takvorian
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00888 Fernando Ramiro-Ibanez
00889 Shoshanah McKnight
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00904 Anjie Latta
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00918 Crandall Bay
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00920 Tara McLendon
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00923 Gary Sanders
00924 Kristen Osman
00925 Kathleen Assiff
00926 Nicolas Johnson
00927 Lisa Brazil

00928 Dawn Atnip
00929 Janis Parks
00930 April Ewaskey
00931 Cynthia Zuccaro
00932 Mel Henshaw
00933 Mary Heeg
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00935 Ryan Powell
00936 Reba Vanderpool
00937 Thomas Greenburg
00938 Corona Brezina
00939 David Kass
00940 Denise Canada
00941 Melanie Konrad
00942 Julia Gallichio
00943 Roger Haddix
00944 Heather Jackson
00945 Charles Woolworth
00946 Saundra Whitten
00947 Laura Strehlow
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00949 Michael Powers
00950 Sheri McLelland
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00962 Mj Hansen
00963 Sarah Love
00964 Lewis King
00965 Heather Richman
00966 Pamela Conley
00967 Anne-Marie Boyce
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00986 Barton Grimm
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01000 Terrance Hutchinson
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01003 Sharon DeLiso
01004 Leslie Robert
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01006 Robin Budry
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01008 Julia Bonfiglio
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01011 Franklin Quan
01012 Tara Morris
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01018 Brian Stanley
01019 John Dunn
01020 Ronald Binder
01021 Carol Surma
01022 Marquerite Ramlow
01023 Ronda Maples
01024 Diana Hartley
01025 Joel Kelly
01026 Stephen Cser
01027 David Newcomer
01028 Karl Armens
01029 Barry Draper
01030 Carla Worth
01031 Harvey and Barbara Sparks
01032 Kathleen King
01033 Betty Wulf-Rice
01034 Kaylin Gregerson
01035 Susan Rademacher
01036 Kimberly Allen
01037 Debra Barmichael
01038 Jennifer Larson
01039 Lisa Douglass
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01042 Frank Wegscheider
01043 Rene Valladares
01044 Beata Lewis
01045 Katherine Kautz
01046 Richard Sanders
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01048 Don Jacobson
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01072 Nolan Farkas
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01076 Onno Koelman
01077 Maura Becker
01078 Marianne Toth
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01092 Christine Nayman
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01098 Sonya Aamodt
01099 Marian Stone
01100 Blake Nicholoff
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01102 Charley Wittman
01103 Linda Francisco
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01134 Adriane Michaelis
01135 Christa Atkins
01136 Andrea Bonacquisti
01137 Judith Lotz
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01142 Gene Trapp
01143 Michael Filip
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01150 Kia Eichert
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01159 Linda Karabinos
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01163 Jerome Weinberger
01164 Amber Storey
01165 Adele Volta
01166 Dru Carter
01167 Karen Chinn
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01169 Jennifer Weinman
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01171 David Richmond
01172 Kevin Zellmer
01173 Melinda McBride
01174 Carol Westerman-Jones
01175 Karryn Hart
01176 Richard Gorr
01177 Rachel Douglas
01178 Jan Scalise
01179 Chris Drozdick
01180 Rosy Morales
01181 Tim Bengal
01182 Margery Troxell
01183 Kathryn Chmurny
01184 Lydia Furman
01185 Belinda D'auteuil
01186 Robert Stevens
01187 Vicky Sanders
01188 Judy Wick
01189 Eric Cadora
01190 Gloria Reynolds
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01198 Mike Ogren
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01203 Dr. Rebecca Summer
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01205 Kathy Weber
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01207 Sisters St. Mary
01208 Susan Markley
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01210 Debra Jackson
01211 Barbara Carrera
01212 Carol Opria
01213 Vivian Alderman
01214 Laura Latt
01215 Rhonda Thurman
01216 Shirley Burga
01217 Dawn French
01218 Monique Roehl-Helliesen
01219 Carol Ann Lantz
01220 Heidi Schooler
01221 Daniel Sullivan
01222 Sheila Alexander
01223 Nicole Castka
01224 Michelle Guenther
01225 Terri Coble
01226 Erif Thunen
01227 Rene Breier
01228 Mitsy Silva
01229 Timothy Webb
01230 Roelof Bijkerk
01231 William Erlenbach
01232 Elsye Friedman
01233 Thomas Saucy
01234 Lee and Elizabeth Kimbrough
01235 Susan Lane
01236 Nina Rollow
01237 Jessica Strichartz
01238 Erika Kayea
01239 Ana Maria Ferrer
01240 Daniel Mitchell
01241 Wyman Whipple
01242 Patty Albright
01243 Mark Kendall
01244 Lauren Hartmann
01245 Elizabeth Fowler-Smith
01246 Lyn Washington
01247 Jill Kloosterman
01248 Jody Platt
01249 Donna Nittinger
01250 Michael Yannell
01251 Misty Michalski
01252 William Bennett
01253 Terry Guyant
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01256 Tawny McLellan
01257 Joni Peters
01258 Ronaele Synder
01259 Alison Pucek
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01262 Barbara Wright
01263 Marquessa Smith-Lin
01264 Sasha Kay
01265 Diane Down
01266 Flip Biondi
01267 Sharon Merritt
01268 Kevin Ryan
01269 Kristin Nunez
01270 Harvey Krantz
01271 Frank Baele
01272 Donna Plutschuck
01273 Walter Bost
01274 Kristina Oden
01275 Margaret Benner
01276 Carolyn Wilhelm-Pierson
01277 Mary Janison Rupert
01278 Greg Rowell
01279 Karl Hubert
01280 Lu Haner
01281 James Hunt
01282 Richard Sproull
01283 Rosemary Caolo
01284 Brenda Andrews
01285 Thomas Aviles
01286 Barbara McKee
01287 Stephen Sharp
01288 Joan Weisenbloom
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01291 Mary Pfeiffer
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01293 Carl Freeman
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01296 Darleen Wright
01297 Brian Digennaro
01298 Mary Anderson
01299 Chad Fordham
01300 Holly Dyer
01301 Roxan Hessenaur
01302 Ron Shedd
01303 Margaret Roach

01304 Sarah Angell
01305 Sue Janiszewski
01306 Vikki Avey
01307 Patricia Kolling
01308 Yvonne Vecchia
01309 Janet Amber
01310 Karen Kissick
01311 Diana Gonzales
01312 Dave Gliva
01313 Minaxi Gupta
01314 Wayne Dorais
01315 Arun Chauhan
01316 Nancy Haggerty
01317 Joan Valancy
01318 Sandra Daugherty
01319 Susan Reithel
01320 Alice Larsen
01321 Lori Ugolik
01322 Angela Hall
01323 Charlotte Bear
01324 Margaret Kiipowitz
01325 Leslie Andrews
01326 Beth Covitt
01327 Camille La France
01328 Janice Rosiek
01329 Nancy Gilleo
01330 Richard Sadowsky
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01332 Rita Perrone
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01334 Jan Meredith
01335 Jonathan Kaslander
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01337 David Mason
01338 Thomas Triplett
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01341 John Downie
01342 Ana Rudolph
01343 Nicolle Mader
01344 Kathy Lehman
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01346 M. Canter
01347 Catherine Gingerich
01348 Renee Noomie
01349 Robert Phillips
01350 Dennis McAllister
01351 Anna Shethar
01352 Samantha Honowitz
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01354 Maureen Finn
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01356 Judy Faraklas
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01358 Jon Morehouse
01359 Marjorie Chrusciel
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01365 Nadine Refsell
01366 Maurice McGleish
01367 Michael Kulakofsky
01368 Virginia Batson
01369 Lori Davis
01370 George Erceg
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01373 Jim P Scott
01374 Reid Kelly
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01377 Robyn Sliney
01378 Priscilla Khweis
01379 Michael Reeves
01380 Lynne Jefferies
01381 Marie Lutz
01382 Jeremy Stoll
01383 Emilene Hill
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01385 Mike Reyer
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01387 Mark Leeson
01388 Richard Bach
01389 Nicole Allen
01390 Ronald Smith
01391 Corrine Gearhart
01392 Katy Mikols
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01401 Janet Arbaugh
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01403 Joyce Pfennig
01404 Mary Sand
01405 Gerard Redpath
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01408 Carstem Hansen
01409 Beth Miazga
01410 Janet Shumaker
01411 Holly Hopkins
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01413 Jennifer Morgan
01414 Raymond Szumal
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01416 Margrit Moan-Nachreiner
01417 Darlene Taylor
01418 Michael Alda
01419 Andi DeCenzo
01420 Leslie Haehn
01421 Mary Jo Andrews
01422 Kaneesha Jefferson
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01424 Barbara Carmichael
01425 Christine Hamilton
01426 Roger Bailey
01427 Jim Patalan
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01432 Michael Whitehead
01433 Jerry Daly
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01436 Artemis Asproyerakas
01437 Carolyn Hwang
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01440 Timothy Graner
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01443 Judith Schlacter
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01447 Sandra Deel
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01449 Michele Pollock
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01454 Kim Forrest
01455 Susan Johnson
01456 Salme Armijo
01457 Michael Kelley
01458 Paul Kripli
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01460 Richard Moczulski
01461 Doris Scala
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01463 Jim Miller
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01465 Donna Pouzar
01466 Kathryn Richardson
01467 Barbara Cowan
01468 Michael Butkiewicz
01469 Sandi Sprankle
01470 Susan Montalvo
01471 Clea Wright
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01474 Joseph Kropf
01475 Chris Della Penna
01476 Annette Mattison
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01486 Traci Gondek
01487 Bhavani Saravanan
01488 Karen O'Connell
01489 Loretta Mink
01490 Gerda Dinwiddie
01491 C. Allen

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01495 Karen Jine
01496 Leslie Brashear
01497 Tom & Gerry Easton
01498 Dirk Beving
01499 Michelle Margules
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01511 Barbara Gaudio
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01513 Elaine Fischer
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01518 Donna Hyatt
01519 June Macarthur
01520 Debora Tramposh
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01522 Patricia Menees
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01533 Elizabeth Ramsey
01534 Lucy Hutcherson
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01536 Thomas Cobb
01537 Patricia Brooks
01538 Valerie Adam
01539 Diane Kaser
01540 Gregory Linn
01541 Alison Zyla
01542 Linda Bew
01543 Jane Sigler
01544 Thomas Tucker
01545 Bette Chase
01546 M.E. Weeks
01547 Leslie Hickcox
01548 Ginger Hopper
01549 Skip Radau
01550 Keith Hall
01551 Anita Merlino
01552 Elizabeth Lyon
01553 Adam Periard
01554 Lisa Deroo
01555 Joann and L. Swanson
01556 Taryn Clapper
01557 Susan Taber
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01560 Lynn Craig
01561 Felicia Farace
01562 Clyde Boudreau
01563 Alan Johnson
01564 Mike Zacharias
01565 Jonathan Saylor
01566 Sandra Dore
01567 Eric Brooker
01568 Marcia Harvey
01569 Jerome Glassman
01570 Michael Hinshaw
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01572 Max Quijano
01573 Sean DeMers
01574 Kimberley Giancaterino
01575 Jason Ortlip
01576 Sara Heitkamp
01577 Arthur Metzger
01578 Douglas Music
01579 Lin Norris
01580 William Wofford
01581 Carol Kemmerer
01582 Kat Mills
01583 Nina Council
01584 Ruby Lee
01585 Inger Olson
01586 Kristina Murphree
01587 Rj Browne
01588 Peter LeClair
01589 Debra Reynolds
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01592 Neil Uelman
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01594 Larry Snyder
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01596 Ana Velasco
01597 Donna Bills
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01599 Cinzia Maddalena
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01601 Sundara Lucas
01602 Del Emory
01603 Patricia Wilkinson
01604 Mike Leahy
01605 David Smith
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01608 Shirley Cook
01609 Kevin J. Wilseck
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01611 Michelle Labadie
01612 John Nelson
01613 Ed Wodniakowski
01614 Kurt Helmstadter
01615 Jerry Kovacs
01616 John Ashworth
01617 Bruce W. and L. Jean Dunegan Walters
01618 Christopher J. Stawasz
01619 Robert G. Tate
01620 Jeri Griffin
01621 Terry Guza
01622 Thomas R. and Mary Jane Vajen
01623 Cindy Yano
01624 Paul Anderson
01625 Kevin McLenon
01626 David J Cox
01627 Robert Crosby
01628 James Lyon
01629 Thomas Kindig
01630 Richard P. Smith
01631 James Engle
01632 Wayne Youngquist
01633 Ronald Williams
01634 R.J. "Curley" Myers
01635 Merlin Ransom
01636 John Cox
01637 Chris Chase
01638 Laurie F. Parssinen
01639 Sean O'Brien
01640 Bob Stage
01641 Allen Saberniak
01642 Dave Miehlke
01643 Rick Mushing
01644 Derrick Wilson
01645 Dan Calhoun
01646 Melissa Peters
01647 Bill Sultze
01648 Todd D. Brown
01649 Anne Okonek
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01652 Jarrod Rominske
01653 Corey Doerr
01654 Mark Schumaker
01655 Darcy Doerr
01656 Chad Wise
01657 Principal C. Howard
01658 Ronald Mansfield
01659 Wayne Doerr
01660 Kelli Doerr
01661 Laura Schalk
01662 Al Doerr
01663 Kevin A. Lynn
01664 Dan White
01665 Gregory Hollis
01666 Tony Wilburn
01667 David Fordon
01668 John D. Carr
01669 David V. Miller
01670 Ann Marie Holas-Dryps
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01672 James Ratajczyk
01673 Brian Birgy
01674 Kenneth Neal
01675 Floyd Jousma
01676 No Name F1
01677 Dr. Michael McElligatt

01678 Walter Vollenweider
01679 Jim Burns
01680 Ken Krohne
01681 Robert Spicer
01682 Tim Ray
01683 Rick Grosz
01684 James Schettek
01685 Jeffery A. Gordon
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01687 John L. O'Toole
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01689 Brian G. Beimers
01690 William Backos
01691 Christopher Sheaks
01692 Jeffrey Latave
01693 Reb Same
01694 Donald W. Bellaw
01695 James Maiani
01696 Joe Taber
01697 Kevin Quain
01698 Chuck Cermack
01699 Jerry Longstretch
01700 Alan Hering
01701 Steve Smith
01702 P.H. Burgher
01703 Jay Gould
01704 Carl D. Harm
01705 Arthur W. Jankens, Jr.
01706 Lewis Glashower
01707 Gary C. Rice
01708 Joe, Joey, Nancy & Matt Rupar
01709 Max Morden
01710 Marion Compton
01711 Rick Ploeg
01712 Al Oatmen
01713 Andrew Snider
01714 Cliff Bennett
01715 Kevin Walters
01716 James Hagenbarth
01717 Clifford Morris
01718 Jamie Pearson
01719 David S. Russell
01720 Randall Boyer
01721 Max Coltier
01722 Todd Noyce
01723 Larry A. Bowman
01724 Ken W. Wirth
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01726 Ronald Mathison
01727 Silverio Mazzella
01728 Tom Weber
01729 Ronald Achtenberg
01730 James & Marilyn Mills
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01734 Ron Rogers
01735 Gerald Rota
01736 Thomas A. Fowler
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01738 Terry Andrews
01739 Jerry Krummrey
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01742 Mike Grice
01743 Vernon M Schneluer
01744 Geoffrey Emede
01745 Christine Mouch
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01749 David Fordon
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01751 Bill Britt
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01753 Randall Boyer
01754 Gary Gaudreau
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01758 Wayne Wieferich
01759 Linda Barrett
01760 James D. Okraszewski
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01762 Richard Shlosser
01763 Thomas Rutledge
01764 Madeleine Smith
01765 Lora Frikken
01766 Richard Gariazzo
01767 Barbara Waldron
01768 John Dierig
01769 Stephen Enger
01770 Joseph Dornbos
01771 Linda Heath
01772 Fiona Urquhart
01773 Cynthia Tyler
01774 Colin Osborne
01775 Renee Owens
01776 Rebecca Mauch
01777 Wolfson Richards
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01779 Laurie Toner
01780 Brandy Martinez
01781 Stephen & Kathryn Tatum
01782 Angela Grammatico
01783 Tracy Thornburg
01784 Judith Shuman
01785 Jennifer Sims
01786 K.J. Bavouset
01787 Caryn Goldman
01788 Eli Solesby
01789 Gwen Kloosterman
01790 Maureen O'Brien
01791 Keith Marcotte
01792 Daniel Tiarks
01793 Renee Cassidy
01794 Nicole Jordan
01795 Paula Bruner
01796 Judith Norwine
01797 Melissa White
01798 Cheryl Reid
01799 Beth Eisenbeis
01800 Mark Cossgriff
01801 Sara Swenson
01802 Sharon Blazes
01803 Sharon Fisher
01804 Patricia Lambert
01805 Victoria Waller
01806 Sandra Bolton
01807 Eileen Conner
01808 Eleanor Drlshagen
01809 Eleanor Brennan
01810 Marsha Alexander
01811 Marcella Mirata
01812 Ava Wolf
01813 Charlie Miles
01814 Susan Nolan
01815 Ruth Connery
01816 Jason Maxwell
01817 Hilary Lorraine
01818 Jean Newcomb
01819 Randy May
01820 Marty Meisner
01821 John Clifford
01822 Wynella Gilbert
01823 Werner Bergman
01824 Ethel Dick
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01826 Dona La Schiava
01827 Mary Hildenbrand
01828 Judy Hildenbrand
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01832 Van Pittsenbargar
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01840 Robert Bieder
01841 Sharon Kindera
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01843 Beth Stauber
01844 James Verry
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01847 Dellas Henke
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01851 Ronald Martini
01852 Rhett Winter
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01858 Karen Deora
01859 Jay Jones
01860 Peter Pitkin
01861 James Lindsay
01862 Richard Gould
01863 Al Graf
01864 Lynda Upton

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01866 Angela Fite
01867 Sigfrido Quijano
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01870 Joseph Carlig
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01872 Jody Terry
01873 Sylvia Marie
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01879 Drew Van Zee
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01888 Polityka Karen
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01896 AJP
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01898 Ms. Ray
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01901 Carol Patton
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01903 Maureen Balluff
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01923 Rick Lanham
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01941 Lynda Mueller
01942 Lele & Rachel Field
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01952 Sharon Imgrund
01953 Joelle Mosher
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01955 Susan D. Hungerford
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01959 Geoffrey Doman
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01962 Alfred Gluth
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01992 Michael Mills
01993 Stephen Paddock
01994 Linda Bunyan
01995 Barbara Welling
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01998 Neil McCloskey
01999 Donna Charland
02000 Lonnie Swaney
02001 Tom Kraut
02002 Courtney Henry
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02004 Steven Seng
02005 Mike Patterson
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02009 Robert S. Anderson
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02011 Thomas Schut
02012 Craig Sard
02013 Tony Stark
02014 Luke Boerger
02015 Scott Wenzel
02016 Gary Zoellner
02017 Troy Rampe
02018 Andrew G Planet
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02021 Glenn, MaryBeth, Grace & Paige MacDonald
02022 Ben Jolloff
02023 Tom Peterson
02024 Nick Amelio
02025 Daniel R. Szkirpan
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02030 Stephen Milks
02031 Sussex Sled Bugs
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02084 Mike Vorce
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02134 Darlene Reed
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02202 Gary Colby
02203 Pam Colby
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02208 Mary Vaisanen
02209 Charles DeVito
02210 Candace Swetkis
02211 Mary Vaisanen
02212 Keith Lynch
02213 Keith Lynch
02214 Keith and Joyce Russotto
02215 Kevin Candler
02216 Sue Alexander
02217 Jeffrey Magowan
02218 Gary Zimmer
02219 Ron Yesney
02220 Jim Bensman
02221 Bob McHugh
02222 Katie Trakselis-Avery
02223 Cheryl Schlehuber
02224 James J. Spooner
02225 Thomas Wilson
02226 Susan Juetten
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02231 Alan K. Shirkey
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02233 LouAnn Hurry
02234 Daniel C. Blaney

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02237 Jeanine Graefen
02238 Vincent DiFiore
02239 Gary Sprung
02240 Linda Crawford
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02256 Tim Nofziger
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02260 Christina Smith
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02263 Malorie Smith
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02300 David Kenyon
02301 Jeffery Jennings
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02304 Kathleen Jankowski
02305 Kern Burden
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02308 Greg Mainwaring
02309 Rosemary Broses
02310 Norm Theil
02311 Mark Hosmer
02312 Donald Moore
02313 David Grzenkowicz
02314 Lowell Kage
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02316 Joe Zaleski
02317 Dean Swanson
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02320 Gordon Gilray
02321 Rick Grosz
02322 Sylvester Ringel
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02328 Larry Shields
02329 Craig Carroll
02330 Arthur Winterstein
02331 Ron Gobeyn
02332 Donald Carroll
02333 Mike Grogitski
02334 John Bitters
02335 George McNiven
02336 Lee Lazenby
02337 Melvin Groleau
02338 Jim Schultz
02339 Bob Quine
02340 Jack Russ
02341 Catherine Kolomitz
02342 Danny Daggy
02343 Larry Vanacker
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02347 Ray Lighthart
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02354 Alan Pike
02355 Steve Pike
02356 Monte Frick
02357 Karen Savine
02358 Walter Hook
02359 Bart Mueller
02360 Kris Cooper
02361 Bill Barnes
02362 Jon Nielsen
02363 John Threewits
02364 Michael Dinkel
02365 Jerry Karasek
02366 Peter Kengis
02367 Greg Roxbury
02368 Ted Minnick
02369 Kirk Simpkils
02370 John Chapin
02371 Steve Blankemeier
02372 Bernard Malys
02373 Jeff Vissering
02374 John Locke
02375 Benjamen Boyer
02376 Phillip Scudder
02377 Don Rasmuson
02378 Darrell Austin
02379 Frederick Lueck
02380 Carrie Canniff
02381 Bart Lydy
02382 Vern Gibson
02383 Jerry Neumann
02384 Lee Hawk
02385 Donald Willson
02386 Brian Fabinski
02387 Dale Dexter
02388 Paul Schruba
02389 Gregg Rising
02390 Mark Romel
02391 Jim Grace
02392 Carl Raiss
02393 Rick Wollpert
02394 James Osmak
02395 David Katus
02396 Karen Katus
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02399 Gregg Wahl
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02435 Larry L. Kayner
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02476 Deborah DeWildt
02477 William Heinisch
02478 Neil Murphy
02479 Ronald Maleport
02480 Ken Jeffries
02481 John Briggs
02482 Chad Hall
02483 Laurie Harm
02484 Richard Asplund
02485 Kenneth Pancake
02486 Karl Klida
02487 Maria Burch
02488 Steve Johnson
02489 Robert Prelewitz
02490 Michael Ouimet
02491 Walleye Lodge
02492 Mike Smith
02493 Jen Dorman
02494 Jake Dorman
02495 Brody Renshow
02496 Brent Renshow
02497 Jim Brownlee
02498 Neil Murphy
02499 Ralph Farr
02500 Nate Farr
02501 Michael Foy
02502 Richard Gawne
02503 Kenneth Johnston
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02505 Randy Fagg
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02512 Consie Pickard
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02514 Richard E. Vetter
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02516 Teresa Moffitt
02517 Lesia Buvunski
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02519 Brad Austin
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02522 Kenneth D. Medema
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02539 Craig Voorheis
02540 Carolyn Maves
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02629 Ransom Haile
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02632 John D. Galuska
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02634 Grey Larsen
02635 R. Henry
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02637 Jan Seides-Murphy
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02647 Whit Forrester
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02673 Perrin de Jong
02674 Erin Daily
02675 Joanna Gras
02676 Jim Cartmel
02677 Krista Detor
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