

Chapter 4 Consultation and Coordination

List of preparers

The following are members of the Core Team:

<u>Name</u>	<u>Agency</u>	<u>Position</u>	<u>Years of Experience</u>
Jon Haber	FS, RI	Project Manager 2001-3	22
Joan Dickerson	FS, RI	Assistant 2001-3 Team Leader 2003-5	20
Raymond Smith	FS, RI	Team Leader 2005-7	15
Tim Bertram	FS, RI	Wildlife biologist	26
Marcia Hogan	FS, RI	Public Affairs	25
Carol Goffe	FS, RI	Writer/editor	23
William Tanke	FS, RI	GIS	27

The following are members of the Interdisciplinary team

<u>Name</u>	<u>Agency</u>	<u>Area of support</u>	<u>Years of Experience</u>
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Cliff Mitchell	FS, RI	Recreation	25
Terry Nevius	FS, RI	Range	10
Mike Niccolucci	FS, RI	Economics	20
Susan Rinehart	FS, RI	Botany	19
Laird Robinson	FS, RI	Public affairs	30
William Terrill	FS, RI	Forests	30

The following people provided technical support:

<u>Name</u>	<u>Agency</u>	<u>Area of support</u>
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List of preparers

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Brian Ferguson	FS, R4	Silviculture
Jeff Foss	FS, R4	Planning
Bruce Fox	FS, R1	Range
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Bob Hamner	FS, R4	Range
Mike Hillis	FS, R1	Wildlife and fire
Melody Holm	FS, R2	Minerals
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Paul Langowski	FS, R2	Fire
Rick Lasko	FS, R1	Fire
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Chuck Quimby	FS, R2	Range
Mike Retzlaff	FS, R2	Economics
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List of preparers

The following people are members of the lynx biology team (members who wrote the Lynx Conservation Assessment and Strategy), and who provided technical clarifications on the LCAS:

<u>Name</u>	<u>Agency</u>
Kurt Broderdorp	FWS – R6
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Bob Naney	FS – R6
Joel Trick	FWS – R3
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The following people are members of the oversight advisory group:

<u>Name</u>	<u>Agency</u>	<u>Area of support</u>
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Cindy Swanson	FS, R1	Wildlife
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Marisue Hillard	FS, R2	Wildlife
Bill LeVere	FS, R4	Wildlife
Steve Solem	FS, R4	Planning

The Lynx and Wolverine Steering Committee, chaired by Kathy McAllister, R1 Deputy Regional Forester, also provided oversight and guidance. The Committee is an interagency committee comprised of FS, BLM, Park Service, FWS, and state representatives. The committee coordinates efforts for compiling scientific data, identifying and prioritizing research needs, recommending conservation measures, and updating existing plans.

Distribution List

County commissions – Idaho

Adams	Custer
Bear Lake	Idaho
Benewah	Jefferson
Blaine	Kootenai
Boise	Latah
Bonner	Lemhi
Bonneville	Lewis
Boundary	Madison
Butte	Nez Perce
Caribou	Shoshone
Clark	Teton
Clearwater	Valley

County commissions – Montana

Beaverhead	Lincoln
Broadwater	Madison
Carbon	Meagher
Cascade	Mineral
Chouteau	Missoula
Deer Lodge	Park
Fergus	Pondera
Flathead	Powell
Gallatin	Ravalli
Glacier	Sanders
Golden Valley	Silver Bow
Granite	Stillwater
Jefferson	Sweet Grass
Judith Basin	Teton
Lake	Wheatland
Lewis and Clark	Yellowstone

County commissions - Utah

Daggett	Uintah
Duchesne	Utah
Summit	Wasatch

County commissions – Washington

Pend Oreille

County commissions – Wyoming

Big Horn	Park
Freemont	Sheridan
Hot Springs	Sublette
Johnson	Teton
Lincoln	

Federal agencies

Army Corps of Engineers, Planning Division North Pacific Division
BLM Director's Office
BLM Idaho State Office
BLM Montana/Dakota State Office
BLM Utah State Office
BLM Wyoming State Office
Bureau of Reclamation
Environmental Protection Agency, Office of Federal Activities
Environmental Protection Agency, Region VIII
Environmental Protection Agency, Region VIII, Montana Office
Environmental Protection Agency, Region X
Federal Highway Administration, Western Region
HQ-USAF/LEEV, Environmental Division
National Park Service, Environmental Quality Division
National Park Service, Intermountain Region
National Park Service, Pacific West Region
Office of Deputy A/S of the USAF, Environment, Safety, Occupational Health
U.S. Department of Energy, Office of Environmental Compliance
U.S. Fish and Wildlife Service, Division of Environmental Coordination
U.S. Fish and Wildlife Service, Montana Field Office
U.S. Fish and Wildlife Service, Snake River Field Office
U.S. Fish and Wildlife Service, Wyoming Field Office
U.S. Fish and Wildlife Service, Region 1
U.S. Fish and Wildlife Service, Region 6
U.S. Geological Survey, Environmental Affairs Program
USDA Forest Service Environmental Coordination
USDA National Agricultural Library
USDA NRCS Meeteetse Conservation District
USDA Office of Civil Rights
USDA Pacific West area – Range sheep production unit

Distribution list

USDI Natural Resources Library
USDI Office of Environmental Policy and Compliance
USDI Office of External and Intergovernmental Affairs

State agencies

Governor of Idaho
Idaho Office of Species Conservation
Idaho Department of Fish and Game
Idaho Department of Parks and Recreation
Idaho Department of Transportation

Governor of Montana
Montana Department of Natural Resources and Conservation
Montana Fish, Wildlife and Parks

Governor of Utah
Utah Department of Natural Resources

Governor of Wyoming
Wyoming Office of Federal Policy
Wyoming Business Council
Wyoming Department of Agriculture
Wyoming Department of Parks and Cultural Resources
Wyoming Game and Fish Department
Wyoming State Forestry Division

Tribal governments

Arapahoe Business Committee
Blackfeet Tribal Business Council
Chippewa Cree Business Committee
Coeur d'Alene Tribe
Confederated Salish & Kootenai Tribes
Crow Tribal Council
Fort Belknap Community Council
Goshute Indian Tribe
Kalispell Tribe
Kootenai Tribal Council
Nez Perce Tribal Executive Committee
Northern Cheyenne Tribal Council
Northwest Band of Shoshoni Nation
Shoshone Business Council
Shoshone-Bannock Business Council
Shoshone-Paiute Tribes
Skull Valley Band of Goshutes
Tribal Council of the Te-Moak Western Shoshone
Ute Indian Tribe

United States representatives and senators

U.S. Representative Rob Bishop	U.S. Senator Max Baucus
U.S. Representative Chris Cannon	U.S. Senator Robert Bennett
U.S. Representative Barbara Cubin	U.S. Senator Mike Crapo
U.S. Representative Jim Matheson	U.S. Senator Larry Craig
U.S. Representative Dennis Rehberg	U.S. Senator Michael Enzi
U.S. Representative Bill Sali	U.S. Senator John Tester
U.S. Representative Michael Simpson	U.S. Senator Craig Thomas
	U.S. Senator Orrin Hatch

Organizations, businesses and others

Access for All
All Transportation Service, Inc.
Alliance for the Wild Rockies
America Outdoors
American Avalanche Institute, Inc.
American Council of Snowmobile Associations
American Society for Prevention of Cruelty to Animals
American Wildlands
Anaconda Snowmobile Club

Distribution list

Animal Protection Institute
Animal Voices
Antelope Butte Ski Area
Associated Logging Contractors
Back Country ATV Association, Inc.
Back County ATV Association
Beaverhead Sno-Riders
Big Hole Snowmobile Club
Big Horn County Government Coalition
Big Horn Mountain Snowmads
Big Horn Snow-Goers
Big Sky Country Trail Preservers
Big Sky Snowriders
Bighorn Ski Area
Biodiversity Legal Foundation
Bitterroot Cross-Country Ski Club
Bitterroot Ridgerunners Snowmobile Club
Bjork, Lindley, Danielson & Little, P.C.
Blacktail Mountain Ski Area
Blue Ribbon Coalition
Blue Ribbon Coalition, Inc.
Blue Ribbon Flies
Bluewater Network
Bohart Ranch
Boone & Crockett Club
Boundary Backpackers
Bradford Environmental Research Institute
Bridger Bowl Ski Area
Broadwater County Snowmobile Club
Broadwater Rod & Gun Club
Cabinet Backcountry Horsemen
Cabinet Ridge Riders
Campbell County Sno-Goers
Capital Trail Vehicle Association
Caribou County Sun
Casper Snow Gypsies
Center for Native Ecosystems
Central Montana Wildlands Association
Circle Snowmobile Club
City of Salmon
City of Stanley

Distribution list

Citizens for a User Friendly Forest
Clearwater Elk Recovery Team
Cody Country Crazy Sledders
Cody Nordic Ski Foundation
Coeur d'Alene Snowmobile Club
Cold Mountain, Cold Rivers
Colorado Off Highway Vehicle Coalition
Colorado State University
Committee For Idaho's High Desert
Conner Enterprises, Inc.
Cut Bank Snowmobile Club
Deer Lodge Snowmobile Club
Defenders of Wildlife
Discovery Basin Ski Corporation
Donnelly Snowmobile Club
Doney Law Firm
Dragging Y Cattle Company
Dubois Snokaters Snowmobile Club
East Pioneer Experimental Stewardship Program
Ecosystem Management Research Institute
Elkins Resort
Environmental Sciences, UMW
F.H. Stoltze Land and Lumber Company
Flathead Audubon Society
Flathead County Parks & Recreation
Flathead Resource Organization
Flathead Snowmobile Association
Flying B Ranch
Franklin County High markers
Friends of Georgia
Friends of Pathways
Friends of the Clearwater
Friends of the King's Pond
Friends of the West
Friends of the Wild Swan
Fund for Animals, Inc.
Gallatin Valley Snowmobile Association
Gillette Internal Medicine Associates
Glacier County Title Company
Glacier Wilderness Resort
Grand Targhee Ski & Summer Resort

Distribution list

Great Burn Study Group
Great Falls Cross Country Club
Greater Yellowstone Coalition
Habitat Concepts, Inc.
Hagenbarth Livestock
Harriman State Park
Helena Snowdrifters
High Country Snowmobile Club
High Mountain Heli-Skiing
High Mountain Trail Association
High Mountain Trail Machine Association
High Uintas Preservation Council
Hills Resort
Humane Society of the United States
Hungry Horse Films
Idaho Cattle Association
Idaho Conservation League
Idaho County Snowmobile Advisory Commission
Idaho Environmental Council
Idaho Farm Bureau – Custer County
Idaho Farm Bureau Federation
Idaho Forest Owners Association
Idaho Groomer Advisory Board – Shoshone County
Idaho Groomer Advisory Board – Lemhi County
Idaho Outfitters & Guides Association
Idaho State Snowmobile Association
Idaho Trails Council
Idaho Wildlife Federation
Idaho Wildlife Society
Idaho Women in Timber
Intermountain Forest Industry Association
International Snowmobile Manufacturing Association
Izaak Walton Inn
Jackson Hole Conservation Alliance
Jackson Hole Locals Coalition
Jackson Hole Ski Corporation
Judith River Farm
Kasino Club
Kelly Canyon Ski Area
Kettle Range Conservation Group
Kootenai Environmental Alliance

Distribution list

Kootenai Winter Sports
Last Chance Nordic Ski Club
Lazy 4W Ranch
Lewiston, ID and Clarkston, WA Chambers of Commerce
Libby Rod & Gun Club
Lincoln County Snowcats
Lone Mountain Guest Ranch
Lookout Pass Ski & Recreation Area
Lost Trail Powder Mountain
Louisiana Pacific
Madison County Commissioners
Marion County Humane Society
Marshall Mountain Ski Corporation
Maverick Mountain
Meagher County Little Belters
Medicine Wheel Snogoers
Meeteese Recreation District
Midland Empire Snowgoers
Mile High Nordic Ski Club
Mission Mountain Chapter of Audubon Society
Mission Mountain Snowmobile Club
Missoula City Council Member Lou Ann Crowley
Missoula Nordic Ski Club
Missoula Snowgoers
Moco Engineering and Fabrication
Monarch & Associates
Mountain Defense League
Montana Audubon Society
Montana Farm Bureau Federation
Montana House of Representative Daniel Fuchs
Montana Logging Association
Montana Mining Association, Missoula Chapter
Montana Multiple Use Association
Montana Night Riders
Montana Outfitter & Guide Association
Montana Public Lands Council
Montana River Action Network
Montana Shooting Sports Association
Montana Snowbowl
Montana Snowcat Club
Montana Snowmobile Association

Distribution list

Montana State Senator Jerry O'Neil
Montana Stockgrowers Association
Montana Trail Vehicle Riders Association
Montana Trails Association
Montana Trappers Association
Montana Wilderness Association
Montana Wildlife Federation
Montana Wildlife Society
Montana Wood Products Association
Montanans for Multiple Use
National Cattlemen's Beef Association
National Council of the Industry for Air and Stream Improvement, Clemson University
National Federation Wild Turkey
National Ski Area Association
National Trappers Association
Native Ecosystems Council
Native Forest Network Yellowstone Branch
Nature Conservancy
North Fork Preservation Association
North Palouse Veterinary Clinic
Northwoods Wilderness Recovery
Noxon Rod & Gun Club
NW Access Alliance
NW Ecosystem Alliance
NW Environmental Defense Center
Off-Highway Vehicles
Orofino Chamber of Commerce
Orofino Ridgerunners Snowmobile Club
Owens and Hurst Lumber Company
Pacific Northwest Trail Association
Park County Environmental Council
Petroleum Association of Wyoming
People for Wyoming
Phibbs Law Office P.C.
Ponderosa Snow Warriors
Powder River Snowbuffs
Predator Conservation Alliance
Priest Lake Chamber of Commerce
Priest Lake Golf Course
Priest Lake Trails Association
Public Lands Council

Distribution list

Purdy Ranches
Pyramid Mountain Lumber, Inc.
Red Lodge Mountain
Red Lodge Race Camp
Red Lodge Snowgoers
Resource Development Coordination Committee
Rich Ranch
Seeley Lake Driftriders
Sierra Club – Georgia Chapter
Sierra Club – Utah Chapter
Sierra Club – Wyoming Chapter
Sleeping Giant Corporation
Smokey Bear Ranch
Snow King Resort
Snowdrifters Snowmobile Club
Society for Conservation Biology
Southwestern Montana Stockman's Association
Snow Devils
Stanford University Biological Sciences
Steadman Diversities, Inc.
Stimson Lumber Company
Stoltze Lumber Company
Sublette Riders Association
Sundance Snowmobile Club
Swan View Coalition
Sweetgrass County Recreation Association
Ten Lakes Snowmobile Club
Teton Pass Ski Area, Inc.
The Big Mountain
The Lands Council
The National Outdoor Leadership School
The Wildlife Society
Thirteen Mile Farm
Three Rivers Timber, Inc.
Timberstone Handcrafted Log Homes
Treasure Mountain Ski Search
Turner Mountain
United Four Wheel Drive Association
University of Colorado At Boulder
University of Montana Wildlife Biology Program
Upper Yellowstone Snowmobile Club

Distribution list

Utah Environmental Alliance
Utah Environmental Congress
Utah Snowmobile Association
Utah Wildlife Federation
Valley Bank of Kalispell
Valley Cats
Vigilante Snowmobilers
Voyageur Outward Bound School
Wallace Family Foundation
Wasatch Powderbird Guides
West Yellowstone Chamber of Commerce
Western Environmental Law Center
Western Environmental Trade Association
Western Montana Fish & Game Association
Western Watershed Project
Western Wildlife Conservancy
White Pine Ski Area
Whitebark Pine Ecosystem Foundation
Wilderness Society
Wildlands Center for Preventing Roads
Wildlife Conservation Society
Wildlife Management Institute
Wildlife Society
WildWest Institute
Winter Riders, Inc.
Winter/Alpine Engineering Lab
Winter Wildlands Alliance
Wise River Jackpine Savages
Women in Timber, Kalispell
Woodland Management
Wyoming Outdoor Council
Wyoming Snowmobile Association
Wyoming People for the USA
Wyoming Trappers Association
Wyoming Wildlife Federation
Wyoming Wilderness Association
Yaak Valley Forest Council
Yellowstone Valley Audubon Society
Yostmark Backcountry Tours

Glossary

Age class – An age class is an age grouping of trees according to an interval of years, usually 20. The trees are within 20 years of the same age, 1-20 years, 21-40 years, etc.

Allotment (range allotment) – An allotment is the area designated for grazing by a certain number of livestock for a given period.

Area of consistent snow compaction – An area of consistent snow compaction is an area of land or water that during winter is generally covered with snow and gets enough human use that individual tracks are indistinguishable. In such places, compacted snow is evident most of the time, except immediately after (within 48 hours) snowfall. These can be areas or linear routes, and are generally found in or near snowmobile or cross-country ski routes, in adjacent openings, parks and meadows, near ski huts or plowed roads, or in winter parking areas. Areas of consistent snow compaction will be determined based on the acreage or miles used during the period 1998 to 2000.

BA (Biological Assessment) – BA “refers to the information prepared by or under the direction of the Federal agency concerning listed and proposed species and designated and proposed critical habitat that may be present in the action area and the evaluation (of) potential effects of the action on such species and habitat.” (50 CFR Part 402.02)

BO (Biological Opinion) – BO “is the document that states the opinion of the (US Fish and Wildlife) Service as to whether or not the Federal action is likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat.” (50 CFR Part 402.02)

Broad scale assessment – A broad scale assessment is a synthesis of current scientific knowledge, including a description of uncertainties and assumptions, to provide an understanding of past and present conditions and future trends, and a characterization of the ecological, social, and economic components of an area. (LCAS)

Browse – Browse is the twigs, leaves, and young shoots of trees and woody shrubs that animals eat or browse upon.

Canopy – The canopy is the part of any stand of trees represented by the crowns. It usually refers to the topmost layer.

Carr – A carr is a deciduous woodland or shrub land occurring on permanently wet, organic soil. (Helms 1998 and LCAS)

Cavity – A cavity is a hole in a tree often used by wildlife, usually birds, for nesting and roosting.

Climax – Climax is the culminating stage in plant succession for a given site. Climax vegetation is stable, self-maintaining, and self-reproducing.

Coarse woody debris – Coarse woody debris is large pieces of dead woody

material, such as dead tree trunks, limbs, and root masses on the ground or in streams. (Helms 1998 and LCAS)

Commercial thinning - Commercial thinning is tree thinning where the cut trees are sold.

Commercial products, commercial timber sale - Commercial products are timber products that can be sold. A commercial timber sale is cutting and selling trees as timber products, bringing revenue to the government.

Condition class - Condition class is a description of how the land has departed from historic conditions based on the number of missed fire cycles (average fire-return intervals) and the amount of change in forest structure and species composition. (Schmidt et al. 2002)

Conifer - A conifer is a tree that produces cones, such as a pine, spruce, or fir. Most conifers have needles instead of leaves.

Coniferous - A coniferous forest is one consisting primarily of conifer trees.

Connectivity (of habitats) - Connectivity is the linkage of similar but separated vegetation stands by patches, corridors, or "stepping stones" of like vegetation. This term can also refer to the degree to which similar habitats are linked.

Cover - Cover is any feature that conceals wildlife or fish. Cover may be dead or live vegetation, boulders, or undercut stream banks. Animals use cover to escape from predators, rest, or feed.

Cover type - Cover type refers to stands of a particular vegetation type that are composed of similar species. The aspen

cover type contains plants distinctly different from the subalpine fir cover type.

Crown - The crown is the top part of a tree where the leaves or needles grow.

Crown fire - A crown fire is the movement of fire through the crowns of trees or shrubs more or less independently of a surface fire. When the crown burns, the tree usually dies. (National Wildfire Coordinating Group 1996)

Cumulative effects - Cumulative effects are environmental consequences that result from the incremental impact of an action added to other past, present, and reasonably foreseeable future actions, regardless of which federal or non-federal agency or person takes such action(s). Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. (40 CFR 1508.7)

Daylight thinning - Daylight thinning is a form of precommercial thinning that removes trees and brush inside a given radius around a tree.

Decommission - To decommission is to stabilize and restore unneeded roads to a more natural state (36 CFR 212.1), or to permanently remove roads and their roadbeds.

Denning habitat (lynx) - Denning habitat is the environment lynx use when giving birth and rearing kittens until they are mobile. The most common component is large amounts of coarse woody debris to provide escape and thermal cover for kittens. Denning habitat must be within daily travel distance of winter snowshoe hare habitat - the typical maximum daily

distance for females is about three to six miles. Denning habitat includes mature and *old growth* forests with plenty of coarse woody debris. It can also include young regenerating forests with piles of coarse woody debris, or areas where down trees are jack-strawed.

Designated over-the-snow routes - Designated over-the-snow routes are routes managed under permit or agreement or by the agency, where use is encouraged, either by on-the-ground marking or by publication in brochures, recreation opportunity guides or maps (other than travel maps), or in electronic media produced or approved by the agency. The routes identified in outfitter and guide permits are designated by definition; groomed routes also are designated by definition. The determination of baseline snow compaction will be based on the miles of designated over-the-snow routes authorized, promoted, or encouraged during the period 1998 to 2000.

Designated play areas - Designated play areas are places identified for winter recreation, such as inner-tubing or snowmobiling, but which are not developed ski areas.

Designated route - A designated route is a road or trail that has been identified as open for specified travel use.

Developed recreation - Developed recreation requires facilities that result in concentrated use. For example, skiing requires lifts, parking lots, buildings, and roads; campgrounds require roads, picnic tables, and toilet facilities.

Development, mineral - Development is the work required to prepare a mineral deposit for production. This may include driving underground workings, stripping the overburden from deposits that will be open-pit or strip mined, building waste dumps and constructing milling and transporting facilities. Oil or gas development occurs through a series of production wells.

Developmental allocations - Developmental allocations are the allotments of federal lands made in land management plans that allow developments like campgrounds and active management like timber sales.

Direct effects - Direct effects are caused by an action and occur at the same time and place. (40 CFR 1508.8)

Dispersed recreation - Dispersed recreation is a form of outdoor recreation taking place away from the developed sites or areas that support concentrated recreational use. It may require facilities for keeping visitors safe, protecting resources and enhancing the quality of the visitor experience. (LCAS) It includes activities like hunting, backpacking, and scenic driving.

Disturbance - A disturbance is any event that alters the structure, composition, or function of a habitat. Natural disturbances include drought, floods, wind, wildfires, wildlife grazing, insects, and pathogens. Human-caused disturbances include timber harvest, wildland fire use, livestock grazing, road construction, and the introduction of exotic species. (LCAS)

Ecological process – An ecological process is the flow and cycling of energy, materials, and organisms through an ecosystem. (LCAS)

Even-aged harvest – Even-aged harvest is timber cutting that creates stands of trees essentially all the same age. Clearcuts and seed tree cuts are examples of even-age harvest.

Exploration, mineral – Exploration is physically searching for minerals. It often includes building roads, drill pads, underground workings, and trenching.

Fire behavior – Fire behavior is how fire reacts to fuel, weather, and topography. (National Wildfire Coordinating Group 1996)

Fire frequency – Fire frequency is how often fire burns a given area, often termed the *fire-return interval*.

Fire regime – Fire regime is a general description of the characteristic pattern of fire: how often (frequency); how hot (intensity); and how big (scale). (Fischer and Bradley 1987; Smith and Fisher 1997; Jones and Barrett, in press)

Fire risk – The fire risk is the likelihood a fire would occur in an area based on the historic fire record data, and defined in terms of whether a stand supports crown fire.

Fire use – Fire use is the combination of wildland fire use and using prescribed fire to meet resource objectives. (National Interagency Fire Center 1996)

Firebreak – A firebreak is a natural or constructed discontinuity in potential fuels that segregates, stops, and controls

the spread of fire or provides a control line from which to control the fire. (Helms 1998)

Forage – Forage is the browse and non-woody plants eaten by wildlife and livestock.

Foraging habitat (lynx) – Foraging habitat is habitat that supports lynx primary prey – snowshoe hare – and alternate prey, especially red squirrels. The highest quality snowshoe hare habitat contains a high density of young trees or shrubs that are tall enough to protrude above the snow in winter. Red squirrel densities tend to be highest in mature cone-bearing forests with substantial quantities of coarse woody debris. (LCAS)

Forb – A forb is a broadleaf plant with little or no woody material in it.

Forest highway – A forest highway is a forest road under the jurisdiction of, and maintained by, a public authority and open to public travel (USC: Title 23, Section 101(a)), designated by an agreement with the FS, state transportation agency, and Federal Highway Administration.

Forest road – Any road wholly or partly within, or adjacent to, and serving the NF road system and which is necessary for the protection, administration, and utilization of the NF system and the use and development of its resources. (FSM 7705)

Forested stringer – A forested stringer is a narrow band of trees that connects to other patches of trees.

Fuel loading – Fuel loading is the amount of fuels on the forest floor, generally consisting of dead needles, twigs, branches, and logs.

Fuel treatment – A fuel treatment is a management action that reduces the threat of ignition, fire intensity, or rate of spread, or is used to restore fire-adapted ecosystems.

Goal – A goal is a broad description of what an agency is trying to achieve, found in a land management plan. (LCAS)

Gramminoid – Grasses and grass-like plants.

Groomed route – Groomed routes are designated over-the-snow routes on which the snow surface is packed, leveled or scarified, with or without “set tracks”, usually by equipment towed behind a snowmobile or snow-cat. Snow roads maintained by permitted snow-cat tours are considered groomed routes. The determination of the maximum miles of groomed routes will be based on the maximum number of miles authorized, promoted, or encouraged during the period 1998 to 2000.

Guideline – A guideline is a particular management action that should be used to meet an objective found in a land management plan. The rationale for deviations may be documented, but amending the plan is not required. (LCAS modified).

Habitat connectivity (lynx) – Habitat connectivity consists of an adequate amount of vegetative cover arranged in a way that allows lynx to move around. Narrow forested mountain ridges or

shrub-steppe plateaus may serve as a link between more extensive areas of lynx habitat; wooded riparian areas may provide travel cover across open valley floors. (LCAS)

Healthy Forests Restoration Act (HFRA) – Public Law 108-148, passed in December 2003. The HFRA provides statutory processes for hazardous fuel reduction projects on certain types of at-risk National Forest System and Bureau of Land Management lands. It also provides other authorities and direction to help reduce hazardous fuel and restore healthy forest and rangeland conditions on lands of all ownerships. (Modified from the Forest Service HFRA web site.)

Highway – The word *highway* includes all roads that are part of the National Highway System. (23 CFR 470.107(b)).

Home range – Home range is the area used by an individual in its normal activities of foraging, mating, and rearing its young, either during the entire year or seasonally. (LCAS)

Horizontal cover – Horizontal cover is the visual obscurity or cover provided by habitat structures that extend to the ground or snow surface primarily provided by tree stems and tree boughs, but also includes herbaceous vegetation, snow, and landscape topography.

HUC (Hydrologic unit code) – HUCs are a hierarchical coding system developed by the U.S. Geologic Survey to identify the geographic boundaries of watersheds of various sizes. The Columbia River is a 1st-code HUC, draining more than 165,000,000 acres. The Lower Snake River,

one of the Columbia's major tributaries, is a 2nd-code HUC, draining more than 22,000,000 acres; the Salmon River is a 3rd code HUC, draining almost 9,000,000 acres; and the Upper Grande Ronde River is a 4th-code HUC, draining just over 1,000,000 acres.

Indirect effects – Indirect effects are caused by an action and are later in time or further removed in distance, but are still reasonably foreseeable. (40 CFR 1508.8)

Isolated mountain range – Isolated mountain ranges are small mountains cut off from other mountains and surrounded by flatlands. On the east side of the Rockies, they are used for analysis instead of sub-basins. Examples are the Little Belts in Montana and the Bighorns in Wyoming.

Ladder fuels – Ladder fuels consist of vegetation below the tree crowns, which can carry fire from the forest floor into the crowns. Ladder fuels may be low branches, shrubs, or smaller trees, or dead material that has not yet fallen to the forest floor.

Land ownership adjustments – Adjusting land ownership means NFS lands are sold or exchanged, or private lands are acquired, so the landowner changes.

Landscape connectivity – see habitat connectivity

LAU (Lynx Analysis Unit) – An LAU is an area of at least the size used by an individual lynx, from about 25 to 50 square miles (LCAS). An LAU is a unit for which the effects of a project would be

analyzed; its boundaries should remain constant.

Leasable minerals – Leasable minerals are federally owned fossil fuels (oil, gas, coal, oil shale, etc.), geothermal resources, sulfur, phosphates and uranium.

Linkage area – Linkage areas provide connectivity between blocks of lynx habitat. Linkage areas occur both within and between geographic areas, where basins, valleys, or agricultural lands separate blocks of lynx habitat, or where lynx habitat naturally narrows between blocks. (LCAS updated definition approved by the Steering Committee 10/23/01).

Locatable minerals – Locatable minerals are deposits such as gold, silver, copper, and other metals.

Low speed, low traffic volume road – *Low speed* is less than 20 miles per hour; *low volume* is a seasonal average daily traffic load of less than 100 vehicles per day.

Lynx habitat – Lynx habitat occurs in mesic coniferous forest that experience cold, snowy winters and provide a prey base of snowshoe hare. In the northern Rockies, lynx habitat generally occurs between 3,500 and 8,000 feet of elevation, and primarily consists of lodgepole pine, subalpine fir, and Engelmann spruce. It may consist of cedar-hemlock in extreme northern Idaho, northeastern Washington and northwestern Montana, or of Douglas-fir on moist sites at higher elevations in central Idaho. It may also consist of cool, moist Douglas-fir, grand fir, western larch, and aspen when interspersed in

subalpine forests. Dry forests do not provide lynx habitat. (LCAS)

Lynx habitat in an unsuitable condition –

Lynx habitat in unsuitable condition consists of lynx habitat in the stand initiation structural stage where the trees are generally less than ten to 30 years old and have not grown tall enough to protrude above the snow during winter.

Stand replacing fires or certain vegetation management projects can create unsuitable conditions. Vegetation management projects that can result in unsuitable habitat include clearcuts and seed tree harvest, and sometimes shelterwood cuts and commercial thinning, depending on the resulting stand composition and structure (LCAS).

Maintain – In the context of this amendment, *maintain* means to provide enough lynx habitat to conserve lynx. It does not mean to keep the status quo.

Maintenance level – Maintenance levels define the level of service provided by and maintenance required for a road. (FSH 7709.58, Sec 12.3)

Maintenance level 1 – Maintenance level 1 is assigned to intermittent service roads when they are closed to vehicular traffic for more than one year. Such roads may be open to and suitable for non-motorized use. Basic custodial maintenance is performed to perpetuate the road and to keep the damage to adjacent resources to an acceptable level, with the emphasis on maintaining drainage facilities and runoff patterns. Planned road deterioration may occur.

Maintenance level 2 – Maintenance level 2 is assigned to roads open for use by high-clearance vehicles, where passenger car traffic is not a consideration. Traffic is normally minor, usually consisting of administrative, permitted, dispersed recreation, or other specialized uses. Log haul may occur at this level.

Maintenance level 3 – Maintenance level 3 is assigned to roads that are open to and maintained for travel by a prudent driver in a standard passenger car. User comfort and convenience are not considered priorities. Roads are typically low speed, single lane with turnouts and spot surfacing. Some roads may be fully surfaced with native or processed material.

Maintenance level 4 – Maintenance level 4 is assigned to roads that provide a moderate degree of user comfort and convenience at moderate travel speeds. Most roads are double lane and aggregate surfaced. Some may be single lane; some may be paved or have dust abated.

Maintenance level 5 – Maintenance level 5 is assigned to roads that provide a high degree of user comfort and convenience. Normally, roads are double-lane and paved, but some may be aggregate surfaced with the dust abated.

Management action – A management action is any activity undertaken as part of the administration of public lands.

Management direction – Management direction is a formal statement of goals

and objectives, and the associated standards and guidelines for obtaining them, found in a land use or other plan, law, or other guiding document.

Map & field-validate – To *map* is to identify and locate certain conditions on a map. To *field-validate* is to sample on the ground a representative number of areas, using an acceptable sampling method, to make sure the mapped areas truly contain the conditions that were mapped. Not every acre has to be field-validated.

Mesic – *Mesic* describes environmental conditions with a medium supply of moisture, as opposed to *xeric* (dry) or *hydric* (wet).

Mid-seral or later – Mid-seral is the successional stage in a plant community that is the midpoint as it moves from bare ground to climax. For riparian areas, it means willows or other shrubs have become established. For shrub-steppe areas, it means shrubs associated with climax are present and increasing in density.

Mineral materials – Mineral materials are common materials such as stone, gravel, clay, cinders, and decorative rock.

Mitigation – Mitigation is an action taken to avoid, minimize, or repair the impact of a management activity.

Mixed-severity fire regime – A fire regime where a mix of understory and stand-replacing fires burn about every 35 to 100 years, or intermediate-intensity fires may burn, which kill fire-susceptible trees while the fire-resistant trees survive.

Multistoried – A multistoried forest is one with both an *overstory* of tall trees and a dense undergrowth, or *understory*, of shorter trees and shrubs.

Multi-story mature or late successional forest – This stage is similar to the *old multistory structural* stage (see below). However, trees are generally not as old, and decaying trees may be somewhat less abundant.

No-action alternative – The no-action alternative means taking no action to resolve the problem described in the purpose & need. It represents the most likely condition expected to exist in the future if current management practices continue unchanged.

Non-developmental allocations – Non-developmental allocations are the allotments of federal lands made in land management plans where natural disturbance processes predominate and active management, like timber sales, may not occur. Allocations generally include wilderness, roadless, and semi-primitive non-motorized areas.

Objective – An objective is a statement in a land management plan describing desired resource conditions and intended to promote achieving programmatic goals. (LCAS)

Old multistory structural stage – Many age classes and vegetation layers mark the old forest, multistoried stage. It usually contains large old trees. Decaying fallen trees may be present that leave a discontinuous overstory canopy. On cold or moist sites without frequent fires or other disturbance, multi-layer stands with

large trees in the uppermost layer develop. (Oliver and Larson, 1996)

Old growth – Old growth forests generally contain trees that are large for their species and the site, and are sometimes decadent with broken tops. Old growth often contains a variety of tree sizes, large snags, and logs, and a developed and often patchy understory.

Old forest, multistoried structural stage – Many age classes and vegetation layers mark the old forest, multistoried stage, and it usually contains large old trees. Decaying fallen trees may also be present that leave a discontinuous overstory canopy. On cold or moist sites without frequent fires or other disturbance, multi-layer stands with large trees in the uppermost layer develop. (Oliver and Larson, 1996)

Old forest, single-storied structural stage Old forest, single-storied stage usually contains large old trees with little understory. Decaying fallen trees may be present, leaving a discontinuous overstory canopy. A single-layer stand evolves under the influence of frequent, recurring surface fires or other disturbance. (Oliver and Larson, 1996)

Overstory – The overstory is the upper canopy layer; the plants below comprise the *understory*.

Peer review – Peer review is the independent consideration and evaluation of a scientific article by more than one other expert in the same field of study. If the reviewers find the article to be reasonable in its descriptions of research methods, findings, and conclusions, it has

been *peer reviewed*. The reviewing experts must be independent of the author and should be anonymous. In a reputable scientific journal, an article will not be published until it has been peer reviewed.

Permanent development – A permanent development is any development that results in a loss of lynx habitat for at least 15 years. Ski trails, parking lots, new permanent roads, structures, campgrounds, and many special use developments would be considered permanent developments.

PCT (precommercial thinning) – Precommercial thinning is the mechanical removal of trees to reduce stocking and concentrate growth on the remaining trees, and not resulting in immediate financial return. (Helms 1998)

Predator – A predator is an animal that lives by preying on other animals.

Prescribed fire – A prescribed fire is any fire ignited as a management action to meet specific objectives. A written, approved prescribed fire plan must exist, and NEPA requirements met, before ignition. The term replaces *management ignited prescribed fire*. (National Wildfire Coordinating Group 1996)

Production, minerals – Producing minerals is removing the minerals from the ground, making them available for processing and consumption.

Programmatic – Programmatic is the broad management direction in land management plans. It provides the overall guidance for resource management programs, practices, uses, and protection measures. It differs from

project-level direction, which provides guidance about a certain project in a particular place.

Prospecting - Prospecting is finding an area with potential for mineral development. It takes place before *exploration*, and involves limited surface disturbance, such as geologic mapping, soil or water sampling, or collecting seismic data.

Public authority - A public authority is a federal, state, county, town or township, Indian tribe, municipal, or other local government or instrumentality thereof, with authority to finance, build, operate, or maintain highway facilities. (23 CFR 460.2(b))

Public road - A public road is any road or street under the jurisdiction of and maintained by a public authority and open to public travel. (FSM 7705)

Reclamation, minerals - Reclaiming means restoring areas disturbed by mineral exploration, development, and production.

Red squirrel habitat - Red squirrel habitat consists of coniferous forests of seed and cone-producing age that usually contain snags and downed woody debris, generally associated with mature or older forests.

Regeneration - Regeneration is the re-growth of trees on a disturbed or deforested site.

Regeneration harvest - Regeneration harvest is cutting trees and creating an entire new age class; an even-age harvest. The major methods are clearcutting, seed

tree, shelterwood, and group selective cuts. (Helms 1998)

Release - To release means to remove the competing vegetation to allow a desired species to grow, similar to weeding a garden. A tree undergoes *release* when it re-enters a period of rapid growth after competing vegetation has been removed.

Research - Research consists of studies conducted to increase scientific knowledge or technology. For the purposes of Standards VEG S5 and VEG S6, *research* applies to studies financed from the forest research budget, and to administrative studies financed by the NF budget.

Responsible official - The responsible official is a federal employee who has been delegated the authority to make the decision about a specific planning action.

Restore, restoration - To restore is to return or re-establish ecosystems or habitats to their original structure and species composition. (Helms 1998)

Restoration tools - Restoration tools are actions such as prescribed fires or thinning used to modify an ecosystem to achieve a desired, healthy, and functioning condition.

Restricted road - A restricted road is a road or segment where a certain type of use or all uses are prohibited during certain seasons of the year, or yearlong.

Riparian area - A riparian area is the area of distinctive soil and vegetation between a stream or other body of water and the adjacent upland. It includes wetlands and the parts of the floodplains and valley

bottoms that support riparian vegetation (LCAS), which typically consists of various emergent aquatic plants, as well as the grasses, sedges, and shrubs that thrive close to water.

Road - A road is a motor vehicle travel way greater than 50 inches wide unless it is designated and managed as a trail. A road may be classified, unclassified, or temporary. (36 CFR 212.1)

Road density - Road density is the measure of the amount of roads in an area. It is typically reported in miles of road per square mile of land.

Road improvement - A road improvement changes a road so that its original design function is altered, its traffic-service level increases, or its capacity expands. (FSM 7705) Road *maintenance* has none of these results.

Road reconstruction - Road reconstruction is improving or realigning an existing classified road. (FSM 7700)

Roads Analysis Process - Roads analysis is a procedure for evaluating the ecologic, social, and economic impacts from roads and road systems. The analysis does not result in a decision, but helps inform management decisions.

Salvage harvest - Salvage harvest is a commercial timber sale of dead, damaged, or dying trees. It recovers economic value that would otherwise be lost. Collecting firewood for personal use is not considered salvage harvest.

Sapling - A sapling is a tree that is between one and five inches in diameter.

Security habitat (lynx) - Security habitat amounts to places in lynx habitat that provide secure winter bedding sites for lynx in highly disturbed landscapes like ski areas. Security habitat gives lynx the ability to retreat from human disturbance. Forest structures that make human access difficult generally discourage human activity in security habitats. Security habitats are most effective if big enough to provide visual and acoustic insulation and to let lynx easily move away from any intrusion. They must be close to winter snowshoe hare habitat. (Modified from LCAS)

Seedling - A seedling is a tree that is less than one inch in diameter.

Semi-primitive non-motorized - A way to characterize an area with a predominately natural or natural-appearing environment, where motorized use is not permitted.

Seral - Seral is a temporary, intermediate stage in the process of succession. (Helms 1998)

Shade tolerant - Shade tolerant is a plant species that does not require abundant sunlight to grow, such as cedar or hemlock.

Shrub steppe habitat - Shrub steppe habitat consists of dry sites with vegetation of intermingled shrubs and grasslands.

Site-specific - Site specific means tied to or involving a certain place. The term is applied to project analysis.

Ski area - A site and attendant facilities expressly developed to accommodate alpine or Nordic skiing. (LCAS)

Snowshoe hare habitat – Snowshoe hare habitat consists of places where young trees or shrubs grow densely; often thousands of woody stems per acre.

Special use authorization – A special use authorization is a permit, easement, or other written instrument that grants rights or privileges to occupy and/or use NFS land, subject to specified terms and conditions. (FSM 2705)

Stand – A stand is a group of trees occupying a certain area that is similar in species, age, and condition.

Stand composition – Stand composition is the proportion of each tree species expressed as a percentage of the total number, basal area, or volume of the stand. (Helms 1998)

Stand-replacing fire regime – A stand-replacing fire regime is one where infrequent, high-intensity fires burn about every 35 to 200+ years, killing most trees and substantially changing the forest structure.

Standard – A standard is a required action in a land management plan specifying how to achieve an objective or under what circumstances to refrain from taking action. A plan must be amended to deviate from a standard.

Stand initiation structural stage – The stand initiation stage develops after a stand-replacing disturbance by fire or regeneration timber harvest. A new single-story layer of shrubs, tree seedlings, and saplings establish and develop, reoccupying the site. Trees that need full sun are likely to dominate these even-aged stands. (Oliver and Larson, 1996)

Stand structure – Stand structure is the horizontal and vertical distribution of the components of a forest stand, including the height; diameter; crown layers and stems of trees, shrubs and the herbaceous understory; snags; and down woody debris. (Helms 1998)

Stem exclusion structural stage – In the stem exclusion stage, trees initially grow fast and quickly occupy all of the growing space, creating a closed canopy. Because the trees are tall, little light reaches the forest floor so understory plants (including smaller trees) are shaded and grow more slowly. Species that need full sunlight usually die; shrubs and herbs may become dormant. New trees are precluded by a lack of sunlight or moisture. (Oliver and Larson, 1996)

Succession – Succession is the natural replacement, in time, of one plant community with another. Conditions in the existing plant community (or successional stage) create conditions favorable for establishing the next stage.

Successional stage – A successional stage is a normal, expected phase in the development of a plant community as it moves from bare ground to climax. The grass-forb stage precedes the woody shrub stage.

Suitable timber base – The suitable timber base is the land that has been deemed appropriate for *timber management*.

Surface fire – A surface fire spreads through surface fuels, not into the upper branches and crowns of trees.

Surface fuels – Surface fuels are needles, leaves, grass, forbs, dead and down

branches and trees, stumps, shrubs, and short trees.

Temporary road – A temporary road is a road not intended to be a part of the forest transportation system and not needed for long-term resource management. (36 CFR 212.1, FSM 7705)

Thermal cover – Thermal cover is cover that helps protect animals from weather. It shields them from harsh winds and precipitation and helps them conserve body heat.

Timber management – Timber management consists of growing, tending, commercially harvesting, and regenerating crops of trees.

Transition zone – A transition zone is the area where the predominant species changes from one to another.

Two-aged harvests – Two-age harvests are clearcuts, seed tree cuts, and shelterwood cuts that retain some overstory trees. They retain structural diversity and result in a two-aged stand when an understory of younger trees begins to grow.

Type conversion – Type conversion is changing the dominant vegetation in a place from forested to non-forested, or from one species to another.

Understory – An understory consists of the trees and woody shrubs growing beneath the *overstory* in a stand of trees.

Understory fire regime – An understory fire regime is one where the understory burns frequently, from once a year to about every 35 years, with low-intensity surface fires that consume forest litter and

kill small trees. Understory fires generally do not kill large, fire-resistant trees or substantially change the stand structure.

Understory re-initiation structural stage – In the understory reinitiation stage, a new age class of trees gets established after overstory trees begin to die, are removed, or no longer fully occupy their growing space after tall trees abrade each other in the wind. Understory seedlings then re-grow and the trees begin to stratify into vertical layers. A low to moderately dense uneven-aged overstory develops, with some small shade-tolerant trees in the understory. (Oliver and Larson, 1996)

Understory thinning – Understory thinning, or thinning from below, removes small trees growing under taller ones, to remove ladder fuels or to improve the health and vigor of the overstory. Understory thinning may or may not provide commercial products.

Uneven-aged harvest – Uneven-age harvests remove trees with commercial value either individually or in groups. A multi-age structure is maintained by removing some trees of all sizes and by regenerating the openings. Structural diversity is retained and the result is a stand with several age classes. *Uneven-aged management* creates multi-aged, multi-storied forests.

Unsuitable lynx habitat – Unsuitable lynx habitat consists of lynx habitat in the stand initiation structural stage where the trees are generally less than ten to 30 years old and have not grown tall enough to protrude above the snow during winter.

Stand replacing fires or certain vegetation management techniques can create unsuitable lynx habitat. Vegetation management projects that can result in unsuitable habitat include clearcuts and seed tree harvest, and sometimes shelterwood cuts and commercial thinning, depending on the resulting stand composition and structure (LCAS).

Unsuitable lands – Unsuitable lands have been classified as inappropriate to manage for a particular resource use. For the FS, *unsuitable lands* are those not managed for timber production for reasons of policy, ecology, technology, silviculture, or economics.

Valid existing rights – Valid existing rights are a definable legal interest established or existing through statute, real estate transactions, or federal grants or leases.

Vegetation management projects – Vegetation management consists of timber and fire management projects that change the composition and structure of vegetation to meet specific objectives, by means of prescribed fire, timber harvest, precommercial thinning, etc. For the purposes of this amendment, the term does not include removing vegetation for permanent developments like mineral operations, ski runs, roads and the like, and does not apply to fire suppression or wildland fire use.

Watershed – A watershed is the entire region drained by a waterway or into a lake or reservoir. Above a point on a stream, it is the area contributing water to the stream.

Wildland fire – A wildland fire is any fire burning in the wildlands that is not a prescribed fire or a structural fire. This term encompasses fires previously called *wildfires*. (National Interagency Fire Center 1998)

Wildland fire use – Wildland fire use is the managing of naturally ignited wildland fires to accomplish resource management objectives in areas that have a fire management plan. This term replaces *prescribed natural fire*. (Wildland and Prescribed Fire Management Policy, August 1998)

Willow carr – A willow carr consists of willows growing on permanently wet, organic soil.

Wildland urban interface (WUI) – (A) An area within or adjacent to an at-risk community that is identified in a community wildfire protection plan; or

(B) in the case where there is no wildfire protection plan in effect the WUI is:

- (i) an area extending ½ mile from the boundary of an at-risk community;
- (ii) an area within 1½ miles of the boundary of an at-risk community including land that has sustained steep slopes that create potential for wildfire behavior endangering the at-risk community, has a geographic feature that aids in creating an effective fire break, such as road or ridge top, or is in condition class 3; and
- (iii) an area that is adjacent to an evacuation route for an at-risk community that requires hazardous fuel reduction to provide safer evacuation for the at-risk

community. (Healthy Forests Restoration Act)

Based on the HFRA definition above, the demarcation of the WUI is contingent upon many human and natural factors. So for the purposes of the Lynx EIS analysis the WUI was considered the zone within one mile of where people live, liberally measured as just one structure per ten square miles.

Winter snowshoe hare habitat - Winter snowshoe hare habitat consists of places where young trees or shrubs grow densely - thousands of woody stems per acre - and tall enough to protrude above the snow during winter, so hares can browse on the bark and small twigs (LCAS). Winter snowshoe hare habitat develops primarily in the stand initiation, understory reinitiation, and old forest multistoried structural stages.

Young regenerating forest - A young regenerating forest is a forest in the *stand initiation* structural stage

Young forest multistoried structural stage - In the young forest, multistoried stage, three or more layers of trees become established because of minor disturbances that cause some mortality in the overstory, perpetuating a multi-layer, multi-aged stand structure. A broken overstory layer with a mix of tree sizes characterizes this stage. Large trees are scarce. This stage likely has shade tolerant trees in the understory (Oliver and Larson, 1996).

References used

Personal communications

Arno, S. F. 2002.

Buster, J. 2002. State of Wyoming Trail Program.

Cook, J. 2001. Idaho Department of Parks and Recreation.

Griffin, P. 2006. Postdoctoral researcher, University of Montana, Missoula.

Hayes, F. 2002. Utah State Parks & Recreation.

Raino, P. 2002. Intermodal Planning Manager. Idaho Department of Transportation.

Rapp, K. 2002. State of Wyoming, Department of Commerce, Division of State Parks and Historic Sites.

Ryan, C. 2002. Region 1 Wilderness and Outfitter & Guides Specialist.

Smith, G. 2002. Skilling Connolly Consulting Engineer.

Squires, J. 2006. Wildlife Research biologist, Rocky Mountain Research Station, Missoula MT.

Stark, T. 2002. Wyoming Department of Transportation.

State of Idaho, Department of Motor Vehicles. 2002.

Walker, B. 2002. Montana Fish, Wildlife and Parks.

Wynsma, B.J. 2002. Forestry Technician, Bonners Ferry Ranger District, Idaho Panhandle National Forest, Region 1, USDA Forest Service.

References

- ACIA. 2004.** Impacts of a Warming Arctic: Arctic Climate Impact Assessment. Cambridge University Press. 139 pp. (<http://www.acia.uaf.edu>)
- Albritton, D. L. and others. 2001.** Technical Summary of Working Group I of the International Panel on Climate Change. Pages 21-83 in Summary for policy Makers, Climate Change 2001: The Scientific Basis. Summary for Policymakers and Technical Summary of the Working Group I Report. Cambridge University Press. 98 pp.
- Agee, J.K. 1993.** Fire ecology of Pacific Northwest forests. Island Press, Washington, D.C. 493 p.
- Agee, J.K. 2000.** Disturbance ecology of North American boreal forests and associated northern mixed/subalpine forests. Pages 351-371. Chapter 3. In Ruggiero, L.F., K. B. Aubry, S. Buskirk, G.M. Koehler, C.J. Krebs, K. S. McKelvey, and J. R. Squires, tech, eds. Ecology and conservation of lynx in the United States. University Press of Colorado. Boulder, CO. 480 p.
- Apps, C.D. 2000.** Space-use, diet, demographics and topographic associations of lynx in the southern Canadian Rocky Mountains: a study. Pages 351-371. Chapter 12. In Ruggiero, L.F., K. B. Aubry, S. Buskirk, G.M. Koehler, C.J. Krebs, K. S. McKelvey, and J. R. Squires, tech, eds. Ecology and conservation of lynx in the United States. University Press of Colorado. Boulder, CO. 480 p.
- Arno, S.F., and R.J. Hoff. 1990.** Whitebark pine. Pages 268-279. In Silvics of North America: 1. Conifers. Agriculture Handbook 654. U. S. Department of Agriculture, Forest Service, Washington, DC, Vol. 1, 675 p.
- Arno, S.F. and S. Allison-Bunnell. 2002.** Flames in our forest: disaster or renewal? Pages 65-88. Island Press. 227 p.
- Arno, S.F., and T. Weaver. 1990.** Whitebark pine community types and their patterns on the landscape. Pages 97-105. In Proceedings---symposium on whitebark pine ecosystems: ecology and management of a high-mountain resource. 1989 March 29-31. Bozeman, MT. USDA Forest Service, National Park Service, Montana State University, Society of American Foresters. 386 p.
- Arno, S.F., and W.C. Fischer. 1995.** *Larix occidentalis* – fire ecology and fire management. Pages 130-135. In Ecology and Management of Larix Forests. Sympos. Proc. USDA Forest Service. Gen. Tech. Rep. INT-319.
- Aubry, K.B., G. Koehler, and J.R. Squires. 2000.** Ecology of Canada lynx in southern boreal forests. Pages 373-396. Chapter 13. In Ruggiero, L.F., K. B. Aubry, S. Buskirk, G.M. Koehler, C.J. Krebs, K. S. McKelvey, and J. R. Squires, tech, eds. Ecology and conservation of lynx in the United States. University Press of Colorado. Boulder, CO. 480 p.

References used

- Ausband, D. E. and G. R. Baty. 2005.** Effects of precommercial thinning on snowshoe hare habitat use during winter in low-elevation montane forests. *Can. J. For. Res.* 35: 206-2210
- Bailey, T.N. 1974.** Social organization in a bobcat population. *J. Wildl. Manage.* 38:435-446
- Barrett, S., S.F Arno, and J.P. Menakis. 1997.** Fire episodes in the Inland Northwest (1540-1940) based on fire history data. Page 15. Gen. Tech. Rep. INT-GTR-370. Ogden, UT: U. S. Department of Agriculture, Forest Service, Intermountain Research Station. 17p.
- Bassman, J.H. 1984.** Selected physiological characteristics of lodgepole pine. Pages 27-43. In Baumgartner D.M., R.G. Krebill, J.T. Arnott, G.F. Weetman, compilers. Lodgepole pine, the species and its management---symposium proceedings. 1984 May 8-10; Spokane, WA; 1984 May 14-16; Vancouver, B.C. Pullman, WA: Washington State University, Office of Conferences and Institutes, Cooperative Extension Service. 379 p.
- Brainerd, S.M. 1985.** Reproductive ecology of bobcats and lynx in western Montana. M.S. Thesis, Univ. of Montana, Missoula, MT 85 p.
- Brittel, J.D., R.J. Poelker, S.J., Sweeney, and G.M. Koehler. 1989.** "Native cats of Washington. " Unpublished report, Washington Department of Wildlife. Olympia, WA 169 p.
- Brocke, R.H., K.A. Gustafson, and L.B. Fox. 1991.** Restoration of large predators: potentials and problems. Pages 303-315. In D.J. Decker, M. E. Krasny, G. R. Goff, C. R. Smith, and D. W. Gross, eds. *Challenges in the conservation of biological resources, a practitioner's guide.* Westview Press, Boulder, CO.
- Brown, J.K., and J.K. Smith eds. 2000.** Wildland fire in ecosystems ; effects of fire on flora. Gen. Tech. Rep. RMRS-GTR-42-Vol.2. Ogden, UT. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 257p.
- Bunnell, K. D., J. T. Flinders and M. L. Wolfe. 2006.** Potential impacts of coyotes and snowmobiles on lynx conservation in the Intermountain West. *Wildlife Society Bulletin.* 34(3):828-838.
- Bureau of Business and Economic Research, School of Business Administration. 1988.** P.E. Polzin and T.P. Fong. Snowmobiling in Montana: an economic study. *Montana Business Quarterly.* Volume 26, number 4. Pages 3-10. University of Montana. 25 p.
- Bureau of Business and Economic Research, School of Business Administration. 1994.** J.T. Sylvester and M. Nesary. Snowmobiling in Montana: An Update. University of Montana 22 p.
- Bureau of Business and Economic Research, School of Business Administration 1998.** J.T. Sylvester. Snowmobiling in Montana: A 1998 Update. University of Montana 12 p.
-

References used

- Bush, R. 2003.** Lynx analysis using FIA data. 2 p.
- Bush, R. 2006.** Lynx analysis using FIA data – 2006. 2 p.
- Buskirk, S.W., L.F. Ruggiero, and C.J. Krebs. 2000a.** Habitat fragmentation and interspecific competition: implications for lynx conservation. Pages 83-100. Chapter 4. In Ruggiero, L. F., K. B. Aubry, S. W. Buskirk, G. M. Koehler, C. J. Krebs, K. S. McKelvey, and J. R. Squires (Tech. Eds.). Ecology and conservation of lynx in the United States. University Press of Colorado. Boulder, CO. 480 p.
- Buskirk, S.W., L.F. Ruggiero, K.B. Aubry, D.E. Pearson, J.R. Squires and K.S. McKelvey. 2000b.** Comparative ecology of lynx in North America. Pages 443-454. Chapter 14. In Ruggiero, L. F., K. B. Aubry, S. W. Buskirk, G. M. Koehler, C. J. Krebs, K. S. McKelvey, and J. R. Squires (Tech. Eds.). Ecology and conservation of lynx in the United States. University Press of Colorado. Boulder, CO. 480 p.
- Byler, J.W., R.G. Krebill, S.K. Hagle, and S.J. Kegley. 1993.** Health of the cedar-hemlock-western white pine forests of Idaho. Pages 107-111. In Baumgartner, D. M., J.E. Lotan, and J.R. Tonn, eds. Proceedings – interior cedar-hemlock-white pine forests: ecology and management. March 2-4, 1993; Spokane, WA. Pullman WA; Department of Natural Resource Sciences, Washington State University. 365 p.
- Campbell, P.R. 1996.** Population projections for states by age, sex, race, and hispanic origin: 1995 to 2025. U.S. Bureau of the Census, Population Division, PPL-47.
- Carlson, C.E.; J.E. Byler, and J.E. Dewey. 1995.** Western larch: pest-tolerance conifer of the northern Rocky Mountains. Pages 123-129. In Ecology and management of Larix forests. Sympos. Proc. USDA Forest Service. Gen. Tech. Rep. INT-319.
- Cicerone, R. J. and others. 2001.** Climate Change Science: An Analysis of Some Key Questions. National Academy Press. Washington, D. C. 28 pp.
- Cohen, J.D. 2000a.** What is the wildland fire threat to homes? Presented at the Thompson Memorial Lecture. School of Forestry, Northern Arizona University, Flagstaff, AZ.
- Cohen, J. D. 2000b.** Wildland-urban fire – a different approach. USDA Forest Service, Rocky Mountain Research Station. 5 p.
- Confederated Salish, Kootenai Tribes (CSKT), 2000.** Flathead Indian Reservation, Forest Management Plan. 303 pp.
- Cordell, H.K., principal investigator; S.M. McKinney, editor. 1999.** Outdoor recreation in American life: a national assessment of demand and supply trends. Pages 248-251, 328-329, 434-440. Champaign, Illinois: Sagamore Publishing. 440 p.
- Creel, S., J.E. Fox, A. Hardy, J. Sands, B. Garrott and R.O. Peterson. 2002.** Snowmobile activity and glucocorticoid stress responses in wolves and elk. Conservation Biology 16(3): 809-814.

References used

- Ehrlich, P.A., D.S. Dobkin and D. Wheye. 1988.** The birder's handbook: a field guide of the natural history of North American birds. Simon & Schuster, Inc. New York, N.Y. 785 p.
- Endangered Species Act of 1973.** P. L. 93-205, 87 Stat. 884, as amended; 16 U.S.C. 1531-1536, 1538-1540.
- Fielder, C.A., and D.A. Lloyd. 1995.** Autecology and synecology of western larch. Pages 118-122. In W.C. Schmidt, K.J. McKonald, comps. Ecology and management of Larix forests: a look ahead. Proceedings of an international symposium; 1992 October 5-9; Whitefish, MT, U.S.A. Gen. Tech. Rep. INT-GTR-319. Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermountain Research Station. 521 p.
- Finney, M.A. 2001.** Design of regular landscape fuel treatment patterns for modifying fire growth and behavior. *For. Sci.* 47(2):201-228.
- Fischer, W.C., and Bradley, A.F. 1987.** Fire ecology of western Montana forest habitat types. Gen. Tech. Rep. INT-223. Pages 4-8, 46. Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermountain Research Station. 95 p.
- Fox, J.F. 1978.** Forest fires and the snowshoe hare- Canada lynx cycle. *Oecologia* 31:349-74
- Fuller, A.K. 1999.** Influence of partial timber harvesting on American marten and their primary prey in north central Maine. Unpublished M. S. thesis. University of Maine. 141 p.
- Fuller, A.K. 2006.** Multi-scalar responses of forest carnivores to habitat and spatial pattern: Case studies with Canada lynx and American martens. PhD Thesis. Unpublished. University of Maine. 223 pp.
- Graham, R.T. 1988.** Influence of stand density on western white pine, western redcedar, western hemlock, and grand fir tree and stand development in the Mountain West. In Schmidt, W., ed. Future forests of the mountain west: a stand culture symposium. Gen. Tech. Rep. INT-243. Ogden, UT: USDA Forest Service, Intermountain Research Station: 75-84
- Graham, R.T. 1990.** Western white pine. Pages 385-394. In R.M. Burns, and B.H. Honkala, tech. coords. *Silvics of North America: 1. Conifers.* Agriculture Handbook 654. U. S. Department of Agriculture, Forest Service, Washington, DC, Vol. 1, 675 p.
- Graham, R.T., J.R. Tonn, and T.B. Jain. 1993.** Managing western white pine plantations for multiple resource objectives. Pages 357-394. In D. M. Baumgartner, J.E. Lotan, and J. R. Tonn, eds. *Proceedings – interior cedar-hemlock-white pine forests: ecology and management.* March 2-4, 1993; Spokane, WA. Pullman WA; Department of Natural Resource Sciences, Washington State University. 365 p.
- Griffin, P.C. and L.S. Mills. In press.** Precommercial thinning reduces snowshoe hare abundance in the short term. *J. Wildlife Management.*
-

References used

- Halfpenny, J., K. Murphy, and D. Reinhart. 1999.** Pages 49-63 in T. Olliff, K. Legg and B. Kaeding editors. Effects of winter recreation on wildlife of the greater Yellowstone Area: a literature review and assessment. Report to the Greater Yellowstone Coordinating Committee. Yellowstone National Park, Wyoming. 315 p.
- Heidel, B.L. 1997.** Interim report: conservation status of *Spiranthes diluvialis* (Sheviak) in Montana. Montana Natural Heritage Program, Helena MT. 33 p.
- Helms, J.A., editor. 1998.** The dictionary of forestry. Published by the Society of American Foresters. 210 p.
- Hessburg, P.F., B.G. Smith, S.D. Kreiter, C.A. Miller, R.B. Salter, C.H. McNicoll, and W.J. Hann. 1999.** Historical and current forest and range landscapes in the interior Columbia River basin and portions of the Klamath and Great Basins. Part 1: Linking vegetation patterns and landscape vulnerability to potential insect and pathogen disturbances. PNW-GTR-458. 467 p.
- Hessburg, P.F., and J.K. Agee. In press.** An environmental narrative of Inland Northwest forest, 1800-2000. 87p. Forest Ecology and Management.
- Hickenbottom, J. R., B. Summerfield, J. Aardahl, G. Halekas, M. Hilliard, L. Jackson, D. Prevedel, J. Rupe. 1999.** Biological assessment of the effects of National Forest land and resource management plans and bureau of land management land use plans on Canada lynx. U.S. Forest Service, Ogden Utah. 149 p.
- Hillis, M., A. Jacobs and V. Wright. 2003.** U. S. Forest Service region one Canada lynx assessment. Prepared by the National Fire Plan Cohesive Strategy Team. U.S. Forest Service, Northern Region. Missoula, Montana. 29 p.
- Hodges, K. 2000a.** The ecology of snowshoe hares in northern boreal forests. Pages 117-161. Chapter 6. In Ruggiero, L. F., K. B. Aubry, S. W. Buskirk, G. M. Koehler, C. J. Krebs, K. S. McKelvey, and J. R. Squires (Tech. Eds.). Ecology and conservation of lynx in the United States. University Press of Colorado. Boulder, CO. 480 p.
- Hodges, K. 2000b.** Ecology of snowshoe hares in southern boreal and montane forests. Pages 163-206. Chapter 7. In Ruggiero, L. F., K. B. Aubry, S. W. Buskirk, G. M. Koehler, C. J. Krebs, K. S. McKelvey, and J. R. Squires (Tech. Eds.). Ecology and conservation of lynx in the United States. University Press of Colorado. Boulder, CO. 480 p.
- Howe, G.E., and M.F. Maholovich. 1996.** The genetics resource program for ecosystem management. Page 1. 30 p.
- Idaho Transportation Department. 2004.** Truck drivers, motorists, dignitaries and wildlife celebrate completion of U.S. 95 (Copeland) project. The Transporter. Idaho Transportation Department. 2 pp.
- IMPLAN Professional Users Guide. 1999.** IMPLAN Professional, Version 2.0, Social Accounting and Impact Analysis Software. Minnesota IMPLAN Group, Inc. 418 p.

References used

- Johnsgard, P.A. 1990.** Hawks, eagles and falcons of North America. Smithsonian Institution Press. Washington, D.C. 403 p.
- Jones, J., and S. Barrett.** In press. "Historic fire regimes for the Northern Rockies." From: Historic fire regimes and departures of fire regimes in northern Idaho and western Montana: a first approximation.
- Jones, J.R., and N.V. DeByle. 1985.** Morphology. Pages 11-18 and 77-81. In N.V. DeByle, and R. P Winokur, editors. Aspen: ecology and management in the western United States. USDA Forest Service Gen. Tech. Rep. RM-119. Rocky Mountain Forest and Range Experiment Station, Fort Collins, Colo. 223 p
- Keane, R.E., K.C. Ryan, T.T. Veblen, C.D. Allen, J. Logan, and B. Hawkes. 2002.** Cascading effects of fire exclusion in Rocky Mountain ecosystems: A literature review. USDA Forest service Gen. Tech. Rep. RM-91. Rocky Mountain Forest and Range Experiment Station, Fort Collins, Colo. 24 p.
- Keane, R.E., S.F. Arno, C.A. Stewart. 2000.** Ecosystem based management in the whitebark pine zone. In Smith, H.Y., ed. 2000. The Bitterroot ecosystem management research project: what we have learned: symposium proceedings; 1999 May 18 - 20; Missoula MT. RMRS-P-17. Ogden UT: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 154 p.
- Kerr, J. and L. Packer. 1998.** The impact of climate change on mammal diversity in Canada. Environmental Monitoring and Assessment 49:263-270.
- Koehler, G.M. 1990.** Population and habitat characteristics of lynx and snowshoe hares in north central Washington. Can. J.Zool. 68:845-851.
- Koehler, G.M. and J.D. Brittell. 1990.** Managing spruce-fir habitat for lynx and snowshoe hares. J.Forestry 88:10-14.
- Koehler, G.M., K.B. Aubry and J. von Kienast. 2001.** Habitat selection by lynx in the North Cascades. Quarterly report to Seattle City Light for quarter ending 30 March 2001. 3 p.
- Koehler, G.M., M.G. Hornocker, and S.H. Hash. 1979.** Lynx movements and habitat use in Montana. Canadian Field Naturalist 93(4):441-442.
- Kolbe, J. A., J. R. Squires, D. H. Pletscher and L. F. Ruggiero. In press.** The effect of snowmobile trails on coyote movements within lynx home ranges. J. Wildlife Management.
- Kuchler, A. W. 1964.** Potential natural vegetation of the conterminous United States (map and manual). American Geographical Society Special Publication 36.
- Losensky, J.B. 2002.** "An evaluation of methods to determine the historic range of variability for selected species in the northern Rockies." Unpublished report. 12p.
- Lotan, J.E. and D.A. Perry. 1983.** Ecology and regeneration of lodgepole pine. Agricultural Handbook 606. Page 6. U.S. Department of Agriculture, Washington, D.C. 51 p.
-

References used

- Lotan, J.E., J.K. Brown, and L.F. Neuenschwander, 1985.** Role of fire in lodgepole pine forests. Pages 133-152. In D.M. Baumgartner, R.G. Krebill, J.T. Arnott, G. F. Weetman, compilers. Lodgepole pine, the species and its management---symposium proceedings. 1984 May 8-10; Spokane, WA; 1984 May 14-16; Vancouver, B.C. Pullman, WA: Washington State University, Office of Conferences and Institutes, Cooperative Extension Service: 379 p.
- Martin, A.C., H.S. Zim and A.L. Nelson. 1951.** American wildlife and plants: A guide to wildlife food habits. Dover Publications, Inc. New York, NY. 500 p.
- McCoy N., I. Fujisaki, D. Blahuna, J. Keith. 2001.** An Economic and Social Assessment of Snowmobiling in Utah. Utah State University, Logan, UT. Prepared for Utah Department of Natural Resources, Division of Parks and Recreation. 92 p.
- McKelvey, K.S. and G.W. McDaniel. 2001.** An analysis of snowshoe hare (*Lepus americanus*) numbers in Island Park based on pellet sampling and capture/recapture trapping. Unpublished paper, USDA Forest Service, Rocky Mountain Research Station, Missoula, Montana. 20 p. + tables & figures.
- McKelvey, K.S., J. Von Kienast, K.B. Aubry, G. M. Koehler, B.T. Maletzke, J.R. Squires, E.L. Lindquist, S. Loch, M.K. Schwartz.** In press. DNA analysis of hair and scat collected along snow tracks to document the presence of Canada lynx (*Lynx canadensis*). Wildlife Society Bulletin.
- McKelvey, K.S., K.B. Aubry, J.K. Agee, S.W. Buskirk, L.F. Ruggiero, and G.M. Koehler. 2000a.** Lynx conservation in an ecosystem management context. Pages 419-441. Chapter 15. In Ruggiero, L. F., K. B. Aubry, S. W. Buskirk, G. M. Koehler, C. J. Krebs, K. S. McKelvey, and J. R. Squires (Tech. Eds.). Ecology and conservation of lynx in the United States. Univ. Press of Colorado. Boulder, CO. 480 p.
- McKelvey, K.S., K.B. Aubry, and Y.K. Ortega. 2000b.** History and distribution of lynx in the contiguous United States. Pages 207-264. Chapter 8. In Ruggiero, L.F., K.B. Aubry, S.W. Buskirk, G.M. Koehler, C.J. Krebs, K.S. McKelvey, and J.R. Squires (Tech Eds). Ecology and conservation of lynx in the United States. Univ. Press of Colorado. Boulder, CO. 480 p.
- McKelvey, K.S., S.W. Buskirk, and C.J. Krebs. 2000c.** Theoretical insights into the population viability of lynx. Pages 21-37. Chapter 2. In Ruggiero, L. F., K. B. Aubry, S. W. Buskirk, G. M. Koehler, C. J. Krebs, K. S. McKelvey, and J. R. Squires (Tech. Eds.). Ecology and conservation of lynx in the United States. Univ. Press of Colorado. Boulder, CO. 480 p.
- McKelvey, K.S., Y.K. Ortega, G.M. Koehler, K.B. Aubry, J.D. Britnell. 2000d.** Canada lynx habitat and topographic use patterns in North Central Washington: A reanalysis. Pages 307-336. Chapter 10. In Ruggiero, L. F., K. B. Aubry, S. W. Buskirk, G. M. Koehler, C. J. Krebs, K. S. McKelvey, and J. R. Squires (Tech. Eds.). Ecology and conservation of lynx in the United States. Univ. Press of Colorado. Boulder, CO. 480 p.
-

References used

- McKenzie, D., Z. Gedalof, D. L. Peterson, and P. Mote. 2004.** Conservation Biology 18 (4): 890-902. (Note: available at <http://www.blackwell-synergy.com/links/doi/10.1111/j.1523-1739.2004.00492.x/full/>)
- McManus C., R. Coupal, and D. Taylor. 2001.** 2000-2001 Wyoming snowmobile survey. Department of Agricultural and Applied Economics, University of Wyoming. Prepared for the Wyoming Department of State Parks and Historic Sites, Wyoming State Trails Program.
- Montana Department of Natural Resources (DNRC), 2005.** Montana DNRC Forested Trust Land, Habitat Conservation Plan (HCP) Canada Lynx Conservation Strategy, October 2005. 72 pp. (Note: available at <http://www.dnrc.state.mt.us/hcp>)
- Montana Department of Transportation, Federal Highway Administration, and Confederated Salish and Kootenai Tribes. 2006.** US 93 Ninepipe/Ronan Improvement Project DSEIS and Draft Section 4(f) Evaluation. 574 pp – specifically reference pages 3-8 to 3-18 which discuss wildlife crossings http://www.mdt.mt.gov/pubinvolve/docs/eis_ea/eis_ninepipe.pdf
- Mowat G., K.G. Poole, and M. O'Donoghue. 2000.** Ecology of lynx in northern Cascades and Alaska. Pages 265-306. Chapter 9. In Ruggiero, L. F., K. B. Aubry, S. W. Buskirk, G. M. Koehler, C. J. Krebs, K. S. McKelvey, and J. R. Squires (Tech. Eds.). Ecology and conservation of lynx in the United States. University Press of Colorado. Boulder, CO. 480 p.
- Mueggler, W.F. 1985.** Aspen vegetation associations. Pages 45-55. In Debyle, N.V. and R.P. Winokur, editors. Aspen: ecology and management in the western United States. USDA Forest Service Gen. Tech. Rep. RM-119, 223 p. Rocky Mountain Forest and Range Experiment Station, Fort Collins, Colo.
- Murphy, K. M., T. M. Potter, J. C. Halfpenny, K. A. Guenther, M. T. Jones, P. A. Lundberg. 2006.** In press. Distribution of Canada lynx in Yellowstone National Park. Northwest Science 80:199-206.
- Murray, D. L., S. Boutin and M. O'Donoghue. 1994.** Winter habitat selection by lynx and coyotes in relation to snowshoe hare abundance. Can. J. Zool. 72:1444-1451.
- National Interagency Fire Center. 1998.** Wildland and prescribed fire Management policy – implementation procedures reference guide, National Wildfire Coordinating Group, Boise ID
- National Wildfire Coordinating Group. 1996.** Glossary of wildland fire terminology, National Wildfire Coordinating Group, Boise ID
- NatureServe Explorer: Version 1.6.** An online encyclopedia of life [web application]. Arlington, VA. Nature Serve. <http://www.natureserve.org/explorer>.
- Neumann, P. W. and H.G. Merriam. 1972.** Ecological effects of snowmobiles. Canadian Field Naturalist 86:207-212.
-

References used

- Nussbaum, R.A., E.D. Brodie, Jr. and R.M. Storm. 1983.** Amphibians and reptiles of the Pacific Northwest. Univ. Press of Idaho. Moscow. ID 332 p.
- O'Donoghue, M., S. Boutin, C.J. Krebs, D.L. Murray, E.J. Hofer. 1998.** Behavioral responses of coyotes and lynx to the snowshoe hare cycle. *Oikos*. 82:169-183.
- Oliver, C.D. and B.C. Larson. 1996.** Forest Stand Dynamics. Pages 145- 170, 213-234. 520 p.
- Oliver, W.W. and R.A. Ryker. 1990.** Ponderosa pine. Pages 413-424. In *Silvics of North America: 1. Conifers*. Agriculture Handbook 654. U. S. Department of Agriculture, Forest Service, Washington, DC, vol. 1, 675p.
- Parrish J., S.R. Leidner, J.D. Hunt, and N. Sanyal. 1996.** Idaho winter sports and recreation: snowmobiling 1994-1995. University of Idaho, Department of Resource Recreation and Tourism. 26 p.
- Poole, K.G. 1994.** Characteristics of an unharvested lynx population during a snowshoe hare decline. *J. Wildl. Manage.* 58:608-618.
- Poole, K.G., L.A. Wakelyn and P.N. Nicklen. 1996.** Habitat selection by lynx in the Northwest Territories. *Can. J. Zool.* 74:845-850.
- Quigley, T.M., R.W. Haynes, and R.T. Graham, tech. eds. 1996.** Integrated scientific assessment for ecosystem management in the interior Columbia basin and portions of the Klamath and Great Basins. Volumes I and II. Pages 61-62 and 891. Gen. Tech. Rep. PNW-GTR-382. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station.
- Roe, N.A., K.G. Poole and D.L. Day. 2000.** "A review of lynx behavior and ecology and its application to ski area planning and management." Unpublished report. IRIS Environmental Systems. Calgary, Alberta. 62 p.
- Ruediger, B. 1996.** The relationship between rare carnivores and highways. Pages 24-38. In G. Evink, D. Zielger, P. Garret, and J. Berry (eds). *Transportation and wildlife: reducing wildlife mortality/improving wildlife passages across transportation corridors*. Proc. Transportation-Related Wildlife Mortality Seminar. 30 April- 2 May 1996, Orlando, FL. Florida Dept. Trans./Fed. Highway Admin.
- Ruediger, B.J. Claar, S. Gniadek, B. Holt, L. Lewis, S. Mighton, B. Naney, G. Patton, T. Rinaldi, J. Trick, A. Vandehey, F. Wahl, N. Warren, D. Wenger, and A. Williamson. 2000.** Canada lynx conservation assessment and strategy (LCAS). USDA Forest Service, USDI Fish and Wildlife Service, USDI Bureau of Land Management, and USDI National Park Service. Publication Number R1-00-53, Missoula, MT. 142 p.
- Ruggiero, L.F., K.B. Aubry, S.W. Buskirk, G.M. Koehler, C.J. Krebs, K.S. McKelvey, and J.R. Squires, tech. eds. 2000a.** Ecology and conservation of lynx in the United States. University Press of Colorado. Boulder, CO. 480 p.

References used

- Ruggiero, L.F., K B. Aubry, S.W. Buskirk, G.M. Koehler, C.J. Krebs, K.S. McKelvey, and J.R. Squires. 2000b.** The scientific basis for lynx conservation: qualified insights. Pages 443-454. Chapter 16. In Ruggiero, L. F., K. B. Aubry, S. W. Buskirk, G. M. Koehler, C. J. Krebs, K. S. McKelvey, and J. R. Squires (Tech. Eds.). Ecology and conservation of lynx in the United States. University Press of Colorado. Boulder, CO. 480 p.
- Ruggiero, L.F., K.B. Aubry, S.W. Buskirk, L.J. Lyon and W.J. Zielinski, tech. eds. 1994.** The scientific basis for conserving forest carnivores: American marten, fisher, lynx and wolverine in the western United States. Gen. Tech. Rep. RM-254. Ft. Collins, CO: USDA, Forest Service, Rocky Mountain Forest and Range Experiment Station. 184 p.
- Saveland, J.M. and S.C. Bunting. 1987.** Fire effects in ponderosa pine forests. Pages 125-130. In Baumgartner, D.M. and Lotan J.E., comps and eds. 1987. Ponderosa pine---the species and its management. Symposium proceedings. 1987 Sept. 29-Oct. 1. Spokane, WA. USDA Forest Service, University of Idaho, Washington State University, Society of American Foresters. 281 p.
- Schmidt, J.L. and D.L. Gilbert, eds. 1978.** Big game of North America, ecology and management. Stackpole books. Harrisburg, PA. 494 p.
- Schmidt, K. M., J.P. Menakis, C.C. Hardy, W.J. Hann, and D.L. Bunnell. 2002.** Development of coarse-scale spatial data for wildland fire and fuel management. Gen. Tech. Rep. RMRS-GTR-87. Fort Collins, CO: U. S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 41p plus CD.
- Schmidt, W.C. and R.C. Shearer. 1995.** *Larix occidentalis*: a pioneer of the North American west. Pages 33-37. In W.C. Schmidt, C. Wyman, K.J. McKonald, comps. Ecology and management of *Larix* forests: a look ahead. Proceedings of an international symposium. 1992 October 5-9; Whitefish, MT, U.S.A. Gen. Tech. Rep. INT-GTR-319. Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermountain Research Station. 521 p.
- Schwartz, M. K., L. S. Mills, K. S. McKelvey, L. F. Ruggiero and F. W. Allendorf. 2002.** DNA reveals high dispersal synchronizing the population dynamics of Canada lynx. *Nature* 415:520-522.
- Shaw, J.D. 2002.** Silvicultural systems for maintenance of structure in a forest landscape. PhD. Dissertation. Utah State University, Logan, UT. 124 p.
- Shelly, J.S. 1988.** Status review of *Howellia aquatilis*: Region 1, Flathead National Forest. Montana National Heritage Program, Helena, MT. 120 p.
- Sheppard, W.D., and J.R. Jones. 1985.** Nurse crop. Pages 181-184. In N.V. Debyle, and R.P. Winokur, editors. Aspen: Ecology and management in the western United States. USDA Forest Service Gen. Tech. Rep. RM-119, Rocky Mountain Forest and Range Experiment Station, Fort Collins, Colo. 283 p.

References used

- Sibley, D.A. 2000.** The Sibley guide to birds. Alfred A. Knopf, Inc. New York, NY. 544 p.
- Slough, B.G. 1999.** Characteristics of Canada lynx, *Lynx canadensis*, maternal dens and denning habitat. Canadian Field Naturalist 113: 605-608.
- Smith, D.S. 1984.** Habitat use, home range, and movements of bobcats in western Montana. M.S. Thesis, Univ. of Montana, Missoula, MT. 58 p.
- Smith, J.K., and W.C. Fischer. 1997.** Fire ecology of the forest habitat types of northern Idaho. Pages 10-18 and 98-110. USDA. Forest Service. Intermountain Research Station. Gen. Tech. Rep. INT-GTR-363. 142p.
- Squires, J.R., K.S. McKelvey, L.F. Ruggiero. 2004.** A snow-tracking protocol used to delineate local lynx, *Lynx canadensis*, distributions. Canadian Field-Naturalist 118:583-589.
- Stenseth, N. C., A. Shabbar, K-S. Chan, S. Boutin, E. K. Rueness, D. Ehrich, J. W. Hurrell, O. C. Lingjaerde and K. S. Jakobsen. 2004.** Snow conditions may create an invisible barrier for lynx. Proceedings of the National Academy of Sciences of the United States (PNAS). 101(29):10632-10634.
- Squires, J.R. and T. Laurion. 2000.** Lynx home range and movements in Montana and Wyoming: preliminary results. Pages 337-349. Chapter 11. In Ruggiero, L. F., K. B. Aubry, S. W. Buskirk, G. M. Koehler, C. J. Krebs, K. S. McKelvey, and J. R. Squires (Tech. Eds.). Ecology and conservation of lynx in the United States. University Press of Colorado. Boulder, CO. 480 p.
- Staples, W.R. 1995.** Lynx and coyote diet and habitat relationships during a low hare population on the Kenai Peninsula, Alaska. M.S. Thesis, Univ. of Alaska, Fairbanks
- Steele, R. 1987.** Ecological relationships of ponderosa pine. Pages 71-76. In D.M. Baumgartner, and J.E. Lotan, comps and eds. Ponderosa Pine---the species and its management. Symposium proceedings. 1987 Sept. 29-Oct. 1. Spokane, WA. USDA Forest Service, University of Idaho, Washington State University, Society of American Foresters. 281 p.
- Stinson, D.W. 2001.** Washington state recovery plan for the lynx. Washington Department of Fish and Wildlife, Olympia, Washington. 78 p.+ 5 maps.
- Todd A. W., L.B. Keith and C.A. Fischer. 1981.** Population ecology of coyotes during a fluctuation of snowshoe hares. J.Wildl. Manage. 45:629-640.
- Tomback, Diana F., S.F. Arno, and R.E. Keane, editors. 2001.** Whitebark pine communities---Ecology and Restoration. Pages 6-7 and 18-19. 440 p.
- US Census Bureau. 2000.** Census 2000 redistricting data (P.L. 94-171) summary file for states and census 2000 redistricting summary file for Puerto Rico, tables PL1 and PL2.
- USDA Forest Service. 1997a.** Outdoor recreation in the United States: results from the national survey on recreation and the environment all forest service regions.
-

References used

- USDA Forest Service. 1997b.** 1998 budget explanatory notes for Committee on Appropriations. In hearings before a subcommittee of the Committee of Appropriations. R1 treatment prioritizing strategies. Page 1. U.S. House of Representatives, One Hundred Fifth Congress, First Session. Part 3, pages 99-103.
- USDA Forest Service. 1997c.** Conservation strategy for *Howellia aquatilis*. Appendix V V to Flathead Forest Plan. Flathead National Forest Supervisor's Office, Kalispell, MT. 24 p.
- USDA Forest Service, 1998.** Northern Region overview---summary and detailed report. Northern Region, USDA Forest Service, Missoula, MT. 263 p.
- USDA Forest Service. 1999a.** Proposed, endangered, threatened, and sensitive species list, R 4. USDA Forest Service, unpublished.
- USDA Forest Service. 1999b.** Region 1, Sensitive fish species list. USDA Forest Service, unpublished.
- USDA Forest Service. 1999c.** Region 1, Sensitive wildlife species list. USDA Forest Service, unpublished.
- USDA Forest Service. 2000a.** Land and resource management plan direction for Canada lynx in Colorado and southern Wyoming. U.S. Forest Service, Region 2. Federal Register, Vol. 65. No. 127, p 40601-40606. 5 p.
- USDA Forest Service. 2000b.** Public forest service roads. USDA Forest Service. 34 p.
- USDA Forest Service. 2001a.** A collaborative approach for reducing wildland fire risks to communities and the environment. 10-year comprehensive strategy. August 2001. U.S. Forest Service, Washington Office, Washington DC. 21 p.
- USDA Forest Service. 2001b.** Forest Service Energy Implementation Plan. 9 pp.
- USDA Forest Service. 2001c.** 36 CFR 294, Special Areas; Roadless Area Conservation Final Rule; January 12, 2001, Federal Register Vol. 66, No. 9, 3244-3273.
- USDA Forest Service. 2004a.** Intermountain Region Proposed, Endangered, Threatened and Sensitive Species, Known/Suspected Distribution by Forest. Unpublished. 23 pp.
- USDA Forest Service, 2004b.** Record of Decision, Forest Plan Amendments for Motorized Access Within the Selkirk and Cabinet-Yaak Grizzly Bear Recovery Zones, 90 pp.
- USDA Forest Service. 2004c.** Region 1, Sensitive plant species list for Montana. USDA Forest Service, unpublished. 4 p.
- USDA Forest Service. 2004d.** Region 1, Sensitive plant list for Idaho. USDA Forest Service, unpublished. 3 p.
- USDA Forest Service. 2004e.** USFS Region 1 Sensitive Species List – Fish. Unpublished. 1 p.
-

References used

- USDA Forest Service, 2005a.** National master list, proposed, threatened, and endangered species. USDA Forest Service, unpublished.
- USDA Forest Service, 2005b.** 36 CFR Parts 212, 251, 261 and 295 Travel Management; Designated Routes and Areas for Motor Vehicle Use; Final Rule. Federal Register, Vol. 70, No. 216, pp. 68264-68291, November 9, 2005.
- USDA Forest Service, 2005c.** 36 CFR 294; Special Areas; State Petitions for Inventoried Roadless Area Management; Roadless Area Conservation Advisory Committee; Final Rule and Notice. Federal Register, Vol. 70, No. 92, 25654-25662, May 13, 2005.
- USDA Forest Service, 2005d.** USFS Region 1 Sensitive Species List – Wildlife (Final). Unpublished. 4 pp.
- USDA Forest Service. 2006a.** Final Conservation Strategy for the Grizzly Bear in the Yellowstone Ecosystem. 87 pp.
- USDA Forest Service. 2006b.** Forest Plan Amendment for Grizzly Bear Habitat Conservation for the Greater Yellowstone Area National Forests, Executive Summary for the Final Environmental Impact Statement. 32 pp.
- USDA Forest Service. 2006c.** Forest Plan Amendment for Grizzly Bear Habitat Conservation for the Greater Yellowstone Area National Forests, Record of Decision. 69 pp.
- USDA Forest Service. 2006d.** Rocky Mountain Region Endangered, Threatened, Proposed and Sensitive Species. Unpublished. 22 pp.
- USDA Forest Service. 2006e.** Schedule of Forest Service Land Management Plans Revisions & New Plans, September 26, 2006. Unpublished. 7 pp.
- USDA Forest Service. 2006f.** Winter Motorized Recreation Plan, Record of Decision, Flathead National Forest, November 2006, 42 pp.
- USDA Forest Service, Northern Region, 2001.** Off Highway Vehicle Record of Decision and Plan Amendment for Montana, North Dakota and Parts of South Dakota. 19 pp.
- USDA Forest Service, Rocky Mountain Region, 2007.** R 2 Regional Forester’s Sensitive Species list. USDA Forest Service, unpublished. 7 p.
- USDA Forest Service and USDI 2000.** Managing the impact of wildfire on communities and the environment. September 8, 2000. U.S. Forest Service and Department of Interior. 17 p.
- USDA Forest Service, USDI Bureau of Indian Affairs, USDI Bureau of Land Management, USDI Fish and Wildlife Service, and USDI National Park Service. 2001.** Communities within the vicinity of federal lands that are at high risk from wildfire. Federal Register, January 4, 2001, Vol. 66, No. 3, pp. 751-777.
- USDA Forest Service, USDI Bureau of Indian Affairs, USDI Bureau of Land Management, USDI Fish and Wildlife Service, and USDI National Park Service.**
-

References used

2001. Urban Wildland Interface Communities Within the Vicinity of Federal Lands that are at High Risk From Wildfire. Federal Register, August 17, 2001, Vol. 66, No. 160, pp. 43384-43435.
- USDA Forest Service and USDI Bureau of Land Management. 2000.** Canada lynx threatened species biological assessment for privately operated downhill ski areas on federal lands in the state of Montana. USDA Forest Service, Northern Region, Missoula, Montana and USDI Bureau of Land Management, Butte Field Office. 92 p.
- USDA Forest Service, USDI Bureau of Land Management, and Fish and Wildlife Service. 2000.** Lynx habitat mapping direction. Memo 2670, August 22, 2000. U.S. Forest Service, Missoula, MT. 4 pp.
- USDA Forest Service, USDI Bureau of Land Management, Fish and Wildlife Service, National Park Service, the National Association of State Foresters and the National Association of Counties. 2003.** Memorandum of Understanding for the development of a collaborative fuels treatment program. USFS Agreement #03-MU-11132001-023. 5 p.
- USDA Forest Service and USDI Fish and Wildlife Service. 2000.** Canada lynx conservation agreement. USFS Agreement #00-MU-11015600-013. Missoula, MT. Unpublished. 12 p.
- USDA Forest Service and USDI Fish and Wildlife Service. 2005.** Canada lynx conservation agreement. USFS Agreement #00-MU-11015600-013. Missoula, MT. Unpublished. 9 p.
- USDA Forest Service and USDI Fish and Wildlife Service. 2006.** Occupied mapped Lynx habitat Amendment to the Canada Lynx Conservation Agreement. Unpublished. 5 pp.
- USDA Forest Service and USDI Fish and Wildlife Service. 2006a.** Canada lynx conservation agreement. USFS Agreement #00-MU-11015600-013. Missoula, MT. Unpublished. 13 p.
- USDC Bureau of Economic Analysis. 1995.** Detailed code file for definitions of BEA component economic areas and the final redefinitions of the BEA economic areas. 85 p.
- USDC Bureau of Economic Analysis. 2002.** Regional economic information system. Personal income and employment estimates for all counties and metropolitan areas in the United States. (www.fisher.lib.virginia.edu/reis/county.html).
- USDI Bureau of Land Management, Wyoming State, 2005.** Final Statewide Programmatic Canada lynx (*Lynx Canadensis*) Biological Assessment. 225 pp.
- USDI Fish and Wildlife Service. 2000a.** Biological opinion on the effects of National Forest Land and Resource Management Plans and Bureau of Land Management Land Use Plans on Canada lynx (*Lynx canadensis*) in the contiguous United States. USDI, Fish and Wildlife Service, Denver, Colorado. 70 p. + appendix.
-

References used

- USDI Fish and Wildlife Service. 2000b.** Endangered and threatened animals and plants; determination of threatened status for the contiguous U.S. distinct population segment of the Canada lynx and related rule. Federal Register March 24, 2000. Vol. 65, No. 58, pages 16051-16086.
- USDI Fish and Wildlife Service. 2001.** 12-month finding for a petition to list the plant *Botrychium lineare* (Slender moonwort) as threatened. June 6, 2001. 50 CFR Part 17, Federal Register Vol. 66, No. 109.
- USDI Fish and Wildlife Service. 2003.** Endangered and Threatened Wildlife and Plants; notice of remanded determination of status for the contiguous United States distinct population segment of the Canada lynx; clarifications of findings; final rule. 50 CFR Part 17. Federal Register Vol. 68, No. 128. pp 40076-40101
- USDI Fish and Wildlife Service. 2005.** Consultation for the Impacts from the Wyoming BLM Resource Management Plans to the Canada Lynx. 27 pp.
- USDI Fish and Wildlife Service. 2005a.** Recovery Plan Outline: Contiguous United States distinct population segment of the Canada lynx. Unpublished. Montana Field Office, Helena, Montana. 21 pp.
- USDI Fish and Wildlife Service. 2005b.** Endangered and Threatened Wildlife and Plants; Proposed Designation of Critical Habitat for the Contiguous U.S. Distinct Population Segment of the Canada Lynx; Proposed Rule. November 9, 2005. Federal Register, Vol. 70, No. 216, pp. 68294-38328.
- USDI Fish and Wildlife Service. 2006.** Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the Contiguous U.S. Distinct Population Segment of the Canada Lynx; Final Rule. November 9, 2006. Federal Register, Vol. 71, No. 217, pp. 66008-66061.
- USDI Fish and Wildlife Service. 2007.** Endangered and Threatened Wildlife and Plants; Clarification of Significant Portion of the Range for the Contiguous United State Distinct Population Segment of the Canada Lynx. Federal Register, Vol. 72, No. 6, pp. 1186-1189.
- USDI Fish and Wildlife Service and National Marine Fisheries Service. 1998.** Endangered species act consultation handbook. U. S. Government Printing Office, Washington, D. C.
- USDI National Park Service (NPS). 2004.** 36 CFR 7; Special Regulations, Areas of the National Park Systems; Final Rule. November 10, 2004. Federal Register Vol. 69. No. 217 65348-65366.
- USDI National Park Service (NPS). 2005.** Winter Use Plans Environmental Impact Statement; Yellowstone and Grand Teton National Park and the John D. Rockefeller Jr. Memorial Parkway, Wyoming, Montana and Idaho. June 24, 2005. Federal Register Vol. 70, No. 121, 36656.
-

References used

- USDI, USDA Forest Service. 2006.** Protecting People and Natural Resources; A Cohesive Fuels Treatment Strategy. 59 pp.
- USDL Bureau of Labor Statistics. 2002.** "Employment statistics for all states and United States." (www.bls.gov).
- USDOT Federal Highway Administration. 2006.** Eco-logical: An ecosystem approach to developing infrastructure projects. 99 p.
(<http://www.environment.fhwa.dot.gov/ecological/ecological.pdf>)
- Utah Division of Wildlife Resources. 1998.** Inventory of sensitive species and ecosystems in Utah – Endemic and rare plants of Utah. An over view of their distribution and status. 111 p.
- Walker, C. J. 2005.** Influences of landscape structure on snowshoe hare population in fragmented forests. M. S. thesis. Univ. of Montana. Missoula, MT. 98 pp.
- Whitaker, J.O., Jr. 1996.** The Audubon society field guide to North American mammals. Alfred A. Knopf. Inc. New York, NY. 745 p.
- Wyoming Department of Transportation. 2005.** Statewide Long-range Transportation Plan. Wyoming Department of Transportation. 84 pp.
- Zack, A.C., and Morgan, P. 1994.** Fire history on the Idaho Panhandle National Forests. Pages 1-2 and 40. Coeur d'Alene, ID. U.S. Department of Agriculture, Forest Service, Idaho Panhandle National Forests. 44p.
- Zielinski, W. J. and T. E. Kucera. 1995.** American marten, fisher, lynx and wolverine: survey methods for their detection. Gen. Tech. Rep. PSW-GTR-157. Albany, CA: USDA, Forest Service, Pacific Southwest Research Station. 163 p.

List of acronyms

<u>Acronym</u>	<u>Title</u>	<u>What it is</u>
AIRFA	American Indian Religious Freedom Act	Law
ASQ	Allowable Sale Quantity	Unit of measure
BA	Biological assessment	Document
BBER	Bureau of Business & Economic Research	Subset of Economics Department at University of Montana
BLM	Bureau of Land Management	USDI agency
BO	Biological opinion	Document
CEQ	Council on Environmental Quality	Federal department
CFR	Code of Federal Regulations	Set of regulations
DEIS	Draft environmental impact statement	Document
DNA	Deoxyribonucleic acid	Genetic material
DNRC	Department of Natural Resources and Conservation	State department
EIS	Environmental impact statement	Document
ESA	Endangered Species Act	Law
FIA	Forest inventory and analysis	Vegetation data
FLPMA	Federal Land Policy Management Act	Law
FS	Forest Service	USDA agency
FSH	Forest Service Handbook	Set of procedures
FSM	Forest Service Manual	Set of policies
FWS	U.S. Fish and Wildlife Service	USDI agency
GIS	Geographic information system	Mapping tool
HCP	Habitat conservation plan	Document
HFI	Healthy Forests Initiative	Set of guidance
HFRA	Healthy Forests Restoration Act	Law
HUC	Hydrologic unit code	Watershed descriptor
ID	Interdisciplinary "team"	Group of people
IMI	Inventory and Monitoring Institute	Administrative subset of FS
IMPLAN	Impact Analysis for Planning	Computer program
INFISH	Inland Native Fish Strategy	Document
LAU	Lynx analysis unit	Lynx habitat descriptor
LCAS	Lynx Conservation Assessment and Strategy	Document
LTSY	Long Term Sustained Yield	Unit of measure
MIS	Management indicator species	Plant or animal
MOU	Memorandum of understanding	Agreement
NEPA	National Environmental Policy Act	Law
NHPA	National Historic Preservation Act	Law
NF	National Forest	Administrative unit

Acronyms

<u>Acronym</u>	<u>Title</u>	<u>What it is</u>
NFMA	National Forest Management Act	Law
NIFC	National Interagency Fire Center	Administrative subset of FS & BLM
NRHP	National Register of Historic Places	
NWCG	National Wildfire Coordinating Group	Administrative working group
OHV	Off Highway Vehicle amendment	Document
PACFISH	Interim Strategy for Managing Anadromous Fish-producing Watersheds in Eastern Oregon and Washington, Idaho, and Portions of California	Document
TEP	Threatened, endangered, proposed – also TEPS threatened, endangered, proposed and sensitive	Plant, animal or fish
TSMRS	Timber stand management record system	Data base
USDA	United States Department of Agriculture	Federal department
USDC	United States Department of Commerce	Federal department
USDI	United States Department of Interior	Federal department
USDL	United States Department of Labor	Federal department
WUI	Wildland urban interface	Area of land