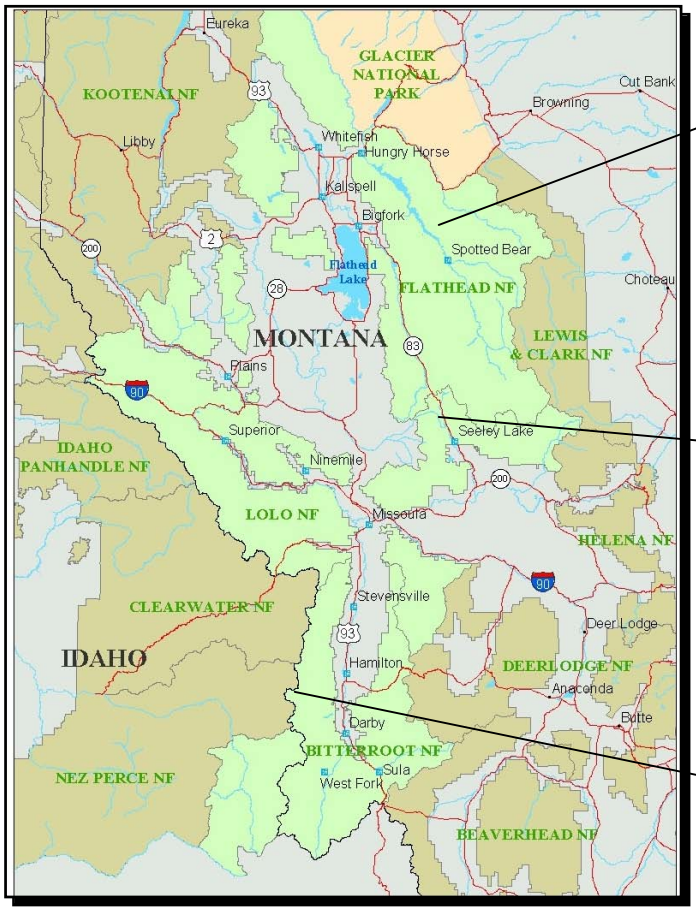
Bitterroot, Flathead, and Lolo
National Forests

Analysis of the Management Situation

Western Montana Planning Zone



The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, and marital or family status. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD).

Table of Contents

List of Figures iv
List of Tables iv
Appendices iv
Chapter 1 - Introduction 1-1
Purpose of the Analysis of the Management Situation 1-1
Three Forests – One Revision 1-2
Timeline for Revision 1-2
An Updated View of Forest Planning 1-4
Determining the Need For Change 1-5
Need for Change 1-5
Public Involvement 1-6
Consultation with American Indian Tribes 1-8
Chapter 2 - The No Action Alternative 2-1
Continuing Current Management on the Bitterroot Forest 2-1
Continuing Current Management on the Flathead 2-4
Continuing Current Management on the Lolo 2-6
Management Areas 2-9
Chapter 3 – Planning Framework 3-1
Scientific Framework: Ecosystem Management 3-2
Legal Framework 3-6
Organizational Framework 3-7
Procedural Framework 3-9
How All the Pieces Fit Together 3-10
Chapter 4 – Major Need for Change 4-1
Major Revision Topics 4-1
Access Management 4-1
Ecosystem Management 4-9
Sub-Topic: Vegetation and Disturbance 4-9
Sub-Topic: Biodiversity and Species Viability 4-19
Sub-Topic: Water Quality 4-33
Forest Products 4-37
National Forest and Private Land Interface 4-47
Recreation: Developed and Dispersed 4-55
Sub-Topic Outfitter Guide 4-60
Wilderness Recommendations and Roadless Areas 4-67
Sub-Topic: Wilderness Dams Management 4-76
Chapter 5 – Developing A Proposed Action 5-1
Proposed Action 5-1
Alternative Development 5-1
Work in Progress 5-2
Chapter 6 – Literature Cited, Glossary, and Acronyms 6-3
Literature Citations 6-3
Glossary 6-8
Acronyms 6-25
AMS Contributors and WMPZ Team Members 6-28

List of Figures

Figure 1: Vicinity Map of the Western Montana Planning Zone 1-3
Figure 2: Components of the Planning Framework. 3-1
Figure 3: Examples of biophysical and human scales. 3-4
Figure 4: Adaptive Management Model. 3-5
Figure 5: Graph showing the past and projected increase in the number of trucks and OHVs throughout the state of Montana. 4-7
Figure 6: Ratings of Areas at Risk within the Western Montana Planning Zone (Cohesive Strategy 2003) 4-50

List of Tables

Table 1: Summary of existing plans as amended and acres by management area category 2-10
Table 2: Closure status[1/] in miles[”] 4-2
Table 3: Road miles by maintenance level. 4-2
Table 4: Road maintenance workload, backlog and budget levels. 4-2
Table 5: Miles of Trail. 4-3
Table 6: Wildland fire use (WFU) and fire suppression in acres. 4-13
Table 7: Summary of Biodiversity and Species Viability Elements 4-23
Table 8: Western Montana Planning Zone Management Indicator Species by Forest. 4-26
Table 9: Capable, Available, and Suitable Lands for Timber Production (current Forest Plans) [1] 4-39
Table 10: Projected Timber Harvest Ceilings (current Forest Plans) and Accomplished Outputs 4-40
Table 11: Comparison of Forest Plan Projected and Actual Harvest Methods (Percentage) [1] 4-42
Table 12: Outfitters by category currently in operation on the three National Forests . 4-62
Table 13: General forest plan direction applicable to all NF lands. 4-63
Table 14: Management Area specific direction. 4-64
Table 15: Area in acres and changes to inventoried roadless areas by Forest. 4-68
Table 16: Specific areas recommended for wilderness by forest. 4-69
Table 17: Possible Forest adjustments to IRA’s Appendix C acres if RACR is implemented. 4-71
Table 18: General Forest Plan Direction Applicable to Recommended Wilderness and Montana Wilderness Study Act Areas. 4-72
Table 19: General Forest Plan Direction for Roadless Areas not Recommended for Wilderness 4-72
Table 20: Management Area Specific Direction for IRA’s and Recommended Wilderness 4-72

Appendices

Appendix A: Other Revision Items
Appendix B: Summary of Forest Plan Amendments
Appendix C: Management Area Crosswalk, descriptions and maps
Appendix D: Tentatively Suited Timberlands (Maps and list by Forest)
Appendix E: Roadless Areas (Maps and list by Forest)
Appendix F: Rivers Eligible for the National Wild and Scenic Rivers System

Chapter 1 - Introduction
Bitterroot, Flathead and Lolo National Forests

The Bitterroot, Flathead and Lolo National Forests are beginning a joint effort to revise their Forest Plans. The National Forest Management Act (NFMA) of 1976 requires that National Forest Land and Resource Management Plans (referred to as "forest plans") be revised whenever conditions or demands have significantly changed, or at least every 15 years.

The 1982 NFMA planning regulations (36 CFR 219) require that an Analysis of the Management Situation (AMS) be prepared as one of the first steps to initiate a forest plan revision. The AMS will develop a reference framework of information about the conditions of the land and peoples' uses of it so that a range of options for the future can be constructed to address public needs and issues, management concerns, and resource opportunities. To meet the needs of revising forest plans the AMS will focus on where and why we think there is a need to change the current plans. It paints a picture of the current biological, physical and social setting. It helps define the decision space and it provides the foundation for developing a range of alternatives for consideration.

Purpose of the Analysis of the Management Situation

This AMS will:

1. Provide a clear explanation of the management situation including an overview of conditions and trends, land capabilities, monitoring and evaluation findings and applicable guidance from broader-scale assessments and conservation strategies.
2. Describe the "no action" alternative (implications of continuing with current forest plan direction).
3. Identify the Need for Change that will lead to a proposed action.
4. Define the decision space available to the decision maker and provide a basis for expectations about scope of revision.
5. Provide a foundation for developing a proposed action that, through public scoping, will lead to issue development.

This is not a decision document. Rather, it provides a synthesis of information useful for developing alternative ways to manage the three national forests.

Three Forests – One Revision

The Bitterroot, Flathead and Lolo National Forests have teamed up to revise their Forest Plans. There are several reasons for this approach:

- The timing for revision of the three forest plans is similar. The current forest plans were approved on:

Flathead National Forest	January 22, 1986
Lolo National Forest	April 8, 1986
Bitterroot National Forest	September 30, 1987

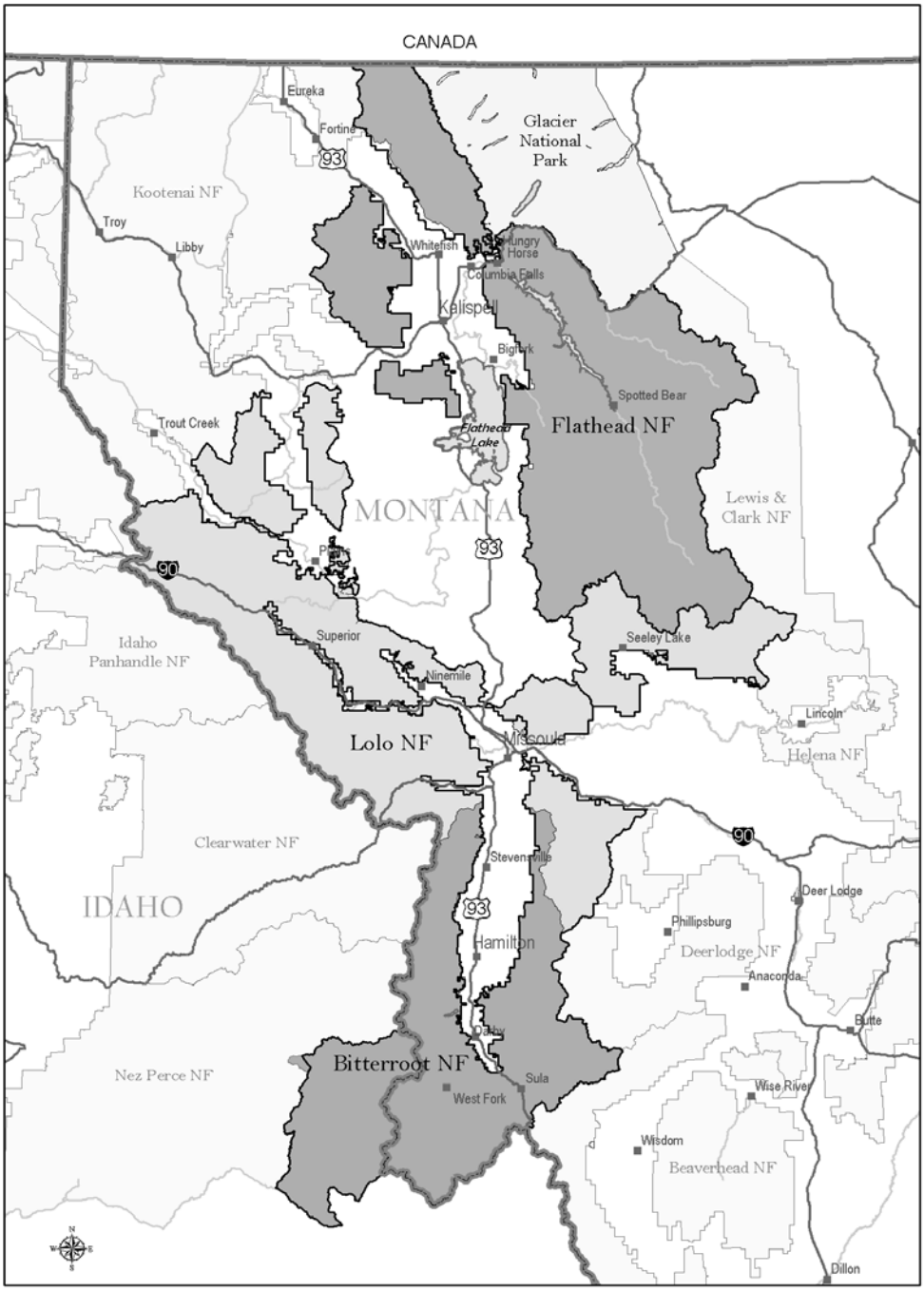
- The three forests share key issues, resources, customers, and interested publics.
- Assessments and management strategies for several key issues need to consider a larger geographical area than a single national forest.
- By working together and sharing personnel, services, budget, knowledge, and experience, we expect to increase the overall efficiency and quality of the revision effort.
- We will have more consistency between forests where appropriate, but allow for individual variation as needed.

The National Forest Management Act requires that one integrated plan be formulated for each unit of the National Forest System. We propose to produce one Environmental Impact Statement, but three separate revised forest plans. Figure 1 below is a map that shows the extent of the Western Montana Planning Zone, and the three forests and communities within the zone.

Timeline for Revision

Fall of 2003	Complete Draft AMS, Issue Revised Notice of Intent (NOI) and Proposed Action
Winter 2003/2004	Public Scoping on Issues Associated with the Proposed Action
Spring 2004	Identification of Significant Issues and Development of Preliminary Alternatives
Winter 2004/2005	Release of Draft EIS and Draft Forest Plans
Spring 2005	Public Comment Period on Draft EIS and Plans
Winter 2005/2006	Issue Final EIS, Final Plans and Records of Decision

Figure 1: Vicinity Map of the Western Montana Planning Zone



An Updated View of Forest Planning

The forest planning of the early 1980s was expensive because it required that each Forest build a plan from scratch. Our revision process will build upon the knowledge base of the current plans, monitoring of projects implemented under those plans, new science and changes in social expectations. One objective is to focus the revision more on the desired condition (DC) of the forest so that people planning future projects have a clear understanding of landscape objectives.

Six Decisions Made in Forest Plans
(36 CFR 219.11, 219.17 and 219.25):

1. *Forest Goals and Objectives.*
2. *Forest-wide Standards.*
3. *Management Area Delineation and Management Area Direction.*
4. *Identification of Lands Not Suited For Timber Production.*
5. *Monitoring and Evaluation Requirements.*
6. *Recommendations for Research Natural Areas and Wilderness Designation.*

Other principles of forest plan revision include:

- Base plan revision on "need for change", while validating earlier decisions where no need for change has been documented.
- Better define plan-monitoring items to measure progress in meeting Desired Conditions (DC).
- Emphasize collaborative and vigorous public involvement.
- Continue to actively involve our Federal, State, County, and Tribal partners.
- Use the latest science throughout the planning process.
- Recognize budget limitations in order to help the Responsible Official prioritize and balance competing planning activities.
- Revised Plans are more strategic:
    - More specific statements of desired conditions developed within the context of ecological, economic, and social systems.
    - More specific outcome-based objectives (i.e., measurable standards of performance).
    - Standards that guide activities to help achieve desired conditions.
    - Standards will be fewer, simpler, and better allow for adaptive management.
    - Larger management areas that better portray landscape level goals and objectives, and reflect larger scale processes.
    - Plans will refer to, rather than repeat Forest Service Directives (Manuals and Handbooks), existing law and regulation.

Determining the Need For Change

In revising the forest plan, we will focus on those areas that must be reviewed in accordance with federal regulations, and on critical issues identified through new information, monitoring, and public concern. The 1982 regulations mandate this:

> *"The Forest Supervisor shall determine the major public issues, management concerns, and resource use and development opportunities to be addressed in the planning process" [36 CFR 219.12(b)].*
>
> *"Based on consideration of data and findings developed in paragraphs (e) (1)-(4), a determination of the need to establish or change management direction" [36 CFR 219.12 (e)(5)].*

The Interdisciplinary Team used a broad array of existing information to identify areas of the forest plans most in need of change. Sources of information included:

- **Forest plan annual monitoring reports and 5-year reviews**: National Forests monitor and evaluate land management activities to determine how well objectives have been met and how well standards and guidelines have been applied. The Bitterroot, Flathead and Lolo have completed many Forest-Wide monitoring reports in addition to the comprehensive 5-year reviews listed below.
    - Bitterroot Forest Plan Five-Year Review, July 1994
    - Bitterroot Post Fire Plan Review (2001)
    - Flathead – Forest Plan Monitoring and Evaluation Report 1993- 1997, September 1998
    - Lolo Forest Plan Five-Year Review, April 1993
- **Northern Region Overview:** This assessment, prepared in 1998, explored the Region's situation with regard to ecosystem health and recreation.
- **New scientific information** as it becomes available.
- **Forest Service employees** including District Rangers were interviewed to get their perspectives and learn what they are hearing from individuals, groups and elected officials that they deal with on a daily basis.

Need for Change

Using the sources listed above, the interdisciplinary team identified six major needs-for-change topics. These topics are complex and controversial enough that they likely would drive alternatives. These topics are described in detail in Chapter 4 of this document.

Access management: This topic includes all aspects of motorized and non-motorized travel (including winter travel). Comprehensive management direction is needed to provide for increasing use and resource protection.

Ecosystem Management: Multiple use continues to be the cornerstone of National Forest System land management, but our view of how to implement it has evolved. Ecosystem management principles, in use over the last decade, were not expressed clearly in the current forest plans. Ecosystem management incorporates social, ecological, and economic components. This topic includes vegetation, biodiversity, species viability, and water resources as well as addressing the roles of fire, other natural disturbances, and invasive species.

Forest Products: This topic consists of classifying lands as either suited or not suited for timber production, calculating the level of timber harvest associated with suitable timber lands, and identifying the appropriate use of timber harvest as a tool to achieve resource management objectives. Management direction for harvest of miscellaneous forest products such as mushrooms, beargrass, berries, and firewood is also included in this topic.

National Forest and Private Land Interface Management: This topic includes all aspects of resource management (fire, fuels, recreation, fish, wildlife, etc.) on lands adjacent to existing and growing urban developments.

Recreation and Outfitter Guide Management: Clear consistent direction for recreation and outfitter/guide use is needed that protects resource values, provides flexibility to accommodate changing public demands and provides a quality experience to all visitors.

Wilderness Recommendations and Roadless Areas: This topic includes recommendations for future Wilderness areas, and what management direction should apply to those areas and to roadless areas not recommended for wilderness.

In addition, we have identified many other needs for changes which merit substantial consideration but will probably not drive alternatives. That is, the manner in which they are addressed will probably differ very little from one alternative to the next. Appendix A lists some of the more significant of these items. For example, item #21 identifies a need to improve our direction for Heritage Management. This is very important, but we expect the changes to be relatively straightforward and not controversial.

Other Need for Change items will likely surface as we hear from the public during the process. All management direction will be examined and modified as necessary. There are many places where we believe that minor changes in wording or minor additions or deletions are needed. There are hundreds of potential small updates that fall into this category.

Public Involvement

The purpose of public involvement is to meaningfully engage all interested individuals, groups, agencies and Native American Tribes in our Forest Plan revision process, in the most effective and efficient way we can. We have set the following two major goals to help us do this:

1. To meaningfully and efficiently incorporate the "public voice" in arriving at revised Forest Plans that are useful, implementable, and widely supported.
2. To build a constructive and lasting two-way dialogue between the three revision Forests in the Western Montana Zone, and the people they serve.

Accomplishing these goals will require us to approach public involvement in a number of different ways. First, we must keep our own employees sufficiently involved that they will understand, support, and be confident in their abilities to successfully implement the revised Forest Plans. It is also essential that we maintain the appropriate level of dialogue and exchange of technical information with other agencies and governments whose interests are linked with National Forest Management in the Western Montana Planning Zone. Among the other governments will be the Confederated Salish and Kootenai, Nez Perce, and other potentially affected American Indian Tribes.

The general public, whether or not they are affiliated with any particular organization, location or interest, will be given opportunities to be informed of what we are doing, why we are doing it, and how they can become actively involved if they so choose. We will encourage and support local and national interest groups in initiating constructive dialogues with other interest groups as well as the Forest Service to find realistic and implementable solutions to policy-level conflicts that many believe contribute to gridlock in the management of public forest lands. We also want to engage place-based communities in on-going small group dialogues that will draw on local knowledge, lifestyles, and livelihoods to arrive at recommendations as to how National Forest lands closest to their own communities should be managed.

We expect the place-based component of our public involvement effort to also provide additional social assessment information. It will be a forum for dialogue among "neighbors" who actually live in and near the places (Geographic Areas) that will be directly affected by Forest Plan implementation. The concept of place-based, is discussed more fully in the Geographic Areas description on page 3-7 of this document.

Dialogue will take place in community place-based "groups" that could vary widely in size and type. They could range from back yard gatherings, to rural fire districts, to community civic clubs, to homeowners' associations, to new groups formed explicitly to address Forest planning issues. Conveners could include individuals, elected leaders, or existing multi-stakeholder groups (such as a Resource Advisory Committee, or a Resource Conservation and Development office). Participation will be open to anyone who has an interest in Forest Planning for a particular Geographic Area, and who is willing to abide by whatever reasonable process ground rules the group decided to adopt. The output of these groups could include:

- Providing place-based input on needs-for-change in current plans.
- Providing input on desired conditions and management alternatives in their Geographic Area.
- Giving feedback on draft materials, such as proposed range of alternatives and Draft EIS.

- Serving as a local sounding board and source of local knowledge, throughout the revision process.
- Conducting community-based monitoring during Forest Plan implementation.

In summary, here are some of the public involvement activities we will undertake:

- Maintain open communication and dialogue with our own employees to keep them informed and to solicit their feedback on major works-in-progress as the revised Plans are developed.
- Provide broad and easily accessible opportunities for informing the public what we are doing, and considering their feedback.
- Engage in place-based dialogue with citizens who live in and around the three revision Forests. Engage in interest-based dialogue with major local, regional, and national stakeholders.
- Coordinate with other governments and agencies to assure that their needs for information and involvement are met, and that our professional and legal obligations to incorporate their interests and expertise are met.

Consultation with American Indian Tribes

American Indian Tribes are Sovereigns. As such they are government entities with which the Forest Service establishes and maintains a government-to-government relationship. Through treaties, tribes have reserved rights and privileges for their tribal members on the lands ceded to the U.S. Government. The U.S. Forest Service now manages some of the lands ceded in the treaties. These treaties create a legal responsibility by the U.S. Government toward Indian Tribes. This obligates the Forest Service to carry out laws and executive orders enacted for the protection and benefit of federally recognized Indian Tribes. As part of meeting these responsibilities, we are required to consult with tribes whenever our proposed policies or forest management actions may affect their interests. We will meet this obligation in the following ways:

- By establishing formal consultation through face-to-face meetings between our Forest Supervisors, and the Tribal Councils of the Confederated Salish and Kootenai, and the Nez Perce Tribes.
- By continuing staff-to-staff consultations through already existing relationships with these Tribes.
- By responding to requests for involvement by other federally-recognized tribes in whatever appropriate and reasonable manner they request.
- By incorporating contributions from tribes into forest plans wherever possible, using tribal language whenever possible.
- While we do not have the same legal obligation to non-recognized tribes or individual American Indians, should there be any such tribes or individuals with interests in our planning zone, we will treat their requests with the same openness and respect that we would treat any other person or interest group.

Chapter 2 - The No Action Alternative Continuing Current Management

Introduction

When doing analysis at the project level the No Action Alternative generally means that the project in question will not take place. But when revising a forest plan, No Action means continue current management. This No Action Alternative serves as a useful baseline to compare with other alternatives. The No Action Alternative will depict how the forests are being managed currently. It is a blend of the original Forest Plans as amended and new laws, regulations and policies put into effect since the original plans were approved.

The existing plans are summarized here to provide a general description of the no action alternative. Eventually this alternative will be developed to the same level of detail as any other alternative.

Continuing Current Management on the Bitterroot Forest

The Bitterroot Plan has 22 Forest Plan Amendments. Most of these amendments were minor adjustments needed to implement site-specific projects. See Appendix B for a complete list.

- **Access Management**

  The 1987 Bitterroot Forest Plan provided for:

  - Use of road closures to maintain 50 percent elk habitat effectiveness on lands currently developed and at least 60 percent elk habitat effectiveness on lands currently undeveloped.
  - Restrictions on the use of roads in order to protect elk habitat and sensitive soils while providing reasonable road access for other uses.
  - Roads to impact up to 5 percent of the inventoried roadless area over the next decade.

  How the plan has been implemented:

  - In response to resource damage and user conflicts resulting from off-road vehicle use the BLM and Forest Service jointly prepared an OHV EIS for Montana. A final decision was issued in January 2001, which amended the Bitterroot Forest Plan (Amendment 20) to restrict wheeled cross-country motorized travel.
  - Permanent road construction did not occur within roadless areas.

- **Ecosystem Management**

  The 1987 Bitterroot Forest Plan directed that:

  - About 1,400 acres will be harvested annually to maintain and improve habitat for elk and deer.
  - Old growth will be distributed over each management area in stands 40 acres and larger to meet the needs of species dependent on this habitat.
  - We will focus on protection of resources from management activities.
  - We will generally focus on individual species (fine filter) rather than looking at interactions of entire ecosystems (coarse filter).
  - Fire Management Plan is incorporated as an Appendix. Fire management is consistent with other resource objectives, cooperates with state air quality bureaus, and eliminates backlog of fuels.
  - We will control noxious weeds to protect resource values and minimize adverse effects to adjacent private lands. Risk to infestation will be evaluated and biological control will be emphasized.
  - We will reduce pest-caused losses to acceptable levels with appropriate silvicultural prescriptions, pesticides, biological agents and chemicals.
  - Ten Research Natural Areas (RNA's) were proposed.

  How the plan has been implemented:

  - PACFISH and INFISH strategies, adopted in 1995, (Amendment 12.5) adopted Riparian Management Objectives, Standards and Guidelines, and increased awareness and protection levels for aquatic and riparian resources.
  - The fires of 2000 had a major impact on Bitterroot ecosystems.

- **Forest Products**

  The 1987 Bitterroot Forest Plan provided for:

  - An allowable sale quantity of 334 million board feet (MMBF) in the first decade with 389,200 acres suitable for timber management.
  - Even-aged management, including shelterwood, seed tree, and clearcut silvicultural systems, will predominate but we will seek out opportunities for uneven aged management where appropriate and cost effective.

  How the plan has been implemented:

  - An average of 8.6 MMBF was sold each year.
  - While even-aged management is still the predominant method used for timber harvest, clearcutting is used less frequently.

- **National Forest and Private Land Interface Management**

  The 1987 Bitterroot Forest Plan provided for:

  - Recognition of fuel treatment needs in areas next to development although these areas were not identified for special management.

  How the plan has been implemented:

  - An increased awareness of the long-term impacts of fire suppression has led to an increase in fuel treatments to reduce risk to private land developments. National policy directs the forest to work cooperatively with other agencies and private landowners to reduce risk.

- **Recreation and Outfitter Guide Management**

  The 1987 Bitterroot Forest Plan provided for:

  - Plan direction is general in nature.

  How the plan has been implemented:

  - Amendment 5 modified direction for the Frank Church-River of No Return Wilderness.
  - Amendment 8 provides additional direction for issuing new permits.

- **Wilderness Recommendations and Roadless Areas**

  The 1987 Bitterroot Forest Plan provided for:

  - Recommendation of wilderness classification for 48,300 acres to be added to the Selway-Bitterroot Wilderness, and 28,500 acres of the Blue Joint drainage to be added to the adjacent Frank Church-River of No Return Wilderness or managed as a separate wilderness. With these additions, the existing and recommended wilderness amounts to about 52 percent of the Forest.

  How the plan has been implemented:

  - These recommended wilderness areas were managed to protect their wilderness character.
  - Amendment 12 modified direction for the Selway-Bitterroot.
  - Amendment 19 updated direction for the Anaconda Pintler Wilderness.

Continuing Current Management on the Flathead

The Flathead Plan has 24 Forest Plan Amendments. Most of these amendments were for management area boundary adjustments and standard and guideline changes. Amendments 19 and 21 were significant forest-wide amendments. See Appendix B for a complete list.

- **Access Management**

  The 1986 Flathead Forest Plan provided for:

  - Construction of new roads to facilitate management activities, but the total miles of road open for traffic will be decreased from the current levels for the benefit of wildlife.

  How the plan has been implemented:

  - In 1995, Amendment 19 amended the plan to prescribe very specific road density standards for all bear management subunits.
  - In response to resource damage and user conflicts resulting from off-road vehicle use the BLM and Forest Service jointly prepared an OHV EIS for Montana. A final decision was issued in January 2001, which amended the Flathead Forest Plan to restrict wheeled cross-country motorized travel.

- **Ecosystem Management**

  The 1986 Flathead Forest Plan provided for:

  - Management is designed to maintain habitat for all native wildlife species. The plan provides for improving habitat for grizzly bear, gray wolf, and bald eagle, including the establishment of the Trail Creek Grizzly Bear Management Area. Improvements designed to facilitate the recovery of the grizzly bear and gray wolf will also benefit other wildlife species.
  - Focus on protection of resources from management activities.
  - General focus on individual species (fine filter) rather than looking at interactions of entire ecosystems (coarse filter).
  - Fire Management Plan is incorporated as an Appendix. Fire management is consistent with other resource objectives and cooperates with state air quality bureaus. The goal was generally resource protection therefore aggressive control was mandated in most management areas.
  - Treatment of forest stands with high risk of developing epidemic levels of insects and disease.
  - Ten Research Natural areas were proposed. Five RNAs and one Special Interest Area designated

How the plan has been implemented:

- INFISH strategies, established in 1995 created Riparian Management Objectives, Standards and Guidelines, and increased awareness and protection levels for aquatic and riparian resources.
- Amendment 17 implements integrated pest management for invasive plant species treatment in the Bob Marshall Wilderness Complex.
- Amendment 19 insured compliance with the Endangered Species Act by amending objectives and standards for Grizzly Bear habitat and timber management.
- Amendment 20 developed a conservation strategy for water howellia.
- Amendment 21 provided new direction on the management of old-growth forests and analysis at the landscape level. The amendment incorporated standards for fire management to address TES plants, TES animals, big game, and planned and unplanned ignitions to meet land management objectives.
- Amend. #22, 1997, established Swan River and LeBeau RNAs.

- **Forest Products**

The 1986 Flathead Forest Plan provided for:

- An allowable sale quantity (ASQ) of 1 billion board feet for the first decade.
- Predominant even-aged stand management, which includes shelterwood, seed tree, and clearcut silvicultural systems.

How the plan has been implemented:

- In 1995, the Allowable Sale Quantity (ASQ) was changed to 54 million-board feet per year with Amendment 19.
- An average of 30.8 MMBF was sold each year.
- While even-aged management is still the predominant method used for timber harvest, clearcutting is used less frequently.

- **National Forest and Private Land Interface Management**

The 1986 Flathead Forest Plan provided for:

- Areas next to development were not identified for special management.

How the plan has been implemented:

- An increased awareness of the long-term impacts of fire suppression has led to an increase in fuel treatments to reduce risk to private land developments. National policy directs the forest to work cooperatively with other agencies and private landowners to reduce risk.

- **Recreation and Outfitter Guide Management**

  The 1986 Flathead Forest Plan provided for:

  - Plan direction is general in nature but does not provide flexibility to adjust seasons or use levels to meet public needs and provide resource protection.

  How the plan has been implemented:

  - Amendment 2 modified recreation management direction for the Bob Marshall Wilderness Complex by adding Limits of Acceptable Change criteria.

- **Wilderness Recommendations and Roadless Areas**

  The 1986 Flathead Forest Plan provided for:

  - Recommendation for wilderness designation of 98,080 acres in areas with high wilderness values including the following:
    - 54,815 acres of the Swan Front, from Holland Lake to Bunker Creek, including 11,148 acres north of Inspiration Point,
    - 5,187 acre Limestone Caves area
    - 6,295 acres near Slippery Bill Mountain
    - 15,368-acre Jewel Basin Hiking Area, plus 16,415 acres of adjacent lands

  How the plan has been implemented:

  - These recommended wilderness areas were managed to protect their wilderness character.

Continuing Current Management on the Lolo

The Lolo Plan has 29 Forest Plan Amendments. Most of these amendments were for management area boundary adjustments and standard and guideline changes. See Appendix B for a complete list.

- **Access Management**

  The 1986 Lolo Plan provided for:

  - New roads would be constructed to facilitate management but most new roads would be closed year-around to other use.
  - Cross-country OHV travel was prohibited.

  How the plan has been implemented:

  - Amendment 29 modified winter sports direction.

- **Ecosystem Management**

The 1986 Lolo Plan directed that we:

- Facilitate the recovery of the grizzly bear: adopts the Interagency Grizzly Bear Guidelines, and provides protection and habitat enhancement through Forest-wide and management area standards that constrain access and timing of human activities in areas important to the bear and elk.
- Increase the use of prescribed burning across the forest.
- Provide and maintain habitat for those wildlife species dependent on snags, old growth, and riparian zones.
- Provide available fish habitat to support a 7 percent increase in fish population.
- Provide coordinated management and protection of the values present in the Rock Creek drainage and its Blue Ribbon trout stream through a special management chapter in the Forest Plan. This chapter is shared with the Deerlodge National Forest Plan.
- Focus on protection of resources from management activities.
- Provide for maintenance of diverse mosaic of vegetation development, well distributed across the forest to ensure ecological integrity.
- Fire Management Plan is incorporated as an Appendix. Fire management recognized the value of both planned and unplanned ignitions based upon appropriate management response, cost effective objectives and coordination with state Air Quality Bureaus.
- Generally focused on individual species (fine filter) rather than looking at interactions of entire ecosystems (coarse filter).
- Identify 8 Research Natural Areas (RNA) with 6 selected in LRMP

How the plan has been implemented:

- INFISH strategies adopted in 1995 established Riparian Management Objectives, Standards and Guidelines, and increased awareness and protection levels for aquatic and riparian resources.
- Amendment 11 added noxious weed direction.
- Amendment #23, 1997, added 3 RNAs for a total of 9 RNAs.

- **Forest Products**

The 1986 Lolo Plan provided for:

- The first decade allowable sale quantity of 1.07 billion board feet.
- Even-aged management would predominate, which includes shelterwood, seed tree and clearcut silvicultural systems.

How the plan has been implemented:

- An average of 47.2 MMBF was sold per year.
- While even-aged management is still the predominant method used for timber harvest, clearcutting is used less frequently.

National Forest and Private Land Interface Management

The 1986 Lolo Plan provided for:

- Areas next to development were generally identified for recreation management.

How the plan has been implemented:

- An increased awareness of the long-term impacts of fire suppression has led to an increase in fuel treatments to reduce risk to private land developments. National policy directs the forest to work cooperatively with other agencies and private landowners to reduce risk.

Recreation and Outfitter Guide Management

The 1986 Lolo Plan provided for:

- Plan direction is general in nature but does not provide flexibility to adjust seasons or use levels to meet public needs and provide resource protection.

How the plan has been implemented:

- Amendment #2 modified direction for the Bob Marshall Wilderness complex
- Amendment #14 modified direction for the Selway Bitterroot wilderness.

Wilderness Recommendations and Roadless Areas

The 1986 Lolo Plan provided for:

- Recommendation of wilderness designation for 223,600 acres in areas with high wilderness values including:
  - The Great Burn - 89,530 acres
  - Bob Marshall Addition - 69,250 acres
  - Selway-Bitterroot Addition - 3,990 acres
  - Sliderock - 60,830 acres
- Existing and recommended wilderness, along with the managed roadless acreage, accounts for approximately 26 percent of the Forest area.

How the plan has been implemented:

- These recommended wilderness areas have been managed to protect their wilderness character.

Management Areas

A management area is an identifiable unit of land that provides focus and emphasis for management direction. Management area direction defines how the area will be managed by incorporating goals and objectives with a desired future condition.

Each of the current forest plans had it's own unique management areas. For example, on the Bitterroot NF, Management Area 5 represents areas managed for semi-primitive recreation and elk security, while Management Area 5 on the Flathead NF represents roaded timberlands with high scenic value. Management Area 5 represents transportation and utility corridors on the Lolo NF. To increase consistency and allow for a better comparison of alternatives a common set of management areas will be used.

For now, to better describe the No Action Alternative, we have cross-walked the existing management areas into broader Management Area Categories (Appendix C). Detailed Management Areas will eventually be developed within each of these categories. Please refer to Appendix C for a more complete description of the proposed Management Area Categories and the crosswalk from the existing forest plans. Short definitions of the Management Area Categories are listed below.

1. Management Area Category 1: Natural processes, including disturbance regimes, predominate with little or no human intervention. Potential management areas in this category include:

   Wilderness, Recommended Wilderness and Backcountry non-motorized areas.

2. Management Area Category 2: Generally naturally appearing landscapes, where management emphasis is to restore or maintain ecologic function; but does not preclude management activities. Potential management areas in this category include:

   Municipal Watersheds and Backcountry Winter motorized areas.

3. Management Area Category 3: Managed for natural appearance, scenic value, and maintenance of ecosystem function. Potential management areas in this category include:

   Scenic travel corridors and dispersed recreation

4. Management Area Category 4: Modified natural environments managed for sustainable multiple use. Potential management areas in this category include:

   Experimental Forests and Forest Products

5. Management Area Category 5: Highly altered landscapes with public and private lands intermixed. Human sites and sounds predominate; motorized transportation is common. Potential management areas in this category include:

   The National Forest and Private Lands Interface.

6. Management Area Category 6: Localized areas of concentrated use that are small but important in context with landscape scale. Potential management areas in this category include:

   Ski areas, utility corridors and mine sites.

Using these categories the current plans, as amended, were compared in Table 1 below to provide a general summary existing forest plan allocations.

Table 1: Summary of existing plans as amended and acres by management area category

Bitterroot NF Plan	Flathead NF Plan	Lolo NF Plan
Approved on Sept 30, 1987	Approve on Jan 22, 1986	Approved on April 8, 1986
Has 22 amendments	Has 24 amendments	Has 29 amendments
1, 577,833 total acres	2,362,082 total acres	2,083,192 total acres
76,800 Wilderness Acres Recommended	98,080 Wilderness Acres Recommended	223,600 Wilderness Acres Recommended
ASQ – 334 Million Board Ft 1st Decade	ASQ – 54 Million Board Ft per year between 1995 and 1999	ASQ – 1007 Million Board Ft 1st Decade
Management Area Category 1 835,497 acres*	Management Area Category 1 1,259,016 acres*	Management Area Category 1 554,210 acres*
Management Area Category 2 33,783 acres	Management Area Category 2 128,886 acres	Management Area Category 2 410,081 acres
Management Area Category 3 241,010 acres	Management Area Category 3 125,677 acres	Management Area Category 3 297,285 acres
Management Area Category 4 474,533 acres	Management Area Category 4 814,781 acres	Management Area Category 4 779,065 acres
Management Area Category 5 00 acres	Management Area Category 5 00 acres	Management Area Category 5 16,355 acres
Management Area Category 6 00 acres	Management Area Category 6 6,230 acres	Management Area Category 6 9,151 acres

*This is intended to be a very general summary of acres. The number of acres may vary based on the method used to estimate the area. Also, the crosswalk process is not exact and there are many nuances that can't be accounted for at this level of detail.

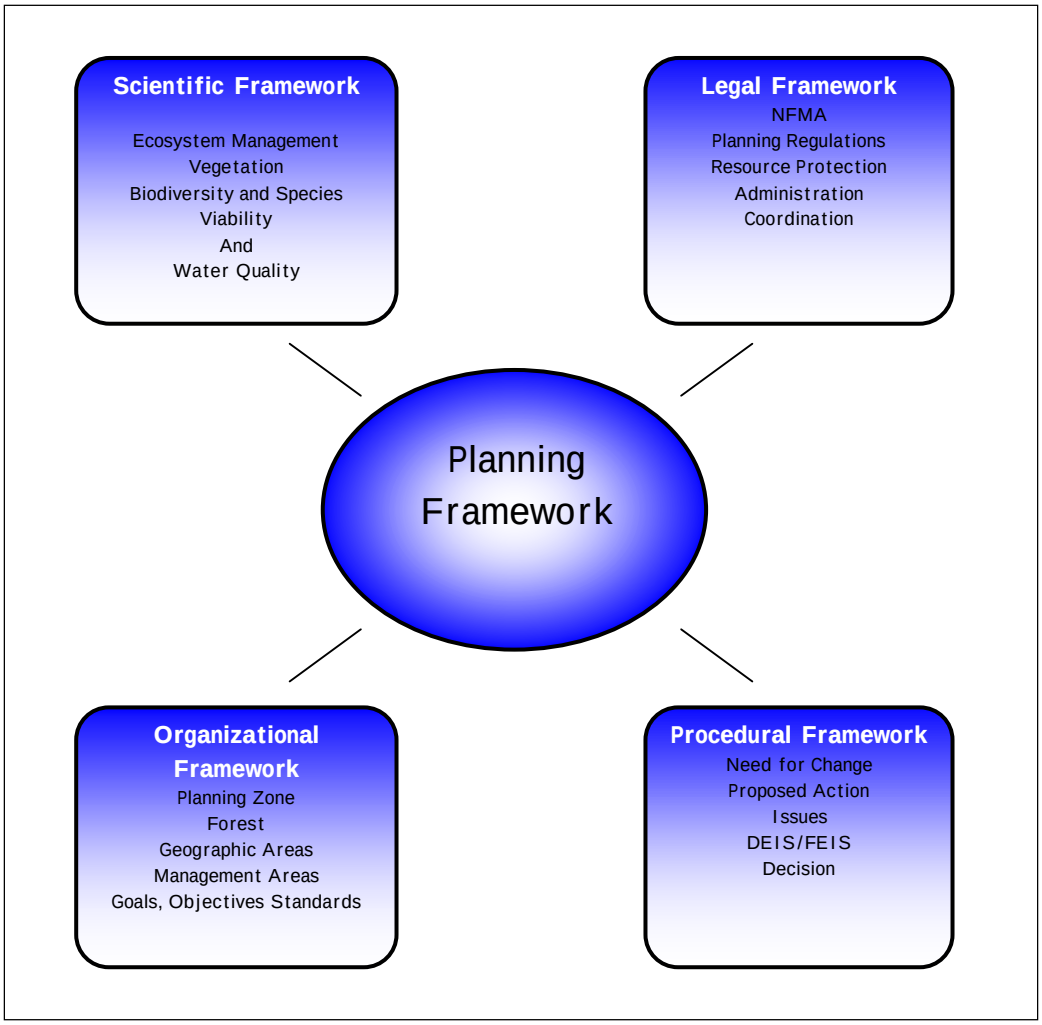
Chapter 3 – Planning Framework

Introduction

In this Chapter we lay out our overall framework for Forest Plan revision, in terms of what we consider to be the major components and how these relate to one another.

The planning framework that will guide forest plan revision consists of 4 components: the *Scientific* framework, the *Legal* framework, the *Organizational* framework, and the *Procedural* framework. Figure 2 illustrates the relationship of these components to the planning process. They are described in more detail below.

Figure 2: Components of the Planning Framework.



Scientific Framework: Ecosystem Management

One of the primary forces affecting forest plan revision is the increasing emphasis on ecosystem management. In 1997, an interdisciplinary Committee of Scientists was convened to review and evaluate the Forest Service's planning process for land and resource management and to identify changes that might be needed in the planning regulations (USDA 1999). As a result of this committee's work, an emphasis was placed on sustainability. As noted in their report: *...for the past 100 years, we, as a nation, have been attempting to define what we mean by "sustainability," in part through our grand experiment in public forest ownership. In the process, we have broadened our focus from that of sustaining commodity outputs to that of sustaining ecological processes and a wide variety of goods, services, conditions, and values*.

Ecosystem management has been defined by a number of authors (Agee and Johnson 1987, Overbay 1992, Christensen et al 1996, Forest Ecosystem Management Assessment Team 1993). Put simply it is to consider social, economic, and ecological principles in managing ecosystems to restore or sustain ecological integrity, and to provide for the values, products, uses, and services for the long term. Ecosystem management tends to accommodate, facilitate, and even encourage processes (i.e. fire) that ecosystems evolved under, which provides for long-term sustainability.

Christensen and others (1996) assert that ecosystem management is driven by explicit goals, executed by policies, protocols, and practices, and made adaptable by monitoring and research based on our best understanding of the ecological interactions and processes necessary to sustain ecosystem structure and function. Forest plan revision will incorporate these attributes as defined below.

1. **Long Term Sustainability:** Sustainability over the long term means to satisfy social, economic, and ecological needs for present and future generations. Social sustainability is the ability to maintain social capital (i.e. investments, services, etc.) that maintains the basic framework of society, and economic sustainability means maintaining capital (Goodland 2002), providing ample opportunities to satisfy preferences and helping to promote and retain vital and diverse communities in our regional economies. Ecological sustainability is the ability of a system to maintain or restore its composition, structure and function over time. This concept of sustainability will form the foundation of the new forest plans in the form of desired future conditions, goals, objectives, and standards.
2. **Clear Operational Goals:** Goals must be explicitly defined in terms of desired future conditions for all ecosystem components necessary for sustainability.
3. **Sound Ecological Models and Understanding:** Science-based models describe how ecosystems function through space and time. Forest plan revision will be based on monitoring and research that help describe ecosystem characteristics and function. Ultimately, our understanding of ecosystem function will help ensure sustainability over the long term.
4. **Understanding of Complexity and Interconnectedness:** Forest plan revision will fully recognize the extreme complexity of the ecosystems we manage. Biological diversity (the diversity of life and its processes) and the complexity of ecosystems are critical to sustainability. The more complex and diverse an ecosystem is the more

likely it can resist, recover, and be resilient when disturbance such as fire, wind and flood occur. The importance of ecosystem complexity and the vast array of interconnections that underlie ecosystem function is certainly one of the most important lessons learned from decades of research and resource management. The revised forest plans will recognize the complex nature of ecosystems, and result in management approaches that are responsive to a need to increase complexity, and that can be modified as our understanding evolves.

5. **Recognition of the Dynamic Character of Ecosystems**: Ecosystems are dynamic and they change continuously. The revised forest plans will acknowledge natural and human disturbance processes (e.g. fire, flood, wind, avalanche, succession, timber harvest, road building, etc.) and consider them in desired future conditions and management actions and strategies.

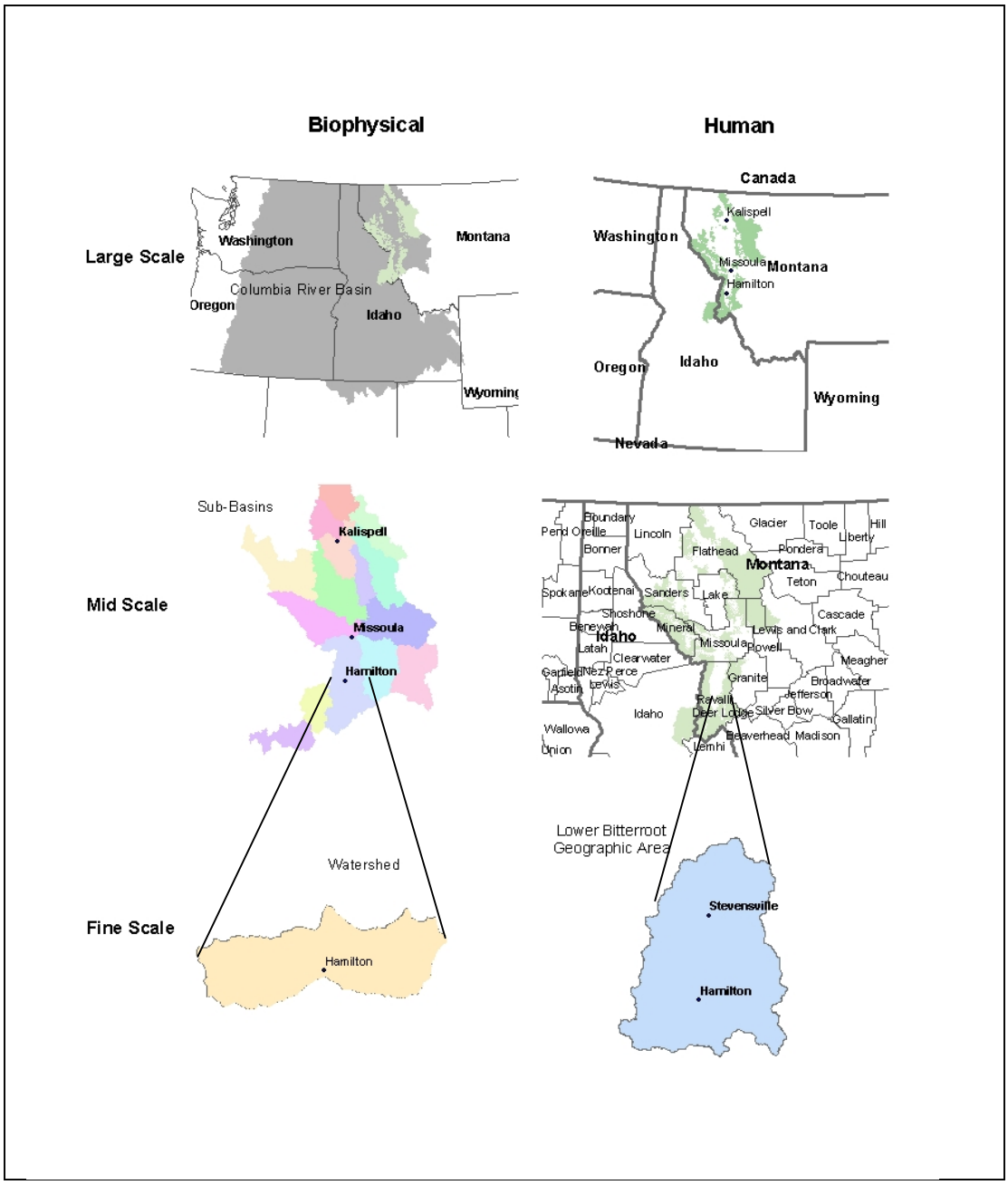
6. **Attention to Context and Scale:** Social, economic, and ecological processes occur over a wide variety of scales in space and time. There is no single spatial scale or time scale appropriate for management of ecosystems. For any issue, the revised forest plans would "zoom in and zoom out" and consider the social, economic, and ecological interrelationships. In addition, the revised forest plans would incorporate the many and complex relationships the Forest has with individuals, communities, businesses, and governments (Federal, State, Counties, etc.) and how they use the lands within and around the Forest (Figure 3).

7. **Acknowledgement of Humans and Ecosystem Components:** People are an integral part of ecosystems. Human population growth is a critical element to consider in terms of ecological sustainability and management opportunities. Forest Plan revision will consider the social and economic aspects of ecosystems. To a large degree, what happens in the socio-economic sphere of interaction determines the types and intensities of impacts that humans will have on ecosystems; and therefore, on the ability of the ecosystem to sustain itself.

8. **Commitment to Adaptability and Accountability:** Our knowledge of ecosystems is incomplete and subject to change with on going research and monitoring. Success in achieving management goals, objectives, and standards must be monitored by comparing expectations to measured results. We must be able to adapt to the unique features or needs of a particular area and to inevitable change through space and time. As new information becomes available, we must be able to adapt accordingly. To be adaptable and accountable, management objectives and expectations should be based on the latest science and monitoring information. A critical part of forest plan revision will be the development of monitoring programs that are designed to provide accessible and timely feedback to managers, so that appropriate adjustments in management can be made. In pursuit of sustainability for forest plan revision, we must first describe where are we now, how are we doing, and where are we going. We then need to identify the critical components of social, economic, and ecological systems and then attempt to gather the appropriate information over time to help answer those questions. Monitoring information is then used to help make the decision on whether or not we are on the right course or if corrections (amendments) are needed in order to meet management goals. A simplified illustration of the adaptive management model is shown in Figure 4.

As seen in Figure 3 below, large social scales may include states or regions, while large biophysical areas may include major river basins or mountain ranges. Mid-scale social scales may include counties, cities, or rural areas, and mid-scale biophysical areas may include sub-basins or eco-regions. At the finer scale, geographic areas can describe a general "sense of place" like the lower Bitterroot Valley or the Ninemile Valley. Finer-scale biophysical areas may include watersheds, sub-watersheds, or forest types.

Figure 3: Examples of biophysical and human scales.



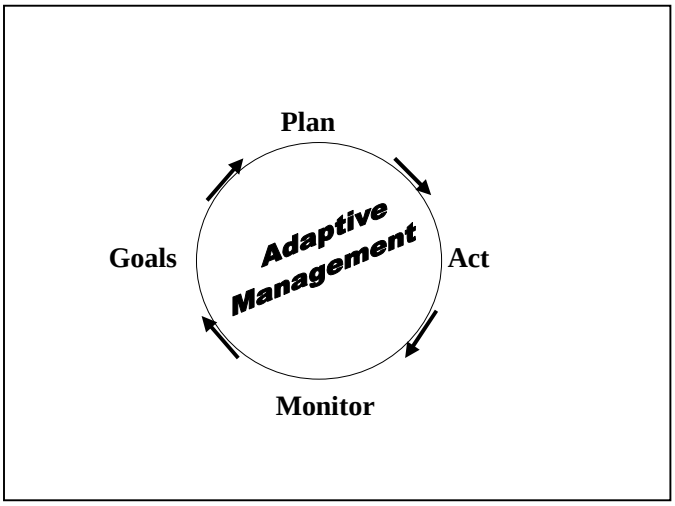
Recent science has emphasized that sustainability of resource outputs is dependent on the long-term sustainability of whole ecosystems. One of the main distinctions of ecosystem management is that it concentrates on overall ecosystem health and productivity through an understanding of how different parts of the ecosystem function with each other, rather than on achieving a set of outputs (USDA 1996).

Using the ecosystem management concepts described above, the revised forest plans will:

1. Focus management direction at the appropriate scale, depending on the resource or issue, and will integrate management among resources and issues.
2. Emphasize sustaining whole ecosystems over the long term
3. Encourage collaboration with governments and the general public in establishing goals and developing desired future conditions.
4. Recognize (and emphasize in the appropriate cases) the human component of ecosystems, especially in developing desired future conditions and management direction.

While ecosystem management has important differences from how we have managed national forest lands in the past, as noted above we are still managing under the Multiple-Use, Sustained-Yield Act (MUSY, 1960). We have, however, placed a much greater emphasis on sustaining ecological processes while providing a wide variety of goods, services, conditions, and values; rather than focusing primarily on sustaining commodity outputs.

Figure 4: Adaptive Management Model.



Throughout the forest plan revision process; ecosystem management principles will be incorporated. These principles will ensure that our management approach is sustainable over time, and that our legal obligations are fully met.

Legal Framework

The *National Forest Management Act* of 1976 (NFMA) directed that forest plans be prepared for each National Forest, and that those plans be revised every 10 to 15 years. The regulations needed to give the detailed guidance necessary for implementing NFMA were adopted in 1979 and substantially amended in 1982. The 1982 regulations are still being used today.

In 1989, the Forest Service conducted a comprehensive review of the planning process and concluded that the agency spent too much time and money on planning. New regulations were proposed in 1995 but were never finalized. Another proposed rule was published in October 1999 and formally adopted in November 2000.

In response to a number of lawsuits and concerns, the Forest Service initiated a review of the 2000 rule and concluded that there were enough serious concerns regarding implementation of the rule that a directive was issued allowing continued use of the1982 regulations for forest plan revision. The Forest Service is now proposing changes to the 2000 planning rule to address issues and concerns raised in earlier reviews The public comment period on the proposed rule ended on April 7, 2003 and a Final Rule is expected soon. Should the revised planning rule be adopted in the near future, it is possible that this planning effort will be completed under the new rule.

Not all agency direction regarding planning is in the regulations. The Forest Service Manual (FSM) contains legal authorities, objectives, policies, responsibilities, instructions, and guidance needed on a continuing basis by Forest Service line officers and primary staff. The Handbook (FSH) is the principal source of specialized guidance and instruction for carrying out the direction issued in the FSM. Examples include Handbooks on land management planning and environmental analysis. Most day-to-day operational questions are more appropriately addressed at the Manual and Handbook level, rather than in the regulations.

In addition to the National Forest Management Act, there are many other laws and regulations that guide our Plan revision process; most of them fall in one or more of the following categories:

- Biological and physical resource protection (such as endangered species, water quality, or air quality).
- Cultural and historic resource protection (such as structures, places, or trails).
- Procedural Requirements (such as consultation with other agencies, Native American Tribes, compliance with the information and documentation requirements of the National Environmental Policy Act, or compliance with the Americans with Disabilities Act).

Organizational Framework

We are using the term *Organizational Framework* to mean the organization of the plans themselves. In the next section, *Procedural Framework*, we will talk about the steps involved in doing the revisions to arrive at our final product of new Forest Plans.

The organizational framework of our revised plans will include many of the same basic components of a strategic plan used by other large organizations, such as a business, an educational institution, or another government agency. Here are the basic components, followed by discussion of what they mean and how they relate to one another.

- Zone
- Forest
- Geographic Area
- Management Areas (and Prescriptions)
- Goals
- Objectives
- Standards
- Monitoring Elements

Zone:

The Western Montana Planning Zone (WMPZ) is an affiliation of the Bitterroot, Flathead, and Lolo National Forests, solely for the purposes of coordination and efficiency in revising our respective Forest Plans. While there may be some decisions made that are the same across the entire Zone, even those would appear as identical but separate decisions made in each of the three individual Forest Plans.

Forest:

This is the basic planning unit; each Forest will have its own individual Forest Plan, supported by its own formal Record of Decision. However, we will be alert for situations where consistent, or even identical, strategic direction might properly apply to all three Forests. We will be especially attentive to assuring compatibility in direction across Forest boundaries, both within our planning zone and between our zone and adjacent Forests.

Geographic Areas:

We have divided the Planning Zone into seventeen Geographic Areas (GAs). We are using the GAs to organize our public involvement activities in such a way that people who live, or have a special interest in, a given area can focus greater attention on that area, rather than being asked to consider an entire Forest when they are giving us planning input. In drawing the GA boundaries, we tried to represent rather large areas within which people tend to have some commonality in terms of how they relate to the National Forest – where they live, where they recreate, where they are most likely to take interest in a new Forest Service project and perhaps, where they are more likely to participate in public forest planning discussions.

Management Areas:

We give the name *Management Area* (MA) to a specific area of land within a Geographic Area, for which we have identified a set of desired future conditions and a prescribed range of management tools for achieving those conditions. We have a standard set of basic Management Area descriptions, each of which may be applied in many different locations with possible slight variations to fit localized conditions. In some respects, Management Areas are rough counterparts of zoning designations used in urban land use planning.

Goals and Objectives:

Once we have decided what long-term outcomes to achieve, we establish goals and objectives as stepping-stones toward those ultimate future conditions. A goal is a broad accomplishment, such as "to restore all streams in the Big River watershed to a "zero degradation" condition, by the year 2015". An objective is a specific, measurable and time-limited accomplishment that will move us toward achieving a particular goal.

Desired Future Conditions:
Desired Future Conditions (DFC) are used to specify the future forest landscape conditions we wish to achieve in a given geographic area, and are based on a combination of public preferences, our own management expertise, and knowledge of the landscape's biological and physical capabilities.

Standards:

"*Standards*" are specific instructions as to what we can and can't do in particular situations. They may reflect laws or regulations which we have little or no authority to change, policies established at the National and Regional level, or direction determined at the Forest level. There are Forest-wide standards that apply in all situations of a certain kind, and management area-specific standards that apply only when the situation occurs in a particular management area.

Monitoring Elements:

A critical part of Forest Plan implementation is observing whether or not what we planned to happen actually is happening and if it is not, taking the necessary corrective (or "adaptive") action. In order to do this, we must specify certain *Monitoring Elements* that can be measured and reported on a regular basis. These are sometimes the same elements addressed by standards (distances, acres, etc.), but they may take other forms as well. The important thing is that they are measurable and that they accurately reflect whatever it is we are trying to monitor.

Procedural Framework

The preceding section talked about major components of the revised Plans; this section talks about the process we will follow for revising the Plans.

Need for change:

We begin by determining:

- Which parts of the existing Forest Plans are working well and should be continued under the revised Plans,
- Which parts need relatively minor changes that are not controversial enough to warrant considering alternative ways of dealing with them, and
- Which parts need major revision and will probably require us to choose from among several alternative ways of dealing with them. We refer to the latter as "major revision topics".

Proposed Action:

Working from the need for change identified by our own employees, and by members of the public, we will publish a Proposed Action in which we indicate the general direction that the Forest Service is leaning, with regard to each of the major revision topics. In some cases, all three Forests in the Zone may have the same "leaning", while in others, each Forest may be taking a different preferred position. The main reason for announcing a Proposed Action is to provide a somewhat specific proposal for members of the public (and other land management agencies) to respond to when we ask for their input.

Issues:

From what we initially perceive as our need for change and what we learn through engagement with the public and other agencies, we will identify a final set of *Issues* that will drive the revision process. Each issue will be expressed as a fairly specific statement of what "the problem" is, and what decisions the Forest Supervisors will eventually have to make to "solve" that problem. In some cases a single major revision topic will embrace several Issues.

Alternatives:

At this stage we will work with the public, other agencies, and our own employees to develop a range of different approaches we might take to managing each of the three Forests in the zone. These *Alternatives* will be our best attempt to incorporate numerous and often differing perspectives into a range of possible management approaches, each of which would be intended to meet all of our scientific and legal forest management obligations but would represent a different mix of tradeoffs among different tools and methods for meeting those obligations.

Effects Assessment:

In order to fully understand the consequences of implementing each of the Alternatives, we will do an *Effects Assessment*. This assessment will reveal the bio-physical, economic and social consequences of each Alternative, with major emphasis on points that are directly relevant to the decisions Forest Supervisors will have to make, as identified in the Issue Statements.

Documentation:

In compliance with the National Environmental Policy Act, all of the above steps will be documented in an Environmental Impact Statement (EIS). The Draft EIS will describe the process we have followed, report the findings of our Effects Assessment, and identify the Alternative that the Forest Service is leaning toward adopting at that time. This Preferred Alternative will give the public a basis for deciding what they do and don't like, and for suggesting changes. Publication of the DEIS will be followed by an intensive period of dialogue with the public and other agencies and governments.

Response to the Draft EIS will almost certainly lead to changes in some or all of the Alternatives, and quite possibly even a different choice of Preferred Alternative. Once all the necessary changes and additional effects assessment have been completed, the Forest Supervisors will consider this new information, as well as a large body of other local and national public input, consult with Forest and Regional Office staff, and make a final selection of alternative to become the Revised Forest Plan. Any additional alternatives and effects assessment will be reported in the Final EIS. Each Supervisor's final Revised Forest Plan decision and supporting reasoning will be documented in the Record of Decision (ROD), publication of which will be concurrent with publication of the Final EIS.

How All the Pieces Fit Together

While it is important to have the public, other agencies, and our own employees understand how all the major components of the plan revision process work together, it is most important of all that members of the plan revision team have a clear and common understanding. The following numbered phrases are an attempt to provide that understanding, as simply as possible.

1. Initial meetings with our own employees, accumulated comments from staff files and personal memories, and page-by-page review of the current Forest Plans and Monitoring Reports reveal what appears to be Need for Change.
2. Through dialogue among team members, and with the three-Forest leadership team (FLT), we arrive at what seem to be the Major Revision Topics. Other topics that are not expected to generate alternatives are also noted for revision.
3. Early public involvement, plus further dialogue with our own leadership team, helps us determine the style and content of the Proposed Action.

4. An important part of our public involvement will be at the community, or place-based level. We will use Geographic Areas as a basis for deciding how to focus our outreach activities and whom we should try to get involved. For public involvement purposes, the Geographic Areas will also be our basic mapping, data tabulation unit.
5. Review of the Proposed Action by members of the public, other agencies, and FS employees helps us determine (1) whether our major revision topics were in fact the right ones, and (2) exactly what issues we will need to respond to when developing Alternatives.
6. Issues are commonly defined as "unresolved conflicts"; so that Alternatives then become differing packages of resolutions for those "conflicts". In order to clarify exactly what kinds of decisions will have to be made in order to resolve the Issues, they are translated into "planning questions", which will have to be answered by each Alternative, and by the Forest Supervisors when they decide which Alternative to select.
7. The Alternatives will attempt to answer the planning questions in the following manner:
    a. For each Geographic Area, we will use a combination of our own expertise and the preferences, and local knowledge of people who live there, or who otherwise have a substantial interest in what happens there, to arrive at a description of the Desired Future Conditions across that landscape.
    b. Again, through a combination of public involvement and our own Forest Service expertise, we will identify various combinations of Management Areas, which if applied on that landscape would be capable of moving toward the Desired Future Conditions. Each such combination of MAs would be the beginnings of a different Alternative.
    c. Each Management Area would consist of:
        i. An overall characterizing Theme (e.g. Wilderness, Wildland-Urban Interface).
        ii. A description of the future conditions likely to occur if that particular management approach were to be followed.
        iii. Activities that would be permitted, and prohibited.
        iv. Management Standards.
        v. Monitoring Items that logically and scientifically are a good match with these Standards and Activities.
    d. The key to starting to build Alternatives would be to match the theme and probable future conditions associated with different Management Areas with the Desired Future Conditions of each Geographic Area. We would expect that in most cases, different parts of the same Geographic Area would have different Desired Future Conditions and therefore, different MAs.

8. At this point we can consider the Desired Future Conditions in each Geographic Area as equivalent to the management Goals for that area. As we select different combinations of Management Areas for reaching those Goals (i.e. different Alternatives), we are implicitly identifying different combinations of Objectives, accomplishment of which would lead us to those Goals.

9. The Principles of Ecosystem Management, our Scientific Framework, would guide our selection of different combinations of MAs for accomplishing the Goals of a Geographic Area.

10. Our Legal Framework would, in part, define the space within which our Alternatives (different packages of Management Areas) would be reasonably implementable.

11. Once completed and subjected to public and internal review and revision, the Alternatives are subjected to Effects Assessment and the remaining NEPA process of DEIS, review, revision, FEIS and Decision.

12. Following are some important questions that remain to be answered:
    a. Exactly how and where will we integrate other forms of public input, beside that gained through the process described above?
    b. How will we aggregate/integrate information based on individual Geographic Areas into Forest-wide Alternatives? Forest-wide Goals? Standards?
    c. How and when/where will we differentiate between individual Forests in the Proposed Action? Alternatives? Effects? Decision?

Chapter 4 – Major Need for Change

Introduction

Consultation with Forest Service employees, plus a limited amount of early public input, has helped us identify six major areas where we believe the current Forest Plans need to be changed. These are areas in which consequences of not changing the Plans are significant, and in which there tend to be substantial differences of opinion as to what changes we should make. These areas of change are likely to drive alternative management approaches from which we will choose a revised Plan for each of our three Forests.

All of our identified needs for changes are documented in a lengthy spreadsheet, filed as Goals, Objectives and Standards (GOS) Crosswalk in our Team Workshop.

Major Revision Topics

Following are the six major revision topics we have identified that will be discussed in detail.

- Access Management
- Ecosystem Management
- Forest Products Management
- National Forest and Private Land Interface Management
- Recreation and Outfitter Guide Management
- Wilderness Recommendations and Roadless Areas

Access Management

In this AMS and the upcoming plan revision effort, access management primarily includes roads, trails, cross-country travel, and snowmobile travel. During the forest plan revision process; a Forest-wide Roads Analysis will be completed. This analysis will address maintenance level 3-5 roads.

Background

Access is a fundamental basis for many of our programs - recreation, timber, fire, minerals, range, and wildlife. It is also one of the most controversial issues facing us today – how do we provide reasonable access throughout the forests while balancing other resource needs? This is an important and highly controversial topic for both Forest Service managers and the public. Many people are unhappy with our access management and we continue to hear from the full spectrum of users. Forest users currently, and in the future, will continue to have foot access to the national forest. Some people feel that their level of access is continually decreasing through road de-commissioning, while others feel we still have too many roads. In addition, contradicting motorized use direction across forest boundaries is causing enforcement and resource management problems. Table 2 shows the number of road miles by closure status.

Table 2: Closure status[1/] in miles[”]

Forest	Open	Not Open	Seasonal restriction
Bitterroot NF	1,062	908	638
Flathead NF	1,200	1,920	384
Lolo NF	2,235	2,628	1,462

1/ For conventional vehicles, does not include OHV use.
2/ From INFRA Roads database

The existing road system on NFS lands was largely constructed during the last 50 years to develop areas for timber harvesting. We are currently managing a road network that was built for timber harvesting and is now being used more for recreation that will continue to increase as the population increases. At the present time, there are over 12,460 miles of road across the planning zone. Table 3 provides a summary of road miles by maintenance level. Road maintenance level descriptions are provided in the Glossary.

Table 3: Road miles by maintenance level.

Forest	Total Miles	ML-1	ML-2	ML-3	ML-4	ML-5
Bitterroot NF	2,618	1,080	690	810	17	21
Flathead NF	3,504	1,824	649	828	174	29
Lolo NF	6,340	2,571	1,785	1,763	170	51
Total	12,462	5,475	3,124	3,401	361	101

1/ From INFRA Roads database

Maintenance and Budget Limitations

Current funding levels are not adequate to maintain existing roads to applicable standards. Road standards minimize ecological impacts, and allow efficient and safe use. Table 4 provides a summary of the maintenance workload and backlog in relation to estimated current budgets.

Table 4: Road maintenance workload, backlog and budget levels.

Forest	Average Annual Maintenance (miles)	Current Backlog (miles)	Annual Budget for Maintenance and Backlog	Estimated Current Budget
Bitterroot	470	2,540	$2,907,000	$662,000
Flathead	1,245	3,547	$6,200,000	$957,000
Lolo	388	5,909	$4,200,000	$544,000

The trail system on National Forest lands is comprised of non-motorized and motorized trails. There are limited opportunities to do motorized recreation on system trails throughout the three forests. Two-wheeled motorized use has more opportunity on system trails than do 4-wheeled motorized use. Table 5 provides the number of miles of each type of trail throughout the planning zone that currently exists on the forest road system. Decommissioned roads are not shown.

Table 5: Miles of Trail.

Forest	Total Miles	Wilderness	General Forest	Groomed Snowmobile Routes	OHV*
Bitterroot	1,564	806	758	85	32
Flathead	2,184	1,176	804	191	13
Lolo	2,441	299	1,352	744	46
Total	6,189	2,281	2,914	1,020	91

**** Trails that are designed to accommodate OHV use.***

Laws and Regulations

The Alaska National Interest Lands Conservation Act of 1980 (ANILCA) Sec. 1323 provides statutory authority for access to non-federal lands located within the boundaries of federal land administered by the Bureau of Land Management (BLM) and the Forest Service (FS). An ANILCA access situation exists where NFS lands are the only reasonable option available for the landowner to access their land for its reasonable use and enjoyment. In such cases, the BLM and the FS are obligated by the statute to grant reasonable access. The right of access is also subject to the reasonable rules and regulations of the Secretary of Interior or Agriculture.

As a result of the Regional Forester's 2001 decision, on the Bitterroot and Flathead Forests, OHVs are allowed on user-built and Forest Service constructed trails in existence at the time of the decision, as long as the wheels fit within the existing trail tread and the trail is not specifically closed to OHV use. This decision was necessary to avoid future impacts from increasing cross-country OHV travel on the land and is a temporary solution until site-specific planning is completed to designate routes.

The Lolo National Forest had existing cross-country OHV use limits in place and is not under the 2001 Regional Forester's decision.

Snowmobiles were exempted from this decision. Snowmobile use has generally been allowed to occur cross-country with higher concentrated use on groomed routes.

Social-Economic Values

Access issues and conflicts can produce strong reactions because the public values national forest lands and access to those areas for a variety of reasons. Users of the National Forests can be local community members, visitors or others who may not directly experience the forest but who value their existence for a multitude of reasons.

> "*Many communities and individuals have social and economic dependencies on forest roads and the resources provided by access to them. Changes to a road system or in road management may affect (positively or negatively) local commuting patterns, lifestyles, forest resource-related businesses, the collection of special forest products; school bus routes; firefighting access needs in the wildland-urban interface; and access to municipal water supplies, power lines, and other local infrastructure.*

> *The benefits provided to communities around national forests extend beyond those who directly access or use forest resources. For example, people owning or working in businesses in 'gateway' communities often benefit from tourism associated with people visiting their national forest. Local businesses also benefit through resource activities including timber harvest, grazing, road development and maintenance, water projects, and other special uses in terms of potential economic activity.*
>
> *Communities may benefit with infrastructure development that enhances their local quality of live, but at the same time negatively impact surrounding resources other people value for their quality of life. These externalities may include impact to resources such as soil, water, habitat, visual or damage to values people hold to an area such as an unroaded character, limited accessibility, or solitude. Such costs should be included and considered in any analysis of a road system and its management.*" (USDA FS-643, 1999).

Issues and conflicts over access can be symbolic of larger issues of conflicting values for national forest lands and the management of those areas. For these three forests, conflicting values may include differing opinions regarding how many miles of roads and trails are necessary. They may include the impact of that access on desired experiences or the social landscape (the values placed on the landscape). Concerns for specific impacts on the natural resources may also be an important value. Portions of the public that are invested or interested in these forests may have strong opinions that there are too many roads and trails and that this is having a negative impact on both people's experiences in these areas, but also on the wildlife, watershed, and vegetation. Other portions of the public may strongly disagree and believe that there is a need for increased access and road and trail management. It is important to consider all stakeholders, including those that are not necessarily active users, but still value the forests for other reasons, in management decisions.

Although conflicts occur between differing values towards access, it is often easier to discuss access issues and conflicts that occur because of active uses. Access to national forest lands can be very important to local communities and to people living inside and outside the planning area as well as provide opportunities for a wide variety of motorized and non-motorized recreation. Both motorized and non-motorized access have environmental as well as managerial impacts and the challenge should be to find a way to balance access (both motorized and non-motorized) with resource protection.

Roads and trails provide the mechanism for a wide variety of motorized and non-motorized recreation. Active use issues that are especially important to these three forests include increasing OHV and snowmobile use and desire by these publics to increase access and trails; conflicts between differing activities including hiking, mountain biking, stock users, OHV, snowmobile, skiers, and snowshoers.

Driving for pleasure has been identified as one of the most popular recreation activities in the Columbia River Basin (USDA, 1996). A recent study (USDA, 1989) indicates that by the year 2025, sightseeing opportunities and off-road driving will increase by 85% and 54% respectively. The percentage of population over 65 years of age is expected to

increase about 50% for 65 and older (USDA, 2000). Research indicates that outdoor activities change as people age; however, it is not clear how recreation choices will change in western Montana in this regard.

The use of the road system has changed from resource extraction to recreation use and the safety standard associated with the recreation use is higher then was needed for the original intent of timber harvesting.

Resource Values

Roads provide important access that supports a variety of resource management activities including timber harvest, vegetation management, mineral extraction and exploration, oil and gas, fuel reduction, and fire suppression. The existing road system represents a significant investment made through public dollars.

New science has revealed a great deal of information related to the effects of road systems on wildlife habitat, water quality, fisheries, and noxious weeds. Since approval of the current forest plans, additional terrestrial and aquatic species have been listed as threatened or endangered under the Endangered Species Act, or listed as sensitive by the Forest Service. In addition, several stream segments and lakes have been listed as impaired under the Clean Water Act. The spread of noxious weeds is also associated with roads and trails. In response to new science and the effects of roads on the environment, the Forest Service has incorporated best management practices (BMPs), INFISH standards, herbicide treatment and new road treatments that help in mitigating the affects of roads on the environment.

Snowmobiles can have negative effects to wildlife during the winter. Late season snowmobile use in occupied grizzly bear areas may displace or stress bears. Protection of natal denning habitat from human disturbance may be critical for the persistence of wolverine. The Canada Lynx Conservation Assessment and Strategy limits competition with other predators in lynx analysis units by not allowing any net increase in groomed or designated over-snow routes and snowmobile play areas.

Current Direction and Implementation of Forest Plan Direction:

The current forest plans, as amended, contain fairly detailed management direction for roads, trails, cross-country travel, and snowmobile use. For roads, the plans direct the forests to provide reasonable access for resource management and public use, while minimizing adverse effects to resource values. This direction is provided through relatively detailed goals, objectives, and standards.

The current management direction for trails is relatively general, and provides emphasis on maintenance and construction, while providing the necessary resource protection measures.

Summer cross-country travel direction comes primarily from the OHV EIS that amends the Bitterroot and Flathead current forest plans. This amendment provides direction (with several exemptions) that prohibits cross-country travel by OHVs.

In 1995, the Flathead National Forest amended its forest plan with Amendment 19 (by court order), which provides access-related objectives and standards for grizzly bear habitat. This direction provides very specific road density objectives and standards for all Bear Management Sub-Units on the Flathead National Forest.

Need for Change:

Since the current forest plans were approved,

- It has become more difficult to maintain the current road systems with existing budgets.
- Recreation use and the demand for motorized and non-motorized access have increased dramatically.
- New science has provided additional information about the need to incorporate appropriate environmental measures into road construction, reconstruction, and maintenance in order to reduce adverse environmental effects associated with roads and trails.
- Advances in performance and technology have resulted in increased access during summer and winter by OHVs and snowmobiles.
- Protection of threatened and endangers species has limited motorized use.
- Residential use and access of the forest/urban interface has dramatically increased.

There is a need to modify current management direction in order to facilitate reasonable access to National Forest lands, minimizes environmental effects, and can be maintained with current budgets. Management direction needs to be in the form of a long-term strategy that emphasizes motorized and/or non-motorized travel opportunities in appropriate places in order to meet resource and social needs.

There is a need for consistent direction across forest boundaries to provide understanding and consistent regulations for the public while managing resource issues in a similar manner across boundaries. This strategy also needs to focus on road decommissioning in places where resource benefits can be optimized.

The challenge is to find a reasonable balance between access-related use and resource protection. This new management direction needs to be applied across larger landscape scales. The current management direction provides several goals, objectives, and standards related to access management, but this direction lacks spatial and temporal components. We know we need to provide reasonable access to the forests for public use and resource management. The challenge is to determine where to encourage access and where to minimize it in a larger landscape context.

The grizzly bear population is expanding in western Montana. Because grizzly bear habitat use declines as road densities increase (Mace and Walller 1997. Final Report: Grizzly Bear Ecology in the Swan Mountains, Montana, pg 72), there is a need to establish consistent access management direction in occupied territory outside of recovery areas.

1. Relevant Social and Economic Issues

Population and associated recreation use across the planning zone has increased dramatically since adoption of the current forest plans. In addition, technology has advanced for off-road vehicles, snowmobiles, and OHVs that has enabled these vehicles to access new areas. Table 5 shows the past and projected increase in trucks and OHV use throughout Montana.

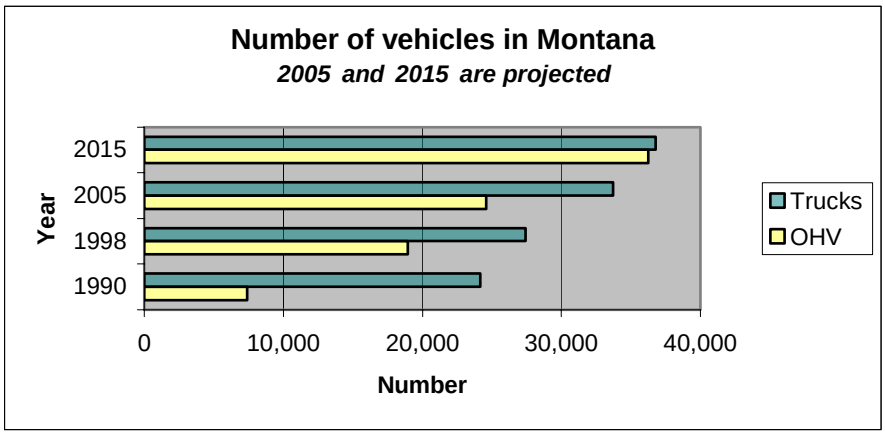


Figure 5: Graph showing the past and projected increase in the number of trucks and OHVs throughout the state of Montana.

During the past several years, many roads have been decommissioned, closed yearlong or closed on a seasonal basis in order to comply with laws such as the Endangered Species Act (ESA) and the Clean Water Act (CWA) and to comply with Forest Plan standards. Many motorized users feel that their use of the forests has been severely limited, while on the other side of the spectrum; non-motorized users feel that there are not enough restrictions on motorized use. Amendment 19 on the Flathead National Forest continues to be highly controversial.

2. Implications of Continuing Current Management

Under current management direction, roads would continue to be managed to meet legal requirements. Decommissioning of current roads will continue in order to meet resource objectives related to water quality, fish habitat, wildlife habitat, and budget. Wildlife security will be attained through the use of road restrictions. Under-maintained roads will continue to deteriorate and long-term economic and resource risk will increase. Site –specific amendments may be required to deal with access management. User expectations are not being met and dissatisfaction could continue to increase.

Access-related management across the planning zone would continue without a broad-scale strategy in place. Current forest plans called for an expanding road system, which presently is not achievable with existing laws and regulations.

Decisions Needed:

- What travel plan principles will we use that balance social and resource needs and provide a strategic, holistic travel management plan that incorporates the following factors:
    - Motorized and non-motorized use.
    - Wildlife security (grizzly bear, elk, etc)
    - Water quality (watershed integrity/303 d impaired)
    - Fire management access
    - Administrative access
    - Commodity purposes
    - Access to private land (ANILCA)
- Where and what areas are suitable for motorized use during summer and or winter seasons?
- Where and what areas are suitable for non-motorized recreation use?
- What direction is needed to guide future site-specific decisions about road, trail and cross-country travel management?
- What uniform strategies do we use that provide the forests with criteria for prioritization of access related treatments (i.e. seasonal closures, etc.) across the planning zone?

Decision Space:

Due to numerous laws, regulations and policies, the decision space is relatively narrow. The challenge is to provide adequate protection of resources to meet applicable laws and regulations, and still provide the public with safe and reasonable access to the National Forests. Legally, there is more room to make decisions that emphasize less access (decommissioning) than more access.

The decision is bound by the following parameters:

- Requirements such as the:
    - Endangered Species Act
    - Clean Water Act
    - Draft Lynx Conservation Strategy
    - ANILCA
    - Wilderness Act
- Social and resource tension between the demand for more motorized use and the need to meet resource protection of the land.
- The physical capability of the land to provide developed access.
- Budget limitations that affect maintenance of roads and trails.
- Amount of decommissioning needed to meet resource needs.

Scale And Scope Of Analysis:

The analysis will occur at a variety of social, physical, and ecological scales. Typical analysis units may include forests, geographic areas, sub-basins, and bear management units. In terms of scope, the analysis will not result in any site-specific recommendations for access-related treatments. Rather, it will provide programmatic management direction for access across the broader landscape within the planning zone.

Ecosystem Management

The Ecosystem Management Topic includes three sub-topics: vegetation, biodiversity and species viability, and water resources. These three sub-topics are intimately linked through time and space, and they are combined into one topic to ensure integration. Biodiversity and species viability are ultimately dependent upon habitat, which is driven by vegetation and physical processes. In addition, vegetation and water affect each other through a variety of complex interrelationships and feedback mechanisms. These, in turn, affect biodiversity and species viability. By assessing these sub-topics together in forest plan revision, we can develop management direction that is built on integration.

Sub-Topic: Vegetation and Disturbance

The revision topic for management of vegetation and disturbance as part of ecosystem management is complex and covers many components. The components identified for this sub-topic include:

- Composition/Structure/Pattern/Function of forest types, shrub lands, grasslands, and riparian areas.
- Disturbance Regimes (Processes). 1) Fire, 2) Insect and Disease and 3) Windthrow. (Timber harvest is discussed under Forest Products Revision Topic).
- Snags and Large Woody Material.
- Old Growth.
- Invasive Plants.

Background

The Western Montana Planning Zone stretches from the Canadian border to the Salmon River in Idaho. The ecosystems within this area vary greatly in climate and landform, which results in diverse vegetation and disturbance processes.

Since the current forest plans were approved, a variety of direction and data has evolved from analysis at the broad-scale, the multi-forest and regional scale, the mid-scale, and the fine scale level. This information describes the historic and existing condition of vegetation components and the disturbance events that affect them.

The major agents of change affecting forest vegetation over the past century include fire exclusion, insect and diseases, timber harvest and lack of flooding in riparian areas. The major agents of change affecting grass and shrubs are fire exclusion, grazing, and the

introduction of invasive weed plants. An understanding of these components and processes provides the context as to why vegetation management is a revision topic.

Laws and Regulations

The concept of sustainability of the ecosystem has been an important objective on National Forest System (NFS) lands since Congress passed the Organic Administration Act of June 4, 1897. The Organic Act gave the Forest Service the authority to "regulate the Forests occupancy and use and to preserve the forests therein from destruction" (16 U.S.C. 551).

Congress enacted the National Environmental Policy Act (NEPA) of 1969 (42 U.S.C. 4321 et seq.) "…to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man, [and] enrich the understanding of the ecological systems and natural resources important to the nation" (42 U.S.C. 4321).

The National Forest Management Act (NFMA) of 1976 (16 U.S.C. 1660(6)), requires the Forest Service to manage national forests and grasslands under land management plans that provide for multiple uses and sustained yields. Development of the land management plans as directed under the NFMA must include "integrated consideration of physical, biological, economic, and other sciences" (16 U.S.C. 1604(b)). The act requires regulations, which "…provide for diversity of plant and animal communities" and also "steps taken to preserve the diversity of tree species similar to that existing in the region."

The 1982 Planning Regulations (36 CFR 219) strengthen and amplify the diversity requirements in NFMA. The 1982 Planning Regulations require the Forest Service to "…preserve and enhance the diversity of plant and animal communities…so that it is at least as great as that would be expected in a natural forest and the diversity of tree species similar to that existing in the planning area." Minimum management requirements listed in 36 CFR 219.27 include:

- Preservation of diversity. 36 CFR 219.27 (a)(5) and (g)
- Prevention of "impairment of the productivity of the land." 36 CFR 219.27 (a)(1) and (f)
- Using "ecologically acceptable" strategies to "prevent or reduce serious, long lasting hazard and damage from pest organisms" 36 CFR 219.27 (a)(3)
- Vegetation manipulation is best suited to the multiple use goals established for the area. 36 CFR 219.27 (b)(1)
- Assure lands can be adequately restocked except where openings are created for wildlife habitat, vistas, recreation uses and similar practices. 36 CFR 219.27 (b)(2)
- Vegetation manipulation is not chosen primarily because they will give the greatest dollar return or the greatest output of timber. 36 CFR 219.27 (b)(3)
- Special attention shall be given to riparian areas. 36 CFR 219.27 (e)

The 1982 Planning Regulations also require that:

- "inventories shall include quantitative data making possible the evaluation of diversity in terms of prior and present conditions".

- Identification of vegetation management practices chosen for each vegetation type and circumstance defined in the plan (36 CFR 219.15)

The Federal Noxious Weed Act of 1974, the Carlson-Foley Act and the Montana County Noxious Weed Management Act of 1948 (7-22-2101 MCA) direct the control of weeds for individuals, organizations and local, state and federal agencies. In Idaho, state laws and County ordinances require all landowners to be responsible for control of noxious weeds on their lands.

Assessment: Vegetative Components

Since the current forest plans were approved new information and analysis has given us a better picture of historic and existing conditions in the following components:

Composition/Structure/Pattern/Function

- Approximately 55 percent of the potential vegetation types in the zone are dominated by cool, moderately dry to wet types; 27 percent are characterized by warm, dry to moist types; eight percent are cold types and only one percent are grass/shrub lands. (Cohesive Strategy Team 2003).
- A comparison of the historic to the current cover type, size and density shows a lack of shade intolerant species such as white pine, ponderosa pine and western larch in early successional stages in the uplands, and hardwoods in riparian areas. (Quigley 1997; NRO 1998 pgs. 7,12-18, 34, 38, 40; Landscape Assessments).
- A significant loss of the whitebark pine dominated communities has occurred since historic times. (Quigley 1997; NRO 1998 pgs. 7, 13)
- Compared to historic conditions, there has been in increase in multi-storied stands and more homogenous landscapes, due to fire exclusion and succession. (Hessburg et. al., 1999)
- In some areas timber harvest has resulted in fragmentation of forested habitats.
- Upland grasses and shrubs have decreased due to conifer encroachment from fire exclusion and spread of noxious weeds. (NRO 1998, pg. 7, 15, 32, 37, 39)

Disturbance Regimes

- Historically, the WMPZ experienced seven percent non-lethal fires, 38 percent mixed-severity fires, and 44 percent stand replacement fires. Nearly 40 percent of the WMPZ is classified as moderate or high departure fire regime condition class.
- Due to fire suppression, there are higher fuel loads across the landscape. Because of fuels build up and drought conditions, in historically low and mixed-severity fire regimes, fires are now more severe and intense. (Quigley 1997, BTR 2001, Lolo 2001, FNF 2001).
- Fire occurred on approximately 13 percent of the total acreage in the zone from 1940 to 2001. Out of that 13 percent, over six percent burned in one single year, the year 2000. The Bitterroot NF has highest amount burned. Nineteen percent of the forest burned in the year 2000. In 2003 fires burned: 21,916 acres on the Bitterroot, 157,494 acres on the Flathead, and 60,038 acres on the Lolo NF.

- Since 1986, over 1.7 million acres within the zone have been infested with insects and disease.
- In the past 13 years, there has been a transition away from clearcutting harvest to intermediate harvests and a shift in emphasis from what is taken to what is left. See Forest Products Revision Topic for more information.

Snags and Downed Woody Material

- There is a reduction in large snags and downed woody material (DWM) where management activities have occurred.
- Within 100 feet of roads, firewood gatherers have removed large snags.
- There has been an increase of snags and DWM in areas where fire and insect and disease have caused widespread mortality.

Old Growth

- Low elevation ponderosa pine is below historical levels due to past timber harvest, expansion of urban and agriculture development on private lands, and fire exclusion over the past century.
- There is a decrease in large areas of old, large diameter stands over the past century in roaded areas as a result of past timber harvest.

Invasive Plants

- Noxious weeds are recognized as a major threat to native plant communities especially on disturbed sites and grasslands. The area impacted by invasive plants has increased throughout the Interior Columbia Basin, northern region, the WMPZ and watersheds (Quigley 1997; NRO pg. 7, 10, 11, 15, 19-20).
- A 1998 analysis shows approximately 666,400 acres of NFS in the WMPZ are infested with noxious weeds (Mitchell,1998).
- The potential for new species of invasives is high in some areas and there is heightened awareness of the need for education, prevention, and control.
- Prevention and treatment of invasive plants is a top priority for the Forest Service.

Current Direction and Implementation of Forest Plan Direction:

Our knowledge of landscape and fire ecology has advanced and is better understood since development of the current forest plans. The three forests in the zone have incorporated new knowledge and scientific information into management planning and implementation where possible within the framework of the current forest plans such as conducting Ecosystem Analysis at the Watershed Scale (USDA 1995).

The Bitterroot NF has completed 17 assessments, ranging from 4,000 acres to 300,000 acres (BTR 2002). The Flathead NF has completed 9, encompassing 761,032 acres (Carlin, personal communication). The Lolo NF has completed 31, for approximately 1.2 million acres (Beckes personal communication). These mid-scale assessments provide analysis of the historical and existing condition of resources, which are used to refine forest plan desired future conditions, and recommendations for management opportunities to move toward the desired conditions.

Composition/Structure/Pattern/Function

The current Plans address vegetation and ecosystems in forest-wide goals, objectives and standards. *Management Area* (MA) direction is mainly at the stand level and habitat type as defined by Pfister etal, 1977. Management Area size averages from 206 acres on the Lolo to 3737 acres on the Bitterroot. They tend to be fragmented across the landscape except in MAs for Wilderness and Roadless areas. Although some MAs were defined generally along topographic features, they were not based on broad landscapes.

The FNF Amendment #21 establishes goals, objectives and standards at the landscape level as well as stand level for specific Potential Vegetation Groups. Two of the three forests have added a Monitoring Item to their annual report, which evaluates ecosystem management or biodiversity. (BTR, 1994, pgs. 1-7, Lolo 1993 to current, Item 3-EM)

Disturbance Regimes

The current forest plans give some recognition to the desirability of disturbance processes. The following table shows fire management strategy according to Management Area allocation.

Table 6: Wildland fire use (WFU) and fire suppression in acres.

Forest	Wildland Fire Use Acres	Suppression acres
BNF	814,686	822,758
FNF	978,780	1,354,406
LNF	637,820	1,428,167

Monitoring reports show:

- From 1987 to 2003 the Bitterroot National Forest reported 81,558 acres of WFU in the Selway-Bitterroot and Frank Church – River of No Return Wildernesses, and 300 acres in the Anaconda Pantler Wilderness (Kirkendall, January, 2004, personal communication).
- Between 1992 and 2000, the FNF reported 10,606 acres of WFU (FNF 2001).
- Since 1986, the Lolo has accomplished 68 percent of projected acres for WFU (Lolo 2002).

All three forests have goals, objectives and standards to address insects and disease (I&D). The goals are mainly to protect forest stands so that pest-caused losses of timber are reduced to acceptable levels. (BTR pg – II-4). The forests have objectives to convert high-risk or insect and disease infested stands to young, healthy stands. (BTR, pg. II-6; FNF pg. II-8-9 (2001 version), Lolo pg. II-20-21)

Adoption of the National Wildland Fire Policy (1995), National Fire Plan direction and 10-year Comprehensive Strategy guides the management of fire and how it plays a role in ecosystem management. The Wildland Urban Interface is discussed as a separate Revision Topic.

Snags and Downed Woody Material

Current direction for management of dead, standing trees (*snags*) and down, woody material varies across the three forests. Standard e (3) on the Bitterroot retains all snags that are not safety risks. Downed woody material objectives are listed for fish and wildlife habitat. The FNF Plan Amendment #21 lists specific objectives and standards based on ecological principles for snag management and downed woody material. The Lolo incorporates Appendix N, Procedures to Implement the Forest Snag Standard, and updates the procedure as new information and science becomes available for snags and downed woody material. Each Forest requires consideration of habitat for wildlife species before salvage of snags could occur.

Old Growth

The current plans provide for retention and management of old growth but are not consistent in the following: 1) the definition of old growth, 2) the amount of land and distribution allocated to old growth management, and 3) standards applied to the management of old growth

Invasive Plants

The Bitterroot NF and Lolo NF have forest-wide goals, objectives, and standards to manage noxious weeds. The Lolo NF amended their original forest plan in 1991 with Amendment #11. It added noxious weed prevention and management standards, monitoring, and project guidelines, into all management activities.

All three forests have adopted an *Integrated Pest Management (IPM)* strategy to manage invasive plant species. The strategies include the use of education, prevention, and manual, mechanical, biological and chemical control. In some areas, weed species are spreading but at a slower rate and new invaders have not become established (Lolo 2002, BTR 2002, FNF 2001).

Need for Change:

Since the current forest plans were approved, a range of monitoring, analyses, and policy direction have provided new information that demonstrate a need for change in management of vegetation on NFS land. These include:

- Forest plan monitoring,
- Landscape, watershed and post-fire assessments.
- The Northern Region Overview,
- The Cohesive Strategy Team analysis,
- The Forest Health and Protection surveys, and
- The Interior Columbia River Basin Ecosystem Management Project (ICBEMP)

There is now an increased focus and scientific understanding of sustainability, disturbance processes, and vegetation management at various scales. It is a challenge to manage vegetation across MA boundaries that have different MA goals, objectives and standards.

Composition/Structure/Pattern/Function

Fifteen years of implementation and monitoring of management activities demonstrate a need to revise vegetation management direction. There is new information that shows there have been extensive changes in vegetation type, structure, and size classes from historic ranges (e.g. see background on page 4-9), which may increase the risk and uncertainty in managing for contributions towards ecological sustainability. Vegetation management has shifted from timber yield to ecosystem management. Management direction needs to address these changes, integrate with other resources, provide for restoring these ecosystems across large landscapes, and recognize existing and future human influences. (BTR 2002. pg. 5-6; BTR 1994, pg. 12 – 13, 18-19; Lolo 1993, pgs. 7 – 8).

Disturbance Regimes

Disturbance such as fire, natural processes, and human development, plays a significant role in the ecosystems across the WMPZ. With the exception of the FNF plan as amended, management direction does not reflect the frequency, size, intensity, and severity of disturbance processes which influences vegetative conditions. With the exclusion of fire tree stand densities are often much greater than they were historically, species composition has changed, as has landscape pattern. These changes increase the susceptibility of some vegetative communities to large-scale infestations of insects, disease, and larger stand replacement fires (Lolo 2002, Item 3-1). Landscape components for all forest and non-forest cover types and structural stages need to be designed to meet management goals and objectives that also take into account disturbance regimes.

Existing forest plans goals and objectives pertaining to the benefits of wildland fire and prescribed fire (fire use) for restoring ecosystem health need to be updated. The forest plans recognize the need to manage unplanned ignitions, but in limited areas. Fire can be used to encourage natural ecological processes to provide forage production and wildlife habitat, and to meet other vegetative management objectives (BTR 2002, pgs. 12-16; FNF 1998, pgs. 79-80; FNF 2001 pgs. 35-36; Lolo 1993, pg. 8). Several management area allocations do not give managers the flexibility to manage lightning-caused fires or to ignite fires. There is a need to incorporate new information and direction from the analyses that have occurred. There is a need to recognize existing and future human influences adjacent to and on the forests. National Forest and Private Land Interface Management is discussed as a separate Revision Topic.

The original plans viewed insects and pathogens as a problem or negative (FNF 2001, pg 42, Lolo 1993, pg. 7). Since then, our understanding of the role of insects and disease has changed. They are important mechanisms to maintain biodiversity. Large-scale outbreaks may, in current weather and vegetative stocking conditions, play a different ecological role than in the past. We need a better understanding of the ecological outcomes at the landscape level. This understanding will help determine management objectives to attain desired landscape conditions to meet social and ecological needs.

Snags and Downed Woody Material

The intent of the forest plan snag guidelines was to retain some vertical structure within regeneration harvest units (BTR 1994, pg. 22). Downed woody material guidelines also focus on regeneration harvest units. The forest plans need to incorporate new information and address these components across the landscape to ensure ecosystem sustainability.

Old Growth

The Northern Region office compared old growth management strategies by Forest in 2002 (R1 2003). Results show some of the current forest plans are inconsistent on how they incorporate new information about ecological processes and conditions across the landscape to manage for old growth. The FNF plan as amended considers the above but has many standards that focus at the fine scale.

Some Management Areas do not have guidance for retention of old growth (BTR 2002, pg. 29). Common definitions, objectives, and standards, and monitoring are needed for consistent management of old growth and potential old growth across the WMPZ. The Plans need to incorporate new information about ecological processes, conditions and distribution across the landscape to manage for old growth (BTR 2002, pg. 29, Lolo 1993, pg. 20).

Invasive Plants

The current forest plans did not anticipate the severity and potential for weed spread. With the exception of the Lolo NF Amendment #11, Noxious Weed Management, the Forests treat more weeds than was projected in the forest plans. The FNF forest plan projected weed control on an average of 8 acres/year. In the year 2000, approximately 13,818 acres of weeds were treated (FNF 2001, pgs. 13-14). Two of the Forests Plans do not have guidance on how to incorporate weed prevention and treatment measures for all management activities. A key finding of ICBEMP (pg. 181) is rangeland health effect of exotic species and altered fire regimes on biological diversity will be important management considerations as we revise the forest plans (BTR 2002, pg. 6). There is a need for flexible management direction to include new technology, information, and chemicals.

1. Relevant Social and Economic Conditions

There is a social component to vegetation management as well as a biological one because the public has diverse views and values toward vegetation and its management. This can include differing views regarding the composition, disturbance regimes, old growth management and invasive plant management. For some, vegetation can be valued for the aesthetics that it provides. For others, vegetation composition is valued as a resource that can be utilized through various means, for example, timber or grazing.

People have very different views as to appropriate management actions when it comes to the use of fire, timber harvest (see Forest Products section), and herbicides as management tools, to manage old growth, invasive plants and insects and diseases. The values towards fire management can be influenced by concerns over such issues as firefighter, aviation, and public safety, air quality, loss of timber production, cost, and impact on forest health.

Old growth management can become a controversial issue in that some people value the existence of old growth, for a multitude of reasons including the benefits to wildlife, for recreational opportunities, and for just having it be there and maintaining it in its natural state. Whereas, other people may value the timber that could be extracted from those areas, thus creating a conflict over how to manage old growth.

Although most of the public could agree that invasive species need to be managed, there are different opinions about to manage invasive plants. Recognizing where differences exist, such as what control mechanisms are supported and which aren't, can impact how the Forest manages for invasive species.

Forest areas hit by disease and insect damage can also be viewed and valued by the public differently. Portions of the public may support removal of pest-caused losses of timber whereas other portions may want to leave it the way it is. The fires during 1988, 1994, 2000, 2001 and 2003 have raised people's awareness about the role wildland fire plays in their lives and ecosystems. People recognize that fire management costs as well as risks to resources and communities have increased. People are starting to acknowledge that smoke generated from prescribed burning under controlled conditions may be more acceptable than smoke generated from wildland fires.

2. Implications of Continuing Current Management

Composition/Structure/Pattern/Function

Human development and natural processes will continue to influence composition, structure, pattern and function. Changes in landscape components would become more homogenous than historic conditions with fire exclusion. Management activities that attempt to treat landscapes to achieve desired composition, structure, pattern and function will remain controversial and expensive. Current management would slowly address fragmentation through, site-specific projects. Fragmentation and the opportunity for connectivity are best addressed through both coarse and fine scale analyses.

Disturbance Regimes

The Forests do not have the flexibility to consider a full range of management options when wildland fire occurs and will have to suppress fires in specific MAs that may benefit from fire use. Fire management objectives for wildland fire use will not be met across the Forests. Suppression costs will continue to increase.

Old Growth

The Forests will continue to manage for old growth, which does not incorporate new information and ecological processes.

Snags and Downed Woody Material

Snags and coarse woody material guidelines in the current Plans would continue to look at the fine-scale functional and structural diversity, and patterns. Current direction would have an unknown effect on maintaining the diversity of plants, wildlife, and fish habitats over larger landscapes.

Invasive Plants

Invasive plant management would continue on a site-specific basis for weed prevention and treatment measures for all management activities. New technology, information, and chemicals would not be reflected in management direction.

Decisions Needed:

- Where is it appropriate to restore or maintain vegetation structure, composition, pattern and function of landscapes and communities toward sustainability objectives? Where is it appropriate to alter historic vegetation components to accommodate other goals and objectives?
- To what extent and where will we accommodate disturbances; to what extent and where will we try to prevent them? What is an acceptable and achievable level of fire use to help move toward ecological sustainability within the next planning period? What are the appropriate management tools available to manage after disturbance occurs and where will they be allowed?
- What is the desired distribution of various structural stages, from openings to mature and old growth? What management direction is needed to move toward that distribution during the next planning period?
- How much old growth is sustainable across the landscape and what management direction is needed to achieve the desired condition?
- What management direction is needed to provide for habitat connectivity, linkage zones between landscapes, wildlife corridors, habitat edge, and horizontal and vertical diversity?
- What management direction is needed to integrate snags and down woody material at the desired stand and landscape level that maintains ecosystem structure and function?
- What is the overall strategy for preventing the spread of noxious weed and managing existing weed populations? What tools will be used to address weed spread and where will they be applied?

Decision Space:

The decision space is influenced by the integration of vegetation management and other resources. The amount and location of vegetation management depends on: habitat requirements to meet the needs of ESA listed species, water quality (303(d)), visuals, and recreation. The outcome of current lawsuits for old growth, post-burn harvest, and harvest in watersheds with 303d streams may have an effect on the decision space. For burning, air quality regulations for Particulate Matter (PM)-25, PM-10 and haze will affect decision space. Generally, prescribed fire is not allowed during the traditional fire season.

Scale and Scope of Analysis:

The analysis will occur at a variety of social, physical, and ecological scales. Typical analysis units may include forest types, shrub lands, grasslands and riparian areas across geographic areas, sub-basins, and watersheds. The scope of the analysis will not result in any site-specific recommendations for vegetation treatments. Rather, it will provide programmatic management direction and priorities for vegetation management across the broader landscape within the planning zone.

Sub-Topic: Biodiversity and Species Viability

Biodiversity or Biological diversity is the variety and abundance of life and its processes. It includes all living organisms, the genetic differences among them, and the communities and ecosystems in which they occur. Biological diversity also refers to the compositions, structures, and functions of species and habitats and their interactions. The interactions of biological and physical components operate at multiple scales, from micro-sites to regional landscapes. The variety of habitats and species on federal and adjacent lands puts land management agencies in a key role for managing and protecting biological diversity. Current management direction (see laws and regulations below) for biological diversity concentrates on numbers of species and diversity of habitats.

Background

Since adoption of the current forest plans, the following changes have occurred within the planning zone.

- Habitat changes such as fragmentation, loss of linkage zones for wildlife movement, and weed expansion are covered in the previous vegetation section.
- Grizzly bear range has expanded within the zone.
- Wolf packs have established new territories on all three forests.
- Lynx, Spalding's catchfly, water howellia, bull trout, sockeye salmon, and steelhead trout all have been listed under the Endangered Species Act (ESA).
- A regional plan amendment has been started to provide lynx management direction.
- The peregrine falcon range has expanded on the three forests within the zone and the species has been delisted from the ESA.
- Sensitive species and management indicator species lists and our understanding of how to handle them have evolved.
- Elk populations have increased in the zone while their winter ranges are threatened by increasing weed infestations and subdivision development.
- Montana Fish Wildlife and Parks and Idaho Fish and Game have written a wolf management plan. Montana Fish, Wildlife and Parks is revising the elk management plan and is developing a new grizzly plan that includes areas within the western Montana planning zone. New direction in these plans will be considered during the revision.

Laws and Regulations

The National Forest Management Act implementing regulations state, "Fish and wildlife habitat shall be managed to maintain viable populations of existing native and desired non-native vertebrate species in the planning area" (36 CFR 219.19). Forest Service Manual 2670.12, states that USDA Regulation 9500-4 directs the Forest Service to:

1. Manage "habitats for all existing native and desired nonnative plants, fish, and wildlife species in order to maintain at least viable populations of such species."
2. Conduct activities and programs "to assist in the identification and recovery of threatened and endangered plant and animal species."
3. Avoid actions "which may cause a species to become threatened or endangered."

Three key principles within the 1982 NFMA regulatory language pertain to viability (36 CFR 219.19).

1. The viability requirement has a strong habitat basis ("habitat must be provided to support, at least, a minimum number of reproductive individuals" and "habitat must be well distributed so that those individuals can interact with others in the planning area").
2. The viability requirement is applicable at the "planning area" scale ("maintain viable populations of existing native and desired non-native vertebrate species in the planning area.").
3. "Well distributed" language references both habitat and populations.

While the viability requirement is habitat based, the goal for viability is clearly tied to populations. Therefore, analysis and conclusions related to habitat must occur within the context of populations. The regulations describe a viable population as "one which has the estimated numbers and distribution of reproductive individuals to insure its continued existence is well distributed in the planning area."

A primary goal of the Endangered Species Act (ESA) is to protect and recover those species that are either "threatened" or "endangered" with extinction. Section 7 of the ESA directs Federal agencies to conserve the ecosystems upon which endangered and threatened species depend and to utilize their authorities to further the purposes of the Act.

The Migratory Bird Treaty Act makes the taking or killing of migratory birds unlawful. Executive Order 13186 directs Federal agencies to develop Memorandums of Understanding with the Fish and Wildlife Service that shall promote the conservation of migratory bird populations. Each agency shall design migratory bird habitat and population conservation principles, measures and practices into agency plans and planning processes, and to ensure that plans and actions promote programs and recommendations of comprehensive migratory bird planning efforts.

Caves are to be managed in accordance with the Federal Cave Resources Protection Act of 1988 (Public Law 100-691, 16 USC 4301 through 4309) and the implementing regulations at 36 CFR 290. The law and regulations stipulate that cave locations will not be disclosed, marked, or advertised by the Federal Government. National Forest System lands will be managed in a manner, which to the extent practical, protects and maintains significant cave resources.

Assessment: Diversity Elements

In general, prior to human-caused disturbances, major changes in native biodiversity were a result of substantial shifts in climate, geology, or other natural occurrences such as stand replacement fires, volcanoes, or floods. Recent assessments of landscape condition and trend within the interior Columbia Basin identified at least three major management practices as principle causes for the dramatic change in forested habitat conditions since early European settlement:

1. Large-scale intensive timber harvest.
2. Large-scale exclusion of wildfire.
3. Widespread development of roads.

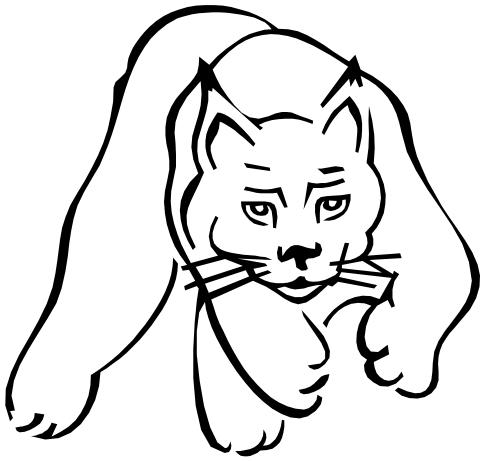
Early and late-seral forest habitats have become increasingly fragmented, simplified in structure, and infringed on or invaded by exotic plants (Wisdom, et al 1999). Expanded human populations and activities have resulted in reduced or degraded habitats for many forest-associated wildlife within the basin. This reference needs to be considered in the proper context--these changed conditions include all ownerships throughout the Columbia River Basin. Of the approximate 6 million acres of National Forest land in the zone, about 2.1 million acres are wilderness or wilderness study areas where timber harvesting and road building are excluded and an additional 1.7 million acres are inventoried roadless, eliminating most harvest activities. As the human population continues to grow, there will be ever increasing pressure on the remaining open space and the quality and diversity of habitat.

The Interior Columbia Basin Ecosystem Management Project (ICBEMP) supported a wide range of large-scale, scientific assessments of social, economic, and environmental conditions throughout the Interior Columbia Basin, which includes the Western Montana Planning Zone. Some of the key findings related to aquatic and terrestrial biodiversity and species viability are listed below (USDA 1996a, USDA 1996b, Wisdom 1999). Increasing road density is correlated with declining aquatic habitat and fish populations. Strong populations of key salmonids are associated with low road density.

- Designated wilderness and unroaded areas are important strongholds for aquatic species.
- The amount and quality of pool habitat in streams has decreased during the last 40-60 years, mainly due to riparian habitat loss, road and highway construction, timber harvest, and other disturbances.
- The integrity and extent of riparian vegetation has been changed and fragmented.
- Road development has reduced habitat area, fragmented the remaining habitats and facilitated increased human activities.

Current Direction and Implementation of Forest Plan Direction:

The Bitterroot, Flathead, and Lolo Plans contain management direction for biodiversity and species viability that rely on mitigation of impacts to these resources from management activities such as timber harvest, road construction, and livestock grazing through a variety of goals, objectives, and standards.



Maintaining viable populations of native species is a forest plan goal on all three forests. Although the current forest plans address many of the key indicators of biological diversity, they tend to describe and analyze individual species (fine filter) rather than looking at the interactions of entire ecosystems (coarse filter). There is little information as to how these indicators interact with one another and with natural processes, particularly at the broad, forest-level or larger scale.

Management direction for biodiversity comes from several sources such as national direction, current forest plans, and other Federal regulations. When the original forest plans were developed, national focus emphasized commodity outputs as a primary need for planning. Currently, the first goal of the 2000 USDA Forest Service Strategic Plan is “Promote ecosystem health and conservation using a collaborative approach to sustain the Nation’s forests, grasslands and watersheds”.

The following table summarizes some of the biodiversity and viability elements of the plans. Except for habitat discussed in the previous subsection on ecosystem management, more thorough explanations follow this summary.

Table 7: Summary of Biodiversity and Species Viability Elements

Topic	What's Changed Since the Current Plans were Signed	Current Forest Plan Direction
Habitat	Fragmentation; expanded weed populations; insect, disease & fire effects have changed many plant communities in composition and structure.	Habitat is summarized in the preceding vegetation sub-section and in the National Forest and Private Land Interface sub-section later in this chapter.
Linkage Zones	Disturbances, management activities and development have fragmented habitat, limiting areas where animals can safely move.	There is no plan direction for linkage zones.
Aquatic Resources	Fish have gained prominence as a socially important resource and we have improved understanding and data about aquatic resources.	PACFISH and INFISH strategies.
Special Habitat Areas	There is increased knowledge about species that require unique or rare habitats.	Caves, riparian habitats, Research Natural Areas, and Special Interest Areas have some protections.
Big game	Elk populations have increased; weeds and private land development have reduced winter range habitat quality and availability while extensive wildfires have increased available forage.	Multiple standards address winter and summer range habitat elements. These include motorized access, security, forage enhancement and thermal cover.
Threatened and Endangered Species	One species has been delisted and eight species have been added to the list.	All listed species are protected.
Sensitive Species	The sensitive species list began after the plans were adopted and continues to evolve.	All forests address sensitive species needs in site-specific planning. Manual direction is to prepare biological evaluations and to implement management objectives for all sensitive species.
Management Indicator Species	Monitoring techniques were found to be too complex or costly and the current species do not reflect the best indicators of management practices.	Management Indicator Species populations or habitat will be monitored.

Habitat: With the exception of water and some unique habitat types this element is discussed in the vegetation section of ecosystem management. Vegetation components especially important to species viability include fragmentation and habitat connectivity; snags and large woody material; old growth; limited vegetation types such as western larch and whitebark pine; and invasive plants.

Linkage Zones: Are defined as the area between larger blocks of habitat where animals can live at certain seasons and where they can find the security they need to successfully move between these larger habitat blocks. Habitat fragmentation occurs when contiguous blocks of habitat are broken into pieces from disturbances or activities and are separated by areas of unsuitable habitat. Altered habitat can create impermeable barriers to wildlife movement; populations limited to habitat islands are at increased risk of extinction. The grizzly bear recovery plan and lynx conservation strategy both call for evaluation of linkage zones. Linkage zones at the landscape scale are needed primarily for wide ranging species such as carnivores or elk. Linkage zones are the project scale are also needed for species with more limited mobility.

Aquatic Resources: In 1995, the three forest plans were amended by the *Inland Native Fish Strategy* (INFISH), which provides additional protection and maintenance of aquatic ecosystems, and was designed to prevent further loss of inland native fish populations. A portion of the Bitterroot National Forest (about 467,000 acres) lies in the State of Idaho, within the Middle Salmon and Upper Selway Sub-Basins, which contain anadromous fish. This portion of the Bitterroot was amended by *Interim Strategies for Managing Anadromous Fish-producing Watersheds in Eastern Oregon and Washington, Idaho, and Portions of California* (PACFISH). INFISH and PACFISH include the identification of interim Riparian Habitat Conservation Areas (RHCAs), Riparian Management Objectives (RMOs), and Watershed Analysis requirements. The Riparian Management Objectives (RMOs) contained in INFISH and PACFISH significantly changed the level of consideration for riparian and aquatic resources in all aspects of project-level planning across the planning zone. INFISH and PACFISH are both interim aquatic conservation strategies that are intended to prevent further loss of inland and anadromous fish populations.

INFISH and PACFISH contain a variety of interim goals, objectives, and standards that are designed to maintain and restore watershed, riparian, and aquatic habitat conditions. A key component of INFISH and PACFISH is the designation of Riparian Habitat Conservation Areas (RHCAs). RHCAs are typically areas along streams, lakes, ponds, and wetlands where riparian-dependent resources (i.e. water quality, fish habitat, etc.) receive primary emphasis. The Riparian Management Objectives (RMOs) contained in the strategies describe various habitat parameters such as large woody debris, number of pools, temperature, and other habitat attributes that form quality fish habitat. These RMOs are considered to be only starting points. Aquatic habitat components vary widely across geographic areas, so development of more site-specific RMOs is encouraged to more accurately reflect the potential of riparian and aquatic habitats. Some of these interim RMOs may not be attainable (Effectiveness Monitoring Project 2002), which indicates the need to develop more site-specific values.

The current forest plans also contain specific management direction for water quality and aquatic habitat. This direction mainly provides protection, maintenance, and improvement of these resources in light of other management activities.

Special Habitat Areas: There are currently some rare and unique species or ecosystems on the forests that require some level of management emphasis to maintain viable populations dependent upon those habitats. Some of these are identified on the Montana animal or plant species of concern lists or the Idaho rare animal or special status plant lists. Examples of rare habitats include caves and abandoned mine shafts or adits that serve as roosts for bats; and rocky outcrops or moist valley mixed conifer forests that provide for rare mollusks. Some species of special concern are very rare, existing in small often-isolated populations (Hendricks 2003). These special habitat areas would be good candidates for protection as special interest areas.

The previously mentioned Federal Cave Resources Protection Act as well as Management Area 21 on the Flathead National Forest provide for cave protection.

Riparian habitats are protected to a large degree by INFISH and PACFISH management objectives. Rare species that are listed as Regional Sensitive species (addressed later) are managed through FSM direction (2670.22). With the above exceptions, there is currently little or no management direction in the forest plans concerning rare and unique species or ecosystems.

Big Game: Multiple standards address winter and summer range habitat elements. These include timing of activities, motorized access, security, forage enhancement and thermal cover. All three forest plans have goals, standards, and objectives to maintain or improve conditions for big game with the emphasis on elk management. White-tailed deer are also given special emphasis on the Flathead.

Threatened and Endangered Species: Federally listed threatened (T) and endangered (E) wildlife species on the forests include the bald eagle (T), gray wolf (T & experimental population 10(j)), grizzly bear (T), and lynx (T). Listed fish species include the bull trout (T), sockeye salmon (E), and steelhead trout (T). The grizzly bear is expanding its range but is not known to currently reside on the Bitterroot National Forest. The sockeye salmon and steelhead trout occupy a small portion of the planning zone within the Upper Selway Sub-basin on the Bitterroot National Forest. Listed plant species include Spaldings catchfly (*Silene Spaldingii*) (T) and water howellia (*Howellia aquatilis*) (T).

Current forest plans direct the protection of all listed species and to assist in their recovery with the ultimate objective of removing the species from Federal listing once stable viable populations are established and maintained. Flathead National Forest adopted a conservation strategy for water howellia through forest plan amendment 20. Several amendments address wolves and grizzly bears.

Two species are on the Federal candidate species list, the yellow-billed cuckoo and the slender moonwort (*Botrichium lineare*). The forests will consult with the Fish and Wildlife Service on how to manage for candidate species during the revision process.

Sensitive Species: Species are designated "sensitive" by the Regional Forester because their populations or habitats are trending downward, or because little information is available on their population or habitat trends. The primary purpose of the sensitive species program is to conserve or improve habitat conditions for these species to prevent them from becoming federally listed.

Currently, there are 14 animals, 2 fish, and about 85 plants designated sensitive which occur or are suspected to occur within the three-forest zone. These lists are periodically updated and will likely change soon as the region is working on updating the sensitive species lists to reflect new information. The Forest Service Manual directs that forests prepare Biological Evaluations for all programs and activities to disclose the effects on sensitive species (FSM 2672.4) and to develop and implement management objectives for sensitive species (FSM 2672.22). Conservation strategies are being implemented for three plants within the zone and one conservation strategy is being developed for another.

Management Indicator Species (MIS): The 1982 National Forest Management Act (NFMA) regulations require that "population trends of the MIS will be monitored and relationships to habitat determined" [36 CFR 219.19 (a) (6)]. The planning regulations require MIS to be selected "because their population trends are believed to indicate the effects of management activities." Categories appropriate for selection of MIS may include Threatened and Endangered species, as well as commonly hunted and fished species.

By monitoring and assessing populations of indicator species, managers can estimate effects on other species with similar habitat needs. Management indicator species in the current forest plans were selected because their habitat requirements encompass a diverse range of conditions. The three forests have different management indicator species with little overlap (Table 8).

Table 8: Western Montana Planning Zone Management Indicator Species by Forest

Species	Bitterroot	Flathead	Lolo	Indicator For
Pine Marten	X			Old Growth/Tree Dependent
Pileated Woodpecker	X		X	Old Growth
Mule Deer, Elk, White-Tailed Deer		X		Commonly Hunted
Elk	X		X	Commonly Hunted/Big Game
All Threatened & Endangered Species		X*	X	T & E
All Sensitive Wildlife Species		X*		Sensitive
Northern Goshawk			X	Old Growth
Westslope Cutthroat Trout	X	X		Fish
Sediment Sensitive Invertebrates			X	Fish

* Flathead National Forest Plan Amendment 21 lists the threatened, endangered, and sensitive species that are management indicator species.

Need for Change:

Changes in environmental conditions, social interests, new science, and new information call for changes in management direction related to biodiversity and species viability. The current forest plans tend to focus on a species-by-species approach (fine filter) rather than looking at the interactions of entire ecosystems (coarse filter). To better ensure the maintenance of biodiversity and species viability, there is a need to use an approach that addresses and analyzes not only fine filter indicators (for threatened, endangered, and sensitive species, management indicator species, rare and unique habitats) but also does a coarse filter analysis where current conditions (ecosystems, vegetative communities, watersheds, etc.) are compared to the historic range of variability on a large scale. This combined approach should provide habitat for all native species, including those for which we don't have much information.

The current forest plans can be described as somewhat compartmentalized by resource area (i.e. timber, water, wildlife, and fish), and do not emphasize integration and active restoration. At the time the forest plans were approved, more emphasis was placed on protecting wildlife and fish from other management activities than active management and restoration of these resources. More emphasis on active management and restoration of ecosystems and watersheds is needed, as opposed to only mitigating effects of other resource management activities.

Due to the Bitterroot fires of 2000, much of the old growth ponderosa pine/Douglas-fir forest dominated by ponderosa pine was burned and may have eliminated a high percentage of suitable nesting habitat for flammulated owls, a sensitive species (Bitterroot Post Fire Review). The cohesive strategy team concluded that for western Montana and northern Idaho existing large diameter ponderosa pine forests occur at only 12% to 18% of the pre-fire suppression/pre-logging level. These findings lead to the following needs for changes:

- Actively manage drier site ponderosa pine and Douglas-fir old growth areas to promote or retain old growth characteristics and move habitat conditions towards historic range of variability.
- At the proper spatial and temporal scales, we need to recognize the value of all stages of forest succession and the role of disturbance and its relationship to historic range of variation so we can design a strategy to meet biodiversity and species viability goals.
- A consistent standard for retaining snag habitat to maintain ecosystem structure and function should consider the capability of the landscape, cavity-nesting species; coarse woody material for small animals, insects and soils; acceptable fuel loading levels; public safety; firewood management; and natural fluctuations in snag habitat over time and space.

The Nature Conservancy and NatureServe sponsored a study on major causes of biodiversity loss in the United States that found that invasives have contributed to the decline of almost half of all imperiled species. (Bosworth, July 17, 2003 "We Need a New National Debate") The biggest threat to sensitive plants and sensitive plant habitat

at lower elevations is the possibility of knapweed invasion into the areas where tree and other vegetative canopy has been lost due to fire (Bitterroot Post Fire Review). On the Flathead, orange hawkweed and yellow hawkweed appear to be likely invaders in forested areas (Linh Davis, personal communication).

- We need a coordinated strategy and strong management direction that addresses noxious weed prevention and treatment.

Forest Service Chief Dale Bosworth identified habitat fragmentation as the third of four great issues in a speech on April 22, 2003.

- Management direction for habitat connectivity and linkage zones between landscapes needs to be developed.

To address some of the changes in habitat conditions and listed fish species, current management direction needs to be strengthened to establish more emphasis on active restoration (i.e. road obliteration, removal of fish barriers, etc.) of aquatic habitat. There is a need to incorporate the interim management direction in INFISH and PACFISH into the three forest plans. However, the Riparian Management Objectives need to be adjusted to fit local conditions in the planning zone.

Thermal cover comprised well below 20 percent of the winter range on the north half of the forest. The definition of optimal winter range habitat in the Plan ignores the historic condition of winter range vegetation in the Bitterroot Valley, which was typically grasslands and open forest with little cover. Elk trend counts indicate new record numbers of elk in the Bitterroot each year despite the low amounts of thermal cover in winter range. (Bitterroot Fires 2000: Post-Fire Forest Plan Review, 2001) This probably is true for most of the land within the zone. Additionally, thermal cover conditions on many winter range areas in the zone are probably not sustainable due to increased risk of attack by insects and diseases and/or stand-replacing fires. Elk Habitat Effectiveness modeling was adopted as a surrogate for hunting season security, but the technique is more valid for evaluating the capability of land to support elk in the absence of hunting. Monitoring elk security is a more critical factor than cover/forage ratios in many of our timber sales.

- The forest plans should review current elk habitat models and select an appropriate model such as that devised by Hillis, et al. (1991).
- We should review and refine the definition of optimal habitat on winter range in the Plans.

Evaluate possible changes to clarify the shared responsibilities of the forest and Montana Fish, wildlife, and Parks (MFWP) to provide elk security. Making these changes will eliminate confusion over the shared rules (Lolo 5 Year Review 1993, pg 11).

- We need to clarify the shared responsibilities of the forest and MFWP to provide elk security.

“Standards in management area’s 18, 22 and 23 that require half the winter range be in cover, make underburning almost impossible” (Lolo 5 Year Review 1993).

- We need to consider whether lands within or adjacent to the forage producing parts of winter range are appropriate thermal cover.

Employee concerns expressed about viability included:

- The need to integrate management direction for all resources that maintains viable populations of all native species.
- The need to address management needs for special habitat areas with possible protection as special interest areas for rare endemic species.
- The need to develop a new standard for sensitive plant and wildlife species consistent with FSM 2672.4 and 2672.41.
- The need to coordinate sensitive, threatened and endangered species programs across administrative boundaries.

Grizzly bear populations are expanding in western Montana. Activities leaving human-caused food sources of any kind for the bear are not consistent with the Interagency Grizzly Bear Guidelines, the Grizzly Bear Recovery Plan, and the plans of the five national forests (Lewis and Clark, Helena, Kootenai, Flathead, and Lolo) in the Northern Continental Divide Ecosystem.

- A consistent strategy for minimizing human-caused food sources for bears is needed across the zone. This will help prevent conflicts between people and black and grizzly bears.
- There is a need to review and provide direction for all motorized access, including open roads, total roads, secure habitat and off road motorized use. This applies to the Lolo and Flathead National Forests but should also consider how to address future occupied grizzly habitat on all three forests.
- There is a need to review Amendment 19 (grizzly bear habitat management) to the Flathead National Forest Plan.

Montana Fish, Wildlife and Parks is revising the elk management plan and is developing a new grizzly plan that includes areas within the western Montana planning zone. The Northern Rockies Forest Service is preparing a lynx amendment for our forest plans.

- We need to consider the decisions made in these plans during revision.

Our current list of management indicator species (MIS) species differs on the three forests and monitoring for them has proven to be complex and costly.

- Need to select MIS that more accurately reflect the effects of forest management activities and can be effectively monitored.

1. Relevant Social and Economic Conditions

The growth of population in Western Montana is occurring in areas of viable habitat and leading to increased habitat fragmentation and encroachment. This urbanization is changing not only the physical landscape through subdivisions and urban sprawl, but also the social/cultural nature of people's interactions with wildlife and wildlife management

itself (Patterson et al 2003). It is also leading to increased human wildlife interactions such as deer eating ornamental lawn vegetation and vehicle collisions, as well as increasing human encounters with large predators such as mountain lions and bears. The wildlife and wildlands of these three forests are often the draw for (human) migration to these forest and private land interfaces and increasingly, people with varied viewpoints and values on wildlife and wildland management are settling in areas previously dominated by rural agricultural/ranching traditions.

Historically, values towards wildlife were stable and shared among the populace and were based upon traditional subsistence and agricultural values and social contexts (Tapper 1988). However, the urbanization of, and migration of people to the surrounding areas of these three forests has created a social context from one that is primarily rural with similar opinions on wildlife issues to one in which there are diverse views and values toward wildlife. For example support for large carnivores, co-mingle with rural agricultural/ranching traditions, which have been predominately anti-large carnivores. This diverse mixture of views and values towards wildlife and wildlife management creates the potential for social conflict over such issues as how should wildlife be managed, who should manage it, and what species should be managed.

These changes in the social context surrounding wildlife have had implications for biodiversity and species viability. Interest in hunting remains strong; in Montana, ungulates provide a variety of recreation opportunities from hunting to wildlife viewing, generating economic benefits in excess of $450 million annually (Effects of Recreation on Rocky Mountain Wildlife 1999). Fishing and wildlife viewing for species other than ungulates has also become an economic force.

Although the economics of wildlife is an important consideration, so are the differing values that the public holds towards wildlife and wildlife management. Many of the charismatic mega-fauna found in these forests, such as elk, wolves, bears and deer cause controversy and conflict because of differing values placed upon them by different segments of the population. While segments of the population value deer and elk for hunting opportunities, other portions of the population value their existence.

Values and views towards large carnivores can be even more contentious. In this planning zone there are a myriad of values placed on carnivores such as wolves, bears, and mountain lions. Concerns driving these values can include the following issues: human safety concerns, livelihood issues such as outfitting and predation on livestock, wildlife population numbers and social carrying capacity, the use of the Endangered Species Act, restriction of access to public lands and other management land actions, and existence values. Simply put, there are portions of the public that do not want large carnivores around, especially wolves and grizzly bears. There are also portions of the public that are proponents of increasing populations of those same species. With such differing values, not only does managing for some of these species become contentious, but it also becomes quite polarized making it difficult for the Agency to come to a decision.

Wildlife resources are transboundary and how the public, especially adjacent landowners and agencies view and value these species can have an impact on management. However, wildlife and biodiversity issues are national issues with a national public,

meaning that there is national interest in the management of many of these wildlife species, especially wolves and grizzly bears. This creates more conflict between how local residents, which have to deal with living with these species, want them managed and how people from somewhere else would like them managed. Recognizing the various values placed on these wildlife resources and recognizing that people will have varying values partly based on their proximity to the area and how they may be impacted directly has strong implications for management.

2. Implications of Continuing Current Management

Implementation of the current forest plan over the next 10-15 years would result in a continued focus on a species-by-species approach, using short time frames rather than dealing with issues at larger spatial and temporal scales. Under this approach, individual species would likely benefit, however, this neglects ecosystem management principles of context and scale and could result in additional species entering a risk status from being overlooked and not being selected as a focus species.

Ecosystem health would continue to change. Some forest species (for example whitebark pine) could continue to decline as they remain susceptible to insect and disease infestations and are not being regenerated in sufficient amounts from fire activity nor are funds available to adequately address the problems. This could have adverse impacts on species such as the grizzly bear or Clark's nutcracker. More diversity in age classes of all cover types results in a greater diversity of habitats to support more species.

Under current Plan direction, old growth is often treated as a static entity. Natural disturbance, active management and spatial and temporal scales are not adequately addressed. The value of all stages of forest succession as habitat for different organisms needs more emphasis.

The distribution of key salmonids (i.e. bull trout and westslope cutthroat trout) has declined throughout the Columbia River Basin, which includes lands within the planning zone (USDA 1997). Land management practices, particularly historic practices, while not the only cause (introduction of non-native species, influence of hatchery fish, and fish harvest are other contributing causes), have had major influences. Under the current direction, some areas will likely see a slow improving trend, others will continue to chronically degrade, and the viability of native species will continue to be at risk.

Natural events such as fire, flood, and erosion, as well as effects from historic timber harvest, mining, and other human-caused disturbances will continue to effect terrestrial and aquatic habitats at multiple scales. The current forest plan direction reduces the risk to biodiversity and viability from new and ongoing activities. However, the extent and distribution of these historic disturbances are not likely to be effectively reduced at large scales under the current management direction. Local improvements would certainly occur, but they would likely be scattered. Without direction and emphasis in the forest plans, habitat restoration efforts will occur on a project-by-project basis, without an integrated strategy for improvement.

Decisions Needed:

The following bullets are some of the decisions needed to manage biodiversity and species viability. Some decisions needed to ensure species viability have been covered under the preceding vegetation section:

- What direction is needed for prioritizing restoration activities to improve terrestrial and aquatic habitat?
- What direction is needed to guide strategic habitat restoration at the forest level, while integrating multi-resource objectives?
- Are the components of INFISH and PACFISH adequate and applicable to our zone and how should they be modified?
- What direction is needed to manage for big game animals?
- What direction is needed to identify and manage special or rare habitats?
- How do we provide integrated management direction that maintains viable populations of all existing native and desired non-native vertebrate species?
- How do we recover or conserve rare native animals, fish, and plants and their habitats?
- How do we manage human caused food sources to minimize bear/human conflicts?
- How do we manage motorized access to meet grizzly bear and other species needs while providing reasonable human access?
- How do we select management indicator species (MIS) that accurately reflect the effects of forest management activities and that can be effectively monitored?
- How do we develop management direction that incorporates human uses and needs as an element of biodiversity?

Decision Space:

The National Forest Management Act (NFMA) and the Endangered Species Act (ESA) guide some of the decision space concerning terrestrial and aquatic species and their habitats. Opportunities exist to emphasize maintenance and restoration of habitats to approach historic range of variability through revised goals, objectives, and standards. However, meeting historic range of variability may not be possible in many areas due to changed conditions (e.g. noxious weeds that were not present historically); or not desirable due to human needs and desires (e.g. special management needed within the forest and private land interface).

Scale and Scope of Analysis:

The scale of the analysis will encompass all National Forest Lands on the Bitterroot, Lolo, and Flathead National Forests. Lands beyond the three forests will also be assessed to varying degrees, depending on the species or habitat being analyzed.

The scope of the analysis will vary depending upon the species being considered. Most of the analysis will be relatively broad, and will include a coarse filter approach to describing terrestrial and aquatic habitat conditions. A fine filter approach will be utilized for rare species or habitats. All of these assessments will utilize existing data and GIS techniques.

Sub-Topic: Water Quality

The Water Quality sub-topic mainly addresses Water Quality from a physical perspective. However, the complex interrelationships between water and biological systems are fully recognized, and this sub-topic will be fully integrated with the other sub-topics in ecosystem management throughout the revision process.

Background

The Western Montana Planning Zone (WMPZ) is located within 15 sub-basins (4th Code Hydrologic Units), and contains over 20,000 miles of perennial streams and numerous springs and lakes. The vast majority of the Planning Zone lies in Montana, but approximately 467,000 acres of the Bitterroot National Forest lie in the State of Idaho, within the Middle Salmon and Upper Selway Sub-Basins. Water is a critical resource in the planning zone that supports fish, wildlife, public water supplies, irrigation, stock watering, hydropower, recreation, and aesthetics.

Since the current forest plans were approved, approximately 455 miles of stream on the three forests have been identified as impaired under Section 303(d) of the Clean Water Act. Water bodies on the 303(d) list do not meet (or only partially meet) applicable standards for their associated beneficial uses, as defined by the States of Montana and Idaho. For waters that do not fully support their beneficial uses, a Total Maximum Daily Load is calculated. A TMDL is a calculation of the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards, and an allocation of that amount to the pollutant's sources. TMDLs are required for all waters on each State 303(d) list. TMDL planning efforts are currently being conducted throughout the States of Montana and Idaho (usually at the sub-basin scale) and include National Forest lands. In some cases, the Forest Service is assigned load allocations designed to reduce various pollutants. Some load allocations may require passive or active restoration efforts. Several are planned for completion in the coming years throughout the planning zone.

Since approval of the current forest plans, watersheds have continued to be affected by management impacts during the past century. However, current management direction

provides protection of water quality and associated beneficial uses for current and future management activities.

Several public water supplies are located within and adjacent to the planning zone. As population growth and associated development increase, the demand for clean water is expected to increase. At the present time, 51 sub-watersheds across the planning zone contain one or more public water supplies. The Ashley Creek and Rattlesnake Creek watersheds on the Lolo National Forest are currently managed as municipal watersheds. Ashley Creek water is used by Thompson Falls and Rattlesnake Creek water is used by Missoula.

Laws and Regulations

The principle law related to water quality management on National Forests is the Federal Water Pollution Control Act (Clean Water Act) of 1948. The original act was amended in 1972, 1977, 1981, and again in 1987. Sections 303(d) and 319 of the Clean Water Act are most relevant to National Forest management. Section 303(d) requires the States to assign beneficial uses (i.e. public water supplies, aquatic biota, irrigation, etc.) and associated standards for these uses. If a water body, such as a stream or lake, does not meet a standard (or group of standards) for its associated beneficial use, then the State is required to develop a Total Maximum Daily Load (TMDL) for that particular water body.

Section 319 of the Clean Water Act requires the States to control non-point source pollution, which is pollution that does not originate from a single point, but over large areas. Agricultural or wild lands (including forests, rangelands, and grasslands can be sources of non-point source pollutants. The Forest Service complies with Section 319 by implementing Best Management Practices (BMPs), which are designed to prevent or minimize non-point source pollution from activities such as timber harvest and road maintenance. The States of Montana and Idaho have an Anti-degradation policy that protects water quality and stream conditions in systems where existing conditions exceed standards.

The Organic Administration Act of 1897 states that no national forest may be established except to improve and protect the forest, or to secure favorable conditions of water flows, and to furnish a continuous supply of timber. The Multiple-Use Sustained-Yield Act of 1960 directs the Forest Service to manage the national forests and grasslands for outdoor recreation, range, timber, watershed, and fish, and wildlife.

The National Forest Management Act (NFMA) of 1976 provides protection of soil and water resources by limiting timber harvest to those lands where watershed resources will not be irreversibly damaged. This law also limits the extent of clearcuts and provides for reforestation of harvested lands. The implementation rule for NFMA provides specific direction for water quality management in section 219.23:

Forest planning shall provide for:

(a) General estimates of current water uses, both consumptive and non-consumptive, including instream flow requirements within the area of land covered by the Forest Plan;

(b) Identification of significant existing impoundments, transmission facilities, wells, and other man-made developments on the area of land covered by the Forest Plans;

(c) Estimation of the probable occurrence of various levels of water volumes, including extreme events;

(d) Compliance with requirements of the Clean Water Act, the Safe Drinking Water Act, and all substantive and procedural requirements of Federal, State, and local governmental bodies with respect to the provision of public water systems and the disposal of waste water;

(e) Evaluation of existing or potential watershed conditions that will influence soil productivity, water yield, water pollution, or hazardous events; and

(f) Adoption of measures, as directed in applicable Executive orders, to minimize risk of flood loss, to restore and preserve floodplain values, and to protect wetlands.

The Forest Service Manual (FSM 2500) contains numerous policies related to watershed planning, protection, maintenance, and improvement.

Executive Orders 11988 and 11990 direct the Forest Service to protect floodplains and wetlands and associated values.

Current Direction and Implementation of Forest Plan Direction

The current forest plans contain specific management direction designed to protect, maintain, and improve water quality. In some situations, thresholds, or "minimum impact" standards define the criteria for maintenance and protection.
In 1995, the three forest plans were amended by the *Inland Native Fish Strategy* (INFISH), which provides additional protection and maintenance of aquatic ecosystems, including water quality. A portion of the Bitterroot National Forest (approx. 467,000 acres) lies within the Upper Selway and Middle Salmon sub-basins, which contain anadromous fish. This portion of the Bitterroot was amended by *Interim Strategies for Managing Anadromous Fish-producing Watersheds in Eastern Oregon and Washington, Idaho, and Portions of California* (PACFISH). INFISH and PACFISH include the identification of interim Riparian Habitat Conservation Areas (RHCAs), Riparian Management Objectives (RMOs), and Watershed Analysis requirements. INFISH and PACFISH are both interim aquatic conservation strategies that are intended to prevent further loss of inland and anadromous fish populations. Maintenance, protection, and improvement of water quality are key components of INFISH and PACFISH.
Overall, current management direction, as amended, provides protection of water quality and beneficial uses for current and future management activities.

Need for Change:

Impaired water bodies, coupled with listed fish species call for more emphasis on restoration of watersheds. The specific needs for changes are listed below.

- There is a need to strengthen direction for active restoration of watersheds, designed to maintain and improve water quality, and contribute to removal of waters from the 303(d) list. This direction needs to be integrated with access management, as well as with aquatic habitat, upland forest, and riparian improvement objectives.
- Management direction is needed for present and future lands that influence public water supplies. This direction needs to be integrated with access and vegetation management.

1. Relevant Social and Economic Conditions

Public interest in water and water-dependent resources has increased since the current forest plans were approved. For example, in a cooperative planning coalition survey sent to all mailing addresses in Flathead County during 1993, respondents ranked protecting water quality as their highest priority (Sunrift, 1995). Communities in Western Montana are growing rapidly and becoming more urban. Therefore, dependence on clean water from the National Forest is expected to increase. Clean water supports a variety of human uses such as recreational boating, swimming, and fishing. As recreation pressure increases from growing communities, the value of clean water will increase. Demand for public water supplies water is also expected to increase, particularly in the wildland-urban interface where active development is occurring.

2. Implications of Continuing Current Management

The current forest plan direction, as amended, reduces the risk to watersheds from new and ongoing activities, but it lacks direction for watershed restoration. The extent and distribution of legacy disturbances are not likely to be effectively reduced at large scales under the current management direction. Local improvements would certainly occur, but they would likely be scattered.

Decisions Needed:

- How should current direction be strengthened to include more active restoration of watersheds? How can this be integrated with access management, and restoration of other ecosystem components (i.e. aquatic habitat, riparian, and upland forests)?
- How can management direction be established that contributes to de-listing of 303(d) listed water bodies?
- How can more specific management direction be developed for present and future lands that influence public water supplies?

Decision Space:

There is ample opportunity to strengthen current management direction and emphasize water quality improvement in the forest plan through goals, objectives, and standards. Implementation of INFISH and PACFISH certainly contribute to recovery of water quality, but there is opportunity to build on the intent of these strategies and improve various components of them.

Scale and Scope of Analysis:

The scale of the analysis will encompass sub-basins, watersheds, and sub-watersheds that intersect with the Bitterroot, Lolo, and Flathead National Forests. The scope of the analysis will be relatively broad, and will include analyses of physical, biological, social, and economic aspects of water quality.

Forest Products

The Forests of western Montana have played an important role in the development and settlement of the west. Local forests provided the raw materials that built towns and railroads throughout the west. The timber and minerals removed from forestlands were the economic engines that generated wealth and powered civilization for many decades. Thousands of well-paying, skilled, and respected jobs were created and maintained through the extraction and management of forest products. Although today forests are widely recognized and appreciated for the wide variety of resource values such as wildlife, fish and plant habitat, scenery, solitude, clean water, and recreation; forest products continue to be an important part of natural resource management.

Forests in the Western Montana Planning Zone are productive lands that provide a variety of goods that people want and need in their lives. Trees are harvested and manufactured into a wide variety of wood products such as lumber, plywood, particleboard, paper, house logs, posts and poles, and firewood. Other forest products include items such as landscape rock, gravel, minerals, mushrooms, floral greens (such as bear grass leaves), huckleberries, transplants, Christmas trees and personal use firewood.

The Forest Service sells forest products for personal or commercial use at market prices under a system of controlled permits or contracts. These permits/contracts include specifications for product removal, payment, environmental protection, road use, and land cleanup.

Background

The National Forest Management Act (NFMA) requires the Forest Service to classify forestland as to whether it is unsuitable for timber production and calculate an estimate of timber harvest associated with lands classified as suitable for timber production (36 CFR 219.14 & .16). The following lands are classified as unsuitable for timber production:

- The land is not forest land.
- Technology is not available to ensure timber production from the land without irreversible resource damage to soils productivity or watershed conditions.
- There is no reasonable assurance that such lands can be adequately restocked.
- The land has been withdrawn from timber production by an Act of Congress, the Secretary or Agriculture or the Chief of the Forest Service.

The NFMA requires that lands identified as not-suited for timber production be examined at least every 10 years to determine suitability.

Lands classified as suitable for timber production must be further reviewed and assessed to determine the costs and benefits for a range of management intensities designed to meet management objectives for the various multiple uses, including outdoor recreation, timber, watershed, range, wildlife and fish, and wilderness (36 CFR 219.14). In addition, programs outlined in forest plans must meet specific resource management objectives to insure management activities can take place without causing irreversible resource damage (36 CFR 219.27).

The forest plan revision process provides an opportunity to reassess the lands classified as unsuitable for timber production and to account for changes in land status and uses, and management goals and objectives that have occurred in the past decade.

The assessment of lands suitable for timber production will identify lands that are "tentatively suitable" (legally available forested lands that are biologically and physically capable of growing trees where reforestation can be assured). Appendix D displays the criteria and classification of tentatively suitable land. A final set of lands suitable for timber production will be identified in each alternative where timber harvest will be a tool to achieve the desired future conditions within the principals of ecosystem management. The social acceptance of timber harvest will be a consideration in the selection of the final set of suitable lands.

The suitable lands for each alternative are evaluated to estimate the timber harvest level for that alternative. Two terms are used to describe timber harvest levels (36 CFR 219.3): The allowable Sale Quantity (ASQ) and the Long-Term Sustained Yield Capacity (LTSYC). The Allowable Sale Quantity is the maximum quantity of timber that may be sold from the area of suitable land covered by the Forest Plan for a time period specified by the plan (usually ten years). The ASQ is usually expressed on an annual basis as the "average annual allowable sale quantity." The Long-Term Sustained Yield Capacity is the highest uniform wood yield from lands being managed for timber production that may be sustained under specified management intensity consistent with multiple-use objectives.

Neither the ASQ nor the LTSYC define output levels in themselves. Rather, they are calculated harvest levels, which insure that the timber harvest from suitable land is sustainable in the long-term. Actual harvest levels may vary based on budgets and site-specific resource management objectives. Timber harvest may occur on lands that are not suitable for timber production, but in that case, the volume produced will be incidental to the resource management objectives and not included in the ASQ.

In summary, all National Forest System land will be reviewed and assessed as to whether it is suitable or unsuitable for timber production based on the criteria listed in 36 CFR 219.14. Sustainable management of a renewable timber resource will be an important management objective (but not the only objective) on the suitable land base. A maximum allowable sale quantity and long-term sustained yield will be calculated for the suitable lands. Timber harvest may be used as a cost effective tool to achieve other resource objectives on lands classified as unsuitable (excluding withdrawn areas such as wilderness). Timber volume removed from unsuitable land will not be included in estimates of the allowable sale quantity or long-term sustained yield. The actual annual timber sale program may be less than the calculated allowable sale quantity due to budget constraints or other resource values.

Current Direction and Implementation of Forest Plan Direction:

Current forest plans established an allowable sale quantity (ASQ), which is the estimated harvest level that could be harvested from the lands classified as suitable for timber production per decade and at the same time comply with all forest plan standards, goals, and objectives. Although ASQ is a decadal limit, it is usually expressed as an annual figure. Table 9 displays the classification of land suitable for timber production for each Forest in the Planning Zone that was done for the current forest plans. Table 10 shows current Forest Plan ASQs and the annual volume sold since the forest plans became effective. The classification of land suitable for timber production and the associated allowable sale quantity will be re-assessed during the Forest Plan Revision.

Table 9: Capable, Available, and Suitable Lands for Timber Production (current Forest Plans) [1]

	Classification	Bitterroot	Flathead	Lolo
1	Non-forest land	354,713	222,450	37,966
2	Forest land	1,223,170	2,139,632	2,045,226
3	Forest land withdrawn from timber production	457,408	519,741	391,625
4	Forest land not capable of producing crops of industrial wood	0	784,144	218,764
5	Forest land physically unsuitable			7,742
	Irreversible damage likely to occur	0	0	0
	Not restockable within 5 years	34,533	0	0
6	Forest land – inadequate information[2]	144,897	0	0
7	Tentatively suitable forest land (item 2 minus items 3, 4, 5, and 6)	586,332	835,747	1,427,095

	Classification	Bitterroot	Flathead	Lolo
8	Forest land not appropriate for timber production[3]	0	165,077	188,391
	Wilderness (proposed)	24,700	23,187	0
	Semiprimitive recreation & elk security	137,346	0	0
	Minimum management requirements	5,870	12,565	0
	Economic efficiency	28,596	0	0
	Dispersed Recreation (MA 2)	0	39,286	0
	Amenity values (MA 3)	0	18,666	0
	Grizzly Bear (MA 11)	0	25,943	0
	Grizzly Bear (MA 11A)	0	5,242	0
	Riparian wildlife (MA 12)	0	40,188	0
	Administrative, recreation, and historic sites	0	0	5,106
	Concentrated public use	0	0	17,235
	Wildlife (elk winter range & grizzly habitat)	0	0	30,885
	Roadless	0	0	74,224
	Not economically feasible	0	0	60,941
9	Unsuitable forest land (items 3, 4, 5, 6, and 8)	833,350	1,691,412	806,522
10	Total suitable forest land (item 2 minus item 9)	389,820	670,670	1,238,704
11	Total National Forest land	1,577,883	2,362,082	2,083,192

[1] Capable, available, and suitable lands are those forest areas that are biologically and physically able to produce resources (trees) that can legally be harvested where it is economically and environmentally appropriate to do so (refer to definitions in the Glossary).

[2] Lands for which current information is inadequate to project responses to timber management. Usually applies to low site quality lands.

[3] Lands identified as not appropriate for timber production due to: (a) assignment to other resource uses to meet Forest Plan objectives; (b) management requirements, and (c) not being cost efficient in meeting Forest Plan objectives over the planning horizon.

Table 10: Projected Timber Harvest Ceilings (current Forest Plans) and Accomplished Outputs

Forest	Average Annual ASQ MMBF (MMCF)[1]	Annual Volume Sold – MMBF (Year)		
		High	Low	Average
Bitterroot	33.4 (7.5)	19.6 (1989)	0.8 (2000)	8.6 (1988-2002)
Flathead	54.0[2] (13.9)	81.0 (1987)	4.6 (2000)	30.8 (1987-2002)
Lolo	107 (29.7)	105.5 (1989)	8.2 (1999)	47.2 (1987-2002)

[1]ASQ is normally calculated in cubic feet and converted to board feet for convenience.
[2]The 1986 Flathead Forest Plan projected an ASQ of 100 MMBF. In 1995 the Forest Plan was amended (Amendment 19) to establish an ASQ of 54 MMBF.

All three Forests sold timber volumes that were well below their estimated ASQ ceiling during the last fifteen years since the current forest plans were approved. A variety of factors have contributed to timber outputs being less than anticipated, including:

- Limitations of the planning models (spatial relationships)
- Changing budget structure and emphasis.
- Endangered Species Act (ESA) listings
- Adopted riparian area management direction and standards (INFISH) necessary to protect aquatic habitat
- Restricted development in inventoried roadless areas
- Appeals and litigation which have increased project level analysis requirements and costs
- Silvicultural prescriptions now focus much more on what is left rather than what is removed. Seed and shelter trees, for example, are now usually retained for structural diversity.
- Recognition that other resource values such as clean water, wildlife, plant and fish habitat, scenery, and recreation influence timber harvest levels more than envisioned in current forest plans.

Timber harvest direction in current forest plans on all three Forests is focused on managing lands classified as suitable for timber production. Although the planning regulations provide for timber harvest from lands classified as unsuitable for timber production to meet specific resource objectives, current forest plans provide little direction on when and under what conditions timber harvest from unsuitable lands would be appropriate.

Current forest plans primarily address traditional forest products, such as sawlogs, roundwood, and firewood. They are largely silent regarding miscellaneous forest products, such as Christmas trees, mushrooms, huckleberries, landscaping transplants, beargrass leaves, common variety minerals, and personal use firewood. Although Forest Service manual and handbook direction authorizes their sale, there is little or no forest plan direction on when or where removal of these products may be an appropriate activity.

Need for Change:

An ecosystem sustainability approach to forest management is not emphasized in the existing forest plans. Timber management direction in current forest plans is based on concepts embodied in forest regulation. "Essential requirements of a fully regulated forest are that age and size classes be represented in such proportion and be consistently growing at such rates that an approximately equal annual or periodic yield of forest products of desired size and quality may be obtained. There must be a progression of size and age classes so that harvestable trees in approximately equal volume are regularly available for cutting." (Davis, 1966) The current forest plans applied this concept to that portion of the Forest deemed suitable, capable, and available for timber production. Those areas were included in the "regulated timber base" for the Forests.

Allowable sale quantity estimates were developed using an economic optimization model (FORPLAN) that did not adequately reflect spatial considerations. National direction at the time our current forest plans were developed established that the objective function of the modeling effort was to maximize present net value (PNV). Decisions on harvest location, intensity, and prescriptions are frequently driven by factors other than PNV. It is now believed that some of our greatest harvest treatment needs are in areas that would provide some of the lowest PNVs.

Additionally, planners found it difficult to model site-specific constraints in a programmatic model such as FORPLAN. This difficulty created some obtuse relationships between timber harvest and other resource values in the model, which cast doubt on model outputs.

Timber management programs envisioned in current forest plans were also based on assumptions regarding the types and relative levels of harvest prescriptions that would be implemented. Table 10 displays the types and amount of harvest methods that were projected by the forest plans for the first decade compared to the actual accomplishment.

Table 11: Comparison of Forest Plan Projected and Actual Harvest Methods (Percentage) [1]

Forest	Regeneration Harvest (%)			Intermediate Harvest (%)	Selection Harvest (%)	Salvage (%)
	Clearcut	Shelterwood	Removal Harvest			
Bitterroot Plan	50	28	5		3	14
Bitterroot Actual	26	14	10	10	7	33
Flathead Plan (1986 – 1994)	72			28		
Flathead Plan after A-19 (1995 – 1999)	59			41		
Flathead Actual	32	27	19	5	1	16
Lolo Plan	23	65		1	11	
Lolo Actual	22	39	6	12	16	5

[1]Data summarized from R-1 Timber Stand Database

Ecosystem management places a higher priority on integrating non-timber resource considerations in timber harvest prescriptions and projects, compared to the forest regulation approach that was assumed in the development of current forest Plans. Timber growth and yield considerations do not influence harvest prescriptions as strongly as originally envisioned. While timber harvesting is still conducted in response to social and economic needs, it is now viewed as a tool for managing plant communities and wildlife habitats more closely within historic ranges of variability (HRV). Timber harvesting may also be used to achieve specific resource objectives such as creating scenic vistas or

improving recreation sites (removing hazard trees). The focus of many harvest prescriptions is more on what is left rather than what is removed. Even-aged harvest prescriptions of today typically have a notable component of reserve trees left on site for wildlife, aesthetics, and other resource values.

Fire salvage has provided a higher percentage of timber sale programs than anticipated in forest plans because the current plans did not anticipate the large, severe fires of recent years. During the four-year period 2000-2003, about 15 percent of the lands classified as suitable for timber production in the Western Montana Planning Zone were burned by wild land fires. On the Bitterroot National Forest, about 44 percent of the suitable base was burned in 2000 alone. About 40,000 acres of tree plantations have been burned in the Western Montana Planning Zone during the four-year period 2000 – 2003. The fires have not changed the long-term sustained yield capacity of these lands, but the short-term ability of these burned areas to contribute to an annual sale program has been diminished. Future estimates of timber harvest need to consider the probable effect of large-scale wild land fires.

It is now recognized that leaving lands previously classified as not suited for timber production untouched by vegetation management may not achieve the resource objectives for wildlife and plant habitat, watershed protection, or scenic quality. Timber harvest and fire may be tools to manipulate vegetation composition and structure to achieve other resource objectives on these unsuitable lands in an economic fashion.

1. Relevant Social and Economic Conditions

Timber production is inherently an economic and social issue. Abundant, renewable natural resources provide forest product materials for an important industry within the Zone. Although conventional milling capacity has decreased within the zone since the forest plans were written, the manufacture of log homes has increased and replaced some of the lost milling capacity (particularly in Ravalli County).

Timber management objectives outlined in existing forest plans have not been met because of conflicts with other resource values, changing public values, and increasing analysis requirements associated with lawsuits. As a result, timber harvest levels have declined since the inception of the forest plans. The decline in timber harvest levels, in combination with market and technological changes, has affected employment, income, and revenue sharing for some counties within the zone.

What products are being used, why those products are desired, who's using those products, what impact is it having on the surrounding communities, forest management, and forest visitors are all part of the social landscape. The public has very different views on forest products and whether they should be managed. These three Forests especially have stakeholders with strong polarized positions. One position that some people or groups often take is that timber production or any commercial use of forest products from National Forest lands should not occur. There can also be portions of the public that may connect timber production with road building and access issues. In other words, portions of the public may have concerns about timber production because of the effects it might have on what they value. Those values may include issues about access and road building, aesthetics, impacts

on wildlife, plants, watersheds, and recreation. Another position that some people, groups, and communities take is that they are economically tied to timber production. Groups such as loggers and mill workers, directly feel the economic value of timber production. Also, portions of the public may see their community identity tied to timber production and take pride in being a 'timber town.' This difference in strongly held positions creates a tension between those who oppose the commercial use of forest products versus those who view it as a practical economic lifeline.

Litigation and appeals occur in Western Montana over timber sales in part due to these differing views and concerns. Although there is a spectrum of views and values towards timber harvest, recent social assessments indicate that most of the general public supports multiple use and 'selective logging'. However, Forest plans must still consider the spectrum of views and values that exist towards timber harvest.

Forest products, such as huckleberry and mushroom picking, Christmas tree cutting, and personal use firewood gathering also have social components. Conflicts may occur between different user groups, such as hikers and wood gatherers. Conflicts may also occur between members of the same user group, which has occurred between mushroom pickers. It is also important to note that some of these forest products may be necessary for some users for subsistence or economic means of support. Management actions that might impact these uses, such as access management, could then be controversial for those reasons.

Alternative approaches in vegetation management and timber production may be needed to reconcile the competing demands for providing wood products and related employment, maintaining ecosystem integrity, and compliance with the diverse and sometimes conflicting regulatory and statutory requirements applicable to the National Forest System. Community forestry[1] programs are one example of an emerging approach to integrating scientific forest management with public desires for employment, and ecosystem integrity.

The public and forest products industry need a reasonable estimate of future timber supply that is consistent with maintaining ecosystem integrity and consistent with social values. Applications of new vegetative management practices and silvicultural prescriptions are needed to reflect the broader range of values represented in ecosystem management rather than the wood fiber production emphasis of the past. Timber harvest can be a valuable tool for maintaining forest ecosystem health, creating scenic vistas or improving recreation sites (removing hazard trees). Ecosystem restoration or stewardship projects may be management approaches with wider public acceptance if the barriers to cost effective implementation can be overcome.

[1] Community Forestry embraces a participatory model of knowledge production that incorporates local knowledge; integrates monitoring and adaptive learning; involves collaboration between scientists, policy makers, and the public; and helps to empower communities to participate more fully in the management of local resources (Baker, 2003).

Need for Change Summary

In summary, the need for change in forest plan timber management direction is indicated by:

- The regulated forest concept was a single resource approach and not well integrated with other resources to achieve multiple use values.
- Harvest acreages and volumes have been notably lower than the planned levels. Average harvest volumes per acre and average tree size have decreased over the life of the forest plans.
- Forest plans focus on clearcutting, a harvest method that has been largely replaced by other harvest methods except in lodgepole pine forests.
- The rate of logging was higher than anticipated on privately owned forestlands intermingled or adjoining the National Forests. The cumulative effects of harvest levels from both private timberlands and National Forest planned rates would not comply with resource protection standards.
- Past harvest levels (pre-forest plans) in some portions of the National Forest preclude re-entry at the planned levels in order to comply with resource protection standards.
- Anticipated harvest entries in roadless areas have not occurred due to ongoing public interest in roadless lands.
- Controversy, appeals and litigation have greatly increased the costs of preparing timber sales.
- New information, policies and regulations since the forest plans were established have affected timber harvest levels (INFISH, ESA listings).
- Harvest prescriptions implemented typically leave more trees per acre than were envisioned in forest plans, decreasing harvest yields for most acres treated.
- The timber industry needs a more reliable estimate of the raw materials for timber products that can be expected in the future.
- There is a need to find economical methods of restoring fully functioning ecosystems. Small sized trees removed to achieve fuel reduction and forest health goals are generally expensive to handle and have low product values.
- Timber harvest can be used as a tool to manipulate vegetation composition and structure to achieve resource objectives on lands classified as unsuitable for timber production.
- Large wildfires and increasing insect activity of recent years have created abundant dead trees. Current forest plans did not anticipate such events and lack direction on when and where it may be appropriate to salvage dead trees as part of a forest restoration program following large disturbance events.
- Demand for miscellaneous products has grown since the forest plans were written. The removal of forest biomass for heating or power generation is an emerging use. There is a need to provide some direction and establish standards for removal of miscellaneous products to protect resource values.

2. **Implications of Continuing Current Management**
   Continuing current management would result in the Forests failing to attain the projected harvest ceilings in the existing forest plans because the assumptions on which those harvest ceilings were based have fundamentally changed. The downward trend in timber harvest evident on each Forest would likely level off near recent levels. Conflicts over the effects of timber harvest and road construction on wildlife habitat and watershed conditions would continue to influence project level analysis. The risk of continuing current management is that project level analysis will become more difficult to defend based on forest plan direction because the plan direction is increasingly outdated.

Decisions Needed:

- What lands will be classified as unsuitable and suitable for timber production?
- What is the maximum allowable sale quantity (ASQ) and long-term sustained yield (LTSY) associated with the land suitable for timber production?
- How will a cost effective, realistic, integrated timber management program be designed on the suitable land base to achieve ecosystem management objectives and multiple use values while meeting industry needs for stability and predictability?
- How will cost effective timber harvest be applied on lands classified as not suitable for timber production to achieve multiple use values, especially in the forest and private land interface?
- Where and to what degree will miscellaneous forest products such as Christmas trees, mushrooms, huckleberries, landscaping transplants, beargrass leaves, personal use firewood and common variety minerals be managed?

Decision Space:

Lands suitable for timber production may vary from zero acres up to the acres identified as “tentatively suitable” for timber production on each Forest. Likewise, the projected Allowable Sale Quantity (ASQ) may vary from zero to several million board feet depending on the number of suitable and appropriate acres and the intensity of forest management. Timber harvested from lands classified as not suitable for timber production would not contribute to the ASQ, but would be tracked and included as part of the annual programmed sale quantity. This non-regulated component could fluctuate up or down from year to year depending on budgets and resource emphasis.

The decision space is bounded by the following parameters:

- The physical and biological capability of the land to grow trees and other forest products on a sustainable (renewable) basis.

- Requirements to provide and protect diverse habitats sufficient to insure species viability.
- Social and economic tensions between people who depend on wood products and those who desire natural, unmanaged forests.
- Limitations on the amount of other resource impacts people are willing to accept from the commercial harvest and renewable growth of trees.
- Desire to create certain patterns of vegetation composition, structure, and function to achieve human values, goals, and objectives from forest lands.
- Budget limitations that affect program size and quality.

Scale and Scope of Analysis:

The analysis of lands suitable for timber production and the associated allowable sale quantity (ASQ) will be conducted on all National Forest System lands on each Forest in accordance with the National Forest Management Act (NFMA) and its implementing regulations at 36CFR219. The analysis will be conducted separately for each Forest in the planning zone. Maps, tables, and charts will be used to display the timberland classification and projected timber yields.

Although silvicultural prescriptions will be applied to forested lands for the purpose of estimating timber yields, site-specific proposals for timber harvest will not be included in forest plans. These kinds of site-specific proposals and analysis are best done at the watershed or project level.

National Forest and Private Land Interface

The National Forest and Private Land Interface is where humans and their development meet or intermix with forest and rangelands. People who live or recreate in this area have a strong interest in management of National Forest System (NFS) lands adjacent to private lands. These interests include: roads and trails (access), aesthetics, recreation, special uses, and management of vegetation, fire, wildlife, soil, water and fish on NFS lands adjacent to their land.

Background

Management of the National Forest and private land interface is complex and covers many factors, which include social, economic and ecological components. The following is a discussion of some important changes that have occurred since the current forest plans were approved.

Social/Economic Components

- As stated in other portions of this document, population growth and development has increased dramatically within and adjacent to the planning zone (GAO 1999, Appendix VIII, pg. 19). There are nearly 600,000 acres of different land ownership within a quarter mile adjacent to Forest Service lands within the

Western Montana Planning Zone (WMPZ). Private individuals own approximately 250,000 of these acres and Plum Creek Timber Company owns about 225,245 acres. Over 60 percent of the land owned by private individuals has been developed. Further delineations show that:

- There are approximately 1.1 million acres of NFS lands within a one-half mile buffer adjacent to private land.
- There are 1.4 million acres of NFS lands within a three-quarter mile buffer adjacent to private land.
- There are 1.8 million acres of NFS land within a mile of private land.

- Private land development in the forest and private land interface has had several consequences regarding access to National Forest lands. In some areas, easements and right-of-way (ROW) agreements transfer when the land is sold. In areas where easements and ROW don't exist, the process to obtain access can take a long time. Some landowners are unwilling to grant access, which reduces the publics' ability to get to NFS lands. Unresolved access issues can result in both trespasses by adjacent landowners building structures, roads, and trails on NFS lands and the publics' trespass through private land to get access to NFS.

- When people move to the forest and private land interface, there is an increase in demand for suburban infrastructure and services such as fire protection, power lines, water diversions, water and sewer lines, communication sites, and access roads. Requests for special use permits to authorize and monitor these activities have created a large workload.

- Increases in growth, to some degree, have been accompanied by more leisure time and more money to spend on recreation. Technological advances in equipment, new inventions, and a proliferation of four wheel, and sport utility vehicles have resulted in more varied recreational use of the interface areas. In addition to motorized activities, non-motorized activities have also increased such as mountain biking, day use hiking, golf, orienteering, and riding horseback.

- Additional impacts from increased population and pressure in the forest and private land interface include but are not limited to:

    - Illegal dumping.
    - Unauthorized use of natural resources such as water, land, grass, wood products, and plants.
    - Introduction and spread of noxious weeds.

- The influx of people into the forest and private land interface has created a unique situation regarding fuels hazard and risk of wildfire. People live in areas where fire once played a critical role. The amount, size and intensity of fires that occur in the Forest and Private land Interface have increased since the 1980s. (GAO 1999). The Council of Western State Foresters and the Western Governors Association defined four different wildland/urban conditions regarding fuels and proximity to human development. The Healthy Forest Restoration Act 2003 also defines Wildland Urban Interface (WUI).

- Approximately 45 communities within the WMPZ were listed in the Federal Register as Communities at Risk to severe wildfire. The list was compiled by federal, state, and local agencies (Fed. Reg. 2001). Figure 6 shows areas at risk within the planning zone. The analysis combined population density (Census 2000), the probability of a fire starting (ignition), and the type of fire behavior expected after the fire started (Cohesive Strategy Team 2003).
- Data derived from the Cohesive Strategy Team shows approximately 21 percent of the private land within a quarter mile buffer adjacent to NFS lands is classified as moderate to high risk to wildland fire. Fifty-nine percent of the NFS lands adjacent to private land have a current fire severity of stand replacement. In the past, a wildfire that might have been considered benign because of its location on forested lands can now quickly become a threat to homes, structures and property.
- The adoption of the Wildland Fire Policy (1995), National Fire Plan Documents (1999 to 2002) such as the 10-Year Comprehensive Strategy and Implementation Plan have raised the awareness of people and resource managers of the need to reduce fuel hazard and risk of wildland fire.
- Vegetation management in this area can be controversial where people's values are different. Some people do not want the appearance of the forests to change and do not want any vegetation to be removed despite the risk of wildfire. Others support the removal of trees less than 6 inches in diameter or a non-commercial harvest within a specified distance of houses, while others would like to see the commercial harvest of trees not only to reduce fuel hazard but to pay for the treatment as well. Supporters of commercial tree harvest believe the byproducts of management can contribute raw material to the economy, which creates a strong link between communities and their surroundings. Several communities have generated discussion on the use of small diameter byproducts and the ability to generate electricity from burning biomass.
- Air quality regulations have become more stringent throughout the zone especially around communities. Many are classified as non-attainment areas and have low thresholds for increases in particulate matter and haze.
- The influx of people into the forest and private land interface has increased the potential for human-wildlife interactions. For many people this is seen as a positive attribute for living in these areas through wildlife viewing and potential hunting opportunities. However, this can also be seen as a negative attribute when human-wildlife conflicts occur. These conflicts can include increased ornamental vegetation damage, wildlife-car collisions, and having large carnivores such as mountain lions, bears or wolves in and around homes and towns. Human-wildlife interactions can be quite contentious issues because of differing and conflicting values towards these species. Many people move to these areas in part because of the wildlife, and they may be more tolerant of these interactions. However, there may be other people that have strong concerns about the close proximity of the wildlife to their homes and families.

Because of the overriding human influence and needs unique to these areas, ecological sustainability in the National Forest and private land interface is different than lands not adjacent or intermixed with other ownerships.

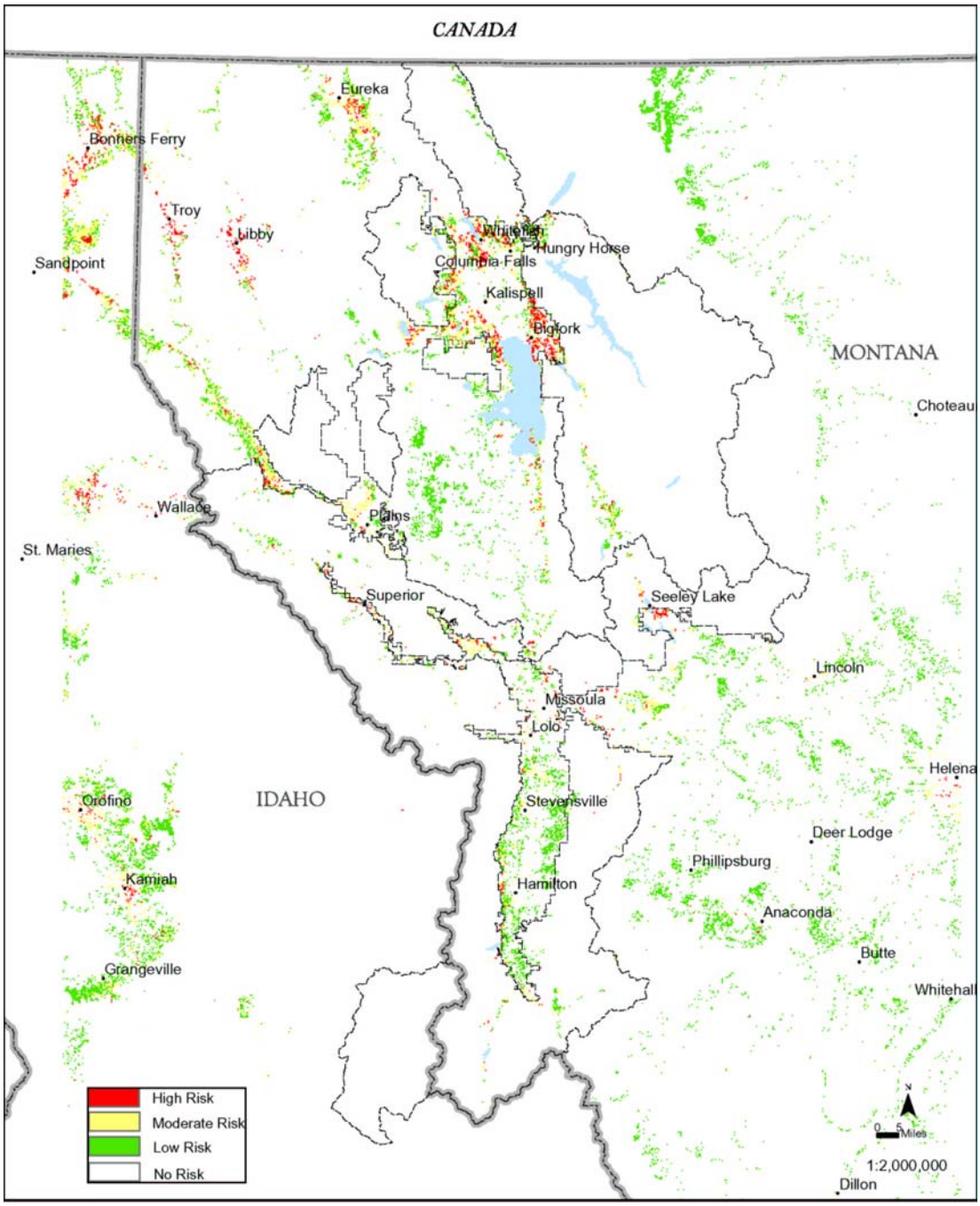


Figure 6: Ratings of Areas at Risk within the Western Montana Planning Zone (Cohesive Strategy 2003)

Ecological Components

Urban development and associated presence of people has resulted in a variety of changes to vegetation, wildlife, soils, water quality, and aquatic habitat.

- There has been an increase in growth and density of understory trees due to fire suppression over the past century, particularly in non-lethal to mixed-severity fire regimes. In contrast, the proportionate change in fuel loading is not as great where longer interval fire regimes occur. This has increased stress and competition to overstory trees.
- Over the past century, timber harvest, urbanization and agriculture in portions of the Forest and Private land Interface have removed large diameter, seral tree species such as ponderosa pine and western larch and reduced the amount of shrub and grasslands.
- Several vegetation and associated wildlife communities are outside the historic range of variability due to human development, fire suppression and spread of noxious weeds.
- "Urbanization eats away at forest interior habitat by eliminating large blocks of unfragmented forest. America is losing valuable corridors needed to connect parts of the national forests with other large undisturbed tracts of land. Animals like marten, bear or cougar need large, relatively undisturbed forests to survive. Many birds also need forest interior habitat." (Bosworth 2003 "We Need a New National Debate").
- The issue of forest fragmentation can be described as the degree to which forested areas are broken into smaller patches and interspersed with nonforest areas. Research has shown that forest close to nonforest cover is often warmer and drier, more likely to be affected by wind, and more likely to be invaded by non-native species (The State of the Nation's Ecosystems 2003). This differs from the corridor issue that is better described as a linkage zone—the area between larger blocks of habitat where animals can live at certain season and where they can find the security they need to successfully move between these larger habitat blocks (Servheen 2001).
- In addition to direct changes to habitat that result from buildings, fences, roads and landscaping, homeowners also bring dogs and cats to the wildland interface, which can disturb, harass, displace or kill a variety of wildlife. Mortality can either be direct or indirect from factors such as disease or increased stress.
- Response of wildlife behavior to the forest and private land interface may take the form of avoidance, habituation, or attraction. Avoidance behavior results in displacement or changes in distribution. Habituation may cause vulnerability to hunters or poachers, vehicle collisions, or management removal in response to property damage. Attraction to food sources such as bears to garbage, pet food or bird feeders can result in property damage, injury to people or pets, or removal of the bear.

- Ungulates provide a large percentage of the recreational opportunities for wildlife enthusiasts in the State of Montana. Hunting, wildlife viewing, and photography generate economic benefits in excess of $450 million annually (Effects of Recreation on Rocky Mountain Wildlife, 1999). During winter, many ungulates are seasonally confined to restricted geographic areas with limited forage resources. In western Montana, much of the big game winter range is lower in the valleys on private ground. Since the current plans were adopted, many ranches serving as winter range have been converted to subdivisions. This conversion has directly reduced the amount of habitat available and reduced the effectiveness of winter range adjacent to these subdivisions because of disturbance and the spread of weeds.
- Urban development changes hydrologic characteristics and associated uses, which can result in additional disturbances. These effects tend to be limited in scale, but their importance and contribution should be considered across larger scales.

Current Direction and Implementation of Forest Plan Direction:

The current forest plans did not identify the Forest and Private land Interface as a unique management area. The goals, objectives, and standards for the interface are the same as for other, adjacent forest areas. In the case of special-use permits, the forest plans generally approve special use permits when they do not conflict with National Forest goals and public values, and they comply with the intent of the specific management area affected. Plans allow only those uses of National Forest System land that cannot be reasonably placed on private land.

Need for Change:

The current forest plan standards often do not reflect the unique and special character of the interface areas, nor do they acknowledge the close proximity to people's homes and the integration between the forest and peoples daily lives. There is high potential for existing large tracts of private land to be sold and subdivided, which will increase the amount of homes and structures and size of Forest and Private land Interface.

1. Relevant Social and Economic Conditions

- There is a need to identify current and future uses that may affect management and integrity of resources associated with interface lands. There is need to identify what activities are appropriate for interface lands.
- There is a need to develop specific management direction that addresses recreational activities on forest and private land interface lands.
- There is a need to assign appropriate Recreation Opportunity Spectrum classes (ROS) to interface lands.
- There is a need to streamline the special use permit authorization and renewal process to allow a limited staff to process a large number of special use permit

applications more efficiently. There is a need for better field monitoring to ensure permits are being obtained and that permit requirements are being followed.

- The risks to human lives and property have increased substantially since the current forest plans. In the original forest plans, each MA lists standards for fire, which includes both prescribed fire and wildland fire (fire use). Theses standards do not reflect current terminology and risks. Some of the current MAs do not allow a full range of management options to respond to fire within the Forest and Private land Interface. Forest plans need to address the extent of changes in fire regimes, the increased risks of severe fire behavior, and severe fire effects. Forest plan direction needs to provide a context for fire management planning to identify values at risk, suppression costs and provide a full range of management options.
- Forest Plans need to integrate the use of prescribed fire, fuel treatments, and wildland fire use objectives with visuals and other resources in the Forest and Private land Interface.
- There is a need to incorporate new information and direction such as National Fire Plan documents, the report on Restoring Fire-Adapted Ecosystems on Federal Lands - Cohesive Strategy for Protecting People and Sustaining Natural Resources (April, 2002), and the 10-year Comprehensive Strategy-Implementation Plan (May, 2002), Communities at Risk, the Federal Wildland Fire Policy (1995) into LRMP goals, objectives, and standards.

a. Ecological Components

The ecological components encompass both vegetative and wildlife elements. The need for change in planning direction for vegetation management stems from the following:

- Some of the current direction does not allow the harvest of trees or burning, which are tools to manage vegetation species composition, density, and structure. There is a need to establish appropriate stocking levels in the Forest and Private land Interface, which are different than general forested lands.
- There is a need for flexible management direction for weed management to include new technology, information, and chemicals.

To manage wildlife within the Forest and Private Land Interface there is a need to:

- Closely coordinate wildlife activities with landowners and other agencies.
- Actively plan and manage for linkage zones and wildlife crossings.
- Develop consistent and effective direction on food attractants within bear habitat over the zone.
- Develop strategies for wildlife protection and habitat improvement consistent with the needs and safety of adjacent landowners.
- Develop winter range enhancement and protection measures that work with high human presence.

The Forest and Private Land Interface may be an area where restoring plant, wildlife and aquatic communities to a historic range of variability is not achievable or desirable due to the impacts of human development and population density.

2. Implications of Continuing Current Management

Because MA direction is non-specific to the Forest and Private Land Interface, conflicts between different user groups and resource management objectives would tend to increase as populations in the interface areas grow.

Although there is little opportunity to change the process for issuing or renewing special use permits, forest plan revision may improve the current situation by providing better direction on where or when special uses are appropriate.

Continuing current management direction would most likely result in inconsistent implementation of recreation direction between managing units.

Wildland urban interface areas with Management Area allocations, that preclude harvest of trees or other fuel hazard reduction tools, will remain high fuel hazard and have high risk potential for severe fires. National direction and emphasis from the National Fire Plan documents will not be met without specific management direction that addresses the interface as a whole and provides direction for resolving conflicting direction and objectives in the Forest and Private Land Interface.

The goals and objectives of vegetation management in the forest and private land interface may be difficult to achieve without direction and standards that are specifically designed for that purpose.

Decisions Needed:

- What areas would be designated as Forest and Private Land Interface?
- What management direction is needed to address the social and ecological components unique to the Forest and Private Land Interface?

Decision Space:

The decision space is bounded by the following parameters:

- Existing wilderness and other legal designations.
- Current land ownership and development pattern.
- TES species.
- Cultural and heritage resources.
- Air quality regulations.
- Risk of increasing invasive weed populations.
- The type of special use requested and it environmental effects.

Scale and Scope of Analysis:

Scale and scope to the analysis would include all lands that meet criteria as Forest and Private Land or have the potential to become part of this interface in the future.

Recreation: Developed and Dispersed

Developed and dispersed recreation encompasses a broad and diverse range of activities. Those commonly valued by the recreating public range from family outings at established campgrounds, to day hikes and mountain biking, hunting, fishing, skiing, snowmobiling, to a gambit of more extreme experiences. Driving along forest service roads, perhaps the most popular recreational activity on national forests, is discussed more fully under Access Management. Outfitter guide resources, management, and service to the public are a unique component of the recreation spectrum and is discussed more fully as a sub topic of this section.

Background

Developed and dispersed recreation throughout the zone is extremely important to local and national visitors. More people use the forest for recreation than for any other purpose. The value of recreational opportunities within the zone, especially primitive, semi-primitive and roaded natural is highlighted in the Interior Columbia Basin Assessment (Quigley et al.1996), the East Side Recreation Analysis and the Northern Region Overview. The zone is one of the most pristine areas in the continental United States and attracts new residents and visitors because of its scenic beauty and wilderness areas. Communities within the Western Montana Planning Zone account for one third of Montana's population and are the primary areas of growth within the state.

Recreation use is increasing at 2.3% per year and is expected to double in 29 years across the Interior Columbia Basin (Quigley et al. 1996). While forest recreation use numbers have been difficult to calculate with accuracy, they do indicate trends. Demographic and population studies indicate that visitation to the forest and surrounding public land will continue to grow. In addition, new types of recreation use have evolved over the life of the existing plans and as a result these plans no longer provide adequate emphasis and direction for this use.

Since implementation of the existing forest plans, conditions have changed with respect to developed and dispersed recreation. These changes include:

- Increases in day use activities within semi-primitive areas.
- Technological development that has created demand for new and previously unforeseen types of recreational activities, such as mountain biking, four wheeling and extreme snowmobiling.
- Increase in recreational demand and change in types of use have contributed to conflicts amongst the recreating public and to impacts on other resource values in some locations.

The recreating public continues to ask for a diversity of experiences, settings and opportunities on the National Forests. As interests and technology change, people search for new and unique experiences that in turn provide new recreational opportunities, some of which may be best provided through outfitter services as discussed below.

Current Direction and Implementation of Forest Plan Direction:

Forest plan direction on the Bitterroot, Flathead and Lolo National Forests ranges from site-specific to general. This direction is limited with respect to programmatic guidance that pertains to recreational activities within forest or designated areas. Recreation Opportunity Spectrum (ROS) designations were identified in the forest plan documents, however these have not been applied as a primary recreation management tool. The ROS would help the forests manage within a spectrum of recreational experiences compatible with resource values. In addition, new listings under the Endangered Species Act have affected the way recreational activities are viewed and managed.

Each forest was to provide an array of recreation settings ranging from developed (providing facilities from camp units, toilets, boat ramps etc.) to primitive (no development). The plans discouraged any expansion of existing developments or construction of new developments unless specifically identified by name in the plan. The existing plans also stated the intent to provide for users with disabilities (Americans with Disabilities Act). Increased visitation and limited budgets have made it difficult to meet forest plan direction and provide for public need. On the Bitterroot National Forest private concessionaires, that direct the maintenance and operation of Forest Service owned facilities, have helped to relieve some of the immediate problems associated with budget. However, they are limited in their ability to meet the growing demand. Private development of new camping facilities, projected in the existing plans as a means to accommodate the growing visitation, has not materialized.

Increase in use and effects of new activities on the resources were not addressed programmatically in the existing forest plans. Most Management Area (MA) direction does not address the appropriateness of the area to accommodate the evolving level and type of use. Current direction minimally helps managers plan for recreational opportunities to meet the growing public demand while fulfilling the need to be compatible with other resources.

Where management area direction does address protection of various resources it falls short of stating which ones take precedence when conflicts arise. Winter recreation is minimally described and allowed in some areas. The 2001 OHV Amendment, may have changed the Recreation Opportunity Spectrum (ROS) potential from semi-primitive motorized to semi-primitive non-motorized by removing the option for cross country motorized use. In some cases this amendment also conflicts with the Flathead Amendment 19.

Forest managers need stronger and more consistent direction from the forest plans regarding dispersed and developed recreation in various settings across the forest. Rapid increasing demands for dispersed recreation need to be addressed to maintain the desired experience levels and resource conditions.

There is a need to provide tools to help managers across the zone decide which types of recreation uses and travel are appropriate and where. These tools will help:

- Address trends to determine how to best meet the demand for outdoor recreation.
- Provide guidance for resource use suitable within management areas.
- Address management of dispersed recreation activities to avoid over use and resource degradation.
- Address and plan for growing day use activities and expanded outfitter guide uses.

The public needs to know what to expect and count on for the next planning period regarding forest conditions, and management of recreation opportunities during every season of use.

Need for Change:

Recreation managers identified three components of recreation management that need change.

1. Increases in use and technology have elevated user conflict and contributed to resource damage. Managers need better guidance to help maintain desired conditions, reduce user conflict and protect resources.
2. Increased motorized use, both summer and winter is occurring in areas that may not be suited for those activities. Wildlife disturbance and resource damage has occurred and can be expected to continue.
3. Existing recreation and camping facilities are not meeting increased demand. Managers need to provide more development in a manor that will accommodate growing demand while reducing conflict with other resources.

In addition there is a need to validate or establish management criteria tied to seven established setting indicators, as defined by the ROS Primer and Field Guide 1990. This will prescribe actions needed to maintain and preserve experience levels and maintain resource condition. Setting indicators include:

a. **Access**. Access includes the type and mode of travel.
b. **Remoteness.** Remoteness refers to the number of encounters with other people experienced per day.
c. **Naturalness.** Refers to the naturalness of the setting and is tied to Scenery Management System (SMS).
d. **Facilities Management.** Refers to the level and type of site development
e. **Social Encounters.** Refers to the social aspect of experience levels as they refer to degrees of solitude.
f. **Visitors Impacts.** Refers to visitor impacts on the environment.
g. **Visitor Management.** Refers to the degree that visitors are controlled and the level of information and service provided.

1. Relevant Social and Economic Conditions

The demand for a greater variety of recreational activities has changed dramatically since the creation of the last planning document.

- New technology has brought about numerous and diverse opportunities for enjoying the National Forests.
- Day use opportunities are one of the fastest growing user activities and will continue to be so during the next few decades.
- Population in the planning area has grown considerably.
- With increased population growth and day use opportunities, opportunities for desired experiences such as seeing few groups may be diminished. This may cause displacement of certain users.
- With increased use, more conflicts may occur between users. This in part may be due to increased encounters, and in part to the different values and preferences of the varying user groups.

2. Implications of Continuing Current Management:

Recreation activities are changing and users are creating new recreation settings without the benefit of planning and consideration of other resources. Controversy exists over what uses are suitable, and where and how is it going to be accommodated. District recreation staff and some public groups are concerned with the increase in use of motorized vehicles in each of the three seasons, and particularly fall and winter. Some groups are concerned about snowmobile use in areas with potential for wilderness designation.

Facility maintenance and operation standards are often hard to meet due to increase in use and uncertain budgets. At the same time some existing facilities are inadequate to handle the growing user base, and changes in the types of recreational vehicles being brought to the forest (ie. spurs are to short, parking spaces to small, group activities not accommodated, water systems hard to maintain to standard
Continuation of current and amended management could result in:

- Forests failing to meet current and future needs of the public.
- Missing opportunities to educate a segment of the public in land stewardship.
- Localized overuse, which exceeds the capacity of facilities resulting in unwanted resource damage.

The land has a certain capability to provide recreation opportunities, within a desired experience and social setting, for the public. The current plans do not address the suitability of the land to accommodate the desired experiences consistent with resource values. As population trends increase, the ability to provide particular opportunities may decrease; and certainly the ability to provide opportunities within the same desired experience will change.

Decisions Needed:

- How and where will we determine ROS designation to maintain experience levels and resource compatibility?
- How and where should the forests provide motorized, non-motorized, and mechanized activities?
- How will we mange to reduce conflicting uses?
- How and where will the forests provide developed verses undeveloped opportunities?
- How and where will the forests provide opportunities for commercial verses non-commercial recreational experiences?
- How will we integrate access and travel management to be compatible with recreation opportunities?
- Where will new recreation uses for example, mountain bike trails, day hiking, cross-country skiing and wildlife viewing be accommodated?
- How will wilderness recreation use be managed to meet resource limitations and user expectations.

Decision space:

Decision space related to developed and dispersed recreation is bounded by the following parameters:

- The physical and biological capability of the land to handle a prescribed amount of human impact. This is expressed in terms of Limits of Acceptable Change as they relate to ROS and Opportunity Class designations.
- Recreation Opportunity Spectrum, which is an expression of a desired future condition that defines experience levels on land outside wilderness.
- Opportunity Class, which is an expression of desired future condition that defines experience levels on lands within wilderness.
- Budget limitations that affect program size and quality.

Scale and Scope of Analysis:

The scale of analysis will encompass all National Forest Lands on the Lolo, Bitterroot and Flathead and those portions of the Lewis and Clark and Helena National Forests within the Bob Marshall Wilderness. Assessment and analysis will encompass lands within special designations and general forest lands.

The scope may include coordination with other forest to assure consistency of management in like areas and other disciplines to assure an integrated approach to new uses that could have the potential to degrade habitats or other critical resource attributes.

Sub-Topic Outfitter Guide

Outfitting and guiding are historical professions the world over. From expeditions and explorers to modern day vacationers, there have always been people capable and willing to share their experience, knowledge, skill and equipment with people needing their assistance. As our society becomes more urbanized, primitive skills associated with outfitting and guiding become more important as a means of preserving a portion of our heritage. Changes in public demand and new technology have created a shift in use patterns and created new demand for non-traditional outfitting services. Current management direction is not formulated to handle or meet this change.

Background

Outfitter and Guide activities of many varieties are a common occurrence on lands and waters across the Western Montana Planning Zone. Commercial outfitters are in business to provide services to the public on general forest lands, within designated Wilderness, on Wild and Scenic Rivers and other water ways. Since implementation of the existing forest plans conditions have changed with respect to Outfitter and Guide Services:

- Growth has been fairly steady. However many of the fastest growing areas are located within the Western Montana Planning zone (for the time period 1990-2000, Flathead County- 25.98% Missoula County-21.75%, Ravalli County-44.22%).
- Public interest has expanded to include non traditional[2] shoulder season[3] and summer progressive[4] trips as well as continuation of traditional[5] outfitted fall hunting trips. Reallocation of use days from fall to summer use have not been not permitted under the current plans.
- Outfitters have a desire to provide these services but are prevented from doing so on the Flathead because of moratoriums placed on the issuance of new permits or the expansion of existing permits.
- New technology has expanded opportunities for providing new service.
- Demand for day use activities has increased dramatically providing opportunities for additional outfitter services.
- There has been an increase in the demand for institutional[6] permits.

[2] Non-traditional outfitters are those that are relative new comers to the industry and provide services to meet new interests such as bird watching, photography, wildlife watching, ecotourism, backcountry skiing, non-hunting horseback etc.

[3] Shoulder seasons are those outside the normal operating period, for example if the normal operating season runs June through September shoulder seasons would be those months prior to June and after September.

[4] Progressive trips are those that start at one location and move across the landscape camping in different locations through out the stay. Non progressive trips travel to a predetermined reserved site, camp in the same location for the entire stay and day trip from that location.

[5] Traditional use outfitters are those that have been around and in use for a significant period of time examples include big game hunting and fishing.

[6] Permits that include a variety of membership or limited consistency institutions such as religious, conservation, youth fraternal, service clubs and social groups; educational institutions such as schools, colleges, universities and similar common interest organization and associations.

- Adequate funding has not been available to complete NEPA, process new permit applications and administer existing permits to a desired standard.

Outfitter use has been capped at the levels established by the first round of forest plans and promises have been made to address these issues as part of the revision process by the Flathead National Forest. The Bitterroot and Lolo forests have permitted a limited number of non-traditional uses.

The public and commercial outfitters expect the new plan to address issues related to allocation of new permits, the process for selection of new outfitters, reallocation of use days to other time periods, and appropriate levels of use for the Bob Marshall Wilderness. Forest and District manager's credibility are at risk if these issues are not addressed to some degree.

In all instances the reasons to allow outfitting in an area is to assure that the public has reasonable access to National Forest opportunities, that the use resulting from it is of the highest quality, that the resources are protected and that the client learns the unique attributes of the environment. (FSM2721.02 Objective: To issue and administer special use permits for recreational uses that serves the public, promote public health and safety, and protect the environment.)

The Forest Service, Montana Department of Fish Wildlife and Parks and the Board of Outfitters (Department of Labor), have a shared interest in management of outfitter and guide operations. All three agencies work cooperatively to assure that game regulations are followed and that the public receives quality service. The Board of Outfitters authorizes operations for the state through the issuance of guide licenses consistent with federal land allocations and management policy, the department of Fish Wildlife and Parks manages the game and seasons while the Forest Service authorizes the use of land for associated activities

In Idaho, the Forest Service manages the land base while the Idaho Fish and Game sets seasons and manages wildlife populations. Traditional outfitters operate in areas designated by the Idaho Outfitter and guide Board. The Idaho Outfitter and Guide Licensing Board approve new outfitter license applications for all activities that are consistent with federal land allocation numbers and management policy. They take regulatory action against permit holders who violate the terms of their permit.

The following table shows the number of outfitters currently operating in the planning zone.

Table 12: Outfitters by category currently in operation on the three National Forests

Type	Bitterroot	Flathead	Lolo	Total
Big Game / Wilderness	17	26	3	**46**
Big Game / Outside Wilderness	23	14	42	**79**
Nontraditional / Wilderness	14	1	0	**15**
Nontraditional / Outside Wilderness	18	1	11	**30**
Wild & Scenic Outfitters / Wilderness	4	11	0	**15**
Wild & Scenic Outfitters / Outside Wilderness	3	7	0	**10**
Institutional / Wilderness	2	5	1	**8**
Institutional / Outside wilderness	2	3	7	**12**
Winter Outfitter-Inside Wilderness	0	2	0	**2**
Winter Outfitter-Outside Wilderness	1	1	1	**3**
Other Recreation Special Use Permits	42	10	80	**132**
Totals by Forest	**126**	**81**	**145**	**352**

The public as a whole continues to ask for a diversity of experiences, settings and opportunities on the National Forests. As interests and technology change, people search for new and unique experiences, which provide new opportunities for outfitter services.

Recent findings, developed by ICBMP, indicate a continued increase in recreational activities that may point to the eventual need for more outfitted opportunity.

District employees across the planning zone report:

- Continued requests for additional outfitting opportunities.
- Additional use days tied to nontraditional opportunities.
- Requests for new authorizations (nontraditional).
- Requests for new day use authorizations.
- Progressive permit opportunities.
- Requests for new institutional permits.
- Reauthorizations of priority service days from fall to summer use.
- Expanded use of Institutional permits.
- Dual authorizations[7] for existing permittees.

In addition to providing services to the public, outfitters make a substantial economic contribution to local communities. The sustainability for rural communities is dependant on creating a diverse economic base. Small businesses such as outfitting can help in this endeavor.

The Tourism and Recreation subcommittee for the Flathead Comprehensive Economic Development Strategy (CEDS) effort described the community's vision as needing additional commercial backcountry guides in wilderness and on other Forest service

[7] Dual authorizations would allow outfitters to provide services in areas unrelated to their existing permit. A big game outfitter would be authorized to provide fishing and float-boat services under one permit.

lands. An average person on a National Forest trip spent $126.68 within a 50-mile area, and an average of $1,198.27 was spent on all outdoor recreation related expenditures. In a typical year on the Lolo, visitors spent an average of $3,300.00 on all recreation related expenditures (equipment, recreation trips, memberships and licenses). Roughly 85% of Montana outfitter guide purchases are made in Montana (Missoula Area Economic Development Corporation 2002).

The forest plan revision process provides an opportunity to reassess outfitter and guide management policies to best to determine how services will be provided to accommodate new and nontraditional uses while meeting the intent of the law to manage National Forest resources.

Current Direction and Implementation of Forest Plan Direction:

The guidance shown in the table below applies to the forest as a whole. Guidance and direction more specific to management areas is found in Table 14..

Table 13: General forest plan direction applicable to all NF lands.

Forest	Direction
Bitterroot	New outfitter permits for traditional use will only be considered when services offered by existing outfitters are fully utilized. Permits operating at less than 100 service days will be considered for relinquishment or phasing out with the service days reallocated to current permit holders. Permits for new uses or uses not currently under permit will be considered.
Flathead	All outfitter activities will be authorized as per FSM 2721.53 Utilize outfitter guide evaluation procedure to respond to new application. This process evaluates the compatibility of the use with manual direction, provides a template for determining need, provides a template for compatibility with other uses and forest resources
Lolo	All future and outstanding permits will be made consistent with the Forest plan.

Table 14: Management Area specific direction.

Forest	Direction
Bitterroot	Issue no new outfitter permits (Selway Bitterroot). No additional outfitter camps will be permitted (Frank Church River of No Return).
Flathead	Manage float outfitters at current levels until further data indicates a need for modification. (W&S) Issue no outfitter special use permits (Jewel Basin). Administer permits in accordance with 2700 manual. Prior to making a decision on level of outfitter services issue no additional permits or expansion of use beyond 1978-1980 levels, based on annual permitted use for those years. (Great Bear and Bob Marshal Wilderness as part of the Bob Marshall Wilderness Complex). Recognize game retrieval on a day use basis. Issue no new permits until additional service is needed. The existing permit (1) may be transferred. (Missions)
Lolo	Administer permits in accordance with 2700 manual. Prior to making a decision on level of outfitter services issue no additional permits or expansion of use beyond 1978-1980 levels, based on annual permitted use for those years. (Great Bear, Bob Marshal). Establish level of outfitter uses following the completion of the LAC process. Increase on ground administration of outfitter permits. Encourage outfitter use and teaching of minimum impact techniques. Permits will be the basis for outfitter management in the wilderness. Managers will develop camp standards for outfitter operations. Spike camps will be evaluated for change or removal. Eliminate or reduce unauthorized outfitter use.(Bob Marshal)

In addition to general forest plan direction and MA specific direction the forests have adopted additional management constraints or actions.

- Districts on the Flathead have honored the policy of not issuing any new permits but have made promises to outfitters and the public that use allocation and the process for new permit issuance will be addressed by forest plan revision.
- A cap of 30,000 commercial use days in the Bob Marshal Complex is not being fully utilized by existing outfitters at present. Priority service days allocated to current permit holders are carried each year but are seldom all used.
- The Anaconda Pintler limits current commercial outfitters to the average of their high ten years. New use is looked at on a case by case basis.
- The Welcome Creek Wilderness has no limit on the number of outfitters or use days.

- The Rattlesnake Wilderness does not allow for hunting outfitters or overnight outfitted use however there are no limitations on the number of use days.
- The Mission Mountains Wilderness has a limitation on the number of outfitters but not on use days.
- The Frank Church and Selway Bitterroot areas have no overall cap on use days. Outfitter and Guide use is limited by priority use days, established through the permit process. River use is controlled by permits and a lottery for private use.

Need for Change:

1. Relevant Social and Economic Conditions

Forest plan direction on the Bitterroot, Flathead, and Lolo is fairly general and follows established guidance outlined by laws, manuals and handbooks. This direction is limited with respect to programmatic guidance that pertains to outfitter and guides operations within forest or designated areas. In addition, new listings under the Endangered Species Act have affected the way recreational activities are viewed and managed.

The demand for a greater variety of outfitter services has changed dramatically since the creation of the last planning document.

- Use and use patterns have changed creating a demand for nontraditional outfitter services. Reallocation of existing service days from traditional use to nontraditional use has been delayed pending the revision effort.
- New technology has brought about numerous and diverse opportunities for enjoying the National Forests.
- Day use opportunities are one of the fastest growing user activities and may continue to be so during the next few decades.
- Population in the planning area has grown considerably.
- Changes in the demographics of the population have created new opportunities and need for permitted services.
- The American public's ability to travel long distances and willingness to pay for outfitted services has changed the level and type of services desired today.
- Traditional uses such as big game outfitting have seen a decline since the last plan was implemented.
- Non-consumptive uses, such as photography of wildlife, are the fastest growing areas of interest.
- The Endangered Species Act has affected management and the way recreational activities are viewed. Grizzly bear and human safety requirements are changing outfitter operations and activities.
- With increased use there are greater opportunities for the expansion and dispersal of invasive plant species.

2. Implications of Continuing Current Management:

- Management of outfitter and guide use would remain unclear to managers and the public.

- Outfitter and Guide providers would not know how use was to be managed. This would hamper their ability to plan for the future and to maintain a viable operation.
- Forests would have fewer opportunities to utilize outfitters as a tool to educate the public in land stewardship practices.
- Illegal outfitting operations could become more common which could result in unwanted resource damage and public injury.
- Forests would not meet the intent of direction which require services and opportunities be provided to those users who are unable to provide them for themselves.

Decisions Needed:

- How will we manage outfitter guides to accommodate permit renewals, new use applications, and day use activities with flexibility to accommodate new technology and changes in public demand?
- How will we select of new outfitters.
- What new types of uses will be allowed and where?
- What management direction is needed to protect resources?
- How will we determine issuance of institutional special use permit and where?
- How will we determine allocation of commercial?

Decision space:

Decision space related to general outfitter and guide management has been limited by time-tested policies that direct basic management activities.
The remaining decision space is bounded by the following parameters:

- The physical and biological capability of the land to handle a prescribed amount of human impact. This may be expressed in terms of Limits of Acceptable Change.
- Recreation Opportunity Spectrum, which is an expression of a desired future condition that defines experience levels on land outside wilderness.
- Opportunity Class, which is an expression of desired future condition that defines experience levels on lands within wilderness.

Scale and Scope of Analysis:

The scale of analysis will encompass all National Forest Lands on the Lolo, Bitterroot and Flathead. Emphasis will be placed on the Bob Marshall Wilderness that also includes portion of the Lewis and Clark and Helena National Forests.

The scope may include coordination with other forest to assure consistency of management in like areas. It would also promote an integrated approach in dealing with new uses, which could potentially degrade habitats or other critical resource attributes.

Wilderness Recommendations and Roadless Areas

The revision topic for roadless areas and Wilderness Recommendation is complex and at many times confusing due to the number of categories covered by roadless designation and laws requiring inventory and protection.

Roadless designation may include the following:

- Wilderness Study Areas, and areas recommended for Wilderness designation
- Roadless Area Review and Evaluation (RARE) areas identified in Land and Resource Management Plan (LRMP) Appendix C roadless inventories.
- Inventoried Roadless Areas (commonly referred to as: Roadless Rule, Roadless Area Conservation Rule, RACR, and Clinton Initiative)
- Unroaded, those areas currently not inventoried that have potential to be placed into one of the two categories in the first bullet.

Wilderness Dams Management has been identified as a need for change on the Bitterroot National Forest. Wilderness Dams Management is discussed as a sub-topic under the broader heading of wilderness.

Background

Roadless Areas refer to areas of the National Forest which (1) are larger than 5000 acres or, if smaller than 5000 acres, contiguous to a designated wilderness or other identified undeveloped areas[8] (2) contain no improved roads[9] and (3) have been inventoried by the Forest Service for possible inclusion into the wilderness preservation system. Essentially these are areas without constructed and maintained roads and that are substantially undeveloped.

The Western Montana Planning zone has 60 inventoried roadless areas, a total of 1,676,807 acres, all with varying degrees of wilderness characteristics. Each of the 60 inventoried roadless areas (IRA's) were evaluated to determine their suitability as potential wilderness which provided guidelines for evaluation of capability, availability, and need.

Inventoried roadless area maps and write-ups are displayed in Appendix C of the Environmental Impact Statements (EIS) of the current Land and Resource Management Plan (LRMP 86, 87) for each forest.

[8] Those areas that satisfy the definition of wilderness found in section 2 (c) of the Wilderness Act
[9] Those areas that do not contain improved roads maintained for travel by passenger type vehicles.

Summaries of those identified areas are as follows:

- The **Bitterroot Forest Plan** identified a total of 405,187 acres as inventoried roadless. Of the acres identified as roadless, 76,800 were recommended for wilderness designation.
- The **Flathead Forest Plan** identified a total of 495,400 acres as inventoried roadless. Of the acres identified as roadless, 98,080 were recommended for wilderness designation.
- The **Lolo Forest Plan** identified a total of 776,190 acres as inventoried roadless. Of the acres identified as roadless, 223,600 were recommended for wilderness designation.

Laws and Regulations

The revision of Wilderness Recommendations and Inventoried Roadless Areas is required by regulation. These regulations require:

- An update of LMRP (86, 87) EIS Appendix C using FSH 1909.12.
- Evaluation and recommendation for potential Wilderness using CFR 21917(b) (2).
- Validation or proposed changes to existing Wilderness recommendations.

Roadless and Wilderness Assessment

Inventoried Roadless

A total of 1,676,807 acres were identified as inventoried roadless acres in the western Montana planning zone. Of that total 398,480 acres were recommended for Wilderness. The remaining 1,278,327 acres were assigned to different Management Areas (MA's) with a range of prescribed management activities. Some were consistent with preserving the roadless characteristics while others were assigned to MA's that allowed activities to include road construction, range improvement, timber harvest, recreation development, and habitat improvement projects. Depending on the size and intensity of these projects, land may be considered developed and subsequently removed from the roadless area, resulting in a change to roadless area size and boundaries.

Table 14 below shows the acres of roadless areas, and indicates acres where some level of active management was allowed.

Table 15: Area in acres and changes to inventoried roadless areas by Forest.

Forests	Total Forest Acres	Total Acres Inventoried Roadless Area (Appendix C)	Percent of Forest in Inventoried Roadless Areas	Forest Plan Acres of roaded emphasis	Acres of planned Develop-ment	Acres affected by roads.	*Acres of timber harvest
Bitterroot	1,583,272	405,187	26%	99,400	20,000	0	2,223
Flathead	2,340,122	495,430	21%	103,685	22,124	265	4,745
Lolo	2,077,823	776,190	37%	*	142,864	14,458	43,445
Total	6,001,217	1,676,807	28%	203,085	184,988	14,723	50,413

*Acres of harvest occurring after the signing of the forest plans were taken from current GIS records

Designation and management of roadless areas is one of the most contentious issues facing the forests today. Forest managers, as well as the public, do not agree on management strategies or designations for these areas. Many people are concerned about limitations placed on access and the effect it will have on local economies; others are concerned about the area's importance from a national prospective and cite the need to maintain and protect these values now and for future generations. While management activities have occurred, many of the roadless areas on all three forests have not been actively managed because of the controversy and contention surrounding these issues.

Wilderness Recommendation

Based on the evaluation ratings for the western Montana planning zone, a total of 398,480 acres were recommended for Wilderness; two areas on the Bitterroot, four on the Flathead, and five on the Lolo National Forest.

National Forest Management Act (NFMA) regulations direct that, "Unless otherwise provided by law, roadless areas within the National Forest System shall be evaluated and considered for recommendation as potential wilderness during the forest planning process" (36 CFR 219.17a). While the Forest Service recommends potential wilderness areas through this process; Wilderness Designation requires an Act of Congress. The following table shows areas identified in the roadless inventory process that are recommended for wilderness in the current forest plans. None of the proposed Wilderness areas have been designated as Wilderness.

Table 16: Specific areas recommended for wilderness by forest.

Forest	Number of Inventoried Roadless Areas	Acres of Inventoried Roadless Area	Roadless Recommended For Wilderness
Bitterroot	11	405,187	Blue Joint (28,500 ac) Selway-Bitterroot (48,200 ac)
Flathead	13	495,000	South Fork Flathead (Limestone Caves Area, 5,187ac) Middle Fork Flathead (near Slippery Bill Mtn., 6,295 ac) Swan Crest (Jewel Basin Hiking area, 31,783) Swan Front (from Holland Lake to Bunker Creek, 54,815)
Lolo	36	776,190	The Great Burn/Hoodoo (89,530 ac) Bob Marshall Addition * (69,250 ac) Selway-Bitterroot/Lolo Creek (3,990 AC) Quigg /Sliderock (60,830 AC)
Total	60	1,676,377	398,480

*The Bob Marshall Addition includes portions of the Great Bear-Bob Marshal-Scapegoat-Swan areas.

Wilderness Study Areas (WSA)

The Montana Wilderness Study Act (P.L. 95-150, May 23, 1977) was passed to protect nine areas, rejected as wilderness candidates during the Roadless Area Review process, while their potential for wilderness designation was studied. Two of the Wilderness Study Areas (WSA) are on the Bitterroot National Forest. These are the Bluejoint (66,000-acres) located on the West Fork District, and the Sapphire WSA located on the Bitterroot (44,000 acres) and the Beaverhead-Deerlodge (73,000 acres) National Forests.

The Act requires that study and a recommendation of these nine areas be made as to whether or not the area should be included in the National Wilderness Preservation System. The Act also required that the areas be managed to "maintain their 'presently existing' wilderness character and potential for inclusion in the National Wilderness Preservation System" as existed in 1977. It was implied in the Act that uses that existed in 1977, would be allowed to continue, including existing motorized or mechanized recreation, unless and until the areas were designated as wilderness, or the normal Forest Service Planning Process determines that off-road vehicle use is inappropriate in an area (MWA vs. USFS, 2003). The Sapphire Mountain WSA does have motorized recreation uses that existed in 1977. As a result of the study required by the legislation, the Blue Joint was recommended for wilderness, and the Sapphires was not. Congressional intent was that 'within seven years after the Act was passed, the President would make a recommendation to Congress as to whether the Study Areas should be included in the Wilderness System" (MWA vs. USFS, 2003). This has not happened.

Roadless Area Conservation Rule (RACR)

The Special Areas; Roadless Area Conservation Rule (RACR) was first published in the Federal Register on January 12, 2001 (66 FR 3244). This rule prohibited new road construction and timber harvest in roadless areas but was subject to exceptions. The intent of the rule is to provide lasting protection for inventoried roadless areas within the National Forest System in the context of multiple use management.

Even though RACR was signed in 2001, implementation has been delayed. The following chronology tracks events to present:

- On January 12, 2001, the Roadless Area Conservation Rule was signed by President Clinton, which prohibited new road construction and timber harvest in inventoried roadless areas subject to exceptions. The main emphasis was to provide lasting protection for the IRA's.
- In May of 2001, the US District Court enjoined the USDA from implementing the Roadless Area Conservation Rule.
- On June 7, 2001, the Chief of the Forest Service issued a letter stating that the Forest Service was committed to protecting and managing roadless areas as a component of the NFS. As part of that, letter he indicated he would be issuing direction regarding timber harvest and road construction in inventoried roadless areas. The interim direction was issued on December 20, 2001 (66 FR 65789)

- In December of 2002, the Ninth Circuit Court of Appeals reversed the May 2001 ruling by the District Court that had enjoined the Forest Service from implementing the Roadless Area Conservation Rule.
- In April 2003 the Ninth Circuit Court declined to review the decision as requested by the Idaho Plaintiffs.
- In April 2003 the Ninth Circuit court issued a mandate reversing and remanding the May 2001 preliminary injunction order.
- The Interim Directive expired June 2003.
- In July of 2003 a District Court in Wyoming issued an order to enjoin further implementation of the Roadless Rule. At this time a decision is pending.

Each Forest in the planning zone has a roadless area map depicting proposed Roadless Area Conservation Rule areas. The following table shows change in acres given implementation of RACR.

Table 17: Possible Forest adjustments to IRA's Appendix C acres if RACR is implemented.

Forest	Inventoried Roadless Acres Appendic C	Appendix C Acres not included in RACR	RACR Acres within Appendix C	RACR Acres added to Appendix C	RACR Acres dropped from Appendix C	Potential Adjustments to Appendix C if RACR is implemented
Bitterroot	405,187	875	405,248	472	403	29,000*
Flathead	495,430	623	478,165	227	396	17,000*
Lolo	776,190	696	699,073	58,018	0	19,000*

*Potential adjustments to IRA's area approximate due to differences in mapping procedures and scale. Adjustments and modifications to roadless areas are possible due to corrections in mapping procedures and changes due to harvest and road construction. In many instances the actual lines on the ground would not change, but the acreages reported may change.

The Roadless Area Conservation Rule has the potential to supercede existing management direction. Implementation of this rule is pending disposition of a lawsuit.

Current Direction and Implementation of Forest Plan Direction:

Plan direction varies with respect to recommended wilderness and roadless areas. Direction on Lolo and Bitterroot is relatively well defined but direction on the Flathead is fairly limited with respect to Wilderness recommendations and roadless areas. Tables 17 and 18 are summaries of forest direction for management of inventoried roadless areas and recommended wilderness on forest lands within the planning zone.

Table 18: General Forest Plan Direction Applicable to Recommended Wilderness and Montana Wilderness Study Act Areas.

Forest	Direction
Bitterroot	Subject to existing private rights and pending final action by congress, wilderness recommendations and Montana Wilderness Study Act areas will be managed to maintain existing wilderness character. Recommend areas of high wilderness attributes and longstanding support for wilderness addition to the National Wilderness System
Flathead	Recommended additional wilderness is shown on geographic maps. If not classified by congress as wilderness, each area is assigned non-wilderness management standards to apply in the interim. No action may occur which will reduce the areas wilderness attributes until a decision is made by congress. Any contiguous areas added to the Bob Marshal will be managed similar to the Bob. Jewel Basin, if added as wilderness, will be managed under current direction until new direction can be developed.
Lolo	General management direction on the Lolo Forest is silent for areas recommended wilderness.

Table 19: General Forest Plan Direction for Roadless Areas not Recommended for Wilderness

Forest	Direction
Bitterroot	Approximately 114,000 acres of roadless area were scheduled for eventual development. About 214,000 acres of roadless lands were managed for motorized and non motorized semi primitive recreation use and wildlife security. Vegetation treatment was not precluded as a means to accomplish management goals for these lands (ROD p.10)

Table 20: Management Area Specific Direction for IRA's and Recommended Wilderness.

Forest	Direction
Bitterroot	Roadless areas fell within a variety of management areas-MA1, 2, 3a, 3b, 3c, 5 and 6. MA 6 direction was specific to Montana Wilderness Study Act Areas and recommended wilderness areas. MA 6 was to manage these lands to maintain existing wilderness characteristics and potential for inclusion in the wilderness system. Some motorized recreation was allowed in these areas. Roadless areas within MA's 1 and 2 were managed for recreation activities associated with roads and motorized equipment. Vegetation management was allowed. MA 3a, 3b and 3c focused on visual and riparian resources. MA 5 lands emphasized motorized and non motorized semi primitive recreation activities.
Flathead	MA's 1, 2, 2a, 2b, 3, 11a, 12, 13, 15, 15a, 16, and 19 are land allocation that contain guidance related to roadless areas that have been recommended for wilderness. Guidance states that no action can occur that will reduce the areas wilderness attributes until Congress makes a decision on wilderness classification. No MA classification was set up solely for roadless area management. Portions of roadless areas, not recommended for wilderness, are scattered throughout the different MA's that allow varying degrees of management actions.
Lolo	MA's 6, 10, 11, 12, 28. Intent is to preserve the roadless resource. MA 6 specifically addresses some roadless areas. Roading may occur in some MA's due to development of mineral resources such as oil and gas. Management prescriptions include dispersed recreation management guidelines. MA 12 directs management of proposed wilderness to protect wilderness characteristics pending a decision as to their classification.

Need for Change:

Some areas recommended for wilderness within the planning zone may no longer meet qualifications for wilderness recommendation while other may have been overlooked. Recommendations for this round of planning may include additional areas for wilderness designation as well as validation or adjustment of existing recommendations made in current forest plans.

Interpretation of direction by Forests and Districts on what activities are appropriate in roadless areas and what activities are considered degrading to wilderness attributes have not been the same. These differences have led to management inconsistencies and confusion for the public especially in areas that have shared management responsibilities.

Growth in population and new technology has resulted in an increase in overall motorized use in both summer and winter activities. Recreationists are developing ATV trails in roadless areas that traditionally had little or no use. Winter users have continued to push the boundaries of useable terrain as machines become more powerful. Controversy has developed over whether over snow use is appropriate in these areas. This use was not expected to increase significantly in the first planning effort.

There is controversy over whether or not any motorized use should be allowed in areas recommended for wilderness and in inventoried roadless areas.

WSA areas have experienced an increase in motorized use through the planning period. Wilderness character was to be maintained at 1977 base levels. Forest management actions may have encouraged increased use, some types of which may have impacted wilderness character.

New scientific information has identified the importance of roadless areas for maintaining ecosystem integrity by providing source habitat for some species of wildlife and fish.

1. Relevant Social and Economic Conditions

The abundant un-roaded areas in the planning zone are an important national resource according to ICBEMP. Approximately 28% of the NF lands in the planning zone are within inventoried roadless areas. These areas provide opportunities for undeveloped recreational activities and are valued as a refuge for wildlife. As the population continues to grow, the importance and value of these un-roaded areas will increase.

Although portions of the public see wilderness and roadless areas as a valuable resource, these areas are highly politicized and contentious. Portions of the public, both local and national, perceive wilderness and roadless designations as a way to lock up land to prevent certain activities such as motorized recreation and timber production. Within a Forest, various communities and stakeholders may have very different views and values toward wilderness and roadless areas. It’s important to know what these differences are so managers can begin a dialogue with them regarding their concerns and issues.

The preceding decades have witnessed intense social and political interest in these areas. The public debate about the needs and values of these areas is not resolved as opponents in this controversy constantly react to evolving administrative perspectives on this issue.

Those who are against additional designation tend to note the economic value of the foregone resources, while those who are for designations describe incalculable values of preservation. Since each side of the controversy is using a different argument, nearly every scientific finding relevant to this topic is expressed as support for either side's position. There is one fact that further complicates decisions in this debate. Local populations are often more directly involved in public forums that support this debate compared to larger numbers of Americans living in different states, who also voice concerns about this issue. Special interest groups formed locally, express these national voices for each side of the argument. This all boils down to a social issue of how and what kinds of uses are appropriate for these areas.

2. Implication of Continuing Current Management:

Since current forest MA direction is so varied, continued management actions may affect roadless character in a number of ways.

- Current plans allocate inventoried roadless areas to MA's that allow for road construction, timber activities and motorized use. This may lead to a loss of the roadless resource and character.
- Areas with a semi-primitive non-motorized emphasis would likely retain their current undeveloped characteristics and roadless values.
- Areas with a development emphasis may reach a point where new development would affect both roadless area characteristics and overall size of the roadless area.
- Inconsistency in the management of designated roadless area would continue between districts and forests and could affect area size.
- The public would continue to be confused about what uses are appropriate in these inventoried areas. User made trails may continue to increase.

Direction with respect to recommended Wilderness is varied. Areas currently recommended for Wilderness are being managed in different ways; some allow motorized and mechanized uses while others do not. Some areas are adjacent to rural residential areas while some areas are away from all forms of development. To continue current management direction would result in situations very similar to those described in the roadless discussion. In addition, if Congress were to enact the current recommendations as they now stand, we can anticipate the following management problems:

- Many of the areas would contain roads or area modifications that are not consistent with wilderness classification.
- Areas adjacent to rural development would be off limits to fuels reduction programs designed to promote safe conditions in the wild land urban interface.
- Motorized trespass could be expected in areas adjacent to rural development.
- Some areas of heavy use would not meet standards for wilderness designation. Social and biological impacts could affect the wilderness quality of the area.

- Current recreational uses of the area that are not compatible with Wilderness designation would be displaced. In many instances lawsuits may result from displacement.
- There is potential for loss of wilderness characteristics, which could reduce the overall size of the roadless area considered for wilderness designation in the future.

RACR is currently in limbo. If the Roadless Rule were to be implemented those inventoried areas would be managed to maintain their current character.

- The intent of the Roadless Area Conservation Rule would be met.

Decisions Needed:

- Which areas are we going to recommend for wilderness?
- How will we manage them?
- Which recommended areas need adjustment or modification?

Decision space:

Decision space related to roadless / wilderness recommendations has been narrowed through the identification process.

IRA's

- Inventoried Roadless Areas found in current forest plan EIS (appendix C may be adjusted.
- There may be opportunities for identification and classification of other areas of significant size that possess notable roadless or wilderness qualities.
- An opportunity exists to modify boundary lines in an attempt to clarify their relationship to other non-federal ownership, forests and roaded features and rectify differences in mapping techniques/methodology.

RACR

- Roadless Areas Conservation Rule areas prohibit new road construction and timber harvest, but are subject to exceptions.
- There is currently no provision to update RACR boundaries.
- Boundary corrections should be identified, but held for implementation in the event the rule is enacted

The decision space is bounded by the following parameters:

- Existing condition.
- Existing Inventoried Roadless Areas.
- Pending lawsuits.
- Montana Wilderness Study Act

Scale and Scope of Analysis:

The scale of analysis will encompass existing recommended wilderness on National Forest Lands on the Flathead, Lolo and Bitterroot National Forests.

The scope of the assessment and analysis will include current inventoried roadless areas (EIS Appendix C), and other areas that are adjacent to existing identified locations. Inventoried roadless areas will be validated and changes made to reflect accurate boundary locations. RACR areas will be validated and boundary location noted where change may be appropriate; however, there is no current mechanism to implement noted changes.

Only Congress has the authority to designate Wilderness Areas; a boundary adjustment to wilderness lands is outside the scope of this analysis. Those areas recommended for wilderness in the current plans may be adjusted as part of the Forest Plan revision process. The Regional office is currently conducting a wilderness needs assessment to help in determining if additional wilderness lands are needed in the zone.

Sub-Topic: Wilderness Dams Management

Background

The Bitterroot Mountain Range above the Bitterroot Valley is a source of much of the water that flows down and through the Valley. Sixteen privately owned water impoundments exist in these mountains and within the Selway-Bitterroot Wilderness. These dams, which predated the 1964 Wilderness Act, harness the snowmelt for use in agriculture and water-based recreation.

Access to, and management of, these aging dams for the purpose of maintenance, operation, reconstruction and breaching is an ongoing issue for both the dam owners and the Forest Service. The Bitterroot N.F. continually struggles to balance the intent of the Wilderness Act, the rights/responsibilities of the private dam owners, and the strict requirements of federal dam safety regulations in maintaining these dams.

Most of the dams are approaching (or in some cases exceed) 100 years old. Six of the wilderness dams were built prior to the reservation of the national forest. The dams typically have earth and rock-filled log crib cores with native rock facings. In many cases, the log cribs have rotted, the fill has settled, and the facings have deteriorated after a century of use and exposure to the severe conditions found at high elevations. Thus, issues surrounding access, maintenance, operation, reconstruction and breaching of these dams can be expected to continue for the foreseeable future.

Laws and Regulations

The Forest Service has dual, and sometimes competing, responsibilities for managing dams within the Selway-Bitterroot Wilderness. Managers are required to protect wilderness character while also ensuring, from a regulatory standpoint, that these dams are maintained in a safe condition. Dam owners have certain rights, as well as the responsibility for maintaining and operating their dams in a safe manner.

a. Wilderness, Access and Private Rights

Wilderness is a unique and vital resource. In addition to offering primitive recreation opportunities, it is valued for its scientific and educational uses, as a benchmark for ecological studies, and for the preservation of historical and natural features. The Wilderness Act of 1964 established the Selway-Bitterroot Wilderness and provides the principal legal basis for its management.

The Wilderness Act, as enacted September 3, 1964, and amended October 21, 1978 (16 U.S.C.1131-1136), specifies congressional policy to secure for the American people an enduring resource of wilderness for enjoyment of present and future generations. It defines wilderness as areas untrammeled by people that offer outstanding opportunities for solitude and directs agencies to manage wilderness to preserve natural ecological conditions (sec. 2320.6). With certain exceptions, the Act prohibits motorized equipment, structures, installations, roads, commercial enterprises, aircraft landings, and mechanical transport. The Act permits mining on valid claims, access to private lands, fire control, insect and disease control, grazing, development of new water resource structures (upon approval of the President), and visitor use.

The dams and reservoirs within the Selway-Bitterroot Wilderness are authorized under various types of easements, which in effect gives them the same status as private property. The owners therefore have the legal right to access and use them. The Wilderness Act acknowledges this right (Section 5, part b) in its discussion of "valid occupancies," but does not provide specific direction for access or management of the dams. Later legislation, the Alaska National Interest Lands Conservation Act (ANILCA) of 1980 (16 U.S.C. 3210), requires the Forest Service to provide adequate access for owners of private property surrounded by public lands (Title XIII, Section 1323). Dam owners often also have water rights associated with the water impounded by the dams.

On the other hand, the Forest Service has the authority and responsibility to reasonably regulate access to and use of the dams to protect the National Forest and its resources. The Forest Service Manual (FSM 232-.5.15) states that "adequate access" is the "combination of routes and modes of travel that the Forest Service has determined will have the least-lasting impact on the wilderness resource and, at the same time, will serve the reasonable purposes for which State or private land or rights is held or used."

b. Dam Safety Regulations

The dam owners are legally obligated to maintain their dams in a safe condition, since the dams may pose a risk to people and property downstream. The Forest Service is responsible for ensuring that the dam owners meet this obligation. The Montana Dam Safety Act of 1993 eliminated the State's regulatory role for dams located on federal

lands, and passed that role to the federal land management agency - in this case, the Forest Service.

Various laws and policies address the issue of dam safety and oversight. They include:

- Federal Dam Inspection Act of 1972 (P.L. 92-377)
- Presidential Memorandum of October 1979
- Federal Guidelines for Dam Safety (June 1979)
- Water Resources Development Act of 1992
- Montana Dam Safety Act of 1993
- National Dam Safety Program Act of 1996 (P.L. 104-303)
- National Dam safety and Security act of 2003 (P.L. 107-310).

Hazard ratings are applied to dams based on the potential for loss of life and/or property should the dam fail. Several of the wilderness dams have a high hazard rating, indicating the potential for loss of life or property. Failure of moderate and low hazard dams may cause significant resource damage even though there is no loss of life or property. Hazard ratings can change as private land development occurs downstream from the dams.

Meeting current dam safety requirements with the primitive access and tools usually associated with wilderness is always a challenge, and in some cases is simply impossible. Furthermore, use of primitive access and tools may not allow work to be completed in the short operating seasons available at these high elevation sites.

Current Direction and Implementation of Forest Plan Direction:

Direction for Selway-Bitterroot Wilderness is contained in the Forest Plan Management Area 7c. The 1987 Forest Plan itself did not contain any direction specific to wilderness dams. Forest Plan Amendment #7 (1992), Selway-Bitterroot Wilderness General Management Direction, did address wilderness dams briefly. Amendment #7 notes that many dams exist in the wilderness, that they must be maintained in a safe condition, and that mechanical access and motorized equipment may be needed to maintain at least some of them. The amendment also summarizes some analysis requirements that re-state policy direction contained in the Forest Service Manual and handbooks.

In recent years, Forest line officers have sometimes allowed for use of motorized tools to complete maintenance on the dams, when an analysis has shown that this approach would minimize impacts of the project on wilderness. Managers have also allowed access via helicopter in some situations, again after a minimum impact analysis. In the case of a major reconstruction project on Bass Lake Dam, access via ground-based equipment was approved. Economic impacts to dam owners, effects on wilderness values and visitors, and dam safety are considered when making these decisions.

Need for Change:

Management of wilderness dams has become more critical and time-consuming as the dams age and deteriorate. Forest managers and dam owners are often dealing with urgent situations that must be addressed in short timeframes. The current approach of analyzing each request for motorized equipment use and mechanized access without meaningful direction in the Forest Plan yields decisions that are not timely for the dam owners, are unpredictable, and are sometimes inconsistent. The question of what constitutes "reasonable" access and use may appropriately vary somewhat depending on each situation, yet there is a need to provide some consistency and predictability in our approach. Dam owners and the public should know where the Forest Service intends to draw the boundaries of reasonable access and use. The Forest Plan can provide overriding direction to minimize inconsistency and unpredictability in how the Forest Service manages wilderness dams.

Federal and State dam safety requirements and construction quality control practices have become much more stringent since 1987 when the Forest Plan was signed. Placing modern technical requirements on dams constructed by primitive means increases the likelihood that motorized equipment and mechanized transport will be needed to meet safety standards. The tension between dam safety requirements and preservation of wilderness values has thus intensified since the Forest Plan was written. Since the Wilderness Act did not address how this dilemma should be resolved, it is an appropriate issue to address in the Forest Plan revision.

Both wilderness advocates and dam owners have litigated the wilderness dams issue in recent years. In addition, dam owners have become frustrated enough with the current situation to approach their United States Congressional representatives with a request for legislation on the issue. These are strong indications that this dilemma is ripe for some kind of resolution, and that there is a need to change the existing situation.

1. Relevant Social and Economic Issues

Operations, maintenance, reconstruction and breaching of these remote dams can be very expensive. Grant money is available, but such funding does not cover all types of work such as breaching. A great deal of the expense is associated with the remoteness of the dams and the difficult access. Attempting to accomplish work at the dams in a manner consistent with wilderness values can sometimes add to those costs. In addition, following federal requirements such as the National Environmental Policy Act (NEPA) and the Endangered Species Act increases the cost of managing these private dams, whether the costs are born by the Forest Service or by the dam owners.

Controversy over the Selway-Bitterroot Wilderness dams has at times reached the national level, but more commonly takes place locally. While other dams are located in designated wilderness throughout the country, often the wilderness legislation involved gave clear direction on how the dams were to be managed. That is not the case for the Bitterroot dams. Thus, every instance when the dam owners request to complete their work with non-primitive means generates controversy, with the dam owners on one side, wilderness advocates on the other, and the Forest Service attempting to balance private rights, wilderness values and dam safety.

Wilderness dams and the associated reservoirs have value beyond their primary purpose as sources of private irrigation water. The reservoirs are often destinations for hikers and are popular places to camp. They serve as reminders of the historic efforts of settlers to obtain water and create an agricultural lifestyle in the Bitterroot Valley. They may even play a role in maintaining the rural character of the valley by continuing to make agriculture a viable business. As agricultural pursuits become less viable, land may be subdivided or otherwise developed. Late season irrigation water from the dams helps keep the relatively arid Bitterroot Valley green throughout the summer. It is not clear what role the late-season irrigation water may play in replenishing ground water supplies in parts of the valley, but if there is a connection the benefits to valley residents are significant.

2. Implications of Continuing Current Management

Implementation of the current Forest Plan over the next 10-15 years would continue to provide little to no direction on how these dams are to be managed or how to balance between wilderness values, dam safety and private rights. The debate about reasonableness of conditions placed on access, operation, maintenance, reconstruction and breaching activities would continue, resulting in untimely, inconsistent and unpredictable decisions.

Decisions Needed:

- What overriding direction is needed to minimize inconsistency and unpredictability in how the Forest Service manages wilderness dams?
- What constitutes reasonable access to and use of privately-owned dams in the wilderness, and will therefore occur routinely?
- What modes of access and activities by the dam owners will be considered only on a case-by-case basis?

Decision Space:

Due to numerous laws, regulations and private property rights, line officer decision space is relatively narrow. Forest Service discretion in managing the dams is limited to: 1) authorizing "adequate" access to the facilities and prescribing "reasonable" terms and conditions for that access; 2) prescribing "reasonable" terms and conditions related to the owners' use of their dams. Any terms and conditions placed upon the access and use of the dams is solely for the purpose of protecting National Forest resources. The challenge is to provide adequate protection of resources to meet applicable laws and regulations and still provide the dam owners their rights to access, maintain and operate their facilities to federal dam safety standards.

Scale and Scope of Analysis:

The analysis will encompass all the dams on the Bitterroot National Forest portion of the Selway-Bitterroot Wilderness. No other wilderness dams within the Planning Zone involve the issues described here for the Bitterroot N.F. portion of the Zone. Management of dams outside designated wilderness areas is not as much of a dilemma and is therefore not considered as a major "need for change" topic.

Chapter 5 – Developing A Proposed Action And Alternatives

This Analysis of the Management Situation summarizes the identification of need for change to the forest plan based on new information, monitoring and evaluation, Forest Service Handbook and Manual direction, new regulations, and the working knowledge of Forest Service employees. Our next step is to take this information and develop a proposed action to initiate formal National Environmental Policy Act (NEPA) analysis in the winter of 2004. At that time a Revised Notice of Intent will be published in the Federal Register and formal "scoping," will be initiated. As stated in Chapter 1, we are encouraging early public participation now to be sure our identified need for change reflects public concerns as well as our own. Comments on this analysis of the management situation will be considered carefully as we develop the proposed action.

Proposed Action

The intent of a proposed action is to start a public dialogue that will allow us to identify issues and concerns and develop alternative courses of action that would address those concerns. The proposed action will generally focus on the need for change topics discussed in Chapter 4 and have enough detail to generate specific issues and concerns. For example, Wilderness Recommendation is one of the need for change topics. Rather than just ask for general public comment on this topic, our proposed action will discuss the wilderness recommendation made in the original forest plans and propose to either:

- Increase the amount of wilderness recommended;
- Decrease the amount of wilderness recommended;
- Make a similar wilderness recommendation as the one found in the original forest plans;

This proposed action is only a starting point for discussion and will not represent any kind of decision. Public comments and further analysis will likely cause significant modification of the agency's preferred course of action as we move through the process.

Alternative Development

Issues and concerns that people express about the proposed action will help us develop alternatives that would be analyzed in the Draft Environmental Impact Statement (DEIS) scheduled for publication in early 2005.

Regulations for implementation of the National Forest Management Act require that we formulate a broad range of reasonable alternatives according to NEPA procedures and provide an adequate basis for identifying the alternative that comes nearest to optimizing the mix of public benefits, consistent with the resource integration and management requirements.

The Interdisciplinary Team will begin to identify a range of alternatives that addresses significant issues. During this phase we plan to provide for as much two-way communication with interested citizens as possible.

Work in Progress

Several areas of work are underway. These include:

- Evaluation of inventoried roadless areas for recommended wilderness designation.
- Determination of rangeland capability.
- Determination of tentatively suited and appropriate lands for timber production.
- Biophysical assessments
- Existing condition of vegetation
- Roads analysis
- Wild and Scenic River eligibility

Chapter 6 – Literature Cited, Glossary, and Acronyms

Literature Citations

Agee J. and D. Johnson. 1988. Ecosystem Management for Parks and Wilderness. University of Washington Press. Seattle, WA. 237 p. *In:* Christensen, N.L., et al. 1996. The Report of the Ecological Society of America Committee on the Scientific Basis for Ecosystem Management. Originally published in Ecological Applications 6(3): 665-691.

Baker, Mark and Jonathan Kusel. 2003. Community Forestry in the United States: A Summary. Condensed from Community Forestry in the United States: Learning From the Past, Crafting for the Future. 27 p. Island Press, Washington, D.C.

Baker, William L., 1994. Restoration of landscape structure altered by fire suppression. Conservation Biology Volume 8, No. 3, September 1994, Pages 763-769.

Baker, William L., 1992. Effects of settlement and fire suppression on landscape structure. Ecology. 73(5). 1992. pp. 1879-1887.

Beckes, Barbara. 2003. Forest Planner, Lolo National Forest, personal communication.

Bosworth, Dale. 2003. "We Need a New National Debate". Speech to Isaac Walton League, July 17.

Bosworth, Dale. 2003. "Managing the National Forest System: Great Issues and Great Diversions". Speech to Commonwealth Club, April 22.

Carlin, Rob. 2003. Forest Planner Flathead National Forest, personal communication.

Christensen, N.L., et al. 1996. The Report of the Ecological Society of America Committee on the Scientific Basis for Ecosystem Management. Originally published in Ecological Applications 6(3): 665-691.

Davis, Kenneth P. 1966. Forest Management: Regulation and Valuation. 479 p. McGraw-Hill, Inc., New York, NY.

Davis, Linh. 2003. Botanist, Flathead National Forest. Personal communication.

De Leo, G.A. and S. Levin. 1997. The multifaceted aspects of ecosystem integrity. Conservation Ecology [online] 1(1): 3. www.consecol.org/vol1/iss1/art3 20pp.

Engstrom, R.T., S. Gilbert, M. Hunter, D. Merriweather [and others]. 1999. Practical applications of disturbance ecology to natural resource management. Pp 313-~~342~~(330) *in* R.C Szaro, N.C. Johnson, W.T. Sexton and A.J. Malk, eds. Ecological Stewardship: A Common Reference for Ecosystem Management. Elsevier Science. Oxford, U.K.

Federal Register. 2001. Urban Wildland Interface Communities Within the Vicinity of Federal Lands that are High Risk From Wildfire. USDA Forest Service, USDI Bureau of Indian Affairs, Bureau of Land Management, Fish and Wildlife Service, National Park Service. Friday, August 17, 2001.

Federal Register 2001. Special Areas; Roadless Area Conservation. January 12, 2001, at 66 FR 3244.

FEMAT (Forest Ecosystem Management Team). 1993. Forest Ecosystem Management: An Ecological, Economic, and Social Assessment. U.S. Government Printing Office, Washington, D.C., USA.

Forest Ecosystem Management Team (FEMAT). 1993. Forest Ecosystem Management: An Ecological, Economic, and Social Assessment. *In:* Christensen, N.L., et al. 1996. The Report of the Ecological Society of America Committee on the Scientific Basis for Ecosystem Management. Originally published in Ecological Applications 6(3): 665-691.

Goodland, R. 2002. Sustainability: Human, social, economic and environmental. Encyclopedia of global environmental change. John Wiley and Sons.

Hendricks, Paul. 2003. Status and Conservation Management of Terrestrial Molluscs of Special Concern in Montana--Draft. USDA Forest Service Region 1.

Hessburg, P.F.; Smith, B.G.; Kreiter, S.D.; and others. 1999. Historical and current forest and range landscapes in the interior Columbia River Basins and portions of the Klamath and Great Basins: Part I: Linking vegetation patterns and landscape vulnerability to potential insect and pathogen disturbances. PNW-GT-458. Portland, OR: USDA Forest Service. Pacific Northwest Research Station, 357 p.

Hillis, M.J., et.al. 1991. Defining elk security: the Hills paradigm. Pages 38043 in A.G. Christensen, L.G. Lyon and T.N. Lonner, comps. Proceedings of the Elk Vulnerability Symposium. Montana State University. Bozeman, MT. 330p.

Huston, Michael A. 1994. Biological Diversity: The coexistence of species on changing landscapes. Cambridge University Press. London, U.K.

Joslin, G,.and H. Youmans, coordinators. 1999. Effects of recreation on Rocky Mountain wildlife: A Review for Montana. Committee on Effects of Recreation on Wildlife, Montana Chapter of the Wildlife Society. 307pp.

Karr, James R. 1991. Biological integrity: A long neglected aspect of water resource management. Ecological Applications. 1:66-84.

Kirkendall, Jack, Forest Fire Management Officer, Bitterroot National Forest, January 2004.

Mace, R.D. and J.S. Waller. 1997. Final Report: Grizzly bear ecology in the Swan Mountains. Montana Fish, Wildlife and Parks. Helena, MT.

Missoula Area Economic Development Corporation, 2002. Assessment of the Economic Impact of the Wildfire Disaster of 2000 on Montana's Tourism and Forest Product Industries. 65p.

Mitchell, J.E. 1998. Estimated acreages of noxious weeds on National Forest System lands by Region. Rocky Mountain Research Station RPA Range Specialist Report. January 1998.

Montana Wilderness Association v. USFS. 2003. United States Court of Appeals for the Ninth Circuit, No. 01-35713 D.C. No. CV-96-00152-DVM Opinion. January 6, 2003.

Overbay, J.C. 1992. Ecosystem Management. pp. 3-15 In Taking an Ecological Approach to Management. U.S.D.A. Forest Service publication Wo-WSA-3. *In:* Christensen, N.L., et al. 1996. The Report of the Ecological Society of America Committee on the Scientific Basis for Ecosystem Management. Originally published in Ecological Applications 6(3): 665-691.

Patterson, Micheal E., Montag, Jessica M., & Williams, Daniel R. 2003. The urbanization of wildlife management: social science, conflict, and decision making. Urban Forestry Urban Greening (1):171-183.

Phister, R.D., et al, 1977. Forest habitat types of Montana. USDA Forest Service, Intermountain Forest and Range Experiment Station, Research paper, INT-34.

Quigley, T.M. and Arbelbide, S. J. 1997. An Assessment of Ecosystem Components in the Interior Columbia Basin and Portions of the Klamath and Great Basins: Volume II. USDA Forest Service Gen. Tech. Rpt., PNW-GTR-405. Portland, OR: USDA Forest Service, PNW Research Station. 4 vol. (Quigley, Thomas M., tech. ed.; Interior Columbia Basin Ecosystem Management Project: Scientific Assessment).

Samson, F. 1994. Conserving biological diversity in sustainable ecosystems. Transactions of the North American Wildlife and Natural Resources 57:303-320.

Servheen, C., .J. Waller, and P. Sandstrom, 2001. Identification and Management of Linkage Zones for Grizzly Bears Between the Large Blocks of Public Land in the Northern Rocky Mountains. In proceedings of the 2001 international conference on ecology and transportation. September 2001.

Sunrift Center for Sustainable Communities. 1995. Flathead Gauges: A Report to the Community on Long-term Trends in Sustainability. 32p.

Tapper, R. 1998. Animality, humanity, morality, society. In T. Ingold (ed.) What is an Animal. London: Unwin Hyman, Ltd.

U.S. Congress. House of Representatives. Committee on Resources. 1999. Western National Forests, Nearby Communities Are Increasingly Threatened by Catastrophic Wildfires. Testimony before the Subcommittee on Forests and Forest Health, Statement of Barry T. Hill, Associate Director, Energy, Resources and Science Issues, Resources, Community, and Economic Development Division. February 9, 1999. GAO/T-RCED 99-77. 21pp.

U.S. Congress. 1999. Reports to the Subcommittee on Forests and Forest Health, Committee on Resources, House of Representatives. Western National Forests: A Cohesive Strategy is Needed to Address Catastrophic Wildfire Threats. April 1999. GAO/T-RCED 99-65. 60 pages.

USDA Forest Service. 2003. Case Studies in Silviculture in 2002. "Development and Maintenance of Old Growth Communities at the Stand and Landscape Scales." USDA Forest Service, Northern Region, Forest and Rangeland Management.

USDA Forest Service. Northern Region Cohesive Strategy. 2003.
http://www.fs.fed.us/r1/cohesive_strategy/

USDA Forest Service. 2002. Bitterroot Forest Plan Monitoring and Evaluation, Fiscal Year 2001.

USDA Forest Service. 2002. Effectiveness monitoring project for streams and riparian areas within the Upper Columbia River Basin, Flathead National Forest. 2002. National Fish and Aquatic Ecology Unit.

USDA Forest Service. 2002. Lolo National Forest Forest Plan Monitoring and Evaluation Report, Fiscal years 2000 and 2001.

USDA Forest Service. 2002. Flathead National Forest. Moose Fire Burned Area Assessment.

USDA Forest Service. 2001. Off-Highway Vehicle, Environmental Impact Statement, USDA, Forest Service, Northern Region, 2001.

USDA Forest Service. Bitterroot National Forest. 2001. 1999 Monitoring Report.

USDA Forest Service. Bitterroot National Forest. 2001a. Bitterroot Fires 2000: Post-Fire Forest Plan Review.

USDA Forest Service. Flathead National Forest 2001. Flathead NF Forest Plan Monitoring and Evaluation Report, Fiscal Years 1998 to 2000.

USDA Forest Service. Lolo National Forest. 2001. Burned Area Assessment, Lolo National Forest Fires 2000.

USDA Forest Service. 2000. Strategic Plan (2000 Revision). Integrity and Accountability: a Framework for Natural Resource Management. Forest Service-682. 73 pp.

USDA Forest Service. Washington Office. 1999. Roads Analysis: Informing Decisions About Managing the National Forest Transportation System. Forest Service-643. August 1999.

USDA Forest Service. 1999. Sustaining the people's lands: Recommendations for stewardship of the national forests and grasslands into the next century. Committee of Scientists. March 15, 1999.

USDA Forest Service. 1998. Flathead Forest Plan Monitoring and Evaluation Report 1993-1997.

USDA Forest Service. 1998. Northern Region Overview: Focus on Ecosystem Health and Recreation. USDA Forest service, Northern Region, Missoula, MT. 192 pp.

USDA(b) Forest Service. 1996. Status of the Interior Columbia River Basin summary of scientific findings. PNW-GTR 385. Portland, OR.

USDA Forest Service. 1994. Bitterroot National Forest. Bitterroot Forest Plan Five-Year Review.

USDA Forest Service. 1993. Lolo National Forest. Lolo Forest Plan Five-Year Review.

USDA Forest Service. 1990. Synthesis of the Critique of Land Management Planning.

USDA Forest Service. 1987. Forest Plan: Bitterroot National Forest. Northern Region. September 1987. Missoula, MT.

USDA Forest Service. 1986. Forest Plan: Lolo National Forest. February 1986. Missoula, MT.

USDA Forest Service. 1985. Forest Plan: Flathead National Forest. Flathead National Forest. December 1985. Kalispell, MT.

USDA Forest Service and USDI Bureau of Land Management. 1997. An assessment of ecosystem components in the Interior Columbia Basin and portions of the Klamath and Great Basins, Volume 1. PNW-GTR 405. Portland, OR.

USDA(a) Forest Service and USDI Bureau of Land Management. 1996. Integrated scientific assessment for ecosystem management in the Interior Columbia Basin and portions of the Klamath and Great Plains. PNW-GTR-382. Portland, OR.

USDA and USDI. Agencies. 1995. Wildland and Prescribed Fire Management Policy: Implementation Procedures Reference Guide.

USDA Forest Service and USDI Bureau of Land Management. 1995. Ecosystem Analysis at the Watershed Scale: A Federal Guide for Watershed Analysis. Version 2.2. 29 pages. Portland, Oregon.

USDI Fish and Wildlife Service, 2001. The National Survey of Fishing, Hunting and wildlife related recreation. http://fa.r9.fws.gov/surveys/surveys.html

USDI Fish and Wildlife Service, 1996. The National Survey of Fishing, Hunting and wildlife related recreation. http://fa.r9.fws.gov/surveys/surveys.html

Wisdom, M.J. et al. 2000. Source Habitats for terrestrial vertebrates of focus in the interior Columbia Basin: broad-scale trends and management implications. Vol. 1 Gen. Tech. Rep. PNW-GTR-485. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 3 vol. (Quigley, Thomas M., tech. ed.; Interior Columbia Basin Ecosystem Management Project: scientific assessment).

Wisdom, M.J., et al. 1999. Wildlife Habitats in forests of the Interior Northwest. Transactions 64th North American Wildlife and Natural Resource Conference.

Wu, J. and O.L. Loucks, 1995. From balance of nature to hierarchical patch dynamics: A paradigm shift in ecology. The Quarterly Review of Biology 70: 439-456.

Glossary

Active Management -- Management approach in which humans actively manipulate ecosystems to achieve resource management objectives.

Adaptive Management -- A dynamic approach to resource management in which the effects of treatments and decisions are continually monitored and used, along with research results, to modify management on a continuing basis to ensure that objectives are being met. *The Dictionary of Forestry* (Helms 1998)

Appropriate Management Response – the response to a wildland fire is based on an evaluation of risks to firefighter and public safety, the circumstances under which the fire occurs, including weather and fuel conditions, natural and cultural resource management objectives, protection priorities, and values to be protected. The evaluation must also include an analysis of the context of the specific fire within the overall local, geographic area, or national wildland fire situation.

Best Management Practices (BMPs) -- A practice or usually a combination of practices that are determined by a State or a designated planning agency to be the most effective and practicable means (including technological, economic, and institutional considerations) of controlling point and nonpoint source pollutants at levels compatible with environmental quality goals.

Biodiversity -- The variety and abundance of species, their genetic composition, their communities, and the ecosystems and landscapes of which they are a part. As used in this document, biodiversity refers to native biological diversity; therefore, increases in species diversity resulting from the introduction of nonnative species would not constitute an increase in biodiversity.

Candidate Species -- Plant and animal species being considered for listing as endangered or threatened under the Endangered Species Act.

Carrying Capacity (recreation)-- the amount of recreation use an area can sustain without deterioration of quality.

Capital Investment-- Investment in facilities such as roads and structures with specially appropriated funds.

Coarse Filter Approach-- A concept of conserving species diversity by providing adequate representation (distribution and abundance) of ecological land units considering the historical range of variability based upon an understanding of the natural disturbance regimes.

Collaboration -- as used in this context means to work together in a cooperative relationship with Native American Tribes, agencies and the public in order to accomplish a desired goal.

Congressionally Designated Area -- Areas established by Congressional legislation, such as National Wildernesses, National Wild and Scenic Rivers, and National Recreation Areas.

Connectivity -- The arrangements of habitats that allows organisms and ecological processes to move across the landscape; patches of similar habitats are either close together or linked by corridors of vegetation. The opposite of ***fragmentation*** as defined below.

Cultural Resource -- The physical remains of human activity (artifacts. ruins, burial mounds, petroglyphs, etc.) and conceptual content or context (as a setting for legendary, historic, or prehistoric events, as a sacred area of native peoples, etc.) of an area of prehistoric or historic occupation

Desired Future Condition -- A portrayal of the land or resource conditions that are expected to result if goals and objectives are fully achieved.

Developed Recreation -- Outdoor recreation requiring significant capital investment in facilities to handle a concentration of visitors on a relatively small area. Examples are ski areas, resorts, and campgrounds (OHV EIS)

Developed Recreation Sites -- Relatively small, distinctly defined area where faculties are provided for concentrated public use, i.e. campgrounds, picnic areas and swimming areas.

Dispersed Recreation -- Outdoor recreation in which visitors are diffused over relatively large areas. Where facilities or developments are provided, they are more for access and protection of the environment than for the comfort or convenience of the people. (OHV EIS)

Disturbance -- Any relatively discrete event, either natural or human-induced, that causes a change in the existing condition of an ecological system.

Downed wood – Downed wood provides living spaces for a host of organisms and serves as long-term storage sites for moisture, nutrients, and energy (Harmon et.al. 1986). Downed wood consists of fallen trees, large dead branches, and large fragments of wood found on or near the forest floor. Downed wood has been previously called Coarse woody debris (CWD).

Ecological integrity -- Defined as the capability of supporting and maintaining a balanced, integrated, and adaptive community of organisms having species composition, diversity, and functional organization comparable to that of natural habitats of the region (Karr and Dudley 1981).

Ecological Process -- The actions or events that link organisms and their environment, such as predation, mutualism, successional development, nutrient cycling, Carbon sequestration, primary productivity, and decay.

Ecological Sustainability -- The maintenance or restoration of ecological system composition, structure, and function, which are characteristic of an area over time, including but not limited to ecological processes, biological diversity, and the productive capacity of ecological systems.

Ecosystem -- An ecosystem is an interacting system of living organisms and their environment.

Ecosystem Diversity -- The variety of ecological structures, communities, and processes across spatial scales such as regions, subregions, landscapes, and localities. Ecosystem diversity arises from variation in abiotic and biotic components and ecological processes over space and time.

Ecosystem management -- This is a management practice and philosophy aimed at selecting, maintaining, and/or enhancing the ecological integrity of an ecosystem in order to ensure continued ecosystem health while providing resources, products, or non-consumptive values for humans. An integral part of ecosystem management is the maintenance of ecologically significant structure and processes within the ecosystem. The actions taken reflect the management goals and range from protection from human influence through to an increasing intensity of intervention to serve human needs.

Ecosystem Sustainability -- The ability to maintain diversity, productivity, resilience to stress, health, and yields of desired values, resource uses, products, or services over time in an ecosystem while maintaining its integrity.

Environmental Impact Statement (EIS) -- the National Environmental Policy Act (NEPA) of 1969 authorized EISs. Prepared with public participation, they assist decision makers by providing information, analysis and an array of action alternatives, allowing managers to see the probable effects of decisions on the environment. Generally, EISs are written for large-scale actions or geographical areas.

Endangered Species -- a plant or animal species listed under the Endangered Species Act that is danger of extinction throughout all or a significant portion of its range.

Environmental Assessment (EA) -- Documentation of environmental analyze authorized by the National Environmental Policy Act (NEPA) of 1969. They are concise, analytical documents prepared with public participation that determine if an Environmental Impact Statement (EIS) is needed for a project or action. If an EA determines, an EIS is not needed, the EA becomes the document allowing agency compliance with NEPA requirements.

Environmental Impact Statement (EIS) – EISs were authorized by the National Environmental Policy Act (NEPA) of 1969 and defined in 40 CFR 1508.11 as a detailed written statement for major Federal actions **significantly** affecting the quality of the human environment.

Even-aged management -- A forest management method in which all trees in an area are harvested at one time or in several cuttings over a short time to produce stands that are all the same age or nearly so. This management method is commonly applied to shade-intolerant conifers and hardwoods.

Exotic -- Animals or plants that have been introduced to an area and are non-native.

Facilities -- Those facilities, such as Ranger Stations, work centers and cabins, which are used by the Forest Service in the management of the National Forest

Fee Site - A Forest Service recreation area in which users must pay a fee. Fee sites must meet certain standards and provide certain facilities as specified in the Forest Service Manual.

Fine Filter Approach – An analysis approach that focuses on individual species (species at risk, special interest) by which assessments are conducted to evaluate whether sufficient amount and distribution of habitat is provided under the coarse filter strategy.

Fire Exclusion--The disruption of a characteristic pattern of fire intensity and occurrence (primarily through fire suppression).

Fire intensity -- A general term relating to the heat energy released in a fire. FEIS usually uses more specific terms to describe rate of heat release.

Fire interval --Time (in years) between two successive fires in a designated area (i.e., the interval between two successive fire occurrences); the size of the area must be clearly specified (McPherson and others 1990).

Fire Regime --The fire pattern across the landscape, characterized by occurrence interval and relative intensity. Fire regimes result from a unique combination of climate and vegetation. Fire regimes exist on a continuum from short-interval, low-intensity (stand maintenance) fires to long-interval, high-intensity (stand replacement) fires.

Fire Regime Condition Class – An expression of the departure of the current condition from the historical fire regime.

- *Condition Class 1 = Fire regimes are within their historical range and the risk of losing key ecosystem components as a result of wildfire is low.*
- *Condition Class 2 = Fire regimes have been moderately altered from their historical range. The risk of losing key ecosystem components as a result of wildfire is moderate. Fire frequencies have changed by one or more fire-return intervals. Consequently, wildfires would likely be larger, more intense, and more severe and have altered burn patterns than that from historic times.*
- *Condition Class 3 = Fire regimes have changed substantially from their historical range. The risk of losing key ecosystem components is high. Fire frequencies have changed by two or more fire-return intervals. Consequently, wildfire would likely be larger, more intense, and more severe and have altered burn patterns than that from historic times.*

Fire-Adapted Ecosystem -- An arrangement of populations that have made long-term genetic changes in response to the presence of fire in the environment.

Fire-resistant species -- Species with morphological characteristics that give it a lower probability of being injured or killed by fire than a FIRE-SENSITIVE species, which has a "relatively high" probability of being injured or killed by fire (McPherson and others 1990)

Fire Severity -- Degree to which a site has been altered or disrupted by fire; also used to describe the product of fire intensity and residence time (McPherson and others 1990, Agee 1994, Rowe 1983). The effects of fire on resources displayed in terms of benefit or loss.

Fire Suppression -- The practice of controlling forest and rangeland fires in a safe, economical, and expedient fashion while meeting the natural resource objectives outlined in each forest's or grassland's land management plan.

Fire use -- the combination of wildland fire use and prescribed fire application to meet resource objectives.

Forest Health -- The perceived condition of a forest derived from concerns about such factors as age, structure, composition, function, vigor, presence of unusual levels of insects or disease, and resilience to disturbance. Individual and cultural viewpoints, land management objectives, spatial and temporal scales, the relative health of the stands that make up the forest, and the appearance of the forest at a point which influences the perception and interpretation of forest health.

Forest Plan Direction -- Allocation of areas to management prescriptions that consist of goals, objectives, standards and guidelines.

Forest Roads -- As defined in Title 23, Section 101 of the United States Code (23U.S.C. 101), any road wholly or partly within, or adjacent to, and serving the National Forest System and which is necessary for the protection, administration, and utilization of the National Forest System and the use and development of its resources. (FSM 7705)

Fragmentation -- The splitting or isolating of patches of similar habitat. Habitat can be fragmented by natural events or development activities.

Fuel -- Fuel is comprised of living and dead vegetation that can be ignited. It is often classified as dead or alive and as natural fuels or activity fuels (resulting from human actions, usually from logging operations). Fuel components refer to such items as downed dead woody material by various size classes, litter, duff, herbaceous vegetation, live foliage etc. (Brown 2000).

Fuel Loading -- The weight per unit area of fuel, often expressed in tons per acre or tonnes per hectare. Dead woody fuel loadings are commonly described for small material in diameter classes of 0 to 1/4-, 1/4 to 1-, and 1 to 3-inches and for large material in one class greater than 3 inches (Brown 2000).

Fuel Management -- The practice of evaluating, planning, and executing the treatment of wildland fuel to control flammability and reduce the resistance to control through mechanical, chemical, biological, or manual means, or by wildland fire, in support of land management objectives.

Full-Service Management --The administration, operation and maintenance of developed recreation sites to established standards with the objective to provide a pleasant recreation experience for the visitor and exceed the minimum health and safety needs of the visitors.

Geographic Area – Typically large areas within which people tend to have some commonality in terms of how they relate to the National Forest – where they reside, recreate, take interest in a Forest Service project, or are likely to participate in public forest planning discussions. This is a method by which to organize our public involvement activities in such a way that people who live, or have a special interest in, a given area can focus greater attention on that area when they are giving us planning input.

GIS – Geographic Information System; a form of computerized mapping and special analysis.

Goal -- A concise statement that describes a desired condition to be achieved sometime in the future. It is normally expressed in broad, general terms and is timeless in that is has no specific date by which it is to be completed. Goal statements form the principal basis from which objectives are developed.

Guideline -- Preferable or advisable course of action.

Ground Fire -- Fire that burns in the organic material below the litter layer, mostly by smoldering combustion. Fires in duff, peat, dead moss and lichens, and punky wood are typically ground fires (Brown 2000).

Habitat - (a) An area in which a specific plant or animal can naturally live, grow, and reproduce. (b) For wildlife, habitat is the combination of food, water, cover, and space.

Habitat Type – The land area that supports, or has the potential of supporting the same primary climax vegetation.

Historic Range of Variability (HRV) -- The variation in spatial, structural, compositional, and temporal characteristics of ecosystem elements as affected by minor climatic fluctuations and disturbances within the current climatic period. This range is measured during a reference period prior to intensive resource use and management. The range of historic variability is used as a baseline for comparison with current conditions to assess the degree of past change.

INFISH -- In 1995, the three forest plans were amended by the *Inland Native Fish Strategy* (INFISH), which provides additional protection and maintenance of aquatic ecosystems, including water quality. It is an interim aquatic conservation strategy that is intended to prevent further loss of inland and anadromous fish populations. Maintenance, protection, and improvement of water quality are key components of INFISH.

Integrated Pest Management -- Uses prevention techniques, early detection, diagnosis and treatment of pest organisms in cooperation and coordination with other agencies and organizations to control or eradicate invasive species. Treatment uses cost effective methods that minimize adverse effects to non-target species. Examples:

- Cultural - Silvicultural prescriptions, change of crop species
- Mechanical - Fire, cultivation, pruning, trapping
- Biological - use of parasites, predators, or disease
- Genetic - use of resistant species or cultivars
- Chemical - use of insecticides, herbicides, fungicides, etc

Integrity -- The capacity to support and maintain a balanced, integrated, and adaptive biological system having the full range of elements and processes expected in a region's natural habitat.

Interdisciplinary Team (IDT) -- A team representing several disciplines in compliance with *National Environmental Policy Act* to ensure coordinating planning of the various resources.

Interpretive Services -- Visitor information services designed to inform and educate Forest visitors improving their understanding, appreciation and enjoyment of National Forest resources

Invasive species – non-native plant species that are introduced into an area in which they did not evolve, and in which they usually have few or no natural enemies to limit their reproduction and spread. These species can cause environmental harm by significantly changing the ecosystem composition, structure, or processes, and can cause economic harm or harm to human health. See Noxious Weeds.

Inventoried Roadless Areas -- Undeveloped areas typically exceeding 5,000 acres that met the minimum criteria for wilderness consideration under the wilderness Act and that were inventoried during the Forest Service's Roadless Area Review and evaluation (RARE II) process, subsequent assessments, or forest planning. Those areas identified in a set of inventoried roadless area maps, contained in Forest Service Roadless Area Conservation, Final Environmental Impact Statement, Volume 2, dated November, 2000, which are held at the National Headquarters of the Forest Service, or any update, correction, or revision of those maps."

Ladder Fuels -- Shrubs and young trees that provide continuous fine material from the forest floor into the crowns of dominant trees (Smith 2000).

Landscape -- An area composed of interacting, and interconnected patterns of habitats (ecosystems) that are repeated because of the geology, landform, soil, climate, biota, and human influences throughout, the areas. Patches, connections, and the matrix form the landscape structure. Landscape function is based on disturbance events, successional development of landscape structure, and flows of' energy and nutrients through the structure of the landscape. A landscape is composed of watersheds and smaller ecosystems. It is the building block of biotic provinces and regions.

Linkage Zones -- The area between larger blocks of habitat where animals can live at certain seasons and where they can find the security they need to successfully move between these larger habitat blocks.

Management Area -- An area with similar management objectives and a common management description.

Management Direction -- A statement of multiple-use and other goals and objectives, the associated management prescriptions, and standards and guidelines for attaining them.

Management Indicator Species (MIS) -- Representative species selected for monitoring because their population changes are believed to indicate the effects of management activities.

Management Prescription -- Management practices and intensity (frequency and duration) selected and scheduled for application on a specific area to attain multiple-use and other goals and objectives.

Mixed-severity fire – Fires occur at an average of 25 to 100 years (Arno 1994). Burning patterns are complex, leaving a fine-grained mosaic on the landscape where 20 to 80 percent of the overstory is killed.

Monitoring and Evaluation (of forest plan implementation) -- Determine how well the objectives have been met and how closely management standards and guidelines have been applied. Can lead to recommendations for changes in management direction, amendments, or revisions to forest plans.

Montana Wilderness Study Act Area --Those areas that are required to be studied for their wilderness suitability under the Montana Wilderness Study Act of 1977 (Public Law 95-150). The Montana Wilderness Study Act encourages productive and enjoyable harmony between man and his environment; promotes efforts to prevent or eliminate prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man; enriches the understanding of the ecological systems and natural resources important to the Nation; and establishes a Council on Environmental Quality.

National Environmental Policy Act (NEPA) -- is the basic national law for protection of the environment, passed by Congress in 1969. It sets policy and procedures for environmental protection, and authorizes Environmental Impact Statements and Environmental Assessments to be used as analytical tools to help managers make decisions.

National Forest System Road -- A classified forest road under the jurisdiction of the Forest Service. The term "National Forest System roads" is synonymous with the term "forest development roads" as used in 23 U.S.C. 205. (FSM 7705)

National Recreation Trail -- Trails designated by the Secretary of the Interior or the Secretary of Agriculture as part of the National system of trails authorized by the National Trails System Act. National recreation trails provide a variety of outdoor recreation uses.

National Register of Historic Places -- A listing maintained by the National Park Service of areas that have been designated as being of historical significance. The Register includes places of local and State significance as well as those of value to the Nation as a whole.

National Wild and Scenic River System -- Rivers with outstanding scenic, recreational, geologic, fish and wildlife, historic, cultural or other similar values designated by Congress under the Wild and Scenic Rivers Act for preservation of their free-flowing condition

National Wilderness Preservation System -- All lands covered by the Wilderness Act and subsequent wilderness designations, irrespective of the department or agency having jurisdiction.

Native Species -- Animals or plants that have historically occupied a given aquatic or terrestrial area.

Non-lethal fire regime – Fires are frequent, with average fire intervals between 10 to 25 years and less than 20 percent of the overstory is killed.

Nonnative invasive species -- plant species that are introduced into an area in which they did not evolve, and in which they usually have few or no natural enemies to limit their reproduction and spread. These species can cause environmental harm by significantly changing the ecosystem composition, structure, or processes, and can cause economic harm or harm to human health.

Noxious weeds -- plant species designated as noxious weeds by the Secretary of Agriculture or by the responsible State official. These species are generally aggressive, difficult to manage, poisonous, toxic, parasitic, a carrier or host of serious insects or disease, and are nonnative, new, or uncommon to the United States. See Invasive Species.

Occupied Territory (for grizzly bears) -- An area where one would reasonably expect to find grizzly bear use occurring during most years.

Objective -- A concise, time-specific statement of measurable, planned results that respond to preestablished goals. An objective forms the basis for further planning to define the precise steps to be taken and the resources to be used in achieving identified goals.

Off-Highway Vehicles or Off-Road Vehicles -- Any motorized vehicle designed for or capable of cross-country travel on or immediately over land, water, sand, snow, ice, marsh, swampland, or other natural terrain; except that such term excludes (A) any registered motorboat, (B) any military, fire, emergency, or law enforcement vehicle when used for emergency purposed, and (C) any vehicle whose use is expressly authorized by the respective agency head under a permit, lease, license, or contract.

Old-growth forest -- Old single story forest – single canopy layer consisting of large or old trees. Understory trees are often absent, or present in randomly spaced patches. It generally consists of widely spaced, shade – intolerant species, such as ponderosa pine and western larch, and high frequency fire regimes. Old multi-story forest – a forest stand with moderate to high canopy closure – a multi-leveled and multi-species canopy dominated by large overstory trees; high incidence of large trees, some with broken tops and other indications of old and decaying wood; numerous large snags; and heavy accumulations of wood, including large logs on the ground.

Open House -- A variation of a public meeting that provides a more informal, one-on-one environment to disseminate information on an issue or process.

Opportunity Class -- Opportunity classes represent a spectrum of wilderness experience opportunities within the wilderness area. The classes describe the existing areas where different resources and social conditions are found. They identify management actions that are acceptable within each class.

ORV -- Outstandingly remarkable values are terms used to describe river related values that are rare and unuique or exemplify features that are significant at a comparative regional or national scale. Areas examnined to contain ORV's include Scenery, Recreation Geology, Fish Wildlife Prehistory and History

PACFISH – Stands for *Interim Strategies for Managing Anadromous Fish-producing Watersheds in Eastern Oregon and Washington, Idaho, and Portions of California* (PACFISH). It is an interim aquatic conservation strategy intended to prevent further loss of inland and anadromous fish populations and includes the identification of interim Riparian Habitat Conservation Areas (RHCAs), Riparian Management Objectives (RMOs), and Watershed Analysis requirements.

Pattern: The spatial arrangement of landscape elements (patches, corridors, matrix) that determines the function of a landscape as an ecological system.

Persons at One Time -- A recreation capacity measurement term indicating the number of people that can use facility or area at one time.

Planned Ignition -- A wildland fire ignited by management actions to meet specific objectives.

Planning Area -- The area of the National Forest System covered by a forest plan.

Potential Vegetation Group – Groupings of habitat types on the basis of similar moisture or temperature environment.

Prescribed Fire -- Any fire ignited by management actions to meet specific objectives. Used to reduce hazardous fuel levels, control unwanted vegetation, favor desired vegetation, and improve visibility and wildlife habitat. A written, approved prescribed fire plan must exist, and NEPA requirements must be met, prior to ignition. This term replaces management ignited prescribed fire.

Prescribed Fire Plan -- A plan for each prescribed fire. Plans are documents prepared by qualified personnel, approved by the agency administrator, and include criteria for a prescription.

Prescription -- A set of measurable criteria that: define the conditions under which a prescribed fire can be ignited; guides the selection of appropriate management strategies and indicates other required actions. Prescription criteria may include safety, economic, public health, environmental, geographic, administrative, social or legal considerations.

Primitive Recreation Setting -- A classification of the recreation opportunity spectrum that characterizes an essentially unmodified natural environment of a size or remoteness that provide significant opportunity for isolation from the signs and sounds of man and a feeling of vastness of scale. Visitors have opportunity to be part of the natural environment, encounter a high degree of challenge and use a maximum of outdoor skills but have minimum opportunity for social interaction.

Public Access -- Usually refers to a road or trail route over which a public agency claims right-or-way available for public use.

Public Involvement -- The process of keeping people abreast of what we are doing, and why; and engaging them in various forms of dialogue that will effectively and meaningfully integrate their values, preferences, and local knowledge into our decision making processes.**Public Issue --** A subject or question of widespread public interest relating to management of the National Forest System.

Rangeland (range) -- Land on which vegetation is predominantly grasses, forbs, or shrubs suitable for grazing or browsing. Rangeland may include some forest and barren land.

RARE (Roadless Area Review and Evaluation) -- A comprehensive process, instituted in June 1977 to identify roadless and undeveloped land areas in the National Forest System and to develop alternatives for both wilderness and other resource management

RARE II (Roadless Area Review and Evaluation) -- A subsequent review and evaluation of Roadless Areas on National Forest System lands that were inventoried by the Forest Service in 1979.

Recovery Area/Recovery Zone -- Areas in Idaho, Montana, Washington, and Wyoming delineated in the Grizzly Bear Recovery Plan as having habitat suitable for self-sustaining grizzly populations.

Recreation Capacity -- The number of people that can take advantage of a recreation opportunity at any one time without substantially diminishing the quality of the experience sought after.

Recreation Experience Level -- A concept used in recreation management to delineate the range of opportunities for satisfying basic recreation needs of people. A scale of five experience levels ranging from "primitive" to "highly developed".

Recreation Livestock Use -- The Forest Service system for recording recreation facility condition and use. The use of an area by domesticated animals, such as horses and mules, which are used primarily in conjunction with recreation activities.

Recreational Opportunities -- The combination of recreation settings, activities and experiences provided by the forest.

Recreation Opportunities -- The combination of recreation settings, activities, and experiences provided by the Forest.

Recreation Opportunity Spectrum (ROS) -- A system for planning and managing recreation resources that recognizes recreation activity opportunities, recreation settings, and recreation experiences along a spectrum or continuum.

Recreation Residence -- A house or cabin on national Forest land for seasonal recreation use that is not the primary residence of the owner.

Recreation Visitor Day (RVD) -- One visitor day equals 12 hours (one person for 12 hours, or 12 people for 1 hour. or any combination thereof).

Reduced Service Level Developed Recreation -- The administration, operation and maintenance of developed recreation sites to established standards with the objective to meet minimum health and safety needs of the visitor and keep the site open to public use.

Regeneration Harvest -- A cutting strategy in which trees are removed to favor environmental conditions for the establishment of a new stand of seedlings.

Research Natural Area (RNA): An area that illustrates or typifies for research or educational purposes, the important forest and range types in each forest region, as well

as other plant communities that have special or unique characteristics of scientific interest and importance. (36 CFR 1251.23)

Restoration -- Restoration of biophysical capacity by returning sites to previous desired conditions (Everett 1994).

Right-Of-Way -- Land authorized to be used or occupied for the construction, operation, maintenance, and termination of a project facility passing over, upon, under, or through such land.

Risk -- The probability of the occurrence of a hazard and/or the consequences of that hazard. (Hazards arc undesirable events.)

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

> ***a. Classified Roads.*** Roads wholly or partially within or adjacent to National Forest System lands that are determined to be needed for long-term motor vehicle access, including State roads, County roads, privately owned roads, National Forest System roads, and other roads authorized by the Forest Service (36 CFR 212.1).
>
> ***b. Temporary Road*s**. Roads authorized by contract, permit, lease, other written authorization, or emergency operation, not intended to be a part of the forest transportation system and not necessary for long-term resource management (36 CFR 212.1).
>
> ***c. Unclassified Roads***. Roads on National Forest System lands that are not managed as part of the forest transportation system, such as unplanned roads, abandoned travel ways, and off-road vehicle tracks that have not been designated and managed as a trail; and those roads that were once under permit or other authorization and were not decommissioned upon the termination of the authorization.

Road analysis -- an integrated ecological, social, and economic science-based approach to transportation planning that addresses existing and future road management options.

Road construction -- activities that result in the addition of road miles to the forest transportation system.

Road Decommissioning -- Activities that result in the stabilization and restoration of unneeded roads to a more natural state.

Road Maintenance -- The ongoing upkeep of a road necessary to retain or restore the road to the approved road management objective.

Road Maintenance Level -- Describes the relative degree of maintenance required for a given road. The five levels of maintenance are described below.

> ***Level 1.*** *Closed to vehicular traffic, but may be open or suitable to non-motorized traffic. Basic custodial maintenance is performed to keep damage to adjacent resources to an acceptable level and to perpetuate the road to facilitate future management activities. Emphasis is normally given to maintaining drainage facilities and runoff patterns. Planned road deterioration may occur at this level. Appropriate traffic management strategies are "prohibit" and "eliminate."*
>
> ***Level 2.*** *Open for use by high clearance vehicles only. Passenger car traffic is not appropriate. Traffic is normally minor, usually consisting of one or a combination of*

administrative, permitted, dispersed recreation, or other specialized uses. Log haul may occur at this level. Appropriate traffic management strategies are either to (1) discourage or prohibit passenger cars or (2) accept or discourage high clearance vehicles.

Level 3. *Open for use by a prudent driver in a standard passenger car. User comfort and convenience are not considered priorities. These roads are typically low speed, single lane with turnouts and spot surfacing. Some roads may be fully surfaced with either native or processed material. Appropriate traffic management strategies are either to "encourage" or "accept." "Discourage" or "prohibit" strategies may be employed for certain classes of vehicles or users.*

Level 4. *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. However, some roads may be single lane. Some roads may be paved and/or dust abated. The most appropriate traffic management strategy is "encourage." However, the "prohibit" strategy may apply to specific classes of vehicles or users at certain times.*

Level 5. *Roads that provide a high degree of user comfort and convenience. These roads are normally double lane, paved facilities. Some may be aggregate surfaced and dust abated. The appropriate traffic management strategy is "encourage.*"

Roaded Natural Setting -- A classification on the recreation opportunity spectrum where timber harvest or other surface use practices are evident. Motorized vehicles are permitted on all or parts of the road system (Don't like this definition).

Roadless Area -- A National Forest area which (1) is larger than 5000 acres or if smaller than 5000 acres, contiguous to a designated wilderness or primitive area; (2) contains no roads and (3) has been inventoried by the Forest Service for possible inclusion in the wilderness preservation system.

Roadless Area Review and Evaluation (RARE) -- A comprehensive process, instituted in June 1977 to identify roadless and undeveloped land areas in the National Forest System and to develop alternatives for both wilderness and other resource management

Roadless Area Review and Evaluation (RARE II) -- A subsequent review and evaluation of Roadless Areas on National Forest System lands that were inventoried by the Forest Service in 1979.

Rotation - The number of years required to establish and grow trees to a specified size, product, or condition of maturity.

Rural Setting -- A classification on the recreation opportunity spectrum that is cauterized by substantially modified natural environment. Resource modification and utilization practices are to enhance specific recreation activities and to maintain vegetative cover ad soil. Sights and sounds of humans are readily evident, and the interaction between users is often moderate to high.

Salvage -- an intermediate cutting made to remove trees that are dead or in imminent danger of being killed by injurious agents.

Scenic Easement -- A legal interest in the land of another which allows the easement holder specified uses or rights without actual ownership of the land: in this case, control of the use of the land adjacent to public highways, parks, and rivers. It may provide something attractive to look at within the easement area, an open area to look through to see something attractive beyond the easement itself, or a screen to block out unsightly views beyond the easement area.

Scoping -- activities in the early stages of preparation of an environmental analysis to assess public opinion, receive comments and suggestions, and determine issues during the environmental analysis process.

Semi-primitive Setting -- A classification on the recreation opportunity spectrum that characterizes a predominately natural or natural appearing environment of a moderate to large size. Concentration of users is low, but there is often evidence of other area users. The area is managed in such a way that minimum onsite controls and restrictions nay be present, but are subtle.

Scenery Management System -- Is a tool for integrating the benefits, values, desires and preferences regarding aesthetics and scenery for all levels of management planning. It provides an overall framework for the orderly inventory, analysis, and management of scenery that applies to every acre of Notational Forest Land.

Sense of place -- the aesthetic, nostalgic, or spiritual effects of physical locations on humans based on personal, use-oriented or attached-oriented relationships between individuals and those locations. The meaning, values, and feelings that people associate with physical locations because of the experiences they had there.

Sensitive species -- those plant and animal species in which a population viability is a concern, as evidenced by significant current or predicted downward trends in population numbers or density, or by significant current or predicted downward trends in habitat capability that would reduce a species' existing distribution.

Seral Stage: The series of plant community conditions that develop during ecological succession from bare ground (or major disturbance) to the climax stage. *Early seral stage* is a condition in which plants are present soon after a disturbance or at the beginning of a new successional process (seedling or saplings in a forest). Grass, herbs, or brush are abundant, diversity is high. A *mid-seral stage* is characterized in a forest setting has almost full crown closure in pole-to medium-sized trees. Understory vegetation and species diversity is less due to tree shading. A *late seral stage* is a condition with mature trees, often of old forest character. Tree growth has slowed, mortality has increased, understory forage is minimal, structural diversity may be high, and species diversity is generally less.

Shade-intolerant trees - Trees that cannot thrive in the shade of larger trees.

Shade-tolerant trees -- Trees that can thrive in the shade of larger trees.

Shrub -- A plant that has persistent woody stems and a relatively low growth habit, and that generally produces several basal shoots instead of a single bole. It differs from a tree by its low stature and form.

Shrub land -- Areas on which vegetation is dominated by shrubs, provided these areas do not qualify as built-up land or cultivated cropland.

Silviculture -- The art, science, and practice of establishing, tending, and reproducing forest stands of desired characteristics. It is based on knowledge of species characteristics and environmental requirements.

Snag – a standing dead tree.

Special Use Permit -- A permit issued under established laws and regulations to an individual, organization, or company for occupancy or use of National Forest land for some special purpose.

Standard -- Limitations on management activities that must be complied with.

Stand-replacement fire regime -- Fire regime in which fires kill or top-kill aboveground parts of the dominant vegetation, changing the aboveground structure substantially. Approximately 80% or more of the aboveground, dominant vegetation is either consumed or dies as a result of fires. Applies to forests, shrublands, and grasslands (Smith 2000).

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

Suppression -- A management action intended to extinguish a fire or alter its direction of spread.

Sustainable -- The ability to maintain a desired ecological condition or flow of benefits over time.

Sustainability -- Satisfying present needs without compromising the ability of future generations to meet their needs.

Thinning -- (a) The cutting down and/or removing of trees from a forest to lessen the chance of a ground fire becoming a crown fire; a method of preparing an area so that a prescribed fire can be more easily controlled. Thinning influences the available amount of fuel and fuel management, and it can indirectly affect fuel moisture content and surface wind speeds. (b) A culture treatment made to reduce stand density of trees primarily to improve growth, enhance forest health, or recover potential mortality.

Threatened species -- any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range and which the appropriate Secretary has designated as a threatened species.

Total Maximum Daily Load (TMDL) -- a calculation of the maximum amount of a pollutant that a water body can receive and still meet water quality standards, and an allocation of that amount to the pollutant's sources.

Values at risk or values to be protected – Includes property, structures, physical improvements, natural and cultural resources, community infrastructure, and economic, environmental, and social values.

Viability -- the ability of a population of a plant or animal species to persist for some specified time into the future. Viable populations are populations that are regarded as having the estimated numbers and distribution of reproductive individuals to ensure that its continued existence is well distributed in a given area.

Visitor Information Service (VIS) -- A site that provides interpretative information, (directional, historical, statistical) located at Forest historical sites, overlook sites, or special interest areas.

Visual Resource -- The composite of basic terrain, geologic features, water features, vegetative patterns, and land use effects that typify a land unit and influence the visual appeal the unit may have for visitors.

Watershed Restoration -- Reestablishment of the structure and function of a watershed, including the physical and biological attributes of aquatic, riparian, and upland components.

Wilderness -- a Congressionally designated area defined in the Wilderness Act of 1964 in the following way: A wilderness, in contrast with those areas where man and his own works dominate the landscape, is hereby recognized as *an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain*. An area of wilderness is further defined to mean in this Act an area of undeveloped federal land retaining its primeval character and influence, *without permanent improvements or human habitation*, which is protected and managed so as to preserve its natural conditions and which – (a) generally appears to have been affected primarily by the forces of nature, with the imprints of man's work substantially unnoticed; (b) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (c) has at least five thousand acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and (d) may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value.

Wilderness Attribute -- One of four attributes required or mentioned in the Wilderness Act, i.e. natural integrity, apparent naturalness, outstanding opportunity for solitude, and primitive recreation. Supplemental attributes are outstanding ecological, geological, scenic, and historical.

Wilderness Study -- An analysis to determine an area's appropriateness, cost, and benefits for addition to the National Wilderness Preservation System.

Wildland -- Any area under fire management jurisdiction of a land management agency**.**

Wildland Fire -- Any nonstructural fire that occurs on wildland.

Wildland Fire Suppression -- An appropriate management response to wildland fire that results in curtailment of fire spread and eliminates all identified threats from the particular fire. All wildland fire suppression activities provide for firefighter and public safety as the highest consideration, but minimize loss of resource values, economic expenditures, and/or the use of critical firefighting resources.

Wildland Fire Use --The management of naturally ignited wildland fires to accomplish specific prestated resource management objectives in predefined geographic areas outlined in Fire Management Plan's. Operational management is described in the Wildland Fire Implementation Plan. Wildland fire use is not to be confused with fire use, which is a broader term encompassing more than just wildland fires.

Wildland-urban interface -- the line, area, or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels. Because of their location, these structures are extremely vulnerable to fire should an ignition occur in the surrounding area.

Acronyms

AMS	Analysis of the Management Situation
ASQ	Allowable Sale Quantity
ATV	All Terrain Vehicle
BLM	Bureau of Land Management
BMP	Best Management Practices
CEDS	Comprehensive Economic Development Strategy
CFR	Code of Federal Regulations
CWA	Clean Water Act
DEIS	Draft Environmental Impact Statement
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FEIS	Final Environmental Impact Statement
FIA	Forest Inventory and Analysis
FMA	Fire Management Area
FMP	Fire Management Plan
FMU	Fire Management Unit
FSH	Forest Service Handbook
FSM	Forest Service Manual
GIS	Geographic Information System
HRV	Historic Range of Variability
ICBEMP	Interior Columbia Basin Ecosystem Management Project
IDT	Interdisciplinary Team
INFS	Inland Native Fish Strategy
IRA	Inventoried Roadless Area
KIPZ	Kootenai Idaho Panhandle Plan Revision Zone
LAC	Limits of Acceptable Change
LNF	Lolo National Forest
LRMP	Land and Resource Management Plan
LTSYC	Long-Term Sustained Yield Capacity

MFWP	Montana Fish, Wildlife & Parks
MWSA	Montana Wilderness Study Area
MMBF	Million Board Feet
MMCF	Million Cubic Feet
MUSYA	Multiple Use Sustained Yield Act
NEPA	National Environmental Policy Act
NF	National Forest
NFS	National Forest System (includes national forests and grasslands)
NFMA	National Forest Management Act
NFMAS	National Fire Management Analysis System
NFP	National Fire Plan
NOI	Notice of Intent
NPF	Not Properly Functioning
NRA	National Recreation Area
NRT	National Recreation Trail
NSA	National Scenic Area
NSO	No Surface Occupancy
NVUM	National Visitor Use Monitoring
NWA	National Wilderness Area
NWPS	National Wilderness Preservation System
NWSR	National Wild and Scenic Rivers
OHV	Off-highway vehicle
ORV	Outstandingly Remarkable Value
PCPI	Per Capita Personal Income
PFC	Properly Functioning Condition
PNV	Present Net Value
RACR	Roadless Area Conservation Rule
RARE	Roadless Area Review and Evaluation
RHCA	Riparian Habitat Conservation Area
RMO	Riparian Management Objective
RN	Roaded Natural
RNA	Research Natural Area
ROD	Record of Decision
ROS	Recreation Opportunity Spectrum
ROW	Rights of Way
RPA	Resources Planning Act
RVD	Recreation Visitor Day
SIA	Special Interest Areas

SMS	Scenery Management System
TAMM	Timber Assessment Market Model
T&E	Threatened and Endangered
TES	Threatened, Endangered and Sensitive
TMDL	Total Maximum Daily Load
USC	United States Code
USDA	United States Department of Agriculture
USDI	United States Department of the Interior
USFWS	United States Fish and Wildlife Service
VQO	Visual Quality Objective
VRU	Vegetation Response Units
W&SR	Wild and Scenic River
WFIP	Wildland Fire Implementation Plan
WFSA	Wildland Fire Situation Analysis
WMPZ	Western Montana Planning Zone
WSA	Wilderness Study Area
WUI	Wildland Urban Interface

AMS Contributors and WMPZ Team Members

Team Leaders:

WMPZ Team Leader:	Lee Kramer	Lolo NF
Assistant Team Leader and Public Affairs:	Chuck Sperry	Bitterroot NF

Revision Topics:

Access Management:	Marsha Moore	Flathead NF
Ecosystem Management:		
Vegetation:	Beverley Yelczyn	Lolo NF
Diversity and Species Viability:	Pat Sweeney	Lolo NF
Water Quality:	Craig Kendall	Flathead NF
Forest Products and Uses:	Ken Hotchkiss	Bitterroot NF
National Forest and Private Land Interface:	Beverley Yelczyn	Lolo NF
Recreation and Outfitter Guide Management:	Ed Weber	Flathead NF
Recommended Wilderness and Roadless Areas:	Ed Weber	Flathead NF
Wilderness Dams:	Sue Heald	Bitterroot NF

Document and Team Support:

GIS Support and Data Analyst:	Don Krogstad	Flathead NF
Writer and Editor:	Claudia Narcisco	Lolo NF
Administrative Assistant:	Amy Lehtola	Bitterroot NF