

United States
Department of
Agriculture

Forest
Service

Intermountain
Region

Wasatch-Cache
National Forest

February 2003



Final Environmental Impact Statement Summary Wasatch-Cache National Forest



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Introduction

This section summarizes the key content of the Final Environmental Impact Statement (FEIS) for Forest Plan Revision for the Wasatch-Cache National Forest. It can also be used with access to the Wasatch-Cache National Forest website (www.fs.fed.us/wcnf) where the entire documents are posted along with numerous maps showing where the forest management being described would occur.

Purpose and Need (FEIS Chapter 1)

The Proposed Action

The Forest Service proposes to revise the Land and Resource Management Plan (hereafter referred to as forest plan) for the Wasatch-Cache National Forest in order to meet legal and regulatory requirements, and to address changes, issues, and concerns that have arisen since the forest plan was originally released in 1985 (USDA Forest Service 1985).

Purpose

The purpose of the proposed action is to provide a revised Wasatch-Cache Forest Plan that will: 1) guide all natural resource management activities on the forest, 2) address changed conditions and direction that have occurred since the original plan was released, and 3) meet the objectives of federal laws, regulations, and policies. Specifically the revised forest plan will provide management direction for identified revision topics and forest-wide management direction in a framework of ecosystem management and sustainability.

In 1992, the Forest Supervisor determined that revision was needed because significant changes had occurred in conditions and demands. The conclusion was based on results published in the forest-wide monitoring report (USDA Forest Service 1992). This report found “serious weaknesses” which when taken in aggregate, resulted in a conclusion that a forest plan revision should be initiated.

Needs For Change

In the *Preliminary Analysis of the Management Situation Summary* (USDA Forest Service 1999) each resource area was examined along with the 1992 monitoring results and specific needs were identified where management should be changed or is required to be changed during revision. Ten areas were identified and are referred to as revision topics. In addition there is a need to change the basic framework and organization of the plan to reflect the integrated nature of ecosystem management. An ecosystem framework broadens the perspective from that of sustaining commodity outputs to that of sustaining ecological processes and a wide variety of goods, services, conditions, and values.

1. Watershed Health. Management direction for watershed health and condition is needed to maintain or restore the integrity of watersheds and soil quality. Healthy watersheds meet the needs of sustainable terrestrial and aquatic ecosystems and supply values for people such as clean drinking water, recreation and commodity uses. The riparian and water quality guidance in the 1985 plan sets limits on management. A more proactive approach that describes the desired watershed conditions to be achieved will provide a basis for needed management protection.

2. Biodiversity and Species Viability. There is a need to update vegetation management direction to provide for short- and long-term sustainability, including direction for restoration, management and maintenance of plant communities, as knowledge and understanding of human impacts grows. People have substantially affected ecological processes and biodiversity and will continue to do so. As the human population continues to grow, there will be ever increasing pressures on the remaining open space and on the quality and diversity of terrestrial and aquatic habitat. There is a need to integrate management direction for all resources to maintain viable populations within the context of overall multiple use objectives. This means that for any given land area, the set of objectives must reflect a compatible blending of uses and values with the capability of the land.

3. Road and Access Management. Management direction for an integrated transportation system that serves multiple functions is needed as a primary component of the desired future for a management area. A forest scale roads analysis is needed to comply with the National Forest System Road Management Rule (January 2001). The intent of the rule is to develop a science-based forest transportation system that meets the needs of the public, yet minimizes or reverses the environmental impacts often caused by roads.

4. Recreation and Scenery Management. Those areas where recreation will be emphasized need to be identified as the first step to provide guidance for managers dealing with increasing conflicts in uses as population and demands continue to grow. The population of the state of Utah is projected to grow by 65% by the year 2020 with most of the growth expected along the urban Wasatch Front. Because of this, settings of this forest will become even more valuable for the unique opportunities they provide. Current dispersed recreation use levels in some areas of the forest are so high that resource degradation is occurring. Direction is needed to provide for future desired recreation settings while sustaining ecosystem health. Updated mapping of recreation opportunity classes is needed to provide guidance on how to manage recreation across the forest. The outdated visual quality objectives contained in the current forest plan need to be replaced with guidance based on the more integrated Scenery Management System.

5. Special Designations. This revision topic includes protection of eligible Wild and Scenic stream and river segments, designation of additional Research Natural Areas and the designation of Special Interest Areas. The eligibility inventory required by the Wild and Scenic Rivers Act was completed in August 1999. Thirty-three segments were found eligible. Until suitability determinations are made, there is a need to protect the resource values and free-flowing character identified for each eligible segment during both ongoing activities and new proposals.

In 1998 an analysis of Research Natural Area (RNA) needs was completed for the national forests in Utah. These needs were defined as vegetation types that occur on National Forest

system lands that are currently lacking in existing RNAs in Utah. There is a need to identify areas of the Wasatch-Cache National Forest that have potential to contribute to the diversity within the RNA system on National Forest system lands in Utah.

Special Interest Areas can be designated to manage and protect an area's special characteristics or unique values. There is a need to identify areas on the Forest that merit this special attention and management.

6. Roadless Areas/Wilderness Management. This is one of the required items included in the planning regulations. The roadless area inventory was updated in 1999. There is a need to determine whether any of these areas should be recommended to Congress for designation as Wilderness. If lands are recommended, the revised plan will provide that these lands be protected and managed accordingly.

The Roadless Area Conservation Final Rule (RACR, January 12, 2001) established prohibitions on road construction, road reconstruction, and timber harvesting in inventoried roadless areas on National Forest System lands. Its intent is to provide lasting protection for inventoried roadless areas within the National Forest System in the context of multiple-use management. Long-term management and protection of roadless areas as directed by Forest Service Manual Interim Directives 1920-2001-1, 2400-2001-3, and 7710-2001-2,3 needs to be addressed in the Forest Plan revision while court and administrative proceedings regarding the RACR are completed. There is a need to determine the appropriate balance of lands that allow development and those that do not.

7. Suitable Timberlands. This is one of the required items included in the planning regulations. It is also an important finding from the 1992 Monitoring Report. There is a need to identify those lands where the management direction will provide for timber production and where maintenance or restoration of properly functioning forest conditions may yield marketable timber products.

8. Rangeland Capability, Suitability and Forage Production. These are required items included in the planning regulations. There is a need to identify the acreage and estimated forage production outputs of areas suitable for grazing livestock as one of numerous uses that may be appropriate for a capable land area. There is also a need to modify current management direction for assigning value classes to riparian areas. Range management direction will be determined to ensure compatibility of this use with sustainable ecosystems and social values primarily incorporating direction from the 1996 Rangeland Health Environmental Impact Statement.

9. Oil and Gas Leasing. The forest plan was approved prior to the passage of the Federal Onshore Oil and Gas Reform Act of 1987. This Act changed the role of the Forest Service in the leasing process and required additional analysis to determine which lands are available for oil and gas leasing and under what conditions. Because of this, leasing direction in the 1985 forest plan is no longer valid. The forest plan was amended in 1994 to allow leasing on a portion of the north slope of the Uinta Mountains. A portion of the Uinta Mountains was specifically excluded from the 1994 decision through an appeal settlement decision (Levere and Heaton, 1994). There

is a need to make the leasing decision in the forest plan revision for this portion since there are suspended leases in the area that need to be acted upon and oil and gas industry continues to express interest in exploring the area.

10. Fire Management. There is a need to update fire management direction to address new national fire policy. In the past 15 years, we've grown to understand fire's role in shaping our ecosystems and the problems inherent in excluding fires from the landscape. The Forest Plan needs to address fire as an integral part of healthy ecosystems and to emphasize treatment efforts in ecosystems that are outside of properly functioning condition. It also needs to address how to manage fuels to reduce the risk of uncharacteristic, high-intensity wildland fire, especially in the urban-wildland interface.

Issues

The following issues were developed from public comments on the September 1999 Proposed Action- a first cut of the Forest Service's approach to forest plan revision.

Issue 1 – Recreation Use Conflicts/Access Management

How should increasing conflicts between and among users of motorized/mechanized vehicles (ATV's, snowmobiles, helicopters for skiing, and mountain bikes, ski area expansion into adjacent areas) and non-motorized recreation be addressed? How much and where is access appropriate for each of these groups? What user densities should we manage for in the future and where?

Issue 2 – Roadless Areas Management

How much and where should additional acreage be recommended for wilderness designation? How much, where, and how should inventoried roadless areas be protected from development? How much and where should inventoried roadless areas be available for which types of development and uses?

Issue 3 –Biodiversity and Species Viability

What are the key factors to emphasize and what is the proper balance of management and land use activities that can maintain biodiversity on the forest? Which areas need what kind of management direction to support overall biodiversity as well as viability of species?

Issue 4 – Concerns About Continued Economic Contributions and Personal/Social Benefits of the Forest

What will be the effects on traditional and current economic outputs and social benefits of the forest? These include forage for livestock, timber for harvest, production of oil and gas, recreation related services and all of the accompanying "quality of life/lifestyle" benefits obtained from the forest? Where and how much of these outputs and benefits can be expected in the future?

Issue 5 – Environmental, Social, and Economic Impacts of Uses

How will we ensure that impacts of uses to watershed conditions, terrestrial, riparian and aquatic wildlife and fish habitats, recreation settings and scenery, and local quality of life are kept within acceptable limits? Uses include livestock grazing, timber harvest, recreation, oil & gas development, and road and trail management.

Issue 6 – Appropriate Types and Amounts of Facility Development for Wildland Settings in the Forest

How much more recreation related facility development, where and of what types, should be allowed in the future?

Alternatives Considered (FEIS Chapter 2)

The FEIS explores the differences among 7 management alternatives for the Wasatch-Cache National Forest. These were developed to provide a range of options for management of the forest over the next 10 to 15 years. They are responsive to the needs for change (‘Topics’) and significant issues listed above. However, given that some of the issues are polarized, no one alternative fully resolves all of them. A set of maps with associated forest management direction accompanies each alternative.

Mapped Forest Management Direction

The National Forest Management Act requires us to develop management direction for each National Forest. This “direction” is to be expressed through goals, objectives, standards, guidelines, management prescriptions, desired future conditions, and monitoring and evaluation requirements for the forest. Some direction logically can be applied to an entire national forest, while other direction should apply only to specific areas of the forest. For this reason, maps are used with this FEIS to show where particular direction would apply by alternative. Management prescriptions, recreation opportunities (summer and winter), scenery management, and oil and gas leasing availability are mapped for each alternative analyzed in detail. These maps, along with the narrative descriptions later in this Chapter (under “Alternatives Considered in Detail”), are the basis for describing the key choices made in each alternative and displaying important differences between the alternatives.

Management Prescription Categories (MPC)

Eight major categories are listed in Table 1. These provide a sense of the management or treatment of the land that is intended to result in a particular condition being achieved or value(s) maintained. The MPC category numbers correspond to the numbers on **Management Prescription Maps** for each of the seven alternatives. However, prescription categories do not stand alone. They are one part of a management direction that also includes Desired Future Conditions, Goals, Objectives, Standards, Guidelines, and Monitoring and Evaluation Requirements. Where an activity is allowed by Prescription, standards and guidelines provide specific parameters within which the activity must be managed.

For Alternative 7 only, several new subcategories of prescriptions have been added to address comments. In Alternative 7 only, 3.1 is subdivided into Aquatic Habitat (3.1A) and Watershed Emphasis (3.1W) and 3.2 is subdivided into Terrestrial Habitat Emphasis Undeveloped (3.2U) and Developed (3.2D).

In addition, for Alternative 7 only, the prescription for recommended wilderness (1.5) allows two activities not allowed in other alternatives under this prescription. These are 1) prescribed fire to return fire dependent vegetation types to properly functioning conditions, and 2) existing snowmobiling until such time as Congress acts, to balance needs for closing other areas.

Recreation Opportunity Spectrum (ROS)

The Recreation Opportunity Spectrum (ROS) is a system of inventory and mapping of different types of recreation settings. These range along a scale from least developed (facilities, etc.) and most remote to most developed and least remote. Listed below is a brief explanation of the eight classes applied to each alternative in this analysis. Maps in the FEIS show where these recreation settings for summer are located and how they vary by alternative. FEIS Appendix D provides a more detailed description of these classes.

Wilderness/Primitive - Designated Wilderness; very high probability of solitude; closeness to nature; self-reliance, high challenge and risk; little evidence of people; Natural Evolving Landscape Character Theme

Wilderness/Semi-Primitive Non-Motorized - Designated Wilderness; high probability of solitude, closeness to nature, self-reliance high and moderately high challenge and risk; some evidence of others; Natural Evolving Landscape Character Theme

Recommended Wilderness/Semi-Primitive Non-Motorized - Recommended Wilderness; high probability of solitude, closeness to nature, self-reliance high and moderately high challenge and risk; some evidence of others; Natural Evolving Landscape Character Theme

Semi-Primitive Non-Motorized - High probability of solitude, closeness to nature, self-reliance, high to moderate challenge and risk; some evidence of others; Natural Appearing Landscape Character Theme.

Semi-Primitive Motorized - Moderate probability of solitude, closeness to nature, high degree of challenge and risk using motorized equipment; evidence of motorized equipment on trails and primitive roads, and by audible motor sounds; Natural Appearing Landscape Character Theme.

Roaded Natural - Moderate evidence of human sights and sounds; moderate concentration of users at campsites; little challenge or risk; Natural Appearing and Developed Natural Appearing Landscape Character Themes.

Rural - Opportunity to be with people is accepted and desirable as is facility convenience, little challenge or risk except for activities like downhill skiing; high interaction among users; Developed Natural Appearing and Resorts Natural Setting Landscape Character Theme.

Urban - Opportunity to be with others is very desirable as is facility convenience; challenge and risk are unimportant except for competitive sports, high interaction among people; Resort Natural Setting / Water Recreation Rural Appearing Landscape Character Theme.

Winter Recreation Classes

The Wasatch-Cache National Forest is using Winter Recreation Classes as a management tool to describe and map outdoor winter recreation areas. Winter Recreation (WR) is one of four mapped management direction elements used in FEIS. Four classes were defined for winter recreation. These are **Wilderness, Non-Motorized, Motorized, and Heliski**. These winter classes are also shown on maps and vary by alternative. (Appendix D of the FEIS includes detailed descriptions of the Winter Recreation classes.)

Scenery Management System (SMS)

The Scenery Management System (SMS) is an inventory and classification system for identifying landscape character themes and setting objectives for management of scenery. Listed below is a brief explanation of six “landscape character themes”. These were assigned to the various areas of the forest by alternative. “Scenic integrity” is simply a qualitative measure of how well the landscape matches its character theme. High integrity means that given the character theme, for example “natural appearing”, management actions, such as facility construction or vegetation treatment, should not result in obvious deviations from the expected appearance. Low integrity on the other hand would allow for some significant deviations from the expected appearance. Integrity objectives are assigned to areas of land on maps in the FEIS map packets. These vary by alternative primarily based on management prescriptions. FEIS Appendix D provides a more detailed description of the Scenery Management System.

Natural Evolving - The natural evolving landscape character originates primarily from natural disturbances and succession of plants, with subtle changes due to indirect human activities. The existing landscape character generally continues to change gradually over time through natural processes.

Natural Appearing - The existing landscape character has been influenced by both direct and indirect human activities, but appears natural to the majority of viewers. Natural elements such as native trees, shrubs, grasses, forbs, rock outcrops and streams or lakes dominate the views. While there is evidence of human influence from historic use, campgrounds, small organization camps, rustic structures and management activity, it would appear to be part of the landscape to the majority of viewers.

Developed Natural Appearing - This landscape character theme is characteristic of National, National Forest and State scenic byways with development, and developed and dispersed recreation facilities visible up to about 1/2 mile. In these areas, the roadway, recreation amenities, and development are anticipated features in the landscape. For users these amenities are part of the valued natural appearing landscape. Users of these amenities are attracted to the natural appearing landscape but desire a moderate to easy interaction with the landscape through the use of these amenities.

Resort Natural Setting - This landscape character theme is characteristic of developed recreation facilities such as ski resorts, and recreation resort communities. In these areas recreation amenities are the main attraction for people and why they come to an area. Facilities are designed and constructed to harmonize with the natural setting, rather than to contrast with that setting. While the facilities in the base areas are dominant, that dominance declines as it transitions onto the mountainsides up to the ridgelines. Likewise, recreational opportunities provided in base areas rely more heavily on constructed facilities, while those higher on the mountain become increasingly oriented toward the natural setting.

Water Recreation Rural Appearing - This theme is characteristic of the Pineview Reservoir recreation complex. The scenic qualities of Ogden Valley attract visitors, and maintaining rural character is important to many landowners in this areas. In these areas recreation amenities are the main attraction for people and why they come to an area. The cultural setting of farms, fields, and pastures influences development on the private lands. Housing, businesses, roads and other developments dominate some views.

Natural (Alternative 4 uses the outdated visual management system) - Under this system, the natural landscape character originates primarily from natural disturbances and succession of plants, with subtle changes due to indirect human activities. The existing landscape character generally continues to change gradually over time through natural processes. The degree of visual alteration is measured in terms of visual contrast with the surrounding natural landscape.

Description of Alternatives

Alternative 1 addresses concerns about a need for very strong emphasis on allowing nature to take its course, minimizing human interference with natural processes, maintenance of roadless landscapes, and restrictive approaches to sustainability forest-wide, given many unknowns. By “restrictive” we mean that human uses are only allowed when and where they are consistent with this emphasis. Current levels of development are maintained, but not increased. No timber harvest is allowed nor is any road construction or reconstruction in inventoried roadless areas. Specific activities needed to reduce impacts of existing development (for example realignment of eroding trails) are allowed. Expected commodity outputs compared with other alternatives are lower. Recreation opportunities are managed to allow a diversity of settings consistent with Forestwide Goals for watershed health, biodiversity and species viability, and ecological status, benchmarks, and reference areas. Winter motorized use is more restricted than currently. Snowmobiling is not allowed in inventoried roadless areas and where special habitat needs are present. Snowmobile routes on roads that have been cherry stemmed into roadless areas are open. Within inventoried roadless areas, summer motorized recreation is allowed on routes designated as open in current Travel Maps except for those within areas recommended as wilderness. User densities are managed (potential permit systems) in ROS classes primitive and semiprimitive. This alternative maintains all areas that currently meet criteria for semiprimitive and primitive recreation opportunities.

Alternative 2 addresses concerns about a need for strong emphasis on biodiversity, mimicking or restoring natural processes with active human management, conservation of large roadless areas, and moderate approaches to sustainability given many unknowns. Uses are allowed when and where they are compatible with achieving restoration emphasis or maintaining properly functioning conditions. In inventoried roadless areas, no road construction or reconstruction is allowed and timber harvest is strictly limited consistent with the National Roadless Area Conservation Rule. Expected commodity outputs may be irregular in their timing with possible spikes of high and low outputs. Recreation opportunities are managed to improve critical habitat, recover rare species, and where possible, provide for some increasing demands consistent with Forestwide Goals for watershed health, biodiversity and species viability, and ecological status, benchmarks, and reference areas. An overall diversity of recreation settings is maintained. Where inventoried roadless areas are recommended for wilderness or are next to existing wilderness, snowmobiling is not allowed. Snowmobile routes on roads that have been cherry stemmed into inventoried roadless areas are open. Within inventoried roadless areas,

summer motorized recreation is allowed on routes designated as open in current Travel Maps except for those within areas recommended as wilderness. This alternative maintains 90 percent of the currently mapped primitive and semi-primitive recreation opportunities.

Alternative 3 was originally developed as the “Proposed Action” for Forest Plan revision and was provided for public comment in September, 1999 and again as part of the five Preliminary Alternatives provided for public comment in September 2000. Public comment suggested that increased access for recreation did not necessarily belong only in Alternative 5 with increases in commodity uses even though those uses could inherently increase access through road building. In response we modified Alternative 3 from earlier versions to respond directly to providing increased recreation access in response to increasing demands, especially for winter motorized use. Alternative 3 provides a mix of uses and protection/restoration activities. It incorporates results of monitoring, project analyses and area assessments with some aspects of evolving policy such as the National Roadless Area Conservation Rule, although it does not apply this rule in its entirety. This alternative emphasizes adjusting management activities to ensure emphasis on ecosystem functioning and sustainability while providing some commodity outputs and a variety of recreation opportunities.

Alternative 4 is formally the “No Action” alternative required by the National Environmental Policy Act. It can also be described as the “continuation of management under direction of the 1985 forest plan” alternative. It represents the 1985 plan as written and amended, however, to contrast the direction of the 1985 plan with needs for change identified since 1992, other sources of management direction that have been applied, but not incorporated into the 1985 forest plan, are *not* included. The 1992 5 Year Monitoring Report found “serious weaknesses” which when taken in aggregate, resulted in a conclusion that a forest plan revision should be initiated. Alternative 4 assumes management direction to include:

- a. All Forest Plan amendments (#1-35). Examples of amendments which affect large areas: Rangeland Health Amendment, Goshawk Amendment, Utah Fire Amendment
- b. Current Travel Management Plans
- c. Conservation strategies NOT requiring plan amendment applied project by project.
- d. Conclusions from 1992 5-Year Monitoring Report (Section V, pgs. 106-115) that have been incorporated into subsequent plan implementation: Resource Inventories, Recreation Program Management, Riparian Management, Timber Objectives, Water Quality Monitoring, Biodiversity, Budget/Target Issues, and Monitoring Requirements.
- e. 1985 Standards and Guidelines as amended.

Alternative 4 implements general direction from the 1985 plan emphasizing various outputs but with project-by-project application of ecosystem approach and findings from the 1992 5-Year Monitoring Report. Except where project analyses have resulted in other combinations of multiple use emphasis based on integration of resource management needs, forested vegetation is managed for growth and yield on suited timberlands and suited rangelands are managed primarily for livestock forage. Outputs are dependent on investments (for example- Forest Plan pages IV – 355-373, Range Improvements- fences, water developments, noxious weed control, plowing, seeding, spraying, sagebrush burning, stock trail construction) and thus are contingent on actual budget allocations.

This alternative emphasizes improved facilities for recreation and accommodation of increased demands for recreation through additional facility construction, again contingent on budgets. Expansion of developed and dispersed summer and winter recreation is envisioned. Project decisions have addressed expansion of winter developed recreation for some ski-based resort areas. Other decisions about ski-based resort development are based on Master Development Plans completed or in progress.

Alternative 5 addresses the concern that the Forest can and should be used to directly benefit economies, livelihoods, and utilitarian traditions of families and local communities through predictable sustained outputs while allowing a variety of other non-exclusive uses and minimizing restrictions or requirements that drive up operating costs. While this alternative was developed to respond to concerns that often might be associated with rural communities, constituents who reviewed the Preliminary Alternatives package pointed out that many rural communities adjacent to the Wasatch-Cache National Forest have a wide diversity of views and values regarding appropriate forest management. This alternative does respond to the desires of people (rural, urban, or otherwise) who would like to see continuation of many historic and/or traditional uses of the forest, sometimes even for new purposes, but with restrictions only as necessary to meet legal requirements. This alternative strives to accommodate a variety of uses within the same areas to avoid need for separation or restriction. Alternative 5 assumes active management for sustained yields can be used to improve productivity and health of the forest. Access plays a major role in the ability to use the land. Timber management to prevent insect, disease, and wildfire outbreaks is envisioned in this alternative. Livestock grazing tied to year-round local ranching operations is supported on forest by vegetation management to increase forage production. Grazing is also viewed as a tool to reduce fine fuels and competition with regeneration of young trees. This Alternative takes a restrained approach to sustaining species and their habitat. By restrained we mean striving to prevent listing but minimizing rather than assuming as necessary, restrictions on resource uses given the many unknowns about rare species. Forage for livestock, timber for harvest, oil and gas leasing, and recreation related services and opportunities are emphasized while actively managing all of these uses together to reduce or avoid conflicts and achieve improved productivity of the land and resources. Recreation opportunities in this alternative are increased over existing in the rural and roaded natural classes as a result of development of inventoried roadless areas for timber harvest and oil and gas exploration and development. Recreation is expected to be coordinated with other uses in the same areas in such a way that conflicts are minimized or avoided. More total recreation capacity is available because of increased numbers of facilities, allowance for higher user densities, and increased access.

Alternative 6 was identified as the DEIS Preferred Alternative. It addresses concerns about needs for emphasis on biodiversity, by mimicking natural processes in some areas with active human management while restoring natural processes to other areas with minimal human intrusion. Conservation of large roadless areas, highlighting of substantial areas for emphasis on sustaining important terrestrial and aquatic habitats, and concentrating activities in areas where they can be managed sustainably provides the basis for this alternative. Uses are allowed and mitigated to maintain ecosystem functions in some areas while in other areas uses are restricted to achieve restoration or protection of properly functioning ecosystem conditions. In inventoried roadless areas, no road construction or reconstruction is allowed and timber harvest is strictly

limited consistent with the National Roadless Area Conservation Rule. Expected commodity outputs are lower than recent years with some areas providing a limited but continual supply and others removed or reduced from commodity production to sustain other important wildland values (such as watershed functioning, ecological reserves and biodiversity corridors, opportunities for solitude, and special designation of reference benchmarks for learning-RNA/SIA). Recreation opportunities are managed intensively in some areas to meet increasing demands, especially in the wildland/urban interface. Areas further from major population bases are managed for a wider variety of recreation opportunities including substantial areas of primitive and semiprimitive classes. Winter recreation uses are separated in key areas to provide both motorized and non-motorized opportunities with access and parking. Total area available for snowmobiling is less than current but high and moderate use areas are maintained as open. Summer motorized recreation is allowed on routes designated as open in current Travel Maps.

Alternative 7 is the FEIS preferred alternative and was developed after public comments on the six alternatives described in the draft environmental impact statement had been reviewed, categorized, and analyzed. The purpose was to improve resolution of issues raised in public comments and to adapt the final preferred/decision alternative to current policy. Some components of the DEIS Preferred Alternative 6, were retained while other components were adjusted in response to comments and in response to recent policy regarding roads analysis and roadless area management.

Key changes made to the DEIS preferred alternative to develop this alternative include:

- Evaluation of individual roadless area values (FEIS Appendix C2) and identification of roadless areas or portions of roadless areas to be 1) recommended as wilderness, 2) maintained as roadless or undeveloped, or 3) where timber harvest, road construction or other development would be allowed.
- Clarification of intent with regard to allowed activities for management prescription categories 3.1 and 3.2 by 1) Dividing 3.1 into two subcategories- 3.1A specifically for riparian/aquatic emphasis and 3.1W specifically for upland watershed emphasis; and 2) Dividing 3.2 into two subcategories- 3.2U for terrestrial wildlife habitat not allowing development (primarily roading and timber harvest) and 3.2D for terrestrial wildlife habitat allowing this type of development (See also Tables of Allowed Activities for Alternative 7, and Revised Forest Plan Chapter 4A.5, Management Prescriptions).
- Clarification of intent in all prescriptions for allowing new trail construction (See Tables of Allowed Activities).
- Identification of fuel treatment needs in wildland urban interface areas and mapping of management prescriptions that allow mechanical fuel treatment on these areas (Prescription 2.6 does *not* allow this).
- Identification of additional areas of the North Slope Uinta Mountains where bighorn sheep habitat could be emphasized in the future should livestock grazing permits be voluntarily waived without preference.
- Adjustment of outputs and activities projections with improved information.
- Changes in prescription mapping, recreation opportunity class mapping, and winter recreation mapping for specific areas in response to public concerns.

Alternative 7 addresses concerns about needs for emphasis on biodiversity by attempting to balance human impacts and uses with maintenance of overall ecological integrity. This Alternative proposes actively managing (primarily vegetation treatments) some areas of the forest to restore ecological functioning and reduce hazardous fuels, allowing continued production of commodity resources for human use in many areas, and in other areas, allowing natural processes to proceed with less human intrusion. This management approach emphasizes conservation of most (75% of total) roadless areas and their values by maintaining them as undeveloped (with application of management prescriptions 1.5, 2.4, 2.6, 2.7, 3.1A, 3.1W, 3.2U, 4.1, 4.2- see Maps). It highlights substantial areas for emphasis on sustaining important terrestrial and aquatic habitats through active management with uses restricted, to achieve restoration or protection of properly functioning ecosystem conditions (prescriptions 3.1A, 3.2U and D- see Maps). This Alternative concentrates human uses and commodity production activities in areas where they can be managed sustainably, i.e. mitigated to maintain primary ecosystem functions (prescriptions 2.5, 4.3, 4.4, 4.5, 5.1, 5.2, 6.1- see Maps). Expected total commodity outputs are slightly lower than in recent years with some areas providing a limited, but continual supply and others removed or reduced from commodity production to sustain other important wildland values (such as watershed functioning, ecological reserves and biodiversity corridors, opportunities for solitude, and special designation of reference benchmarks for learning such as RNA/SIA).

Recreation opportunities are managed intensively in selected areas to meet increasing demands, while recognizing the importance of watersheds especially in the vicinity of current and future urbanization. Areas further from major population bases are managed for a wider variety of recreation opportunities including substantial areas of primitive and semi-primitive classes. The popularity of recreation (especially camping) outside developed sites is recognized and specific actions to provide for this use while protecting watersheds and vegetation are proposed. Winter recreation uses are separated in several areas to provide both motorized and non-motorized opportunities with access and parking. Recognizing the distances that can be covered and growing demand, total area open for snowmobiling is 540,700 (44% of the Forest, 61% of the area not congressionally designated closed). New areas closed to snowmobiling for providing quality non-motorized winter opportunities total 7,500 acres or .8% of total forest acres and 190,700 acres of critical big game winter range (15% of total Forest). Summer motorized recreation is allowed on routes designated as open in current Travel Maps and several areas for potential future expansion of designated motorized routes are identified.

Comparison of Alternatives and Environmental Consequences (FEIS Chapters 2 and 3)

The following estimates and comparisons of environmental consequences by alternative are based on key differences in potential effects. They assume that Standards and Guidelines contained in the revised Forest Plan apply to all alternatives except 4. Alternative 4 is the “No Action” which assumes continued application of the 1985 Plan as amended. In many cases standards and guidelines provide mitigation of activities, reducing or eliminating potential negative environmental effects.

A key difference between alternatives is how Management Prescription Categories (MPC) are mapped and the relative amount of each category. Table 1 provides a comparison of acres by prescription by alternative. However, acres alone do not provide the basis for conclusions about environmental effects because between alternatives, MPCs are not necessarily located in the same areas of the forest, allowed activities for the same MPC may vary between alternatives, and other management direction such as standards and guidelines applies forest-wide.

Table 1: Comparison of Alternatives Acres¹ by Management Prescription

	Alternatives						
	1	2	3	4	5	6	7
1.0 Wilderness							
1.1 Existing Wilderness - Opportunity Class I	178,000	178,000	178,000	61,900	178,000	143,200	143,200
1.2 Existing Wilderness – Opportunity Class II	105,800	105,800	105,800	98,300	105,800	139,400	139,400
1.3 Existing Wilderness – Opportunity Class III	25,100	25,100	25,100	19,600	25,100	26,200	26,200
1.4 Existing Wilderness - No Class	0	0	0	129,200	0	0	0
1.5 Recommended wilderness	388,900	145,900	51,500	0	0	69,400	73,500
2.0 Special Management Areas							
2.4 Research Natural Areas	5,600	5,600	4,600	6,200	5,300	5,600	5,600
2.5 Scenic Byways	20,600	20,600	20,600	22,000	23,100	22,800	21,100
2.6 Undeveloped Areas	197,900	192,000	85,000	0	2,000	88,500	111,200
2.7 Special Interest Areas and Special Areas	17,100	32,500	900	0	1,000	16,600	18,600
3.0 Protection, Maintenance or Restoration of Aquatic/Watershed or Terrestrial Integrity							
3.1 Aquatic Habitat/Watershed Emphasis	138,200	181,500	158,600	106,400	70,400	186,000	0
3.1a Aquatic Habitat	0	0	0	0	0	0	28,300
3.1w Watershed Emphasis	0	0	0	0	0	0	154,600
3.2 Terrestrial Habitat Emphasis	86,800	138,200	201,600	11,500	24,600	218,300	0
3.2d Terrestrial Habitat Emphasis – developed	0	0	0	0	0	0	89,200
3.2u Terrestrial Habitat Emphasis – undeveloped	0	0	0	0	0	0	122,300
4.0 Multiple Resource Uses With Recreation Needs and Opportunities							
4.1 Backcountry Non-motorized Recreation Settings	3,200	30,000	56,700	126,700	104,000	19,900	13,000
4.2 Dispersed Non-motorized Recreation Settings	4,500	3,600	3,200	3,900	20,500	20,000	3,500
4.3 Backcountry Motorized Recreation Settings	16,000	25,000	30,600	1,800	17,300	32,600	27,100
4.4 Dispersed Motorized Recreation Settings	30,900	38,300	41,700	16,600	78,200	49,100	53,800
4.5 Developed Recreation Areas	12,200	13,100	12,300	13,800	22,200	11,900	12,000

¹ Rounded to nearest 100 acres.

	Alternatives						
	1	2	3	4	5	6	7
5.0 Forested Vegetation Management Needs and Opportunities							
5.1 Maintain/Restore Forested Ecosystem Integrity	0	69,800	56,100	41,600	100	73,500	81,100
5.1/6.1 Mixed Forested/Rangeland Ecosystem Integrity	200	200	88,700	0	0	17,300	17,300
5.2 Manage Timber for Growth and Yield	0	0	43,800	251,000	182,100	34,800	34,500
5.2/6.2 Mixed Manage for Timber/Forage	0	0	0	0	186,000	0	0
6.0 Rangeland Vegetation Management Needs and Opportunities							
6.1 Maintain/Restore Rangeland Ecosystem Integrity	5,300	31,300	35,500	61,000	54,300	60,000	60,000
6.2 Manage for Livestock Forage Production	0	0	36,300	264,700	137,600	1,600	1,600
8.0 Concentrated Development Areas							
8.1 Mineral and Energy Development	3,000	3,000	3,000	3,000	3,000	3,000	3,000

Watershed Health

Recently, there has been substantial legal and administrative emphasis on the importance of protecting and sustaining stable watershed conditions as the foundation for all other resources and uses. Watersheds and water-bodies that do not meet desired conditions have been identified over the last few years through inventory work. Table 2 shows that all alternatives in the FEIS except Alternative 1 implement soil and water improvement projects at about the same pace to protect watershed values.

**Table 2: Projected Projects to Improve Watershed Health
For 10 year planning period**

	Alternatives						
	1	2	3	4	5	6	7
Soil and Water Improvement Projects	0	20	20	20	20	20	20
Aquatic Resources Improvement Projects	0	50	15	20	10	25	25

Alternatives 3, 4, and 5 have the greatest potential to affect soil productivity through an irretrievable commitment of soil resources for timber harvest and vegetation treatment road, and oil and gas roads and facilities. Alternative 2 has the highest potential to cause short-term adverse affects to soil productivity because of the large amount of prescribed fire use in aspen and aspen/conifer mixed. Alternative 1 has the least short and long-term cumulative effects on soil productivity because of the small amount of project activities and outputs, and it has the greatest amount of land that is allocated to recommended wilderness and roadless protection where active management is very limited. When properly implemented, activities such as timber harvest and fire use have very little long-term commitment of soil resource. Only a fraction of those acres affected by timber harvest or fire use will actually suffer detrimental soil impacts such as displacement, compaction, or severe burning. Very few detrimental impacts to soils are expected from timber harvest (excluding roads, skid trails, and landings) and mechanical treatments for fuels reduction because these activities will leave adequate ground cover to protect soils and compaction is limited to a small amount of designated area.

New roads represent an irretrievable commitment of soil resources. On the WCNF, the long-term use of roads for new timber harvest and new roads and development for oil and gas activities will occur mainly in the Eastern Uintas Management Area. On lands adjacent to the WCNF in this management area, timber harvest and oil and gas development has occurred in the past and is continuing with activities that may affect soil and water resources such as road building and facility development. OHV and ATV use has been increasing on the WCNF and has had adverse effects to soils, particularly in specific areas where use is concentrated. In the long-term, education, enforcement, and on the ground management on and off the WCNF should help to reduce the adverse effects to soil productivity from these activities.

The short-term effects to water quality are similar to those described in the cumulative effects for soil productivity. This is because ground disturbing activities that have an adverse effect on soil productivity, usually have the potential for adverse effects on water quality, particularly in disturbance area that are close to water bodies. In the long term cumulatively, management activities on and off the WCNF should improve water quality through road decommissioning that will reduce erosion and sedimentation; vegetation treatments that will improve ground cover and reduce potential for wildfire; revised grazing guidelines that include bank trampling review during allotment management plan updates and annual operating permit review; and state and local environmental programs that assess water quality and plan actions for the improvement of impaired waters.

For the most part the detailed descriptions of effects from different activities indicate that effects to watershed under any alternative are manageable and relatively small given the relative areas of projected activities in the Forest, and the application of protective measures (standards, guidelines, and best management practices) during project implementation. Under all alternatives, no irreversible effects should occur from the proposed activities because no soil or water resources are affected where these resources cannot be returned to their previous condition.

Of the management activities that occur on the WCNF, only Timber Harvest/ Vegetation Treatment activities have the potential to substantially effect water yield. Utah and Wyoming are experiencing an increase in timber harvest on private lands in response to declining sales on public lands. This will cause an increase in water yield from private lands that are harvested. Between alternatives, water yield increase is assumed to be greatest with alternatives 4 and 5, which have the greatest amount of suited lands and would most likely have treatments proposed on them in addition to private land holdings. In all alternatives, most of the water yield increase would occur in the eastern Uintas, north part of the western Uintas, and Bear management areas and in private lands adjacent to these areas.

Vegetation

Of the vegetation cover types that currently have the highest deviations from historic ranges (aspen, Douglas-fir, oak, pinyon-juniper, sagebrush, tall forb and riparian), the key differences in effects on vegetation by alternative can be summarized based on the degree to which vegetation is treated. Table 3 shows acres of several types of treatment for the priority vegetation types. The amount of vegetation that would be moved toward properly functioning condition within the

10-year planning period would be greatest in Alternative 2. Alternatives 3, 6 and 7 are second greatest with about 60% as many acres as Alternative 2 treated. Alternatives 4 and 5 are third greatest with about 29% as many acres as Alternative 2 treated. Alternative 2 also treats the most sagebrush with prescribed fire to decrease sagebrush canopy and increase forbs and grasses. Alternatives 3, 6, and 7 treat about half as many acres of sagebrush and Alternatives 4 and 5 treat about one-quarter of the acres in Alternative 2 primarily because of the need to find alternative forage for livestock both prior to and after burning. The primary reason for treating oak is to reduce hazardous fuels in the wildland urban interface. All alternatives do this except 4 because the 1985 plan did not place emphasis on this. Alternatives 4 and 5 allow road construction and manage significantly more conifer vegetation for commercial growth and yield (prescription 5.2) than Alternatives 2, 3, 6, and 7. In Alternative 1, given that no prescribed fire or other vegetation treatment is allowed, the degree to which vegetation would move toward properly functioning condition is unpredictable. It would depend on natural processes such as insect, disease, wind and wildland fire.

Table 3. Comparison of treatments (prescribed fire, harvest, and mechanical fuels treatment) for each alternative over a 10-year period

Treatment	Vegetation Type	Alternatives							
		Total Acres	1	2	3	4	5	6	7
PRESCRIBED FIRE									
Prescribed Fire	Aspen & Aspen/Conifer	205,600	0	80,000	32,000	7,200	7,200	32,000	32,000
	Douglas-fir	87,500	0	4,000	2,000	0	0	2,000	2,000
	Sagebrush and Pinyon-Juniper	266,500	0	40,000	20,000	10,000	10,000	20,000	30,000
	Oak	90,800	0	40,000	20,000	8,000	20,000	20,000	8,000
Total Acres Treated by Prescribed Fire		650,400	0	164,000	74,000	25,200	37,200	74,000	72,000
HARVEST AND MECHANICAL TREATMENT									
Timber Harvest	Aspen and Conifer Harvest	556,600	0	6,500	7,500	12,500	15,500	5,000	8,500
Mech. Treatment	Oak (fuels treatment)	90,800	0	16,000	8,000	0	8,000	8,000	20,000
TOTAL ACRES TREATED									
Total Acres Treated (Harvest, Prescribed Fire, & Mechanical)			0	186,500	89,500	37,700	60,700	87,000	100,500
PERCENTATGE OF THE ACRES TREATED BY FIRE, HARVEST, AND MECHANICAL METHODS									
Of the Acres Treated, Percent Treated by Prescribed Fire			0%	88%	83%	67%	61%	85%	72%
Of the Acres Treated, Percent Treated by Timber Harvest			0%	3%	8%	33%	26%	6%	8%
Of the Acres Treated, Percent Mechanically Treated			0%	9%	9%	0%	13%	9%	20%

The differences between alternatives and their probability of reaching properly functioning condition are shown in Table 4. Alternative 2 shows the greatest likelihood for all cover types except Douglas-fir for reaching PFC within 10 decades. Alternative 5 shows the least accomplishment in reaching PFC because most vegetation treatment is by timber harvest which does not affect vast amounts of acres as fire. Proper functioning would mean less susceptibility to insect or disease epidemics, noxious weed invasion, or uncharacteristic wildfire and would prevent type conversions such as aspen being overtaken by conifer.

Table 4 Cover types in the Uinta Mountains and Overthrust Mountains Sections reaching Properly Functioning Condition within 10 Decades

Cover Types	ALT 1	ALT 2	ALT 3	ALT 4	ALT 5	ALT 6	ALT 7
Sagebrush ¹	Yes	Yes	No	No	No	No	Yes
Oak	No	Yes	Yes	No	Yes ³	Yes	Yes
Aspen	No	Yes	Yes	No	No	Yes	Yes
Douglas-Fir	No	No	No	No	No	No	No
Mixed Conifer Lodgepole	Yes ²	Yes	Yes	No	No	Yes	Yes
Spruce Fir	No	Yes	No	No	No	No	No

¹Modeled outside VDDT

²Uinta Mountain section only

³Overthrust Mountain section only

Botanical Resources

Botanical resources are very important, particularly the most rare elements of the flora, those that are classified as Threatened, Endangered, and Sensitive (TES) plant species. Table 5 provides a list of those species that have state or federal status as Threatened or Proposed. Additionally, we have identified those species that have been identified as imperiled and may warrant listing as Threatened or Endangered by the Utah Native Plant Society and the Utah Natural Heritage Program (Utah Rare Plant Meeting Results 2000). There are no plants currently listed as endangered on the Wasatch-Cache National Forest.

The alternatives have varying effects on botanical resources. For *Primula maguirei* (Maguire’s Primrose) and *Viola frank-smithii* (Frank Smith Violet), threats for potential impacts due to recreation and associated activities are moderate to high under all alternatives and fire could negatively affect these populations. For *Sprianthes diluvialis* (Ute Ladies’-tresses Orchid), which has not been found in surveys in the Wasatch-Cache, the potential for moderate levels of impact to potential habitat are common to all alternatives. For *Dodecatheon dentatum var. utahense* (Utah Shooting Star), all alternatives would have moderate to high threats from recreation. For *Draba maguirei var. burkei* (Burke’s Draba) Alternatives 1, 2, 3, 6, and 7 may pose the least potential impacts because of being within prescriptions that provide the least possibility of disturbance. Alternatives 4 and 5 have prescriptions in these areas that have higher possibilities of disturbance. However, in all alternatives, the largest population occurs in prescription 4.5, which has already experienced loss of plants due to development. *Botrychium lineare* is not currently on the U.S. Forest Service, Intermountain Region sensitive species list and is not currently given any formal consideration. The U.S. Fish and Wildlife Service has concluded that “...the overall magnitude of threats to *B. lineare* throughout its range is moderate

and the overall immediacy of these threats is nonimminent” (USDI USFWS 2002). The threats to the historic habitat on the Wasatch-Cache National Forest for this species have been minimized.

Table 5. Threatened, Candidate, and Species Likely to be Proposed as Threatened or Endangered on the Wasatch-Cache National Forest

Scientific Name	Common Name	Status	Distribution
<i>Primula maguirei</i> L. O. Williams	Maguire’s Primrose	Threatened	Logan Canyon Endemic
<i>Spiranthes diluvialis</i> Sheviak	Ute ladies’-tresses	Threatened	Potential Habitat – through the Wasatch-Cache National Forest
<i>Viola frank-smithii</i> N. Holmgren	Frank Smith’s Violet	Sensitive ²	Logan Canyon Endemic
<i>Dodecatheon dentatum</i> Hook var. <i>utahense</i> N.H. Holmgren	Wasatch Shooting Star, Utah Shooting Star	Sensitive ¹	Salt Lake County Endemic
<i>Draba maguirei</i> C.L. Hitchc. var. <i>burkei</i> C.L. Hitchc.	Burke’s Draba	Sensitive ¹	Northeastern Utah Endemic
<i>Botrychium lineare</i> W.H. Wagner	<i>Slender Moonwort</i>	Candidate	Colorado, Oregon, Montana, Washington, (Historical sites in California, Idaho, Montana, Utah, Nevada and Quebec and New Brunswick, Canada)

¹ Likely to be proposed, as Threatened or Endangered, because of rarity and/or because of potential threats

Terrestrial Wildlife

In evaluating effects on terrestrial wildlife species, it must be remembered that any potential activity may be detrimental to some species while it benefits others because of the wide variety of habitat needs. The primary determinant for evaluating management activities effects on species is the effects of those activities on vegetation communities relative to their historic range of variability.

Effects from timber harvest include fragmentation, displacement, and changes in vegetation structure and age class benefiting species that prefer more open areas in earlier successional stages. Species that prefer mature and old growth coniferous vegetation would see a reduction proportional to the amount of acres harvested however, given the abundance of currently mature and old age classes these species would continue to have available habitat under any alternative. Prescribed fire has similar effects favoring species that use younger vegetation age classes and applies to vegetation types other than conifer including aspen, sagebrush, and oak. Improving age class distribution of vegetation toward the historic range of variability will benefit the most species of terrestrial wildlife. Table 3 provides acres of projected harvest and prescribed fire for selected cover types by alternative.

Prescriptions 1.1-1.5 protect habitat, have minimum fragmentation, and generally favor species that prefer older vegetation age classes until set back by wildfire or wildland fire use. Table 1 shows relative acreages of these prescriptions by alternative.

Potential impacts from roads and trails include fragmentation of habitat and displacement of wildlife. The amount is a function of the amount of use on the road or trail. The greatest potential for adverse impacts associated with roads is from construction for timber harvest or oil and gas exploration and development with alternative 5, followed by 3, 4, 7, 6, 2, and 1 as shown in Table 16. In addition field development and well pads associated with oil and gas activities could further disrupt wildlife and fragment habitat. The amount of land disturbed ranges from 20 acres in Alternative 1 and 2 to 105 acres in Alternative 5.

The greatest potential effect from winter motorized access is disturbance of wintering big game and possibly increased competition for prey of Canada lynx. Acres open to snowmobiling within critical big game winter range are about 22,500 in Alternatives 1 and 2 (9% of total big game winter range), 54,000 in Alternative 7 (22%), 108,500 in Alternative 3 (44%), 115,700 in Alternative 5 (47%), and 141,700 in Alternative 4 (58%). Currently there are 96,100 acres within big game winter range (39%) open to snowmobiling. In Lynx Analysis Units (all of the Uinta Mountains) the Lynx Conservation Strategy recommends no net increase in the amount of groomed or designated over-the-snow routes or snowmobile play areas. The intent is to allow no more than existing compaction of snow in these areas because of potential for reducing the competitive advantage lynx has in uncompacted snow. Alternatives 1 and 2 would reduce the areas open to winter motorized use in the Uinta Mountains significantly while Alternatives 4 and 5 would open some currently closed areas to motorized use which is inconsistent with the Lynx Conservation Strategy. Alternative 3 maintains currently open areas and Alternatives 6 and 7 reduce the net of areas open to motorized use from existing but not to the large extent that Alternatives 1 and 2 do.

Aquatic and Semi-aquatic Resources

There are at least 24 fish species that inhabit the waters of the Wasatch Cache. Bonneville and Colorado cutthroat trout have been identified as sensitive. The June sucker, an endangered species, was stocked in Red Butte Reservoir in the early 1990 for holding and have since successfully reproduced. Of the seven amphibians historically present on the Forest, only the spotted frog is on the sensitive species list.

Effects from timber harvest and oil and gas exploration and development would be primarily from road construction that requires stream crossings and the subsequent risk of sedimentation that causes direct and indirect mortality to aquatic and semi-aquatic species by covering and suffocating eggs. For timber harvest, Alternatives 4 and 5 would have the greatest potential impact followed by Alternative 3, 7, 6, 2 and 1 in that order. For oil and gas activities, Alternative 4 would have the least threats followed by alternatives 1 and 2, 6, 3, 7, and 5.

The prescription providing the greatest reduction in threats is 2.4, research natural areas. No timber harvest, vegetation treatments, road building, grazing or new recreation development is allowed. Prescriptions 1.1-1.5, wilderness and proposed wilderness, along with prescription 2.6,

undeveloped areas, also provide a high level of threat reduction in excluding timber harvest, vegetation treatments, road construction and new developed recreation al facilities. Management prescription 3.1 also provides a high level of threat reduction. To assess the affects of management prescriptions on aquatic species, the number of acres were summed for prescription categories 1.1-1.5, 2.4 and 3.1 and compared. Most of the acres gained in Alternative 1 are in proposed wilderness. Alternative 1 has the most acres in the combined prescriptions followed by Alternatives 2, 6, 7, 3, 4, and 5. Alternatives 2 and 7 also provide recognition for all populations of cutthroat trout.

Alternative 2 provides the best balance of protection and restoration opportunities for aquatic and semi-aquatic. Alternative 1 ranks out high as an alternative that provides for aquatic and semi-aquatic species but there are some difficulties in restoration efforts. Alternative 1 would make it very difficult to actively restore aspen stands adjacent to streams or to install migration barriers to preclude non-native fish because it depends entirely on natural processes. Alternatives 6, 7, and 3 allow for restoration work but they provide less emphasis on aquatic restoration and protection. Alternatives 4 and 5 provide the least emphasis on protection of native aquatic and semi-aquatic species. Alternative 7 encourages restoration of native cutthroat trout to six key drainages.

Timber Suitability and Production

Effects on the timber program are based on the amount of volume projected from both suited lands (prescription 5.2 or 6.2) and tentatively suited lands where harvest is allowed. A number of other factors affecting the program but not dependent on alternatives include quality of the timber, amount actually offered annually, accessibility, distance from the mill, and special requirements or contract provisions that have potential to increase cost of processing. Alternative 1 does not allow any timber harvest therefore there would be no timber program and mills dependent on National Forest timber would have to find other sources or go out of business. Alternative 2 designates no lands as suited for timber production but does allow harvest to meet other resource objectives, however road construction to access areas of inventoried roadless is not allowed and the type of offerings would be for lower value species such as aspen and fir. Alternatives 3, 4, 5, 6, and 7 designate differing amounts of area (Table 6) as suited for timber production and also allow timber harvest for meeting other resource objectives with volumes as shown in Table 7. Alternative 5 would provide the largest volume of quality material and would supply demand for one or two local mills. It would also require a significant shift in dollar allocation within the forest budget. Alternative 4 would provide the second largest volume and also would require reallocation of funds into the timber program. Alternatives 7, 6 and 3 would supply less than that needed to supply one mill on an annual basis but would continue to contribute toward meeting demand.

Table 6. Acres of Timber Suitability

	Alternative						
	1	2	3	4	5	6	7
Suited ¹ Lands for Timber Production	0	0	38,000	193,900	226,000	28,900	28,900

¹ Areas available and capable with Mgt. Prescription 5.2 or 6.2.

Table 7. Timber Production Potential

	Alternatives						
	1	2	3	4	5	6	7
ASQ/TSPQ Volume (MMBF)	0 / 0	0 / 2.1	1.6 / 3.2	3.3 / 6.2	6.2 / 7.4	2.0 / 3.9	2.0/4.5

Rangeland Suitability and Livestock Grazing

Building upon the 1996 Wasatch-Cache National Forest Rangeland Health Forest Plan Amendment, Forest Plan revision management direction for all alternatives has been developed to maintain or improve rangeland conditions on National Forest administered lands. Direction occurs at both the Forest-wide and Management Area levels. Goals and objectives have been designed to achieve desired rangeland conditions over the long term, and to maintain or restore sustainable levels of forage production, livestock use, and ecosystem functions and processes. Furthermore, management direction for other resource programs—such as vegetation, soil, water, riparian, aquatic, wildlife, and recreation—provide additional guidance and resource protection in an integrated manner.

Currently, it is estimated that 95 percent of allotment rangelands with management objectives are either meeting or moving toward those objectives. In the 5% of areas where present rangeland conditions are not meeting objectives, conditions are expected to improve under all alternatives with the implementation of Forest Plan management direction. However, the rate of improvement may vary by alternative.

Several criteria that vary between alternatives were established to determine suitability. All alternatives remove 2,700 acres of developed recreation sites that are currently within open allotments. Alternatives 1, and 2 remove 10,400 acres because of closure of vacant allotments and Alternative 7 removes 2,500 acres for this reason. Alternatives 1,2,6, and 7 remove 7,800 acres from vacant allotments for bighorn sheep habitat, and Alternatives 1,2, and 6 remove 18,300 acres, and Alternative 3 removes 2,100 acres because they are in unsatisfactory condition. Alternative 2 removes an additional 26,000 acres of riparian areas for enhanced protection of Bonneville and Colorado River cutthroat trout habitat. Alternatives 4 and 5 remove no capable acres from the suitable category.

Table 8. Forest-Wide Suitable Rangeland Acres

	Alternative						
	1	2	3	4	5	6	7
Forest-Wide Suitable Rangelands ¹	263,500	237,500	297,900	300,000	300,000	273,900	289,800

¹ From FEIS Table RN-4.

Effects of removal of areas in unsatisfactory condition from suitable acres in Alternatives 1, 2, 3, and 6 would vary because of site-specific factors. Areas in unsatisfactory condition that can be easily avoided through livestock herding, and/or salting would be most likely to improve in ground cover and species composition over the long-term. Areas that are fenced or can be fenced would also be likely to improve if removed from livestock grazing. Areas in

unsatisfactory condition that are relatively small, scattered, or in locations where it is difficult to avoid grazing without expensive structural improvements (fence construction) would be much less likely to improve.

Alternative 7 (and the Revised Forest Plan) includes a forage utilization guideline for lower (30-40%) allowable use on areas in unsatisfactory condition rather than removing these areas from suitability. With implementation of this guideline, areas of both upland and riparian vegetation in unsatisfactory condition would improve with riparian areas restored more quickly than uplands. Improvement would be more consistent overall than in Alternatives 1, 2, 6, and 3 because a lower utilization standard could be applied to all the areas more easily than total avoidance of the areas. However, even this approach's success will depend on diligence in herding, salting, range improvement maintenance, and monitoring of utilization.

Alternatives 4 and 5 do not remove areas in unsatisfactory condition nor do they implement a lower forage utilization allowance for these areas. Some improvement of these areas is expected through implementation of management direction from the 1996 Rangeland Health Amendment, however it is expected that it would be more gradual and less consistent than in any of the other Alternatives.

Potential future changes in suitable acres are included in Alternatives 1, 2, and 6 by allowing for closure of Gilbert Peak, Henry's Fork-Hessie Lake, & Red Castle allotments should those permits be voluntarily waived without preference. Alternative 7 allows for these closures, as well as East Fork Blacks Fork, West Fork Blacks Fork, East Fork Bear River, and Stillwater allotments. The purpose of these closures would be reduced risk for disease transmission from domestic sheep to bighorn sheep as well as watershed protection and establishment of ungrazed benchmarks. Given that this would be based strictly on a voluntary action initiated by permit holders, net effects on permittee operations would be expected to be positive. (Otherwise the permittee could choose not to take this action). These wildlife and ungrazed resource condition values are foregone in Alternatives 3, 4, and 5.

Burning of sagebrush will increase forage production with Alternative 1 not allowing any prescribed fire and depending on wildland fire use, 2 and 7 providing the most benefit with 40,000 and 30,000 acres respectively, alternatives 3 and 6 with about 20,000 acres and Alternatives 4 and 5 with about 10,000 acres. Prescribed burning of sagebrush will require some pre and post treatment exclusion of grazing requiring that alternative forage be found for grazing that would normally be scheduled for the areas to be burned. Effects on grazing from recommended wilderness would be mitigated by allowing for continuation of existing motorized access included in term grazing permits.

Table 9. Estimated Authorized Livestock Grazing Outputs by Alternative

Livestock	10-Year Average AUMs ¹	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7 ²
Cattle	34,300	31,980	28,820	33,940	34,180	34,180	31,980	33,560
Sheep	24,600	23,160	20,870	24,580	24,750	24,750	23,160	24,300
Total	58,900	55,140	49,690	58,520	58,930	58,930	55,140	57,860

Decisions made in the Forest Planning process do *not* include issuance of Term Grazing Permits nor do they include decisions about stocking of allotments (i.e. permitted numbers). These decisions must be based on very specific site-dependent information and are made through either Allotment Management Planning or Term Permit Issuance or Modification. Therefore, the projections displayed in Table 9 are for outputs only. Permitted number changes are dependent on other decision-making processes.

Recreation Management

The primary means of expressing differences between alternatives for summer recreation is the amount land within the different classes of the Recreation Opportunity Spectrum (ROS). ROS is a management system and tool that is based on inventory and mapping of recreation settings. These settings occupy a spectrum from highly developed urban settings (e.g. ski area base facilities) to very primitive settings with no evidence of human development (much of the High Uintas Wilderness).

When the ROS categories were mapped for each of the alternatives it became apparent that the ROS map in the 1985 Forest Plan (Alternative 4/1985) does not reflect existing conditions because it reflects the anticipated ROS conditions that would have come about if the 1985 Forest Plan had been strictly implemented. However, budgets and priorities changed from 1985 to the present and the anticipated ROS conditions on the Forest did not occur. Therefore, the existing condition represents current ROS settings and should be used as the point of comparison for the other alternatives. Table 10 shows the amount of land in ROS classes by alternative. Maps showing ROS allocations by alternative are provided with the FEIS and available on the website (www.fs.fed.us/wcnf).

Table 10. Acres of Summer ROS Categories by Alternative and Existing Condition (EC).

ROS Category	Alternative							
	1	2	3	4/1985	5	6	7	EC
Wilderness/Primitive ¹	36,500	36,500	36,500	307,500	36,500	36,500	36,500	36,500
Wilderness/SPNM ²	272,400	272,400	272,400	0	272,400	272,400	272,500	272,500
SPNM ³	556,200	436,300	392,100	241,900	308,400	411,800	416,100	416,100
SPM ⁴	135,800	188,700	223,600	85,600	268,800	201,400	276,800	276,800
RN (Roaded Natural)	234,600	301,500	311,100	545,600	349,300	313,400	227,900	233,600
Rural	720	720	720	13,600	720	720	6,400	720
Urban	144	144	144	0	144	144	144	144
NA ⁵	0	0	0	45,200	0	0	0	0
TOTAL ⁶	1,236,364	1,236,264	1,236,564	1,239,400	1,236,264	1,236,364	1,236,344	1,236,364

¹ Wilderness (MPC 1.1).

² Wilderness Semi Primitive Non-Motorized.

³ Semi-Primitive Non Motorize and Recommended Wilderness (MPC1.5).

⁴ Semi-Primitive Motorized.

⁵ Lands acquired after 1985 plan.

⁶ Totals differ due to GIS Mapping accuracy and rounding-off of decimal points.

Major differences between alternatives exist in the amount of recommended Wilderness, Semi-Primitive Non-motorized (SPNM), Semi-Primitive Motorized (SPM) and Roaded Natural (RN) ROS classes. The ROS map in the 1985 Forest Plan (Alternative 4/1985) anticipated much more road development than what actually occurred and this is reflected in much more non-motorized ROS categories in the existing condition. Alternative 1 provides an emphasis on more primitive forms of summer recreation with the recommendation of substantial new acreage for Wilderness and protection of the values inherent to undeveloped areas. Alternative 5 gives increased emphasis to motorized and developed uses. Alternatives 2, 3, and 6 provide differing acreages of developed and undeveloped recreation opportunities between the amounts of Alternatives 1 and 5. Alternative 7 is almost the same as the existing condition with only about 6,000 acres added to rural from roaded natural. ROS maps show the particular recreation settings available in an area.

Maps that show the location for four classes of winter recreation are found in the FEIS. These are Heli-skiing, Motorized (snowmobile use), Non-motorized, and Wilderness (non-motorized) and Table 11 shows the acres for each of these by alternative. Effects on winter use are compared by the acres open and closed to snowmobiling and they vary by alternative. Reasons for changing closures from existing include protection of critical big game winter ranges, exclusion from recommended wilderness and/or roadless areas, and separation of motorized from non-motorized uses to enhance non-motorized recreation opportunities in specific locations.

Alternatives 1 and 2 are the most restrictive to motorized use reducing open areas by about 61% and 53% respectively from existing. Alternative 3 increases existing winter motorized access by about 4%. Alternative 4 (1985 Plan) had about 12% more area open to motorized that currently exists in Travel Management Plans. Alternative 5 would open additional areas to motorized use adding about 9% to existing. Alternatives 6 and 7 decrease existing motorized areas by about 14% and 15% respectively. However, a large portion of the reduction (about 30,000 acres) is acreage along the very steep Wasatch Front of the Ogden Ranger District, which is currently “open”, but not used by snowmobilers. Therefore the usable snowmobile terrain in the existing

condition is actually about 5% less than the acres shown and alternatives that close this area (1,2,6,7) have a 30,000 acre reduction that has no real effect on snowmobiling.

Heliskiing areas remain the same as current in Alternatives 5, 6 and 7. The area available for heliskiing is somewhat different and acreage is reduced in Alternative 3, and heliskiing is not allowed in Alternatives 1 and 2.

Alternative 5 allows ski area permit boundary expansion while the other 6 alternatives maintain existing permit boundaries.

Table 11. Acres of Winter Recreation: Heli-skiing, Motorized, Non-Motorized, Wilderness by Alternative and Existing Condition (EC)

Winter Recreation	Acres of Existing Condition and Alternatives							
	1	2	3	4/1985	5	6	7 ¹	EC ²
Heli-skiing	0	0	12,000	17,000	17,000	17,000	17,000	17,000
Motorized	246,800	296,700	663,600	723,300	693,900	548,700	540,700	634,800
Non-Motorized	679,200	629,800	263,000	163,400	232,600	377,900	385,900	291,600
Wilderness	308,900	308,900	308,900	307,500	308,900	308,900	308,900	308,900

¹ Alt 7 Allows motorized use in areas currently open within Recommended Wilderness (Prescription 1.5)

² Existing Condition

Scenery Management

Scenery is an integral component of all national forest landscapes, and contributes to the quality of people’s experience.

For Scenery Management the major change between the 1985 forest plan and the revised forest plan is the replacement of the old Visual Management System with a new system for managing scenery – the Scenery Management System. The Scenery Management System (SMS) provides new terminology (terms are explained on page 11) and a different perspective within which to plan for scenic resources. Under the previous Visual Management System, human alteration of the natural landscape character was considered a negative impact to scenery. The forest was managed to acceptable degrees of deviation from the natural characteristic landscape using Visual Quality Objectives of preservation, retention, partial retention and modification. Under SMS, positive cultural modifications can be included in the landscape character to establish a baseline of measurement.

The Forest is classified in five landscape character themes that are tied to management prescriptions that may include positive cultural modifications within the theme definition. Alternative 4 uses the old system and is presented for contrast in Table 12.

Scenery has been altered in numerous locations across the Forest by both human and natural forces. Obvious significant effects on scenic resources arise from a variety of resource management activities and public uses such as recreation, timber management, wildland and prescribed fire, grazing, oil and gas leasing and development and utility corridors that alter

vegetation and the landscape appearances. The relative amount of these activities and uses vary by alternative. However, they are likely to be present to some extent in all alternatives.

Table 12. Percent of the WCNF of Landscape Character Theme and Scenic Integrity Objectives

LANDSCAPE CHARACTER	Scenic Integrity Objective	Alternative						
		1	2	3	4/1985	5	6	7
Natural evolving	Very High	56.3	36.7	29.1	N.A.	24.9	30.5	29.9
Natural appearing	High	33.8	43.6	36.6	N.A.	39.5	38.7	49.7
	Moderate	7.3	17.0	28.2	N.A.	2.2	25.2	14.7
	Low	0	0	3.5	N.A.	29.7	2.8	3.1
Developed natural appearing	High	1.9	2.0	1.9	N.A.	2.9	2.0	1.9
Resort natural setting	High	0.5	0.5	0.5	N.A.	0.5	0.5	0.5
Water recreation rural appearing	High	0.3	0.3	0.3	N.A.	0.3	0.3	0.3
Natural ¹ VQO preservation	Very High	0	0	0	25.0	0	0	0
Natural ¹ VQO retention	High	0	0	0	21.0	0	0	0
Natural ¹ VQO partial retention	Moderate	0	0	0	27.0	0	0	0
Natural ¹ VQO modification	Low	0	0	0	36.0	0	0	0
Grand Total		100	100	100	100	100	100	100

¹ Translation from Visual Management System terminology to Scenery Management System. Alternative 4 represents the 1985 Forest Plan direction for Scenic Resources.

Trails

Hiking, walking, bicycling, horseback riding, and motorized uses are all very popular activities on Wasatch-Cache trails. For this forest planning effort trail by trail allocation to different uses and the opening and closing of trails were not within the scope of the decisions to be made, and in general, most trail opportunities will continue as defined in current ranger district travel management plans. Currently, there are 306 miles of motorized trails on the Forest. Because of allocations of inventoried roadless areas to recommended wilderness in some alternatives, some trails that are currently open to motorized and mechanized uses would be closed to these uses. In Alternative 1, approximately 76 miles or 24 percent of existing trails would be closed to motorized use. In Alternative 2, approximately 7 miles or 2 percent of existing trail would be closed to motorized use. Alternatives 3 through 7 would have no change in motorized trail use from existing conditions.

Table 13. Miles of Existing Motorized Trails Closed to Motorized Use in Recommended Wilderness

	Alternative						
	1	2	3	4	5	6	7
Trails Closed to Motorized Use from Wilderness Recommendation	76	7	0	0	0	0	0

For mountain bikes (mechanized use) there are also effects of recommended wilderness by alternative. Because of allocations of inventoried roadless areas to recommended wilderness in some alternatives, some trails that are currently open to mountain biking would be closed to this use. In Alternative 1, approximately 167 miles of existing trail would be closed to mountain

biking use in 11 roadless areas. In Alternatives 2, 6, 7, and 3, approximately 53, 47, 43, and 12 miles of existing trail would be closed to mountain biking use. However, not all miles of trail that are open to mountain biking are actually suitable for average skill levels, therefore they may not be commonly used for that purpose. Alternatives 4 and 5 would have no change in mountain biking use from existing conditions.

Table 14. Miles of Existing Trails Closed to Mountain Biking in Recommended Wilderness

Roadless Area	Alternative						
	1	2	3	4	5	6	7
Burch Creek	6.5	NA	NA	NA	NA	NA	NA
High Uintas	12.6	7.8	7.8	NA	NA	5.9	5.9
Lakes	40.3	24.6	0	NA	NA	9.5	9.5
Lone Peak	0	0	NA	NA	NA	NA	NA
Mount Aire	11.3	NA	NA	NA	NA	NA	NA
Mount Naomi	33.5	15.5	3.8	NA	NA	3.8	NA
Mount Olympus	8.8	0	0	NA	NA	NA	NA
Nobletts	0.5	NA	NA	NA	NA	NA	NA
Stansbury	13.9	0	0	NA	NA	NA	NA
Twin Peaks	6.4	0	0	NA	NA	NA	NA
Upper South Fork	27.5	NA	0	NA	NA	27.5	27.5
Wellsville Mountains	0	0	0	NA	NA	0	NA
White Pine	5.3	5.3	NA	NA	NA	NA	NA
Widdop Mountain	0	NA	NA	NA	NA	NA	NA
Total	166.6	53.2	11.6	0	0	46.7	42.9

Inventoried Roadless Area Management

In addition to providing areas for future wilderness consideration, inventoried roadless areas possess social and ecological values and characteristics such as unique opportunities for non-motorized and motorized dispersed recreation in a primitive or semi-primitive setting, sources of clean drinking water, and large undisturbed landscapes that offer privacy and seclusion. These areas support a diversity of habitats for native plants and animal species, conserve biological diversity and provide opportunities for study and education.

Alternative 1 recommends the largest amount of acreage for wilderness designation, has the greatest amount of acreage managed as 2.6 (undeveloped areas), and applies the Roadless Area Conservation Rule to all inventoried roadless areas. Because of these factors it affords the most amount of protection to wilderness characteristics within inventoried roadless areas. Alternatives 2 and 6 protect large amounts of inventoried roadless acres primarily because of application of the Roadless Area Conservation Rule, but also because of the amount of inventoried roadless areas managed as undeveloped or recommended as wilderness. Alternatives 3 and 7 maintain most roadless values on a large part of the inventoried roadless area. Alternatives 4 and 5 maintain roadless values to a much lesser degree than the other alternatives and the potential to effect wilderness characteristics in roadless areas is highest under these alternatives. Refer to

Table 1, Management Prescription 1.5 to determine relative differences in areas recommended as wilderness.

Table 15. Inventoried Roadless Acres Disposition by Alternative

Prescriptions that:	Alternative						
	1	2	3	4	5	6	7
Maintain Roadless Area Values ¹	606,000	546,200	366,900	0	7,200	191,200	188,700
Mostly Maintain Roadless Area Values ²	0	39,200	58,100	131,900	109,900	389,400	267,400
Allow Development	0	20,600	180,900	474,000	488,800	25,300	149,900

¹No road construction, no timber harvest, no new trail or recreation development construction, no mechanical fuels treatments.

²No road construction, no timber harvest, trail construction, minimal new recreation development, and mechanical fuels treatments allowed.

Alternatives 1, 2 and 6 have the least potential timber management effects on inventoried roadless area values. In Alternatives 3, 4, and 5, undisturbed landscapes that are found in inventoried roadless areas could be altered by timber harvest and vegetation treatments to differing degrees. Timber harvest activities also increase the risk of impairing water quality and affecting habitat of some species.

Development of existing leases in inventoried roadless areas could affect roadless values under any alternative. Within the area being analyzed in the forest plan revision for future leasing, oil and gas activities resulting from new leases have the greatest potential to affect roadless area values in Alternative 5. In Alternatives 2, 3 and 6 areas are available for leasing however most do not allow surface occupancy. Alternative 7 does not surface occupancy on 20,900 acres while 27,000 acres allow surface occupancy with stipulations applied to protect resource values.

In Alternative 1 with motorized and mechanized recreation restricted in about 388,900 acres that are recommended as wilderness, user densities could increase in the remaining inventoried roadless areas. However, it is unlikely densities would increase to the degree that semi-primitive class is changed. Conversely, the primitive settings would be maintained in areas recommended as wilderness. Effects from recreation management in alternatives 2, 3, 6 and 7 would be similar to Alternative 1. In Alternatives 4 and 5 proposals could be considered that may affect primitive or semi-primitive settings since these alternatives allow new recreation facilities or road construction in inventoried roadless areas.

Road Management

The total overall miles of roads do not change substantially by alternatives. The one exception is in Alternative 1 that has 2.3 miles of open travel plan roads that would be closed to motorized uses as a result of inventoried roadless area being recommended for Wilderness. The management prescriptions assigned to areas may affect some road management objectives for specific areas. Maintenance effects are the same for all alternatives based on experienced budget levels.

Proposed miles of road construction vary by alternative and by prescription where construction is allowed. Alternative 5 proposes the most new road construction as a result of timber harvest and oil and gas leasing and has the most acreage where it is allowed by prescription. New road construction would be very minimal in Alternative 1, a result only of allowing access to existing leases. The risk of effects to soil and water resources resulting from road reconstruction is mitigated through standards and guidelines. In all alternatives road construction is precluded by prescription in areas managed for undeveloped or backcountry values. Alternatives 1, 2, and 6 further restrict road construction in inventoried roadless areas. The primitive and semi-primitive settings currently present would be maintained.

Table 16. Projected Road Construction and Projected Road Closure to Motorized Use (Total miles¹ for 10-year Planning Period)

	Alternative						
	1	2	3	4	5	6	7
New Timber Harvest Road Construction	0	6	39	49	49	6	7
Projected New Oil and Gas Exploration Roads	3	3	6	0	10-11	6	7.5
Projected New Oil and Gas Development Roads	0	0	4	0	4	4	4
Roads Closed to Motorized Use from wilderness Recommendation	2	0	0	0	0	0	0

¹ Rounded off to nearest mile.

Oil and Gas Leasing

The Appeal Settlement Zone referred to in the discussion below describes an area of about 68,300 acres defined through an appeal settlement decision in 1994. It is a band of land adjacent to the High Uintas Wilderness on the north slope of the Uinta Mountains. Alternative 1 does not allow new leasing in the Appeal Settlement Zone; however, development of existing leases within the Table Top Unit (an area of about 19,000 acres within the Hayden Fork, Stillwater and East Fork of the Bear River drainages) could affect resources on an estimated 20 acres because of oil and gas exploration activities. In Alternative 1 the majority of this area would be recommended as wilderness. Alternative 2 is very similar. Again, development of existing leases within the Table Top Unit could affect about 20 acres. Once existing leases expire, new leases could be issued but surface occupancy would not be allowed. The majority of this area would be managed for backcountry or undeveloped values. Alternative 3 precludes leasing availability in areas recommended for wilderness in the future and does not allow new leases with surface occupancy in areas managed for undeveloped and backcountry recreation values. New leases would be allowed outside those areas with stipulations applied to protect sensitive resources. Oil and gas activities are estimated to disturb about 75 acres. Some of the effects could be long-term because of field development. Some of this development is predicted within the Table Top Unit and within areas managed for backcountry and undeveloped values. Development within these areas could substantially affect the recreation setting. Alternative 4 does not make a leasing decision. Because lessees would not be able to effectively develop a field should one be discovered due to nearby unleased parcels, future activities are not likely. No effects are

probable. Alternative 5 would provide for leasing with standard lease terms and therefore provide the greatest opportunity for full field development. Oil and gas activities are estimated to disturb about 105 acres. In Alternative 6 new leases issued as a result of the leasing decision made in the plan revision would not allow surface occupancy. However, existing leases in the Table Top Unit that expire would be immediately renewed in areas not precluded by management plan direction. Leases would be issued in areas managed for motorized dispersed recreation values and terrestrial habitat. In the Table Top area the degree of effects from Alternative 6 is similar to Alternative 3. In the remainder of the area the effects would be minimal because of no surface occupancy. In Alternative 7 leasing would be allowed with surface occupancy on about 27,000 acres with no surface occupancy allowed on 20,900 acres. About 85 acres could be disturbed. Potential effects on resources from new leases are most likely to result from Alternative 5 and least likely in Alternative 1. Conversely, opportunities for oil and gas exploration and development are most restricted in Alternative 1 while Alternative 5 affords the greatest opportunities.

Decisions to make lands not administratively available for leasing or not to authorize lands for leasing precludes the exploration and potential discovery of oil and gas resources and can make subsurface oil and gas resources unrecoverable. If drilling and production occurs on adjacent private lands drainage of federal reserves may occur and result in lost federal revenues and returns to the counties and states. Also, the opportunity to explore and produce on adjacent leased lands may be affected by precluding exploration and production from reservoirs under unavailable lands.

Alternatives 1, 2, 3 6 and 7 would administratively eliminate various amounts of acreage from leasing consideration. Alternative 1 would remove the most acreage from leasing consideration followed by Alternatives 2, 7, 6 and 3. Alternative 5 allows all lands within the revision analysis area to be leased. Areas determined not administratively available are based on the lands recommended for wilderness.

Table 17. Available Acres and Not Available Acres by Alternative

	Alternative						
	1	2	3	4	5	6	7
Acres available for leasing	0	40,100	50,100	N/A	68,300	48,300	47,900
Acres not available for leasing	68,300	28,200	18,200	N/A	0	20,000	20,400

Footnote: N/A = not applicable

Table 18 displays the differences between the alternatives in the number of acres available for leasing and the number of acres where different stipulations would be applied. The size and shape of an area assigned an NSO stipulation affects a potential operator’s ability to access the subsurface resource from adjacent lands. In Alternatives 2, 3, 6 and 7, areas assigned an NSO stipulation generally tend to be big blocks. The shape of an area where CSU would be applied is less important because CSU permits year-round occupancy and maintains potential for discovery and development of oil and gas resources.

Alternative 5 would have no acres stipulated with NSO.

Table 18. Acres with Stipulations Listed by Alternative

	Alternative						
	1	2	3	4	5	6	7
Acres Available for Leasing	0	40,100	50,100	--	68,300	48,300	47,900
Available with Stipulations							
No Surface Occupancy	0	40,100	37,200	--		44,700	20,900
Controlled Surface Use	0	0	2,100	--		3,600	24,900
Timing Limitation	0	0	300	--		0	100
CSU/TL	0	0	100	--		0	1,000
Standard Lease Terms	0	0	10,400	--	68,300	0	1,000

Special Designations

Special designations refer to Research Natural Areas (RNAs), Special Interest Areas (SIAs), Special Areas (SAs), and Wild and Scenic Rivers (WSRs). These designations are defined in detail in the FEIS within several management prescription categories: 2.4 for RNAs, and 2.7 for SIAs and SAs. Eligible Wild, Scenic, and Recreational Rivers are not mapped with prescriptions. In brief, an RNA is an example of important forest, shrubland, grassland, alpine, aquatic, and geologic types that have special or unique characteristics of scientific interest and importance. RNAs on the Wasatch-Cache will not be open to use by the general public. SIAs are areas with scenic, historical, geological, botanical, zoological, paleontological, or other special characteristics. Special Areas are designed to protect and manage for public use and enjoyment, special recreation areas with scenic, geological, botanical, zoological, paleontological, archaeological, or other special characteristics or unique values. The primary distinction between SAs and SIAs, is that Special Areas have recreation as an underlying value while Special Interest Areas protect and “where appropriate” foster use.

WSRs include three categories of free-flowing rivers (Wild, Scenic, and Recreational) that differ based on the amount of development present in the river corridor. The FEIS makes no recommendation to Congress of which eligible rivers should be included in the National Wild and Scenic Rivers System. Thirty-three river segments were found to be eligible as a result of a 1999 inventory. Suitability determinations must be completed to address this. The current Forest Plan (in any alternative) protects the outstanding values for eligible rivers until such suitability studies and recommendations are completed.

Table 19. Acres of Research Natural Areas and Special Interest Areas (rounded to the nearest 100 acres) by alternative.

Designation	Alternative						
	1	2	3	4	5	6	7
Red Butte RNA	4,650	4,650	4,650	5,500	4,650	4,650	4,650
Morris Creek RNA	1,050	1,050		200	200	1,050	1,050
Mollens Hollow RNA	1,200	1,200	1,200	1,200	1,200	1,200	1,200
Total RNA Acres (MPC 2.4) ¹	6,900	6,900	5,850	6,900	6,050	6,900	6,900
Red Butte SIA	850	850	850	0	850	850	850
Logan Canyon SIA	13,800	13,800	0	0	0	13,800	22,550
Willard Basin SIA	200	200	0	0	0	200	2,200
Daniels Experimental Forest SIA	1,700	0	0	0	0	1,700	1,700
Tri Canyons Special Area	0	17,600	0	0	0	0	0
Total SIA Acres (MPC 2.7)	16,550	32,450	850	0	850	16,550	27,300

¹ These acres include acres mapped as MPC 3.1 or MPC 3.1a within the boundary of the Research Natural Area.

The alternatives propose RNA changes in Morris Creek and Red Butte Canyon but not in Mollens Hollow and SIA additions as shown on Table 19. In Alternatives 1, 2, 6 and 7 additional acreage (an estimated 850 acres) contiguous to the existing **Morris Creek RNA** is added. With this addition, greater elevational gradient and associated climatic conditions, aspects, soils, plant communities, and dependent species would be represented in the RNA providing a larger and more diverse ecosystem to the RNA. Alternative 1, 2, 3, 5, 6, and 7 would remove approximately 850 acres from the **Red Butte Canyon RNA** and place those acres in Special Interest Area status because of the high amount of introduced and weedy species that occur. This provides a potential for manipulative restoration ecology research, which is incompatible with RNA direction. Alternative 4 keeps these acres in RNA status.

Lower Logan Canyon SIA would be added in Alternatives 1, 2, 6, and 7. In addition, Alternative 7 would manage the roadless (MPC 2.6) south-facing slopes in the lower portion of the canyon as an SIA (botanical area), which would add approximately 8,750 acres. For this area rock climbing activities or other undeveloped recreation might be limited or redirected, if it was determined that use patterns could affect specific plant species at sites where these species exist.

Lower Red Butte, a portion of the existing RNA (about 850 of the total 5140 acres) would be reclassified as an SIA in Alternative 1, 2, 3, 6 and 7. In these alternatives more flexibility for restoration ecology research would be provided (than if the area remained part of the RNA). Current uses in this prescription area would be modified so that the research could be conducted in a controlled manner.

Willard Basin SIA would be added in Alternatives 1, 2, 6, and 7. In this small tall forb area, recreation use patterns, mostly motorized uses, but also other non-motorized recreation that might affect the tall forb setting would be controlled to the extent that the relic tall forb community was protected.

W.C. Daniels School Forest has operated under an agreement between the Forest Service and Utah State University for many years. The State of Utah owns one of the four sections that make up the W.C. Daniels School Forest, while the other three are National Forest lands. It is unlike the previous three SIA's in that reclassification of it as an SIA (under Alternatives 1, 2, 6, and 7) is largely recognition of the existing situation, but places the area within the Forest Service Manual's direction for SIA's.

Alternative 2 includes a **potential Tri-Canyon Special Area**. Under this alternative a process would be initiated among the Forest Service, other interested governments and agencies, business groups, and citizenry to identify values, refine management direction and add additional detail to the desired future condition for this area based on this process. Under Alternative 1, large parts of this area are recommended for Wilderness. For Alternatives 3, 4, and 5 management would be as depicted by prescription. There would be no special recognition of the area other than values embodied in the mapped prescriptions.

Fire Management

Recent spotlighting of fire management policies and practices because of several severe fire seasons have lead to increased emphasis on suppression resources, fuel treatment, and fire restoration on the landscape. 2001 is the first year of substantially increased funding and personnel to accomplish these, however it is unclear whether this level of commitment will be stable for the life of the Forest Plan. Effects analysis assumes it will. There are a number of challenges in addition to funding including species at risk management, lack of experience and personnel for fire management project planning and implementation, potential for noxious weed invasion, sensitive watershed concerns, scenery resource concerns, smoke production, and dense populations in and surrounding the forest. These essentially apply to all alternatives.

Table 3 shows projected use of fire and mechanical treatment of fuels by vegetation cover type in acres by alternative. Alternatives 2, 3, and 6 plan more prescribed fire than alternatives 4 and 5 while alternative 1 does not allow prescribed fire. A key component of each alternative except 1 and 4 is the mechanical treatment of oakbrush to reduce hazardous fuels in the urban/wildland interface along the Wasatch front. Effects on fire management from livestock grazing may be significant because it affects the amount of fuel available to burn. In the case of fire suppression this can be an advantage while in the case of prescribed fire it can be a disadvantage because of lack of fine fuels needed to carry a lower-intensity fire. Grazing may need to be deferred before and after use of prescribed fire in order to allow proper regeneration of vegetation. Prescribed fire must also be coordinated with scenery management, species at risk and recreation. In each case these may be constraints on the design and implementation of restoring fire's role in Wasatch-Cache landscapes.

Timber harvest affects fire management by reducing fuel loadings and increasing openings to reduce fire's ability to transition from a surface fire to a crown fire. It can also create activity fuels which if not properly treated can lead to higher fuel loadings and increase the threat of ignition and hazard. Since Alternative 1 does not allow timber harvest or vegetation treatment (with the exception of wildland fire use) natural fuels would continue to accumulate and some

fires may increase in size and intensity. As timber stands age the threat of large stand replacing fires with more risk to firefighters, public, and adjoining areas becomes more likely. In Alternatives 2 and 6 that apply the Roadless Area Conservation Rule, fire use will be the favored treatment in inventoried roadless areas for ecosystem benefit and hazardous fuels reduction. Access to the forest effects fire management by increasing the potential of human-caused fire starts, but also increases the ability to report fires and suppress fires. The opposite is true in areas without access.

Economic and Social Effects

When this analysis considered the ten counties that surrounds and includes the Wasatch-Cache, it was found that few jobs and income are directly derived from the Forest. Traditional forest related jobs in timber, livestock grazing, oil and gas or other mineral production, and recreation uses make up a small part of this economy. When considering only the rural areas within the ten counties, all jobs traditionally related to the forest were still a very small portion of the total number of jobs in these rural areas. However, jobs in these sectors are important to those that depend on them, and their presence in the area helps keep the economy diverse which is a positive condition from an economic standpoint.

The different alternatives do project different outputs for timber products and minerals, and this affects projections for jobs and income across the seven alternatives. For livestock grazing the variance in jobs and income is less across the alternatives. The projections of the numbers of jobs by alternative affected in the rural setting of the ten county area are shown in Table 20 for current conditions and for the alternatives at the end of the decade after implementation. In each case the percentage change from current conditions is minor. The complete FEIS has much more detailed information on economic effects.

Table 20. Average Annual Employment (jobs) by Program by Alternative (Decade 1)

Resource	Alternatives							
	Current	No Action	1	2	3	5	6	7
	----- average annual employment, jobs-----							
Recreation/tourism	5,510	5,982	5,960	5,977	5,993	6,002	5,993	5,993
Wildlife and fish	80	88	88	88	88	88	88	88
Grazing	35	35	33	29	35	35	33	34
Wood products	60	60	0	18	25	63	33	37
Minerals	89	89	52	52	210	251	210	227
Forest Service expenditures	393	393	394	392	392	392	392	392
Total forest management	6,167	6,647	6,527	6,556	6,743	6,831	6,749	6,771
Percent change from current	---	8%	6%	6%	9%	11%	9%	10%

Table 21. Labor Income estimated by Program by Alternative (Decade 1)

Resource	Alternatives							
	Current	No Action	1	2	3	5	6	7
	----- average annual, in millions of dollars -----							
Recreation	108.2	117.6	117.0	117.4	117.8	117.9	117.8	117.8
Wildlife and Fish	1.6	1.8	1.8	1.8	1.8	1.8	1.8	1.8
Grazing	0.5	0.5	0.5	0.4	0.5	0.5	0.5	0.5
Wood products	1.4	1.4	0.0	0.4	0.6	1.4	0.8	0.8
Minerals	4.5	4.5	2.6	2.6	10.6	12.6	10.6	11.4
Forest Service expenditures	12.4	12.4	12.4	12.5	12.5	12.5	12.5	12.5
Total forest management	128.6	138.2	134.3	135.1	143.8	146.7	144.0	144.8
Percent change from current	---	7%	4%	5%	12%	14%	12%	13%

Source: MIG 2002.

All counties within the Wasatch-Cache National Forest analysis area except Cache, Rich, and Tooele counties in Utah have selected stable payments under the secure payments legislation. There will be no changes in payments to states by alternative to those counties selecting stable payments. Cache, Rich, and Tooele counties will continue receive a portion of Forest revenues, Table 22 highlights historical payments by program to these counties. Funds from timber harvesting and salvage are a significant portion of the related payments; it is likely any alternative with lower timber activity may return fewer funds to the counties. Grazing has been fairly stable over the last three fiscal years and this trend may continue. Finally, the fees from recreation have been declining and will likely continue to do so under all alternatives.

Table 22. Cache, Rich, and Tooele counties Utah, 25% payment, fiscal year 1999-2001.

Revenue category	Cache County			Rich County			Tooele County		
	FY99	FY00	FY01	FY99	FY00	FY01	FY99	FY00	FY01
	nominal dollars								
Timber	51,448	33,463	92,332	8,988	6,006	16,574	256	4,906	4,714
Grazing	25,006	25,660	24,750	4,368	4,606	4,443	4,687	4,792	4,392
Land use	4,308	3,128	5,017	752	561	900	22,314	4,118	1,858
Recreation Special Use	44,850	30,158	47,964	7,835	5,413	8,610	203,929	173,787	13,303
Power Line	7,529	7,204	7,344	1,315	1,293	1,318	773	789	801
Minerals	0	0	0	0	0	0	64	66	956
Recreation Fees	15,258	13,753	5,477	2,665	2,468	983	137	155	291
KV/Salvage	271,093	138,697	167,731	47,364	24,897	30,099	25,535	18,278	9,922
Total revenues	419,492	252,063	350,615	73,291	45,247	62,928	257,695	206,891	136,237
County 25% payment	104,873	63,016	87,654	18,323	11,312	15,735	64,424	51,723	34,059

Source: USDA Forest Service 2001c.

As with economic effects, off-forest effects to social conditions in communities and counties surrounding the Forest (including American Indians) were determined to be minor.

Preferred Alternative

The Regional Forester has selected Alternative 7 as the Preferred (Decision) Alternative.