

CHAPTER 1. PURPOSE OF AND NEED FOR ACTION

1.1 Document Structure ---

The Forest Service has prepared this Environmental Impact Statement in compliance with the National Environmental Policy Act (NEPA) and other relevant federal and state laws and regulations. This Environmental Impact Statement discloses the direct, indirect, and cumulative environmental impacts that would result from the proposed action and alternatives. The document is organized into four chapters:

- **Chapter 1. Purpose and Need for Action:** The chapter includes information on the history of the project proposal, the purpose of and need for the project, and the agency's proposal for achieving that purpose and need. This section also details how the Forest Service informed the public of the proposal and how the public responded.
- **Chapter 2. Alternatives:** This chapter provides a more detailed description of the agency's proposed action as well as alternative methods for achieving the stated purpose. These alternatives were developed based on significant issues raised by the public and other agencies. This discussion also includes mitigation measures. Finally, this section provides a summary table of the environmental consequences associated with each alternative.
- **Chapter 3. Affected Environment and Environmental Consequences:** This chapter describes the environmental effects of implementing the proposed action and other alternatives. This analysis is organized by resource area.
- **Chapter 4. Consultation and Coordination:** This chapter provides a list of preparers and agencies consulted during the development of the environmental impact statement.
- **Appendices:** The appendices provide more detailed information to support the analyses presented in the environmental impact statement.

Additional documentation, including more detailed analyses of project-area resources, can be found in the project planning record located at the Ogden Ranger District.

1.2 Project Area ---

The project area is located in Rich County, Utah on the Ogden Ranger District of the Wasatch-Cache National Forest. The 21,000 acre project area is located about 50 miles east of Ogden, Utah at the headwaters of the Big Creek watershed, which drains to the east into the Bear River. Approximately 4,800 acres within the 21,000 acre project area are proposed to be treated. See Appendix A, Map 1 for a general vicinity of the project area.

1.3 Current Condition of Vegetation Communities ---

The Big Creek project area is located at the headwaters of the 171,000 acre Big Creek watershed that drains to the east into the Bear River. Wasatch-Cache National Forest resource specialists conducted a watershed assessment of this 21,000 acre portion of the Big Creek watershed in 2005 (USDA Forest Service 2006d). The assessment characterized the current condition of the area and identified opportunities for vegetation management.

As indicated in the watershed assessment, vegetation communities on National Forest System lands within the 21,000 acre project area are composed of approximately 7,000 acres of conifer, 3,500 acres of aspen/aspen-conifer, 1,500 acres of conifer-aspen, and 6,000 acres of sagebrush. The remaining balance is private land within the project area boundary (see Appendix A, Maps 2 and 3).

Prescribed fire has been used over about 750 acres (1990-1992) and about 1,375 acres have been previously harvested (approximately 500 acres in clearcuts and 800 acres in partial cuts, between 1965 and 2000).

The National Forest Management Act of 1976 states that forest plans must provide for diversity of plant and animal communities (NFMA 1976). “The most efficient way to maintain biological diversity in a forested landscape is to have a diverse array of stands, and thus a diverse array of ecosystems and their constituent species” (Hunter 1990). Projects based on forest plan objectives must be targeted at creating and maintaining diversity in vegetation both in terms of species composition and structural stages.

Historically, natural disturbances such as wildfire, wind, insect damage, and disease created variation in the patterns of vegetation structure across the landscape. The result of these disturbances was a diverse mosaic pattern of vegetation with respect to age and type. It is this mosaic pattern that helps create a more resilient, diverse forest and maintain biodiversity. When landscapes are generally within the range of historic conditions, they are said to be in “properly functioning condition” (PFC). When landscapes are generally outside the range of historic conditions, they are considered not to be properly functioning.

In 1998 an assessment (USDA Forest Service 1998a) was completed for the forests of northern Utah (which includes the Wasatch-Cache) to determine vegetation conditions in relation to the R4 PFC Rapid Assessment Process findings (USDA Forest Service 1998b). In this, recommended structural stage distributions at the landscape level are based on Reynold’s work for the major forested vegetation types. These distributions represent the needs in each of the age classes to supply recruits for the next older age class over time and thus perpetuate both that particular vegetation type and the balanced range within it. These are based on seedling establishment requirements, growth rates, life expectancy (pathological rotation), soils and climatic factors (Reynolds 1992).

Over the years, wildfires have largely been suppressed on the WCNF. As a result, much of the vegetation has become uniform with respect to age and type with little variation across the landscape. In addition, forest inventories suggest much of the historical aspen cover type on the WCNF (60% or more) has been replaced by conifer-dominated communities.

The Big Creek Watershed Assessment indicates vegetation communities are substantially altered from what they were historically and many communities are not at properly functioning condition (USDA Forest Service 2006d). Some of the notable communities at risk are: aspen communities (being encroached upon and potentially replaced by conifer trees), sagebrush communities (in late seral condition with closed canopies of sagebrush; sites which were shared historically by sagebrush, grass, and forbs) and Engelmann spruce/subalpine fir, Douglas-fir, and lodgepole pine forests (composed primarily of dense stands skewed heavily toward old and mature age classes).

Within the aspen communities in the Big Creek project area, there has been an ongoing loss of aspen to decadence and spruce/fir encroachment as a result of fire suppression. Structural diversity is being lost as aspen stands mature and older classes are found across the landscape. Aspen in properly functioning condition would have a balanced range of structural classes across the landscape with about 40% in grass/forb and seedling/sapling, 30% in young, mid, and mature, and about 30% in old forests. Historically, fire has been the most important disturbance factor for maintaining the patterns and

structural diversity of aspen, with a typical fire return interval of 20 to 100 years. Fire suppression and other practices over the past 100 years have created conditions that are inconsistent with the normal successional trends in these ecosystems. Within the Big Creek project area, approximately 5,000 acres are in the aspen, aspen-conifer, and conifer-aspen communities and the majority of it is in mid-age to mature forests in various stages of conversion to conifer. Few pure aspen stands remain, primarily on the lower elevation and drier slopes.

A similar situation exists within sagebrush communities, which comprise about 6,000 acres of the Big Creek project area. These communities are skewed toward older age classes and have a dense canopy cover that precludes grasses and forbs valuable for preventing erosion and providing forage for wildlife and livestock. Fires, which historically occurred in sagebrush every 20 to 40 years providing a mosaic of age classes and canopy cover, have been suppressed for many years, contributing to the current deteriorated condition. Sagebrush communities in properly functioning condition would have a balanced range of structural stages. Currently, sagebrush communities in the project area are in late seral, closed canopy structural stages, indicating they are highly departed from the natural fire regime, and are not in properly functioning condition.

Conifer forests composed of Engelmann spruce/subalpine fir, Douglas-fir, and lodgepole pine, in pure and mixed stands comprising about 7,000 acres of the Big Creek project area, are skewed heavily toward mature and old age classes. These conifer types in properly functioning condition would have a desired structure of about 10% in each of the grass/forb and seedling/sapling structural stages and about 20% in each of the young, mid-aged, mature, and old forest structures. The Big Creek watershed assessment indicates the majority of the conifer type is in the mature and old forest structures and is not in properly functioning condition (USDA Forest Service 2006d).

The Big Creek Analysis Area is a 21,000 acre area with a fairly extensive road system. There are 66.2 miles of roads within the analysis area, including unauthorized routes which are not part of the forest road system. See Bullock and Vallejos 2008 for a description of roads in the Big Creek analysis area.

1.4 Purpose and Need for Action

The first purpose of this project is to improve vegetation structure and pattern for cover types within the Big Creek project area to move toward properly functioning condition at the landscape scale. The need for improving the vegetation structure and pattern of vegetation cover types in the project area is clearly demonstrated when comparing the existing conditions (as summarized under Section 1.3, Current Condition of Vegetation Communities) to the desired landscape structure for these types in the Revised Forest Plan (USDA Forest Service 2003; page 4-39, Guideline 14). These communities are clearly not at properly functioning condition and timely treatments are needed to begin moving in that direction.

A second purpose of this project is to enhance ecosystem resiliency and to maintain desired fuel levels with fire operating within historical fire regimes as described in the Revised Forest Plan (USDA Forest Service 2003; pages 4-10, 4-19). A fire regime refers to the natural role that fire plays across the landscape, characterized by occurrence, frequency (Fire Return Interval), and intensity or severity of fire. A Fire Regime Condition Class (FRCC) analysis was conducted as part of the Big Creek watershed assessment (USDA Forest Service 2006d). This analysis is a standardized tool for determining how the current vegetation, fuels, and disturbance regimes compare to historic reference conditions. The Big Creek assessment shows that the subwatersheds within the project area are moderately to highly departed from reference conditions for their natural fire regimes. This is primarily indicated by the predominance of older vegetation, and the lack of young and mid-seral age classes, due to a reduction in natural fires over the last century or so. Because of this departure, there is a need for action to move towards a more

natural fire regime. A more natural fire regime can lessen the potential for very high intensity wildfires with undesirable effects, such as injury of the aspen clonal root system from exposure to extreme heat.

A third purpose of this project is to provide commercial timber that contributes to a sustainable level of goods and services. The Revised Forest Plan directs the use of timber harvest where allowed, to contribute to the economy while achieving properly functioning conditions of vegetation and watersheds (USDA Forest Service 2003; page 4-23). There is a need to provide a product to supply local and regional sawmills.

This action responds to the goals and objectives outlined in the Revised Forest Plan, and helps move the project area towards desired conditions described in that plan (USDA Forest Service 2003).

1.5 Proposed Action

The Proposed Action has been modified from what was proposed earlier in scoping (refer to Section 2.3 for the rationale). The action proposed by the Forest Service to meet the purpose and need is treatment of approximately **4,800** acres of aspen, conifer, and sagebrush communities within the Big Creek project area. See Table 1.5.1 for a description of acres in each treatment type.

In order to move toward a landscape structure more balanced between older and younger vegetation, as identified in the properly functioning condition analysis and the fire regime condition class assessment, a combination of mechanical treatments (including both commercial timber harvest and non-commercial cutting or brush harrowing), prescribed fire, and/or herbicide treatment (specifically herbicide treatment to thin sagebrush) is proposed across the project area. The Proposed Action moves towards properly functioning condition while ensuring the Revised Forest Plan standards are fully met as well as reducing roads and treatment acres to a level that addresses most of the concerns and issues brought up during the preliminary analysis.

Table 1.5.1. Proposed Action (Alternative 1) approximate acres to be treated by prescription type.

Prescription	Alt. 1 Acres
Clearcut	206
Conifer Removal with Patches	27
Conifer Removal Followed by Fire	556
Group Selection	256
Groups and Patches	150
Irregular Shelterwood (IRSW)	71
IRSW with Groups / Patches	140
Overstory Removals	130
Prescribed Fire / Herbicide / Mechanical	2,513*
Prescribed Fire Mosaic	681
Shelterwood Prep	32
Thin with Groups	38
Total Treated Acres	4,800

* The 2,513 acres proposed in the prescribed fire / herbicide / mechanical prescription are gross acres, not net acres. Within any treatment type, the actual acres burned, sprayed, or harrowed would be less than the gross acres. The preferred course of action is to burn the proposed acres, however if that is not feasible because of weather conditions, or steep slopes, or other conditions then herbicide or mechanical treatment will be used. All potential acres of each treatment type have been analyzed.

Within the 2,513 total acres, up to 2,513 acres are proposed for burning, up to 1,005 acres are proposed for herbicide, and up to 1,470 acres are proposed for mechanical treatment see Table 1.5.2.

Table 1.5.2. Alternative 1 – Prescribed Fire / Herbicide / Mechanical treatment by Unit.

General Location	Alt. 1 Unit #	Acres	Burn Acres	Herbicide Acres	Mechanical Acres
Monument Peak	59	139	0-139	0-35	0-70
Bowery Fork	61	314	0-314	0-80	0-160
Pole Hollow	62	651	0-651	0-130	0-100
The Valley	35	913	0-913	0-500	0-800
S of Six Bit Hollow	42	14	0-14	0	0
N of Big Crawford Ck	44	6	0-6	0	0
Big Crawford Ck	46	16	0-16	0	0
S of Big Crawford Ck	51	8	0-8	0	0
SW of Crawford	52	227	0-227	0-100	0-150
W of Valley Spring	63	225	0-225	0-160	0-190
Totals:		2,513	0-2,513	0-1,005	0-1,470

Source: Corbin 2008.

See Appendix A, Map 2 for general treatment areas. Not all acres would be treated within the general treatment areas.

See Chapter 2, Section 2.2 for a complete description of treatment types and a more detailed roads description.

The Big Creek project area has a fairly extensive road system in place and most of the general treatment areas are accessible (see Bullock and Vallejos 2008 for a description of roads in the Big Creek analysis area). However, approximately **9 miles of temporary roads** are proposed to be constructed to access specific treatment units. Following treatments, all temporary roads would be obliterated, the road prism returned to contour, and the surface revegetated.

Approximately **1.5 miles of roads** are proposed to be constructed to access partial cut units in the spruce-fir cover type. Referred to as “intermittent service roads,” following project completion, these roads would be closed using gates or other physical barriers and seeded, but the road prism would be kept in place for future administrative use.

Fireline

See Chapter 2, Section 2.2, Alternative 1 for a detailed description of the five basic techniques that will be used to contain prescribed fire in the treatment units. Estimates of miles of each kind of fire line are approximate, but represent the upper end (most line construction) for control lines. It is likely that firing techniques will be utilized more and constructed lines less than the estimates given. At least 25 miles of unit perimeter will utilize firing techniques. Up to about 14.3 miles of handline will be built and rehabilitated. Approximately 0.8 miles of machine line is expected to be used. Approximately 5.2 miles of skid trails (including incidental machine line) will be used as fire containment lines. Where existing Forest system roads coincide with burn unit boundaries these will be used as fire lines. Approximately 2.0 miles of road will be used for fire containment.

1.6 Decision Framework

Given the purpose and need, the deciding official will review the proposed action, the alternatives, and the environmental consequences in order to make the following decision:

Whether or not to implement vegetation treatments in the Big Creek project area, and if so, to what degree, where and with what conditions.

1.7 Relationship to Forest Plan

The 2003 Revised Forest Plan sets forth management direction for managing the land and resources of the Wasatch-Cache National Forest (USDA Forest Service 2003). The Forest Plan is the result of programmatic analysis, which is addressed in the Revised Forest Plan FEIS (USDA Forest Service 2003). The Big Creek Vegetation Treatment Project is a project-level analysis; its scope is confined to addressing the significant issues and possible environmental consequences of the project.

A 2007 court ruling enjoined the Forest Service from implementing the 2005 planning rule (*Citizens for Better Forestry v. USDA*). The Forest Service is currently operating under the 2004 interpretive rule that requires best available science to be considered in implementing the current plan. Literature reviewed and considered by specialists in the analyses is referenced in the FEIS, Appendix B. A new 2008 Rule was approved April 9, 2008. Its effective date has not yet been established.

Chapter 4 of the Revised Forest Plan contains Forest-wide as well as area-specific management direction (USDA Forest Service 2003). The pertinent Revised Forest Plan Standards and Guidelines are summarized in Tables 1.7.1 and 1.7.2.

Table 1.7.1. Wasatch-Cache NF Standards (S) that apply to this project.

Revised Forest Plan (RFP) Standards (USDA Forest Service 2003)
(S1) Allow no ground-based skidding and oil and gas surface occupancy on slopes greater than 40% (RFP, p. 4-36).
(S2) Apply runoff controls during project implementation to prevent pollutants including fuels, sediment, oils, from reaching surface and groundwater. (RFP, p. 4-36).
(S4) Place new sources of chemical and pathogenic pollutants where such pollutants will not reach surface or ground water. (RFP, p. 4-36).
(S6) Within legal authorities, ensure that new proposed management activities in watersheds containing 303d listed water bodies improve or maintain overall progress toward beneficial use attainment for pollutants which led to listing; and do not allow additions of pollutants in quantities that result in unacceptable adverse effects. (RFP, p. 4-37). (See RFP, Appendix II provides for clarification of terms used in this Standard).
(S7) Allow management activities to result in no less than 85% of potential ground cover for each vegetation cover type. (RFP, p. 4-37). (See RFP, Appendix VII for potential ground cover values by cover type).
(S12) Prohibit forest vegetation treatments within active northern goshawk nest areas (approximately 30 acres) during the active nesting period. (RFP, p. 4-39).
(S13) At least 20 percent of each forested cover type by ecological section (McNab and Avers 1994) shall be maintained with old forest landscape structure with patch sizes of at least 10 acres. These old forest areas are dynamic, changing location as disturbances occur. (RFP, p. 4-39).
(S17) All decommissioned roads/trails will be properly drained. (RFP, p. 4-45).
(S20) When constructing or maintaining roads, trails and facilities, use Best Management Practices to minimize sediment discharge into streams, lakes and wetlands. (RFP, p. 4-46).
(S25) As a tool to achieve desired conditions of riparian areas, maximum forage utilization standards (stubble height) for low to mid elevation greenline species apply. (RFP, p. 4-51).

Table 1.7.2. Wasatch-Cache NF Guidelines (G) that apply to this project.

Revised Forest Plan (RFP) Guidelines (USDA Forest Service 2003)
(G2) Projects in watersheds with 303(d) listed waterbodies should be supported by scale and level of analysis sufficient to permit an understanding of the implications of the project within the larger watershed context. (RFP, p. 4-37).
(G3) Proposed actions analyzed under NEPA should adhere to the State Nonpoint Source Management Plan to best achieve consistency with both Sections 313 and 319 of the Federal Water Pollution Control Act. (RFP, p. 4-37).
(G4) At the end of an activity, allow no more than 15% of an activity area to have detrimental soil displacement, puddling, compaction and/or to be severely burned. (RFP, p. 4-37).
(G5) Do not allow activities that could result in water yield increases that would degrade water quality and impact beneficial uses. (RFP, p. 4-37).
(G6) In Riparian Habitat Conservation Areas when projects are implemented, retain natural and beneficial volumes of large woody debris. (RFP, p. 4-37).
(G8) In stream channels naturally occurring debris shall not be removed unless it is a threat to life, property, important resource values, or is otherwise covered by legal agreement. (RFP, p. 4-37).
(G9) Avoid soil disturbing activities (those that remove surface organic matter exposing mineral soil) on steep, erosive, and unstable slopes, and in riparian, wetlands, floodplains, wet meadows, and alpine areas. (RFP, p. 4-38).
(G11) Use Best Management Practices and Soil and Water Conservation Practices during project level assessment and implementation to ensure maintenance of soil productivity, minimization of sediment discharge into streams, lakes and wetlands to protect of designated beneficial uses. (RFP, p. 4-38).
(G12) Locate new actions (such as incident bases, fire suppression camps, staging areas, livestock handling facilities, recreation facilities, roads and improvements including trails) outside of Riparian Habitat Conservation Areas. If the only suitable location for such actions is within Riparian Habitat Conservation Areas, sites will be located to minimize resource impacts. (RFP, p. 4-38).
(G13) Any long-term crossing of stream channels containing fish habitat will provide for desirable aquatic passage. (RFP, p. 4-38).
(G14) Manage vegetation for properly functioning condition at the landscape scale. Desired structure and pattern for cover types of the Wasatch-Cache National Forest (from USDA Forest Service 1996) are listed in the Revised Forest Plan on page 4-39 to 4-40 except in the Wildland Urban Interface, where vegetation structure and pattern should be managed to reduce threat of severe fire to property and human safety. (RFP, p. 4-39).
(G15) In goshawk habitat, design all management activities to maintain, restore, or protect desired goshawk and goshawk prey habitats including foraging, nesting, and movement. (RFP, p. 4-42).
(G16) When treating vegetation in the following cover types, maintain or restore snag and woody debris habitat components at a stand level (where they are available distributed over each treated 10 acres). If the minimum number of snags is unavailable, then use largest trees available on site. Snag and woody debris requirements by forest type are listed on page 4-42 of the RFP. (RFP, p. 4-42).
(G29) Avoid disruptive management activities in elk calving areas and elk spring use areas from May 1 through June 30 (RFP, p. 4-44).
(G35) The full range of fuels reduction methods is authorized consistent with management direction for the specific area. (RFP, p. 4-45).
(G45) Access routes for heavy equipment should be selected to limit disturbance to riparian vegetation and to limit the number of stream crossings. (RFP, p. 4-46).
(G47) Waste material should be handled in a manner to avoid sidesteaming materials to areas where they may enter a stream. (RFP, p. 4-46).
(G73) Delay livestock use in post-fire and post-harvest created forest openings until successful regeneration of the shrub and tree components occurs (aspen trees reach an average height of 6 feet). (RFP, p. 4-52).

1.8 Public Involvement

A Notice of Intent (NOI) to prepare an environmental impact statement was published in the Federal Register on May 16, 2006. The NOI asked for public comment on the proposal from May 16 to June 16, 2006. At that time, a scoping letter and document was sent to approximately 225 interested agencies, tribes, groups, and individuals.

On May 25, 2006 an informational public meeting in conjunction with the Scoping and NOI was held at Randolph, Utah.

In addition, as part of the public involvement process, the agency has listed the project on the Wasatch-Cache National Forest's Schedule of Proposed Actions (SOPA) since April 2006. It has also been posted on the Wasatch-Cache web page at: <http://www.fs.fed.us/r4/wcnf/projects/proposed/index.shtml>.

A total of seven responses (letters containing short to lengthy comments) to this initial mailing were received. Using the comments from the public and other agencies, the interdisciplinary team developed a list of issues to address (see *Issues* section).

On July 20, 2007 a Notice of Availability of the Draft Environmental Impact Statement was published in the *Federal Register*. A Notice of Opportunity for Comment was published in *The Salt Lake Tribune* on July 30, 2007. On July 10 and August 6, 2007 additional fieldtrips to the project area were held. The public comment period ended on September 4, 2007. Five responses were received and reviewed by the interdisciplinary team. Specialists responded to those comments in the Chapter 5 of this FEIS, and where needed, updated sections of the EIS.

1.9 Issues

The Forest Service separated the issues into two groups: significant and non-significant issues.

Significant Issues

Significant issues were defined as those directly or indirectly caused by implementing the proposed action. The Forest Service identified the following significant issues during scoping:

Soil Productivity: Effects to the soil resource will be disclosed in terms of the kind and amount of detrimental disturbance predicted or anticipated from the various types of proposed treatment activities.

Indicators:

- 1) the amount of increased soil erosion;
- 2) the amount of soil compaction; and
- 3) a severe soil burning hazard assessment.

Water Quality: Forest canopy removal and erosion following log skidding, prescribed burning, herbicide or mechanical treatments, and/or road construction could lead to adverse effects on water quality, and for this project specifically, sedimentation of water and changes in pH of stream water.

Indicators:

- 1) the amount of sediment entering streams or wetlands; and
- 2) changes in pH of stream water.

Wildlife/Habitat: The project area supports a variety of wildlife species and habitats. The proposed action and alternatives will have varying effects on wildlife species and their habitat depending on the amount of treatment, the location, and the type of treatment. Species include: USFWS listed threatened, endangered, proposed, and candidate species, USDA Forest Service Sensitive species, Management Indicator Species (MIS), neotropical migratory birds (priority species), Wasatch-Cache NF Species at Risk, and general species of local concern (e.g., deer, elk, and moose).

Indicators:

- 1) Acres of specific habitat and/or vegetation types treated/modified for select species.
- 2) Miles of new road construction within specific habitat and/or vegetation types for select species.
- 3) Distance of potential disturbance activities from nest sites/territories for select species such as the northern goshawk.
- 4) Changes in open road density by 6th order watershed.
- 5) Changes in elk patch size.

Non-significant Issues

Non-significant issues were identified as those: 1) outside the scope of the proposed action; 2) already decided by law, regulation, Forest Plan, or other higher level decision; 3) irrelevant to the decision to be made; or 4) conjectural and not supported by scientific or factual evidence. The Council on Environmental Quality (CEQ) NEPA regulations explain this delineation in Sec. 1501.7, "...identify and eliminate from detailed study the issues which are not significant or which have been covered by prior environmental review (Sec. 1506.3)..."

The Interdisciplinary Team developed a list of non-significant issues and reasons regarding their categorization as non-significant. The following list of non-significant issues did not drive an alternative and/or the effects were analyzed in Chapter 3:

Roads/Transportation: Roads is not necessarily the issue, rather it is the effect of the roads on resources such as wildlife, water quality, etc. Therefore, the impacts of temporary and intermittent service roads are analyzed by applicable resource area in Chapter 3.

Noxious weeds: Does not drive any of the alternatives. They will be addressed through mitigation (inventory and treat according to Wasatch-Cache Noxious Weed EIS 2006). Noxious weeds are discussed in Chapter 3, Section 3.10.

Private Lands: Some members of the public expressed that they didn't want any treatments on their lands, and others have expressed it would be okay. The effect of treatments on private lands was considered in Chapter 3, Section 3.5.

Fish: No threatened or endangered aquatic species occur on the Wasatch-Cache National Forest. The Colorado River cutthroat trout, Bonneville cutthroat trout, and the Columbia spotted frog (*Rana luteiventris*) are the only sensitive species listed for the Wasatch-Cache National Forest. Neither Colorado River cutthroat trout nor Columbia spotted frog are found on the Ogden Ranger District. Bonneville cutthroat trout and boreal toad are discussed in Chapter 3, Section 3.2.

Rare Plants: Individuals or populations of Forest Service Threatened, Endangered, Sensitive, or Rare plants have not been found within the analysis area. Rare plants are discussed in Chapter 3, Section 3.10.

Range: Rangeland management is discussed in Chapter 3, Section 3.5, but it is not an issue driving alternatives. There are five allotments within the area. The impact on permittees is considered.

Fire Regimes: Fire regimes are discussed in Chapter 3, Section 3.3.

Roadless Areas: Timber harvest and/or road construction will not occur in Roadless areas. Roadless areas are discussed in Chapter 3, Section 3.6.