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Environmental Assessment

Monks Hollow Motorized Trail

Diamond Fork Management Area
Spanish Fork Ranger District
Uinta National Forest
Utah County, Utah
T9S, R5E, Sections 9,10,15,16 (SLM)

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SUMMARY

The Spanish Fork Ranger District of the Uinta National Forest is proposing the construction of a trail which would connect the existing Monks Hollow and Long Hollow all-terrain vehicle (ATV) trails with the existing Teat Mountain and Knoll Hollow ATV trails. These trails are open to hiking, horseback riding, mountain biking, and motorcycle riding, however ATV riding is the primary use and management objective. The proposed 2.7 mile connector trail would be open to all of the same uses as the existing trails. Approximately 1.2 miles of new trail would be constructed and approximately 1.5 miles of existing unclassified road would be designated as an ATV trail to create the 2.7 mile connector (Maps 1-2, Appendix A).

The project is located in Township 9 South, Range 5 East, Sections 9, 10, 15, and 16 (Salt Lake Meridian) in the Diamond Fork Management Area of the Spanish Fork Ranger District, Uinta National Forest. The proposed action, **Alternative A**, would expand motorized trail opportunities and move the Diamond Fork Management Area closer to the Desired Future Conditions described in the 2003 Revised Uinta National Forest Land and Resource Management Plan.

In addition to the proposed action, the Forest Service fully evaluated the following alternatives:

Alternative B: Construction of 2.1 miles of trail would connect the existing Monks Hollow and Long Hollow trails with the Teat Mountain and Knoll Hollow trails through Township 9 South, Range 5 East, Sections 16 and 17 (Salt Lake Meridian), as shown on the Alternatives Map in Appendix A. This alternative would follow the ridge on the north side of the upper end of the Long Hollow drainage until it reaches the road at Teat Mountain. All 2.1 miles would be new trail construction.

Alternative C: The no-action alternative provides a baseline for comparing the effects of the action alternatives. Current management of the Monks Hollow, Teat Mountain, Long Hollow, and Knoll Hollow trails would continue.

The Spanish Fork District Ranger is the responsible official for this project. The decision to be made is either to connect the Monks Hollow and Teat Mountain trail systems by implementing one of the action alternatives or to select the no-action alternative. This decision will be based on how well the alternatives meet the purpose and need for the project and the impacts the alternatives will have on the environment.

I. INTRODUCTION

Document Structure

The Spanish Fork Ranger District has prepared this Environmental Assessment (EA) in compliance with the National Environmental Policy Act (NEPA) and other relevant Federal and State laws and regulations. This EA discloses the direct, indirect, and cumulative environmental impacts that would result from the proposed action and alternatives. The document is organized into six parts:

- *Introduction:* The section 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.
- *Comparison of Alternatives, including the Proposed Action:* This section 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 possible mitigation measures. Finally, this section provides a summary table of the environmental consequences associated with each alternative.
- *Environmental Consequences:* This section describes the environmental effects of implementing the proposed action and other alternatives. Within each section, the affected environment is described first, followed by the effects of the No Action Alternative that provides a baseline for evaluation and comparison of the other alternatives that follow.
- *Agencies and Persons Consulted:* This section provides a list of preparers and agencies consulted during the development of the environmental assessment.
- *References:* This section provides a list of references cited in the EA.
- *Appendices:* This section provides maps and responses to comments received from the public.

Additional documentation, including more detailed analyses of project-area resources, may be found in the project planning record located at the Spanish Fork Ranger District Office at 44 West 400 North, Spanish Fork, UT, 84660.

Background

A Decision Notice was issued in April of 2003 to construct a trail to connect the Monks Hollow and Long Hollow trails with the Teat Mountain and Knoll Hollow trails. This decision was subsequently appealed and remanded, and the proposal was not implemented. The Spanish Fork Ranger District has since refined the proposal. The previous proposal consisted of three parts: (1) trail construction to connect the Monks Hollow and Long Hollow trails with the Teat Mountain and Knoll Hollow trails, (2) reconstruction of the existing Monks Hollow trail, and (3) closure and rehabilitation of existing user-created trails. The current proposal is limited to trail construction to connect the Monks Hollow and Long Hollow trails with the Teat Mountain and Knoll Hollow trails. The Spanish Fork Ranger District has performed additional environmental analysis and has provided the proposed action for additional public comment. In addition, this proposal is tiered to the 2003 Uinta National Forest Land and Resource Management Plan (Forest Plan).

Purpose and Need for Action

Recreational use of off-highway vehicles (OHVs), particularly all-terrain vehicles (ATVs), has increased dramatically over the past several years. The number of OHVs registered in Utah increased by 147% between 1998 and 2002 (Stukey, 2003). Public lands, including the Uinta National Forest, are experiencing an increase in demand for OHV riding opportunities.

The Diamond Fork Management Area of the Spanish Fork Ranger District contains the Monks Hollow trail which receives a high level of ATV and motorcycle use. The Monks Hollow trailhead was recently upgraded with paved parking, a new restroom and a user information board to manage this use. The Monks Hollow trailhead currently provides access to approximately 10 miles of motorized trail, consisting of the Monks Hollow trail (approximately 3 miles), which connects with the Long Hollow trail (approximately 7 miles). Forest Road 383 (approximately one mile) connects the Long Hollow trail to State Highway 6, and is also open to OHV use.

The Teat Mountain trail is located approximately two miles east of the Monks Hollow and Long Hollow trails. The Teat Mountain trail currently provides access to approximately 6 miles of motorized trail, consisting of the Teat Mountain trail (approximately 3 miles), and the Knoll Hollow trail (approximately 3 miles). Forest Road 070 (approximately 6 miles) and Forest Road 076 (approximately 2 miles) are connected to the Teat Mountain and Knoll Hollow trails and both roads are open to OHV use.

The purpose of this proposal is to connect the Monks Hollow and Long Hollow trails with the Teat Mountain and Knoll Hollow trails. The need for this action is to meet public demand for OHV trail opportunities, improve the quality of OHV trail riding experiences in the Diamond Fork Management Area, and move the Diamond Fork Management Area towards the Desired Future Condition described in the 2003 Forest Plan. The Desired Future Condition for recreation in the Diamond Fork Management Area is described on page 5-56 of the Forest Plan:

“ATV trail opportunities include loop trails and additional facilities to tie into adjacent National Forest trail systems that provide similar opportunities. The Monks Hollow ATV trail is completed, and any areas that have been disturbed through construction have been revegetated.” (USDA, 2003b).

The purpose and need for the proposal would be accomplished by providing a longer system of interconnecting trails. Connecting the Monks Hollow and Long Hollow trails with the Teat Mountain and Knoll Hollow trails would provide OHV riders departing from the Monks Hollow trailhead with approximately 19 miles of interconnecting trails, and 9 miles of roads open to OHVs.

Proposed Action

The Spanish Fork Ranger District is proposing the construction of a trail which would connect the existing Monks Hollow and Long Hollow ATV trails with the existing Teat Mountain and Knoll Hollow ATV trails. These trails are open to hiking, horseback riding, mountain biking, and motorcycle riding, however ATV riding is the primary use and management objective. The proposed 2.7 mile connector trail would be open to all of the same uses as the existing trails. Approximately 1.2 miles of new trail would be

constructed and approximately 1.5 miles of existing unclassified road would be designated as an ATV trail to create the 2.7 mile connector (Maps 1-2, Appendix A).

New trail construction (1.2 miles) would include removing vegetation from the trail route and creating a tread base with appropriate water dispersal and drainage structures. Disturbed areas would be seeded with a certified weed-free seed mix of native species following construction. Hand crews and/or mechanized trail construction equipment would perform the trail construction. An ATV cattle guard would be installed on the existing unclassified road that would be designated as ATV trail, and no other vegetation removal or tread construction would occur on this segment. The information board at the Monks Hollow trailhead, the primary access point for the system, would be used to display information about responsible trail riding. The Proposed Action is Alternative A in the EA.

Connecting the Monks Hollow and Long Hollow trails with the Teat Mountain and Knoll Hollow trails would provide OHV riders departing from the Monks Hollow trailhead with approximately 19 miles of trail and 9 miles of road open to OHVs, compared to the existing condition of approximately 10 miles of trail and one mile of road open to OHVs.

Decision Framework

The responsible official will decide to either connect the Monks Hollow and Teat Mountain trail systems by implementing one of the action alternatives or select the no-action alternative. This decision will be based on how well the alternatives meet the purpose and need for the project, the issues raised during scoping, and the impacts the alternatives will have on the environment.

Public Involvement

Public scoping for a proposal to connect the Monks Hollow and Long Hollow trails with the Teat Mountain and Knoll Hollow trails began in January of 2000. Pre-decisional Environmental Assessments were provided for public comment in October of 2000, April of 2002, and January of 2003.

Initial public scoping for the current proposal included publication of a legal notice in the *Provo Daily Herald* on December 19, 2003 and letters sent to the 10 individuals who commented on the past proposals and to 14 other interested individuals, groups, agencies and tribes. The current proposal was also listed in the Fall of 2003, and the Winter, Spring, Summer and Fall of 2004 Editions of the *Uinta National Forest Quarterly Schedule of Proposed Actions*.

Pursuant to 36 CFR 215.6, the 30-day period for public comment on the proposed action began with the publication of a legal notice in the *Provo Daily Herald* on August 6, 2004. In addition, letters and pre-decisional EA's were sent to all of the individuals or groups that responded to initial scoping, and pre-decisional EA's were posted on the Uinta National Forest's website.

The Spanish Fork Ranger District received four responses during initial public scoping. Comments were received from six individuals or groups during the 30-day comment period. The interdisciplinary team (IDT) used these responses, plus input from the IDT and previous scoping and comment efforts, to develop a list of issues to address in this document.

Significant Issues

The interdisciplinary team classified issues as either significant or non-significant. Significant issues were identified as those directly or indirectly caused by implementing the proposed action. 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 require 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 identified the following significant issue: the project area is located within Inventoried Roadless Area # 0418016 and trail construction and the subsequent increased OHV trail use would impact roadless area characteristics and values.

The 2003 Forest Plan determined the Recreation Opportunity Spectrum (ROS) classification for the area containing the project to be Semi-primitive Motorized (USDA, 2003b)

This issue is the reason behind the development of Alternative B, which proposes construction of a connector trail that would result in approximately 22% less motorized trail being added in the roadless area than Alternative A, the Proposed Action.

Alternative C, the No-Action Alternative, proposes no trail construction in the roadless area. Due to the location of the existing trails, no feasible alternative could be developed which would connect these trails without impacting the roadless area.

Non-significant Issues

The interdisciplinary team analyzed the following issues that were either raised during scoping for this proposal or discussed in previous similar proposals, and determined them to be non-significant. These issues were either addressed during the development of the proposed alternatives and associated mitigation measures or determined to be 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 following non-significant issues were dismissed from further analysis in this document:

Issue 1: Resource problems associated with the user-created trails should be addressed before any additional trail development is initiated. This issue is outside the scope of this proposal. The Uinta National Forest, including the Spanish Fork Ranger District, is actively taking steps to reduce and eliminate user-created trails, however the purpose and need for this proposal is to improve OHV trail riding opportunities in the Diamond Fork Management Area.

Issue 2: Creating additional motorized trail would result in increased off-trail riding in newly accessible areas. This issue is conjectural. The information board at the Monks Hollow trailhead would be used to display information about riding the trail system responsibly. Trails would be patrolled by Forest Service personnel and posted with signs indicating routes open to OHV travel.

Issue 3: The proposed construction activities would contribute to the spread of noxious plants. Mitigation measures would include washing trail construction equipment prior to its use in this project, prompt revegetation of disturbed areas (other than the trail tread) using a certified weed-free (including non-listed undesirable non-native species such as cheat grass), and monitoring areas disturbed during trail construction for three years following construction. In addition, the entire trail system would be monitored for noxious weeds during future routine trail maintenance activities. Noxious weeds found during monitoring would be sprayed with herbicide and/or physically removed.

Issue 4: The proposed trail would affect grazing management by creating a path that the cattle would follow between two units of the Diamond Fork Allotment. Fence construction and installation of cattle guards, features of Alternatives A and B, would mitigate impacts to grazing management.

Issue 5: An Environmental Impact Statement (EIS) should be prepared because the proposed trail would be built within an Inventoried Roadless Area, which would amount to an irreversible and irretrievable commitment of resources. This Environmental Assessment (EA) evaluates the effects of the proposed alternatives. Analysis indicates that an EA is appropriate for this project. The proposed alternatives would not constitute an irreversible and irretrievable commitment of resources. The OHV trails proposed by these alternatives could be closed to OHV use or completely closed and obliterated if dictated by future management direction.

Issue 6: The Forest Service has overreached in identifying areas with roads, power transmission corridors, etc. as Inventoried Roadless Areas. Inventoried Roadless Areas were updated and described in the 2003 Forest Plan. This issue is outside the scope of this proposal, to improve OHV trail riding opportunities in the Diamond Fork Management Area.

Issue 7: The proposed action would not sufficiently meet the stated purpose and need for the project and additional OHV riding opportunities should be proposed. This issue is conjectural. The stated purpose and need for the project is to improve OHV riding opportunities in the Diamond Fork Management Area. The proposed action would connect the Monks Hollow and Long Hollow trails with the Teat Mountain and Knoll Hollow trails and provide OHV trail riders departing from the Monks Hollow Trailhead with approximately 28 miles of interconnecting trails and roads open to OHVs. The existing condition is approximately 11 miles.

The following non-significant issues receive additional analysis in chapter three of this document:

Issue 8: The project would negatively affect nesting neotropical migratory birds.

Trail construction would be avoided during nesting and fledging season to reduce possible disturbance of nesting neotropical migratory birds. Analysis has determined that no significant effects to nesting neotropical migratory birds would occur.

Issue 9: The project would negatively affect Threatened, Endangered and Sensitive (TES) wildlife.

Analysis has determined that no significant effects on TES wildlife would occur. As a mitigation measure, discovery of TES wildlife during project implementation would cause trail construction activities to halt. The U.S. Fish and Wildlife Service would be consulted if a Threatened or Endangered species is discovered in the project area. A Forest Service biologist would analyze situations involving Sensitive species and determine additional protective measures to be taken. Trail construction would not resume unless measures could be taken to protect the discovered TES species.

Issue 10: The project would negatively affect Threatened, Endangered and Sensitive (TES) plants.

No Threatened, Endangered or Sensitive plants were found during surveys of the project area and no suitable habitat exists in the project area for these species.

Issue 11: Trail construction and subsequent increased motorized use would impact watershed resources, including a State of Utah 303(d) listed stream.

In 2004, Diamond Fork Creek was removed from the State of Utah 303(d) List of Impaired Waters and included in the 305(b) report as a Category 4C water. Category 4C waters are impaired for one or more designated uses and do not require development of a TMDL. Furthermore, the impairment of Category 4C waters is not linked to a specific pollutant. In the case of Diamond Fork, the impairment is due to riparian habitat and flow alteration as a result of the CUP (UDEQ 2004). Soldier Creek, from Thistle Creek to Starvation Creek, is on the 2004 State of Utah 303(d) List of Impaired Waterbodies for sediment and temperature.

Issue 12: The project would negatively affect culturally and historically significant sites.

The project area was surveyed for culturally and historically significant sites. No sites were found, and none of the alternatives would affect cultural or historical resources.

II. COMPARISON OF ALTERNATIVES, INCLUDING THE PROPOSED ACTION

Chapter II describes and compares the alternatives considered for the project. This section presents the differences between each alternative and provides a basis for choice among options by the decision maker.

Alternatives Considered But Not Fully Explored _____

The interdisciplinary team considered and eliminated from detailed study the following alternatives:

- **Constructing a non-motorized trail between the Monks Hollow and Teat Mountain trails.** This alternative was not carried forward because it does not meet the purpose and need for the project, to provide additional OHV trail riding opportunities in the Diamond Fork Management Area.
- **Constructing additional motorized trails connected only to the Monks Hollow and Long Hollow trails, utilizing existing user-created trails where possible.** This alternative was not carried forward because it would not create an improved OHV trail system without substantial new trail construction. In addition, this alternative was not carried forward because the existing adjacent trails would not be connected and the Desired Future Condition described in the 2003 Forest Plan would not be achieved.
- **Expanding the proposed action to include providing additional motorized trail routes throughout the district by utilizing other existing routes and designating unclassified roads open to OHVs.** This alternative was not carried forward because it is outside the scope of this project, to provide additional OHV trail riding opportunities in this portion of the Diamond Fork Management Area.
- **Constructing no additional trail and closing and rehabilitating existing system and user-created trails.** This alternative was not carried forward because it does not meet the purpose and need for the project, to provide additional OHV trail riding opportunities in the Diamond Fork Management Area. Under the no-action alternative no new trail would be constructed and user-created trails would continue to be closed and rehabilitated as part of on-going management.

Alternatives Fully Explored ---

Alternative A

Proposed Action

Alternative A is the preferred alternative. This alternative proposes the construction of a trail which would connect the existing Monks Hollow and Long Hollow ATV trails with the existing Teat Mountain and Knoll Hollow ATV trails. These trails are open to hiking, horseback riding, mountain biking, and motorcycle riding, however ATV riding is the primary use and management objective. The proposed 2.7 mile connector trail would be open to all of the same uses as the existing trails.

Approximately 1.2 miles of new trail would be constructed and approximately 1.5 miles of existing unclassified road would be designated as an ATV trail to create the 2.7 mile connector (Maps 1-2, Appendix A). The connector trail would be located in Township 9 South, Range 5 East, Sections 9, 10, 15, and 16 (Salt Lake Meridian).

New trail construction (1.2 miles) would include removing vegetation from the trail route and creating a tread base with appropriate water dispersal and drainage structures. Disturbed areas would be seeded using a certified weed-free (including unlisted undesirable non-native species such as cheat grass) seed mix of native species following construction. Hand crews and/or mechanized trail construction equipment would perform the trail construction. An ATV cattle guard and approximately 100 feet of fence would be installed on the existing unclassified road that would be designated as ATV trail, and no other vegetation removal or tread construction would occur on this segment. The information board at the Monks Hollow trailhead, the primary access point for the system, would be used to display information about riding the new trail system responsibly.

The Features and Mitigation Common to Each Action Alternative section describes mitigation measures that would be incorporated into this alternative.

Connecting the Monks Hollow and Long Hollow trails with the Teat Mountain and Knoll Hollow trails would provide OHV riders departing from the Monks Hollow trailhead with approximately 19 miles of trail and 9 miles of road open to OHVs, compared to the existing condition of approximately 10 miles of trail and one mile of road open to OHVs.

This alternative is the proposed action because it would achieve the purpose and need for the project while taking advantage of an existing road in order to minimize the amount of new trail construction.

Alternative B

This alternative would connect the Monks Hollow and Long Hollow trails with the Teat Mountain and Knoll Hollow trails by constructing 2.1 miles of new trail, as shown on Maps 1-2 in Appendix A. The trail would be located in Township 9 South, Range 5 East, Sections 16 and 17 (Salt Lake Meridian) in the Diamond Fork Management Area of the Spanish Fork Ranger District.

New trail construction (2.1 miles) would include removing vegetation from the trail route and creating a tread base with appropriate water dispersal and drainage structures. Disturbed areas would be seeded using a certified weed-free (including unlisted undesirable non-native species such as cheat grass) seed mix of native species following construction. Hand crews and/or mechanized trail construction equipment would perform the trail construction. An ATV cattle guard would be installed and approximately 1500 feet of fence would be built. The information board at the Monks Hollow trailhead, the primary access point for the system, would be used to display information about riding the new trail system responsibly.

The Features and Mitigation Common to Each Action Alternative section describes mitigation measures that would be incorporated into this alternative.

Connecting the Monks Hollow and Long Hollow trails with the Teat Mountain and Knoll Hollow trails would provide OHV riders departing from the Monks Hollow trailhead with approximately 18 miles of trail and 9 miles of road open to OHVs, compared to the existing condition of approximately 10 miles of trail and one mile of road open to OHVs.

This alternative was driven by the significant issue stated on page 5. It was fully explored because it would achieve the purpose of the project while creating 0.6 fewer miles of motorized trail in the Inventoried Roadless Area than Alternative A, which proposes a 2.7 mile connector trail.

Alternative C

No-Action

Under the no-action alternative, no trail construction would occur and current management of the Monks Hollow, Long Hollow, Teat Mountain, and Knoll Hollow trails would continue.

Features and Mitigation Common to Each Alternative ____

Mitigation measures ease some of the potential impacts the action alternatives may cause. The following features and mitigation measures apply to both of the action alternatives.

Threatened, Endangered or Sensitive (TES) Plants and Animals

- Discovery of TES species during project implementation would cause trail construction activities to halt. The U.S. Fish and Wildlife Service would be consulted if a Threatened or Endangered species is involved. A Forest Service biologist or botanist would analyze situations involving Sensitive species and determine additional protective measures to be taken. Trail construction would not resume unless measures could be taken to protect the discovered TES species.

Other Wildlife including Neotropical migratory birds

- Trail construction would be avoided during nesting and fledging season to reduce possible disturbance of nesting neotropical migratory birds.
- Trail construction would be avoided between December 1 and March 30th to avoid potential disturbance to deer and elk.

Noxious Weeds

- Disturbed areas would be monitored for noxious weeds for three years following construction and thereafter during routine patrolling and maintenance activities.
- Noxious weeds found during monitoring would be sprayed with herbicide and/or physically removed.
- Equipment used to construct this trail system would appropriately be washed prior to their use.
- Certified weed-free (including non-listed undesirable species such as cheat grass) seed would be used for revegetation.

Soils, Water Quality and Aquatic Species

- Proposed trail locations were chosen to avoid potential impacts to streams, water quality and aquatic organisms.
- Areas disturbed during construction would be seeded as soon as practical with native species.
- Constructed trail would include appropriate water dispersal and drainage structures.

Unauthorized Travel

- An information board at the Monks Hollow trailhead would be used display information on responsible riding.
- The trail system would be posted with signs indicating routes open to ATV travel.
- The trail system would be patrolled periodically by Forest Service personnel.
- Subject to the availability of funds and resources, the Forest will continue to obliterate unauthorized user-created roads and trails.

Public Safety

- To reduce the likelihood of collisions, to the extent practical trail design would include long sight distances.
- Trailhead signs will be used to provide information to inform the public of other types of trail users they may encounter and which trail users have the right-of-way.
- Trailhead signs will be used to provide information to inform the public of possible hazards.

Forest Plan Consistency

The 2003 Forest Plan provides specific management direction in the form of Goals and Objectives, Standards and Guidelines, Management Prescriptions, and Management Area Desired Future Conditions. The proposed action alternatives are consistent with Forest Plan management direction.

The following Forest-wide goals and sub-goals support the proposal:

FW-Goal-6 Diverse and suitable recreational opportunities are provided responsive to public demand while maintaining ecosystem health and contributing to social and economic sustainability.

Sub-goal-6-1 An increasing number of users are accommodated within the capability of the resource by maintaining and improving existing developed recreation sites and emphasizing management of dispersed recreation.

Sub-goal-6-3 Dispersed recreation opportunities are offered in areas close to urban centers, with an emphasis on a full range of trail opportunities. (USDA, 2003)

Forest Plan Standards and Guidelines that apply to this project include:

Trans-3 Guideline: Motorized trails should not be constructed or single-track motorized trails reconstructed to accommodate all-terrain vehicles with the exception of trails necessary to complete loops and linkages in the all-terrain system.

Trans-5 Guideline: Trails should be managed for multiple uses except in isolated instances where specific trails may be managed for limited uses if an overriding or unique situation is identified.

ROS-1 Guideline: Forest resource uses and activities should meet the objectives for the assigned Recreation Opportunity Spectrum (ROS) classes for each management area. (USDA, 2003)

ROS-4 Standard: Motorized recreation use, with the exception of over-the-snow vehicles, is limited to the classified road system and those parts of the inventoried trail system designated for motorized use in all Semi-Primitive Motorized, Roded Natural, Roded Modified, and Rural Recreation Opportunity Spectrum (ROS) classes. Any other use of motorized

equipment off of classified roads or inventoried trails is allowed only for approved administrative activities or as authorized in a permit.

S&W-13 Guideline: Reduce stream sedimentation created as a result of construction.

The project area falls within Forest Plan Management Prescriptions 6.1, Non-forested ecosystems, and 3.3, Aquatic and Terrestrial Habitat. Both of these Management Prescriptions state:

“Additional motorized trails may be constructed.” (USDA, 2003)

The project area falls within an area assigned in the 2003 Forest Plan to Semi-Primitive Motorized and Roded Modified ROS classes (USDA, 2003).

The Management Area Desired Future Condition for recreation in the Diamond Fork Management Area states:

“ATV trail opportunities include loop trails and additional facilities to tie into adjacent National Forest trail systems that provide similar opportunities. The Monks Hollow ATV trail is completed, and any areas that have been disturbed through construction have been revegetated.” (USDA, 2003)

Comparison of Alternatives

The following table provides a comparison of the total miles of OHV trail that would be added to the Inventoried Roadless Area, total miles of new trail construction, and total mile of OHV opportunity from the Monks Hollow trailhead for each of the proposed alternatives.

Table 1. Comparison of Alternatives.

	Alternative A	Alternative B	Alternative C
Total miles of OHV trail added to the Inventoried Roadless Area	2.7*	2.1	0
Total miles of new trail construction	1.2	2.1	0
Total miles of trails and roads available to OHVs from the Monks Hollow trailhead	28	27	11

* 1.5 miles of existing unclassified road would be designated as system trail and 1.2 miles of new system trail would be constructed.

III. ENVIRONMENTAL CONSEQUENCES

This section summarizes the affected physical, biological, and social environments and the potential changes to those environments resulting from implementation of the alternatives. Potential direct and indirect effects are described first, followed by a discussion of cumulative effects.

A cumulative impact is the incremental impact of a proposed action when added to other past, present, and reasonably foreseeable future actions. Other past, present, and reasonably foreseeable future activities in the Diamond Fork area are described below. Not all of these activities would cause cumulative effects when their effects are combined with the effects of this proposal.

Past Projects

Historic Land Use Practices

Native Americans used the Diamond Fork area as a travel route and for hunting and gathering plants. These activities likely had no long-term effects on the area.

European-Americans settled in the area in the mid 1800's and their activities included road building, stone quarrying, logging, water conveyance, homesteading, and livestock grazing. Recreational use of the area increased throughout the 1900's as road improvements and trails made the area more accessible to hunters, anglers, hikers and campers.

The Forest Service performed large-scale reseeded in the 1950's and 1960's to mitigate the effects of earlier over-grazing.

Stream Bank Hardening

Many locations on Diamond Fork Creek have undergone stream bank hardening for flood control, to protect adjacent infrastructure, and for agricultural purposes.

Strawberry Valley Project and Central Utah Project (CUP)

Construction on the Strawberry Valley Project was completed in 1922 when the Strawberry Tunnel was put into operation. The tunnel transported irrigation water from the Uintah Basin to the Bonneville Basin via Diamond Fork. The Strawberry tunnel diverted an annual average of 61,500 acre-feet of water from Strawberry Reservoir into Sixth Water and Diamond Fork Creeks resulting in artificially high flows during the summer irrigation season. The high flows caused extensive deterioration of natural stream channels and resulted in severely limited fish production, loss of riparian and wetland habitat, and reduced recreational experiences along Sixth Water and Diamond Fork Creeks.

In 1956, Congress authorized the construction of the CUP. The CUP will transport up to an additional 101,900 acre-feet of water from the Bonneville Unit through Diamond Fork. The Syar Tunnel and Sixth Water Aqueduct were constructed to convey both Strawberry Valley Project water and Bonneville Unit water. The Strawberry Tunnel, which is higher in the system, is still be used to convey instream flow deliveries to Sixth Water Creek and will deliver irrigation supplies (up to a maximum of 200 cfs) during

emergencies when Syar Tunnel/Sixth Water Aqueduct are inoperable. Strawberry Valley Project and CUP water deliveries through the Syar Tunnel began in 1996.

To mitigate for the anticipated impacts resulting from the additional diversions of CUP water into Diamond Fork, reduce the impacts from Strawberry Valley Project deliveries, and allow more natural flows in Diamond Fork Creek, the Diamond Fork Pipeline was constructed from Monks Hollow to the mouth of Diamond Fork Canyon. The pipeline was constructed primarily in the existing road corridor from the mouth of Diamond Fork Canyon to Monks Hollow and a seven mile 24-foot-wide asphalt-surfaced road has been constructed over the top of the pipeline. The Diamond Fork Pipeline began operation in June 2004.

The Diamond Fork System included the construction of a number of water delivery facilities in Diamond Fork. The system will take water from the Syar Tunnel and deliver it to the Diamond Fork Pipeline through a series of tunnels and pipelines. The completed delivery system, along with mandates from CUPCA, will also provide minimum stream flows in Sixth Water and Diamond Fork Creek. The recently completed components of the Diamond Fork System include the Sixth Water Connection, Tanner Ridge Tunnel, Upper Diamond Fork Pipeline, Upper Diamond Fork Tunnel, Diamond Fork Outlet and connection to the Diamond Fork Pipeline.

Diamond Fork Campground Reconstruction

The Diamond Fork Campground was reconstructed in 2000 with a capacity approximately 33 percent smaller than the original facility. This reduction in capacity resulted from removing group-site facilities from the campground and single family campsites from the active floodplain of Diamond Fork Creek. The purpose for the reduction in campground capacity was to minimize impacts on riparian vegetation and to maximize the opportunities for stream restoration afforded by the construction of the Diamond Fork Pipeline.

Angler Access and Private Land Acquisition



Lands have been acquired in Diamond Fork to be managed for wildlife habitat and public access for fishing. These lands include the Lower Diamond Fork Mitigation Lands (approximately 168 acres), the Redford Mitigation Lands (approximately 617 acres), and Red Hollow (approximately 640 acres).

Reconstruction of the Monks Hollow and Three Forks Trailheads

These trailheads were reconstructed in 2001 and 2003 respectively. Improved parking, vault toilets, informational kiosks and fencing were provided to manage increasing use of these trailheads.

Springville Crossing-Rays Valley Road Reconstruction

A segment of the Rays Valley road was moved from its old location along a riparian zone to an upland site in 2003. The old road was reshaped, resurfaced with gravel, and seeded to provide safer and better all-weather access and protection against erosion.

Watershed Protection Fencing

Historically, high irrigation flows in Diamond Fork Creek served as a barrier for cattle movement. High flows were removed from the creek as a result of the Diamond Fork System and cattle movement is no longer restricted. In 2003 fencing was completed at

the upper end of the Right Fork of Hobble Creek near the Diamond Fork Creek junction. Several acres have been fenced for stream bank vegetation rehabilitation.

Redford Fencing

The Utah Mitigation Reclamation and Conservation Commission (Mitigation Commission) completed construction of a four-strand barbed wire fence to exclude cattle grazing in mitigation lands along the Diamond Fork corridor in November 2003. The four-strand barbed wire fence is approximately 3.25 miles in length on the south side of Diamond Fork Creek. Wire spacing allows for wildlife passage.

Red Hollow Prescribed Fire

The Red Hollow area was treated with prescribed fire in the Spring of 2003. Fire was applied to 1,200 acres to regenerate aspen and oak.

Halls Fork Prescribed Fire

Approximately 2,400 acres in the Halls Fork area was treated with prescribed fire in September of 2004 to regenerate aspen and oak.

Red Bull Wildfire Burned Area Response

In July and August of 2004 the Red Bull Wildfire burned about 1,836 acres in Upper Spanish Fork Management Area. None of this burn occurred within the project area or Diamond Fork Creek drainage, but the burn did cross part of the Rough Hollow Trail which connects to the proposed Monks Hollow ATV trails. A Burned Area Emergency Response (BAER) Plan was prepared for this burn in August of 2004. This plan called for replacement of some culverts on the Rough Hollow Trail to accommodate anticipated increases in runoff from the burned area, but did not identify a need to restrict or otherwise affect ATV use. The BAER was implemented in September and October of 2004.

Diamond Fork Recreation Facilities

The Forest Service, in cooperation with the Mitigation Commission, has developed a conceptual recreation plan (USDA and URMCC, 2000) that identified recreation features that would complete the recreation commitments of the Diamond Fork System. These projects include reconstruction of Diamond Campground, construction of a group site campground, angler access, a day use area at Red Ledges, education and interpretation sites, trailhead improvements at Sawmill Hollow, Fifth Water, Three Forks and Monks Hollow, and dispersed camping management. The plan is tiered to the Diamond Fork Area Assessment (USDA, 2000).

Present and Future Projects

Dispersed Camping and Day Use Management

Over the past three years the Spanish Fork Ranger District has inventoried dispersed camping sites across the District. This inventory identified sites that should be closed for resource protection or hardened for continued dispersed use. In the Diamond Fork drainage all dispersed camping has been prohibited in the lower 7.5 miles. Three sites have been approved for management as a day use or dispersed camping. These sites are Red Ledges, Dry Canyon, and Sawmill Hollow. A primary consideration in the design of these sites was the need to protect riparian resources and wet meadows.

Diamond Fork Group Site Campground

The Spanish Fork District Ranger has issued a decision (Diamond Fork Group Site Environmental Assessment) to design, construct, and operate a group-site campground in Diamond Fork. The Mitigation Commission will fund the project as part of meeting the recreation development responsibilities for developed camping identified in the 1984 and 1990 EIS for the Diamond Fork System and the 1988 DPR for CUP. The group-site facility would encompass approximately 20 acres located adjacent to or just upstream and across Diamond Fork Creek from the Monks Hollow Trailhead. The campground will have a capacity of up to 475 PAOT (people at one time) and include up to five 4-unit vault toilets, paved access road and spurs, shade shelters, a water system, trail system, the establishment of vegetation, a host site and an information/fee station. The proposed project would be constructed no earlier than Spring 2005.

Sixth Water and Diamond Fork Creek Restoration and Monitoring

A monitoring program will be developed to measure responses to the removal of high irrigation flows from these creeks by the Diamond Fork System (CUP). A conceptual aquatic and riparian habitat restoration plan for Diamond Fork Creek from the Diamond Fork pipeline to the Spanish Fork River will be developed. Fisheries, stream and watershed improvement projects have been and will continue to be developed to achieve Forest Plan and restoration plan objectives.

Utah Lake Drainage Basin Water Delivery System (ULS) Powerplants

As part of the ULS, the Central Utah Water Conservancy District is proposing to construct two hydroelectric generating plants on the Diamond Fork System. The Sixth Water Power Facility would occupy 0.7 acres and consist of a 45 megawatt (MW) generator located at the Sixth Water Aqueduct outlet. The Upper Diamond Fork Power Facility would occupy 0.3 acres and consist of a 5 MW generator located adjacent to the Upper Diamond Fork Flow Control Structure. As part of this proposal, the power transmission line from the Sixth Water Aqueduct outlet would be upgraded and replaced.

Additional Diamond Fork Prescribed Fire

The Monks Hollow, First Water through Sixth Water, and Billies Mountain burn units are scheduled to be treated with prescribed fire between 2006 and 2010. Units range from 1,100 acres to 6,800 acres in size.

Mechanical Fuels Treatment

Mechanical treatment of vegetation to reduce wildfire hazard is being considered on National Forest Lands adjacent to private property in the Little Diamond and Wanrhodes watersheds which are tributaries to Diamond Fork. An estimated 500 to 1,000 acres would be treated.

Range Improvements

Most of this watershed is within the existing Diamond Fork Cattle Allotment, and it is anticipated grazing in this allotment will continue into the future. The allotment is permitted for 2,141 cow/calf pairs from about June 11 to October 15 and is managed with a three-pasture rest rotation grazing system. With the Diamond Fork System fully operational and high flows now removed from Diamond Fork Creek, cattle movement is not as restricted as before. Additional fencing may be required in some locations to keep cattle in the appropriate grazing units.

Other Land Uses

The Diamond Fork drainage contains some private lands. In general, these lands are located some distance down-drainage from the project, and are grazed by livestock and used by their owners for recreational purposes. Several of these properties have homes or other improvements constructed on them. These uses are expected to continue in the future.

Permitted facilities including overhead utility lines and a transmission site occur within the Diamond Fork Management Area. Special Use Permits authorize the permit holders to maintain these existing facilities.

Physical Environment

Air Quality

Affected Environment

National Ambient Air Quality Standards (NAAQS) are established by the Environmental Protection Agency to promote a level of air quality sufficient to protect public health. Individual states are responsible for enacting implementation plans for areas that do not meet air quality standards. The project area is located in Utah County which is classified as a non-attainment area for small particulate matter. The effects analysis and cumulative effects analysis area for air quality is the Diamond Fork Watershed which is shown on Cumulative Effects Map 2, Appendix A.

Effects Analysis

Under Alternatives A and B, trail construction activities would temporarily impact air quality in the project area. Trail construction would cause dust to rise in the immediate area, and mechanized trail construction equipment would create exhaust fumes. Increased OHV traffic following completion of trail construction would create dust and exhaust fumes. These effects would be localized, of very minor intensity, and of short-duration. The project would not impede attainment of air quality standards.

Cumulative Effects

All of the previously described past projects had minor impacts to air quality. The construction associated with these created very minor, short-term, localized, increases in fugitive dust and emissions from motorized equipment. Some of these projects (e.g. Private Land Acquisition, Monks Hollow and Three Forks Trailheads, Diamond Fork Campground, Fishing Access and Day Use Area, Central Utah Project) have resulted in better access and facilities, and thus attracted more recreationists to Diamond Fork. This has resulted in more passenger vehicles and OHVs on the roads and trails, resulting in more exhaust pollutants and dust. (NOTE: Although many of these projects occurred over the last several years, much of the Diamond Fork drainage has been closed due to construction and thus the impacts from additional recreational use are just recently being observed). This use is resulting in very minor (undetectable at the airshed, watershed, or even minor sub-drainage level), localized, and intermittent short-term increases in fugitive dust and emissions from motorized equipment.

Present and future projects in the Diamond Fork drainage would have effects similar to those of past projects. Construction or other activities associated with all of the present and future projects listed would create short-term, very minor, localized increases in fugitive dust and emissions. This Monks Hollow Trail project and many of these projects/activities are also likely to draw more recreationists to Diamond Fork, resulting in very limited, localized, and intermittent short-term impacts to air quality similar to those described in the preceding paragraph.

Prescribed burns will generate substantial amounts of smoke and associated pollutants. These emissions would generally affect limited areas, and be of short duration (usually 1-2 days). These burns would only be implemented following approval of a burn plan by the State, and their approval would limit burns to periods when smoke and pollutant dispersal are good and the burn would not cause (either directly, indirectly, or

cumulatively) exceedances to air quality standards. The cumulative effect is that implementation of the alternatives analyzed in this EA would have minimal direct, indirect or cumulative effects on air quality along Diamond Fork Creek, and most effects would be limited to short periods of time, mostly during the summer weekends and summer holidays.

Soil and Water Quality

Affected Environment

The area where new trail construction would occur under Alternatives A and B follows primarily along a ridge or side slope, with some flatter terrain associated with the Alternative B route. These areas are not currently experiencing noticeable soil loss or run off. Both Monks Hollow and Long Hollow are intermittent streams. Monks Hollow is a tributary to Diamond Fork Creek. Diamond Fork Creek was removed from the 2004 State of Utah 303(d) List of Impaired Waters and included in the 305(b) report as a Category 4C water. Category 4C waters are impaired for one or more designated uses and do not require development of a Total Maximum Daily Load (TMDL). Furthermore, the impairment of Category 4C waters is not linked to a specific pollutant. In the case of Diamond Fork, the impairment is due to riparian habitat and flow alteration as a result of the CUP (UDEQ 2004). Long Hollow is a tributary to Soldier Creek. This segment of Soldier Creek, from Thistle Creek to Starvation Creek, is on the 2004 State of Utah 303(d) List of Impaired Waterbodies for sediment and temperature.

Effects Analysis

The effects analysis and cumulative effects analysis area for water quality includes the entire Diamond Fork Watershed and a portion of the Soldier Creek Watershed (Cumulative Effects Map 2, Appendix A). For the purpose of analyzing cumulative effects on the Soldier Creek watershed, historic and current land management/issues in Long Hollow are similar to those in Diamond Fork watershed. The notable exception is that no CUP related activity took place in Long Hollow.

The Forest Service Water Erosion Prediction Project Computer Model (WEPP Road) was used to compare sediment production and delivery for all alternatives proposed. Technical Documentation for WEPP Road, including applications, limitations, and explanation of variables is available in the project record or on the worldwide web at <http://forest.moscowfsl.wsu.edu/fswepp/>. Additionally, a flood frequency analysis was performed using HYDRAIN—a hydrologic model developed by the Federal Highway Administration. Pre and post construction runoff rates for each of the alternatives were calculated for both Monks and Long Hollow.

Alternative A would construct approximately 1.2 miles of new trail and would impact approximately one acre. The trail would have an average weighted slope of 11.8% and would be constructed on hillsides ranging from 8 to 20%. Construction of any new trail will produce localized resource effects. Sediment would be produced during the trail construction period (but not delivered to streams) and rill and gully erosion are possible on the cut and fill slopes before revegetation takes place.

The WEPP Road modeled results indicated that an unrutted (best case scenario) Alternative A would result in essentially zero sediment reaching the stream. WEPP Road results indicate that a rutted Alternative A (worst case scenario) would result in 3 to 6 times more sediment leaving the buffer than an unrutted Alternative A. Even with sediment leaving the buffer, the results are very low and, with proper trail design and revegetation of cut and fill slopes, would have no impact on watershed and stream resources. The HYDRAIN model results indicate that there would be no increases in runoff after the construction of Alternative A. This alternative would have no negative impacts on Bonneville cutthroat trout (*Oncorhynchus clarki utah*) habitat or water quality in Diamond Fork. This alternative would not affect aquatic macroinvertebrates.

Alternative B would construct approximately 2.1 miles of new trail and impact about 1.5 acres. The trail would have an average weighted slope of 10.3% and would be constructed on hillsides ranging from 0 to 17.8%. Because this alternative would not utilize the old existing travelway, more new construction would occur, and the short term impacts, such as localized sediment production (but not delivery) and rill and gully erosion, would be greater than in Alternative A. WEPP results indicate that an unrutted Alternative B would produce 1.5 times more trail prism erosion per year than an unrutted Alternative A and that a rutted Alternative B would increase sediment leaving the buffer 3 to 6 times more than an unrutted Alternative B. It should be noted that the WEPP model is accurate to between plus or minus 50-100%. This means that results obtained from the WEPP model for trail prism erosion are essentially the same for Alternatives A and B. The sediment production and delivery estimates for either alternative are very low and proper trail design and revegetation would eliminate all measureable effects to water quality and stream resources. Results of the HYDRAIN model indicate that runoff would not be affected by the construction of Alternative B. The construction of this alternative would have no negative impacts on Bonneville cutthroat trout (*Oncorhynchus clarki utah*) habitat or water quality in Soldier Creek. This alternative would not affect aquatic macroinvertebrates.

Under Alternative C, no new construction would occur. The WEPP and HYDRAIN models indicate that natural erosion rates for the currently undisturbed sites where the potential trail would be constructed are very low. With the current vegetation type and cover, upland erosion at both sites is minimal. Short-term localized upland sediment would be produced under Alternatives A and B, but not under Alternative C.

Cumulative Effects: Soil and Water

Many of the past, present and future projects described earlier have, or would have, effects on water quality in the Diamond Fork and Soldier Creek watersheds. Because this project would have no effect on water quality, there is no cumulative effect to either of the watersheds.

Biological Environment

Terrestrial Wildlife

Endangered, Threatened, and Candidate Species

Affected Environment

The United States Fish and Wildlife Service (USFWS) lists the following federally protected terrestrial wildlife species that could be affected by the proposed project (Federally Listed and Proposed (P) Endangered (E) and Threatened (T)): Bald eagle (*Haliaeetus leucocephalus*) (T), Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*) (C), and Canada lynx (*Lynx Canadensis*) (T).

Bald Eagle Bald eagles require habitat that will provide them with open water for feeding and large, mature trees for nesting, roosting, and perching. The winter habitat used by eagles includes lakes, streams or rivers for feeding (USDA 2003). There are only four known breeding occurrences in Utah for bald eagles, none of which occur on the Uinta National Forest (UDNR 2003). Bald eagles use the Diamond Fork Creek riparian area for winter foraging and roosting habitat. Eagles were sighted along the Diamond Fork Creek area from Highway 6 to the Diamond Campground during the winter of 2003-2004 (USDA 2004a). There are no known nest sites within the Diamond Fork watershed.

Western Yellow-billed Cuckoo The western yellow-billed cuckoo requires large blocks (greater than 25 acres) of riparian habitat (particularly woodlands with cottonwoods and willows) with dense understory foliage (USDI 2001). Their diet consists mostly of hairy caterpillars but they will also eat cicadas, beetles, grasshoppers, crickets, other insects, berries, frogs and lizards (Stokes 1996). The western yellow-billed cuckoo is rare in Utah. The May 2003 Natural Heritage database shows 35-40 sightings in Utah. Nesting habitat for the cuckoo is found at low to mid-elevations (2500-6000 ft) (Parrish et al 2002). Even though suitable habitat does exist within the Diamond Fork drainage (riparian habitat with elevations ranging between 5000-5500 feet), no western yellow-billed cuckoos have been found during neo-tropical bird surveys conducted at Billies Mountain (1994, 2000), Two Tom Hill (1994, 2000, 2004) along Diamond Fork Creek (1999-2002, 2004), or in the 1992-2004 Sheep Creek breeding bird surveys. They have been found in close proximity in nearby Thistle Creek, and the Spanish Fork River.

Canada Lynx The Canada lynx requires high elevation boreal forest habitat of both typical old growth and an early successional structure, relying heavily on snowshoe hare as prey (USDA 2003). There is no habitat in the project area for Canada lynx or snowshoe hares (dense coniferous stands over 7000 feet elevation). Presence of the Canada lynx has not been documented in Diamond Fork. There is a key linkage route along Strawberry Ridge bordering the east side of the watershed. Two lynx were recorded moving through this route in 2004. These lynx moved through the Uinta National Forest quickly (in a few days), and have not settled down to establish a Utah population (Waters 2004).

The Biological Opinion issued by the USFWS for the 2003 Forest Plan states that recent records of lynx in Utah include unconfirmed reports from 1980 and 1982 in the Uinta Mountains.

Effects Analysis

Analysis Methods

Data utilized for this analysis includes the *Diamond Fork Area Assessment* (USDA 2000), habitat and population surveys from the Utah Division of Wildlife Resources, and Forest Service field surveys. The Diamond Fork watershed has been surveyed for TEP terrestrial wildlife and its habitat. The areas along Diamond Fork Creek and upper Sixth Water Creek were surveyed for wintering bald eagles by snowmobile during early winter of 2000. Other areas of northern Utah, including areas along Diamond Fork Creek were surveyed for bald eagles in January of 2003 (UDNR 2003). Neo-tropical migratory bird species monitoring surveys were conducted along several sites within the watershed during 1994, 1999, 2000, 2002, and 2004 (USDA 2004e).

Effects Common to Alternatives A and B

The proposed project areas were not included in the bald eagle surveys in 2000 as there is no riparian habitat within the proposed project areas. Surveys along the Diamond Fork Creek, adjacent to the Monks Hollow trailhead showed no use of this area by wintering bald eagles, even though there is suitable habitat for eagles there.

There will be no direct effects to the bald eagle as a result of trail construction, due to lack of habitat within the project area. There may be indirect effects to the bald eagle from the increased activity within the Monks Hollow trailhead adjacent to the creek. Loud noise from ATVs and snowmobiles may keep the eagles from temporarily using the area as roosting habitat. This would not affect their foraging area, as there are no large, open stretches of creek associated with the Monks Hollow area.

There will be no direct effects to the Western yellow-billed cuckoo as a result of trail construction, due to lack of habitat within the project area. Suitable habitat for the cuckoo does exist along the Diamond Fork Creek. If in the future cuckoos were to reoccupy the habitat along Diamond Fork Creek, there may be indirect effects to the cuckoo from the increased activity within the Monks Hollow trailhead adjacent to the creek. Loud noise from ATVs and snowmobiles may keep the cuckoos from temporarily using the area.

There will be no direct or indirect effects to the Canada lynx as a result of trail construction due to lack of boreal habitat and adequate prey base within the project area or watershed. There is no habitat in the project area or watershed for snowshoe hares (dense coniferous stands over 7000 feet elevation), which is the primary food source for the lynx.

Effects of Alternative C

Not building the trail will have no direct impact on the bald eagle, the Western yellow-billed cuckoo, or the Canada lynx for the reasons described above.

The same indirect effects as described above, also apply to all three species. Even if the trail is not built, off-road motorized use of this area will continue to rise as the demand

for recreational areas increase with the increasing population of the urban front. Not building the trail will not reduce the pressure for more developed ATV opportunities.

Terrestrial Wildlife: Sensitive Species

Affected Environment

The following are designated Forest Service sensitive terrestrial wildlife species having the potential to be located on the Uinta National Forest (Intermountain Region Proposed, Endangered, Threatened and Sensitive Species December 2003): spotted bat (*Euderma maculatum*), Townsend's big-eared bat (*Corynorhinus townsendii pallescens*), fisher (*Martes pennanti*), greater sage-grouse (*Centrocercus urophasianus*), flammulated owl (*Otus flammeolus*), Northern goshawk (*Accipiter gentilis*), peregrine falcon (*Falco peregrinus*), and Northern three-toed woodpecker (*Picoides tridactylus*).

Townsend's big-eared bats Townsend's big-eared bats are known to occur throughout Utah, and are a well-known hibernator utilizing caves and mines. Caves or adits are the primary habitat determinants for the species (UDNR 2003). The species utilizes desert shrub, pinion-juniper, pinion-juniper-sagebrush, mountain brush, mixed forest, and ponderosa pine forest for foraging habitat (USDA 2003). There is a population of Townsend's big-eared bats in the west Monks Hollow adit approximately 1/2 mile south of the Monks Hollow trailhead. Approximately 40 bats were discovered during a May 1999 survey (USDI 1999). Bat gates were installed in the mouths of the adits to protect them from human disturbance.

Spotted bat The spotted bat has been captured in Utah in several habitats including low land riparian, desert shrub communities, sagebrush-rabbit brush, ponderosa pine forest, montane grassland (grass-aspen) and montane forest and woodland (grass-spruce-aspen) (USDA 2003). They use rock crevices high up on steep cliff faces. Cracks in limestone and sandstone with 1-2 inches widths are important roosting sites (UDNR 2003). Surveys conducted at abandon mine sites in American Fork Canyon (Pleasant Grove Ranger District) found occurrences of spotted bats in 1997. There are limited rock outcrops within the watershed that may provide potential habitat for this species, but will not be impacted by activities associated with this project. No spotted bats were found during the 1999 survey of the Monks Hollow adits. There is no suitable habitat in the project area, or documented historical occurrence within the project area or watershed, and no additional surveys have been conducted

Fisher Fishers prefer dense lowland forests and spruce-fir stands with extensive canopy cover. They prey upon small to medium mammals, birds, and carrion of large mammal species. In coniferous forests they concentrate on snowshoe hare. There is no substantial evidence that fisher historically or currently reside in Utah. There is one photographic record of tracks from 1938 in Summit County, but it is considered speculative (USDA 2003). There is no coniferous forest habitat in the project area and no fishers presently or historically are known to inhabit the project area or watershed.

Greater sage grouse Greater sage grouse inhabit sagebrush plains, foothills, and mountain valleys. Sagebrush is the predominant plant of quality habitat (UDNR 2003). On the Uinta National Forest sage grouse are found in the Vernon area of the Spanish

Fork Ranger District and in Strawberry Valley on the Heber Ranger District. Sagebrush is not the predominant vegetation type in the Diamond Fork watershed, which would explain why the sage grouse have not been found within the project area or this watershed.

Flammulated owl The flammulated owl is an insectivorous species that resides mainly in mixed pine forests. They prefer ponderosa pine but also occur in spruce-fir, Douglas fir, lodge pole pine, aspen and pinion juniper. They use previously excavated cavities in large diameter trees for nesting habitat (USDA 2003). Limited habitat occurs for flammulated owls within the watershed and the project analysis areas. No surveys have been conducted specifically for the flammulated owls in this area. There have been no occurrences of the owls during neo-tropical migratory bird or breeding bird surveys. There is no suitable habitat within or flammulated owls inhabiting the project area.

Northern goshawk Northern goshawks are found in several locations throughout the Uinta National Forest. The species utilizes a variety of trees for nesting, using sticks as nest material. Goshawks forage in dense woodlands, but prefer a more open understory for flight purposes (USDA 2003). No northern goshawks were observed in the Diamond Fork Creek #1 (1999, 2002, and 2004) or #2 (2004) neo-tropical bird surveys (USDA 2004e), or in the Sheep Creek (2001-2004) breeding bird surveys (USDA 2004f). The closest known goshawk territory is on Timber Mountain, located approximately eight miles northwest of the proposed trail. This territory was active from 1996 to 2000. No goshawks have been found in yearly surveys from 2001 to 2004, suggesting that the goshawks have abandoned the territory.

The Forest has been monitoring goshawk population trend since 1996 by monitoring territory occupancy (USDA 2004b). Between 13 and 20 territories were monitored annually across the Uinta National Forest. Territory occupancy ranged from 8 to 37 percent during those years, with no strong negative or positive trend over time. The 5 year average (1999 to 2003) of active territories is 27.6%. Monitoring in 2004 found 30% of the territories active, suggesting that the forest-wide population is currently stable.

Peregrine falcon Peregrines typically occupy open country habitats near water. Cliffs are preferred for nesting habitat and they typically prey on smaller birds (USDA 2003). Historical nests are known from above Alpine (Pleasant Grove Ranger District) in the early 1970s and in the canyons east of Utah Lake from the 1930s to the 1960s, but no nests have been found on the Uinta National Forest in recent years. No peregrine falcons were observed in the Diamond Fork Creek #1 (1999, 2002, and 2004) or #2 (2004) neo-tropical bird surveys (USDA 2004e), or in the Sheep Creek (1992-2003) breeding bird surveys (USDA 2004f). There is suitable habitat for peregrines within the watershed in the Sixth Water Creek area, but no suitable habitat within the proposed project area. There are no peregrine, and no suitable habitat within the proposed project areas.

Northern three-toed woodpecker The Northern three-toed woodpecker is associated with coniferous forests and requires dead trees for cavity nests. They excavate cavities in trees with a 9" dbh or greater located near high insect populations (mainly spruce bark beetles) (USDA 2003). No nesting habitat is within the proposed project area or adjoining areas, although limited, scattered habitat does occur within the Diamond Fork watershed.

Although this species is widely distributed, it occurs at relatively low densities in most areas. Data for the western Breeding Bird Survey region shows no evidence that population trends of this species have been declining during the past 20 years. The 2004 Uinta National Forest survey data indicates that this species is relatively common in suitable conifer habitats on the Forest (USDA 2004c). They were commonly detected in mature to old spruce-fir and Douglas-fir forest types, and were especially common in these habitats where insects were active.

In 2004, Forest-wide surveys for this species were conducted. Birds were detected at 14 of the 43 survey sites (33%). One to four birds were detected at 14 (~33%) of the survey sites. In addition, project surveys detected three-toed woodpeckers at 17 sites. Four of the 14 detections were on the Spanish Fork Ranger District, but none were within Diamond Fork Creek drainage due to the scattered nature of the available habitat. The 2004 Uinta National Forest survey data (USDA 2004c) indicates that this species is relatively common in suitable conifer habitats on the Forest. They were commonly detected in mature to old spruce-fir and Douglas-fir forest types, and were especially common in these habitats where insects were active. This suggests that the numbers of birds are stable forest-wide where suitable habitat is present. This is consistent with past neo-tropical surveys in Diamond Fork and breeding bird surveys in nearby Sheep Creek, where no three-toed woodpeckers have been observed.

Along the Alpine Loop on the Pleasant Grove Ranger District, surveys were conducted in a proposed shaded fuel break treatment area. No three-toed woodpeckers were detected.

Random forest surveys in potential habitat were conducted in June 2001 and 2003. The results of this survey showed that Heber Ranger District had sites located in Wolf Creek Campground and Bryant's Fork. The Spanish Fork Ranger District had sites located in the Left Fork of the White River and the Nebo Unit. No three-toed woodpeckers were found on the Pleasant Grove Ranger District, possibly due to the lack of dead trees in coniferous forests.

Three-toed woodpeckers have been identified during breeding bird surveys (BBS) located on the Heber Ranger District. Birds were identified in 1997 and 1998 on the Heber Mountain BBS transect, and in 1996, 2001, 2002, and 2003 on the Soapstone BBS transect.

Three-toed woodpeckers have also been located during neo-tropical migratory bird surveys on the Heber Ranger District (USDA 2004e). Birds were identified on the Heber Mountain #2 in 1995, 2000 and 2004. No birds have been located on the remaining Forest transects.

Although the presence of birds has been established on the Forest, no nest sites have been found. The numbers of birds found during these surveys were low in number (1-4), they were consistently found over the years within the studied areas. This suggests that the numbers of birds are stable within the surveyed areas.

Effects Analysis

Analysis Methods

Data utilized for this analysis includes the *Diamond Fork Area Assessment* (USDA 2000); habitat and population surveys from the Utah Division of Wildlife Resources; and Forest Service field surveys. The Diamond Fork watershed has been surveyed for sensitive terrestrial wildlife and its habitat. Neo-tropical migratory bird species monitoring surveys were conducted during 1994, 1999, 2000, 2002, and 2004 and breeding bird surveys have been conducted in nearby Sheep Creek since 1992.

Effects Common to Alternatives A and B

The following species are removed from further discussion due to their lack of or limited habitat within the project area and the lack of historic occurrence within the Diamond Fork watershed: spotted bat, fisher, greater sage-grouse, flammulated owl, Northern three-toed woodpeckers and peregrine falcons. The Northern goshawk is eliminated due to abandonment of their territory and no establishment of a new territory within the watershed. None of the alternatives will directly, indirectly or cumulatively affect these species.

The proposed trail is within three miles of the Monks Hollow adit where Townsend's big-eared bats are located. There will be no direct impacts from construction. However, there is a potential for increased indirect impacts associated with additional people using the Monks Hollow trailhead to access the trail. Townsend's big-eared bats are very sensitive to human disturbance. Bat gates have been installed to prevent human occupancy of the adits to limit disturbance impacts to this species.

Effects of Alternative C

There will be direct impacts to habitat within the project area through the construction of user created trails. Even if the trail is not built, use of this area will continue to rise as the demand for recreational areas increase with the increasing population of the urban front. Not building the trail will not reduce the pressure for more developed ATV opportunities. There will be potential for increased loss of habitat from existing uncontrolled ATV recreational activities between the existing Monks Hollow and Teat Mountain trails.

Terrestrial Wildlife: Management Indicator Species

Affected Environment

Management Indicator Species (MIS) are listed in Appendix B of the Uinta National Forest 2003 Land and Resource Management Plan. Species selected as MIS are used to monitor a particular habitat type. This is accomplished by assessing the habitat conditions and population changes of the species that occupy each habitat as required in 36 CFR 219.19. Terrestrial MIS species include: beaver, Northern goshawk, and three-toed woodpecker. The existing condition and environmental effects of the alternatives on habitats and populations of Northern goshawk and three-toed woodpecker are discussed under the "*Terrestrial Wildlife: Sensitive Species*" section of this EA. This section will only discuss the beaver.

Beaver Beavers (*Castor Canadensis*) were widely distributed across Alaska, Canada, and the continental U.S. prior to 1800. They were trapped out quickly, however, and by the mid 1800s many beaver populations had been eliminated or dramatically reduced. Populations have become re-established throughout much of the U.S. and Canada and are increasing range-wide. The beaver is a riparian obligate species, although it inhabits a wide variety of riparian habitats as long as there is sufficient permanent water and food (USDA 2003).

Beavers are widely distributed on the Uinta National Forest. They inhabit a wide variety of riparian habitats having permanent water and food. Primary food sources are willow, aspen, and in lower-elevation riparian forests, cottonwood. Beavers are and have been surveyed on the Uinta National Forest. Many of these surveys were conducted in connection with site-specific projects. In 2003 and 2004, a survey of sample areas was implemented across the Uinta NF. In these surveys, a beaver dam was considered active if new mud and recently cut willows or aspen were observed. Based on available data, populations of beaver on the Forest appear to be stable (USDA 2004d). These areas include the Mineral Basin area, Left Fork of White River, Diamond Fork, Timpooneke Campground, below Cascade Springs, the Nebo Unit and portions of the Heber Ranger District.

The Diamond Fork Area Assessment (USDA 2000) describes the Diamond Fork area as having a large beaver population in many areas of wide willow complexes during pre-settlement conditions. Over time, the beaver populations declined due to overgrazing of willows, road building in the bottoms of drainages, and trapping. They reached a low point in the 1940's, and were only found in the headwaters of Diamond Fork and Fifth Water. Today beaver are found in a majority of creeks within the Diamond Fork Watershed.

Riparian habitats are not found within the proposed project area, but are found throughout the Diamond Fork watershed. Diamond Fork Creek, Sixth Water Creek, an Unnamed Tributary to Diamond Fork and Wanrhodes Creek were surveyed in April 2002 for the presence of beaver and beaver dams. No beaver were noted within the Diamond Fork Creek adjacent to the Monks Hollow trailhead during the survey. The 2002 surveys of Diamond Fork Creek had seventeen potentially active beaver dams within three and a half miles downstream of Springville Crossing, and five potentially active beaver dams within one-half mile upstream of Springville Crossing. In 2002, 58 dams were counted on the segment of lower Wanrhodes Creek (about 2.5-3 miles in length) above the Diamond Fork Road. No potentially active or abandoned beaver dams were found in the Unnamed Tributary.

In 2004, Diamond Fork Creek and Wanrhodes Creek were again surveyed. Forty-four dams were found, 34 of which (79%) were active. In Wanrhodes, 67 dams were observed, 36 percent of which were active.

No lasting beaver dams were found in the Diamond Fork Creek between Three Forks and Highway 6. One dam was initiated near Diamond-Palmyra Campground, but it washed out during the spring runoff and was not rebuilt. This is probably a result of the high flows or irrigation water that had been released into Sixth Water Creek from the Syar Tunnel. These high flows (up to 500 cfs at highest flow) wash out the beaver dams. Now that the Central Utah Project is completed and the irrigation waters are removed

from the system (reduction of 500 cfs flow to 50 to 80 cfs) regime, it is probable that the beaver will expand their territories to areas of suitable habitat (i.e. good willow habitat exists) along the rest of Diamond Fork Creek.

Beaver surveys in nearby White River found beaver populations and densities similar to those observed in Diamond Fork. The Left Fork of White River was surveyed in June 2003 for the presence of beaver and beaver dams. Forty seven (47) beaver dams were found in a 3.6-mile stretch between Boiler Canyon and the Forest boundary. Four bank dens and three lodges were found. Only one of the dams and one of the bank dens appeared to be abandoned. The Right Fork of the White River was surveyed for the 2001 White River Restoration Project. Ten beaver dams were found on a one-mile reach starting at the project boundary. The recently completed restoration work on the Right Fork will improve the habitat available for the beavers to occupy.

2003 beaver surveys on part of the Heber Ranger District found 13 of 33 beaver dams to be active (39%) in the reaches surveyed. Ninety-two percent (92%) of the dams that were located in areas with extensive willow habitat were active, while only 5% of those located in other habitat types were active.

Based on the beaver surveys conducted and other field observations by Forest Service wildlife biologists, in the professional judgments of these biologists the data described above is indicative of beaver populations and trends throughout the rest of the Diamond Fork drainage.

Effects Analysis

Analysis Methods

Data utilized for this analysis includes the *Diamond Fork Area Assessment* (USDA 2000). The Diamond Fork watershed has been surveyed for MIS and their habitat. Beaver surveys along Diamond Fork Creek were conducted in the spring of 2002 and in 2004.

Effects

There will be no direct or indirect effects to beaver at the point of trail construction as the trail is not located in or near any riparian areas that provide suitable habitat for the beaver. There will also be no indirect effects to the beaver at the Monks Hollow trailhead due to the lack of suitable habitat at this location. The Monks Hollow Trailhead is located adjacent to the Diamond Fork Creek. The banks there are extremely steep and lack the willow/cottonwood habitat necessary for beaver to inhabit the area. There will be no indirect effects from having recreation use associated with the trailhead.

Neo-tropical Migratory Birds

Affected Environment

The Diamond Fork area has a diverse neo-tropical migratory bird population that uses the area for breeding, nesting grounds, and foraging. While an emphasis is placed on riparian area protection for neo-tropical migratory birds, almost all bird species that could be found in Utah are considered neo-tropical migratory birds. They occupy a wide range of habitat types. The Utah Ornithological Society lists 425 species of birds in the 2004

Field Checklist of the Birds of Utah. Of those 425 species, only 20 are not considered neo-tropical (USDI 2004). Consequently, all habitat types have the potential to have a neo-tropical bird associated with it. Riparian habitats are particularly vulnerable. The lower portion of the riparian area in Diamond Fork has lost as much as 90% of the riparian forest from the 1920s to the present (Diamond Fork Area Assessment 2000).

Five (5) neo-tropical migratory bird monitoring sites are located within the Diamond Fork Management Area. Eighty-one (81) species of neo-tropical migratory birds have been found during neo-tropical migratory bird surveys in years from 1994 to 2004. Survey dates and number of species identified are shown in the following table.

ROUTE NAME	SURVEY DATE	NUMBER OF SPECIES
Billie's Mountain #2	06/01/1994	41
	06/02/2000	30
Ray's Valley #1	05/16/1994	24
	06/09/2000	31
	07/01/2004	31
Two Tom Hill	06/29/1994	25
	06/30/2000	27
	06/30/2004	35
Lower Diamond Fork Ck.	06/16/1999	44
	07/16/2002	38
	07/09/2004	44
Upper Diamond Fork Ck. ^{1/}	07/09/2004	34

^{1/} This route was established in 2004.

Bird species identified at all sites and associated with riparian habitats include the Northern flicker, dusky flycatcher, Cordilleran flycatcher, black-capped chickadee, house wren, American robin, black-headed grosbeak, rufous-sided towhee, and the chipping sparrow (USDA 2004e). The broad-tailed hummingbird, a Utah Partners in Flight (PIF) Avian Conservation Strategy's Priority species associated with riparian areas (Parrish et al 2002) was identified in 4 of the 5 survey routes.

Bird species associated with upland habitats include red-naped sapsucker, Townsend's solitaire, Virginia's warbler (a PIF priority species), and chipping sparrows. Virginia's warbler was found in 2 of the 5 survey routes.

Effects Analysis

Analysis Methods

Data utilized for this analysis includes habitat and population surveys from the Utah Division of Wildlife Resources; and Forest Service field surveys. Neo-tropical migratory bird species monitoring surveys were conducted during 1994, 1999, 2000, 2002, and 2004. Breeding bird surveys were conducted in nearby Sheep Creek in 1992-2004. Assumptions are made from observation, literature review and experience.

Effects Common to Alternatives A and B

The construction of any new trail will directly affect neo-tropical migratory bird by removing foraging and nesting habitat and dissecting contiguous habitat. Indirect effects

from having increased miles of trails include a potential increase of activity within the area and with the noise associated with motorized vehicles. Human and noise disturbance would increase due to easier access into the area. Construction activities will not occur until after mid-July to reduce the risk of incidental take and of disturbing the nesting and fledging periods of any neo-tropical migrants that may be in the area.

Alternative A would directly remove approximately one acre of mostly open meadows and mountain brush patches (potential foraging and nesting habitat for neo-tropical birds) as part of the new trail construction. Construction activities on the 1.5 miles of existing unclassified roads would help to stabilize the soils in this already disturbed area by providing a hardened surface for the motorized vehicles to travel on. This would prevent further damage to the area, as the motorists will hopefully stay on the hardened trail.

Alternative B would directly remove approximately 1.5 acres of mostly open meadows and mountain brush patches (potential foraging and nesting habitat for neo-tropical birds) as part of the new trail construction. There will be no construction on the unclassified trails, thus leaving the area open to soil erosion and continued loss of habitat.

Alternative C, the no action alternative, would also provide disturbances to neo-tropical migratory birds. There will be continued habitat loss and noise disturbances from use of the unclassified trails, as motorized vehicle drivers continue to look for new places to ride.

Effects to Other Terrestrial Wildlife Species

Golden Eagles

Golden eagles are known to nest in close proximity of Diamond Fork Creek. Golden eagles have been studied from February 1996 through June 2002 (Keller, 2002). Six Golden Eagle territories have been defined in Diamond Fork Canyon. Three of the known territories are located near potential alternative campground sites. The three territories are Lower Diamond Fork, West of Brimhall Canyon, and Red Mountain South.

The Red Mountain South golden eagles territory, the closest territory to the preferred alternative, has not been occupied since 2000 (Keller, 2002). This territory has not had a successful fledgling since 1997. A chick was hatched in mid-April and fledged by late-June of that year. If the project area becomes repopulated by golden eagles, the hatch and fledging would be over before most of the recreation use occurs.

Cumulative Effects: Terrestrial Wildlife Species

This section briefly describes other interrelated projects that may contribute to cumulative impacts. As previously stated, cumulative impacts are the incremental impact of an action when added to other past, present, and reasonably foreseeable future actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time. For the purposes of this analysis, the cumulative effects analysis area is the Diamond Fork Watershed and a portion of the Soldier Creek Watershed (Cumulative Effects Map 2, Appendix A). Impacts from any of the action alternatives are not anticipated outside this analysis area.

Endangered, Threatened and Proposed Species

There is no habitat in the project area or watershed for snowshoe hares (dense coniferous stands over 7000 feet elevation), which is the primary food source for the Canada lynx. The project has no direct or indirect effects on this species or its habitat, and therefore, no cumulative effects.

Past historic land use practices, including clearing for agriculture, grazing and uncontrolled dispersed camping and recreation activities have caused a reduction of riparian habitat along the Diamond Fork Creek, causing a loss of winter roosting trees for the bald eagle, and nesting habitat for the western yellow-billed cuckoo.

Reconstruction of the Diamond Fork Campground has improved habitat for the bald eagle and yellow-billed cuckoo by moving the campground farther away from the riparian corridor and associated wetlands.

Recently completed and currently on-going projects designed to include improvements for the riparian corridor along Diamond Fork include the Diamond Fork System completion, dispersed camping and day use management, Springville Crossing-Rays Valley Road reconstruction, and Redford fencing. Protection and improvements to the riparian corridor will improve conditions for the bald eagle and yellow-billed cuckoo. The negative aspect of these projects are that these improvements make it easier for people to access the Diamond Fork watershed leading to increased human disturbances along Diamond Fork Creek.

The Sixth Water and Diamond Fork Creek restoration will improve riparian conditions for bald eagles and yellow-billed cuckoos.

Sensitive Species

The following species are removed from further discussion due to their lack of or limited habitat within the project area and the lack of historic occurrence within the Diamond Fork watershed: spotted bat, fisher, greater sage-grouse, flammulated owl, Northern three-toed woodpeckers and peregrine falcons. The Northern goshawk is eliminated due to abandonment of their territory and no establishment of a new territory within the watershed. As there are no direct or indirect effects associated with these species, there are no cumulative effects.

The Diamond Fork System Completion provided the habitat for the Townsend's big-eared bat. The Central Utah Project was originally planned to construct a dam between Red Ledges and Monks Hollow to create a water storage facility. As part of the preliminary planning, two adits were built into the mountainside. Later this project was abandoned, and construction of the Diamond Fork System pipeline occurred. The adits were to be permanently closed as part of the rehabilitation of the site. Instead, the adits were surveyed for bats, and the population of Townsend's was found. Instead of permanently closing the adits, bat gates were installed on both adits – one to protect the existing population of Townsend's big eared bats, and one to provide future habitat.

The Townsend's big-eared bat is found at a location less than one mile away from the proposed Diamond Fork Group Sites Campground. Increased human activities

associated with a 475 PAOT campground, such as hiking and rock climbing in the area could lead to disturbance of the adits from hikers, causing the bats to abandon the adit.

Management Indicator Species

Past historic land use practices have caused a reduction of riparian habitat along the Diamond Fork Creek, resulting in a loss of willows habitat for the beaver.

High irrigation flows in Diamond Fork Creek from the operation of the Strawberry Tunnel, Syar Tunnel and Inlet, Sixth Water Aqueduct have prevented beavers from using the various project areas to a large degree. The increased flows wash out the beaver dams. The new flow regime since completion of the Diamond Fork System will allow for improved habitat for beavers.

Riparian zones associated with the Prescribed Burns will be protected with a 300-foot buffer and there will be no loss of beaver habitat from the burns.

Motorized recreation has been increasing in the Diamond Fork watershed in recent decades, and is projected to keep increasing. The Forest Service has taken action to harden parking sites, designate trails and otherwise keep impacts to soil and vegetation resources to a minimum, but a slight increase in OHV-related sedimentation into Diamond Fork Creek can be predicted. Under all alternatives, the rehabilitation of user-created trail would restore wildlife habitat and reduce erosion and sediment introduction from these trails into the watershed. Similarly, existing problems from user-created trails would be mitigated when they are closed and rehabilitated.

Recently completed and currently on-going projects designed to include improvements for the riparian corridor along Diamond Fork include the Diamond Fork System completion, dispersed camping management, Springville Crossing-Rays Valley Road reconstruction, and Redford fencing. Protection and improvements to the riparian corridor will improve conditions for the beaver. The negative aspect of these projects are that these improvements make it easier for people to access the Diamond Fork watershed leading to increased human disturbances along Diamond Fork Creek.

The Sixth Water and Diamond Fork Creek restoration will improve riparian conditions for beaver. Bank stabilization and restoration of the creeks will improve the riparian corridor and that will benefit the beaver.

Neo-tropical Migratory Birds

Construction of the Diamond Fork Group Campground is currently undergoing analysis for implementation in the Diamond Fork watershed. Construction of a campground will have limited cumulative effects on the area. This area has already been disturbed by the Diamond Fork System Completion as it was the staging area for the construction work during completion of the project. Prior to that, the area was impacted by uncontrolled dispersed camping, and was bisected with unclassified roads. Many areas were devoid of vegetation prior to clearing for the construction project. Through this area could be re-vegetated, it will still be subject to the future needs of campers in the Diamond Fork area. The second site, at the Monks Hollow Trailhead, will not cumulatively affect this area. The area is a popular trailhead to the Monks Hollow ATV trail. Providing a place for the

ATV campers to use, will limit dispersed camping in other areas. The third site is located on the south side of Diamond Fork Creek across a footbridge. This site will add the most to the cumulative impacts. To build the footbridge at this area would remove riparian vegetation at this site. Given the current losses to riparian habitat from past historic land uses, removal of riparian habitat at this location will decrease nesting and foraging habitat. Building an access road for construction and maintenance of this site will further remove nesting habitat.

The objectives of the Dispersed Camping Management project include the protection of riparian and wildlife habitats from unmanaged dispersed recreation use.

Past historic land use practices including grazing and uncontrolled dispersed recreation use will continue to reduce undisturbed areas necessary for nesting birds. The Lower Diamond Fork Mitigation Lands will provide undisturbed areas. The Sixth Water and Diamond Fork Creek restoration will provide an improvement in riparian habitat.

Summary of Cumulative Effects on Terrestrial Wildlife

In summary, implementation of Alternative A or B would have no cumulative effect on habitat of the TES wildlife species: Canada lynx, peregrine falcon, greater sage grouse, fisher, spotted bats, northern goshawks, flammulated owls, and northern three-toed woodpeckers.

None of the alternatives would directly affect, but may have minor indirect and cumulative effects on Western yellow-billed cuckoos, Townsend's big-eared bats, and bald eagle.

Alternatives A and B would have only minor effects on upland habitat dependent neotropical migratory birds. The cumulative effect of these alternatives when combined with other past, present and future activities would not be significant.

Aquatic Wildlife

Aquatic Wildlife: Endangered, Threatened, Sensitive and Candidate Species

Affected Environment

Bonneville cutthroat trout (*Oncorhynchus clarki utah*), a Uinta National Forest Management Indicator Species and a Forest Service Region-4 Sensitive species (which has been petitioned for listing as Threatened by the USFWS), is known to inhabit the Diamond Fork Creek drainage. Currently most populations of Bonneville cutthroat trout on the Uinta National Forest are fragmented. In Diamond Fork Creek drainage, 2004 survey data indicates remnant populations currently occur only in the headwater reaches of upper Diamond Fork (above Three Forks and well above the project area), Cottonwood Creek, Wanrhodes Creek, Little Diamond Creek, Fifth Water, Sixth Water,

Chase Creek, Halls Creek, and Shingle Mill Creek (USDA 2004g). Naturalized populations of non-native brown trout have become well established in the drainage and are successfully competing with native cutthroat trout, thereby suppressing native trout populations (USDA 2004h). In lower Diamond Fork (below Three Forks), it is possible scattered individual remnant Bonneville cutthroat may still inhabit this stream reach. However, they occur only in very limited numbers due to competition from brown trout. No cutthroat trout were observed in lower Diamond Fork Creek in 2002, 2003, or 2004 surveys. Both Monks Hollow and Long Hollow are intermittent streams that do not support fish, including Bonneville cutthroat trout.

In upper Diamond Fork (above Three Forks), Bonneville cutthroat trout do occur in this stream. Population data using indices of overall condition (K factor) for Bonneville here does not show a statistically observable change in the average overall condition of cutthroat trout during the 1976-2004 time period. The overall condition of cutthroat trout here has historically averaged 0.93, with a low of 0.83 observed in 1976 and a high of 1.08 in 2004. Cutthroat trout densities have averaged 0.28 fish/meter, and range from 0.01 fish/m in 2004 to 0.55 fish/m in 1979. The apparent decline (not statistically significant) is a result of competition with brown trout. 1979 data indicates brown trout comprised 26% of the salmonoid population. 2004 data indicates brown trout comprised 98% of the population.

The streams containing populations of Bonneville cutthroat trout are physically isolated (e.g. a natural fish barrier exists) from, and/or are upstream from Monks Hollow and Long Hollow. None of the alternatives will directly affect Bonneville cutthroat trout or any habitat occupied by this species.

Colorado River cutthroat trout (a Uinta National Forest MIS species) are not endemic to this drainage and are not present within the Diamond Fork drainage (USDA 2004h). Consequently, none of the alternatives would directly, indirectly or cumulatively affect populations or habitat of this species.

Columbia spotted frogs (*Rana luteiventris*) are currently found in isolated springs or riparian wetlands in Juab, Sanpete, Summit, Utah and Wasatch counties. In September 2002, the Utah Division of Wildlife Resources announced the discovery of a new population of Spotted Frogs in Diamond Fork. The spotted frogs were found in wetlands several miles downstream of Monks Hollow. Although spotted frogs were not found upstream of this site, suitable habitat was identified from the mouth of Diamond Fork Canyon upstream to approximately the Diamond Fork Campground which is located about 1.5 miles downstream of the project area. The USFWS's most recent review of the status of the Wasatch Front spotted frog found stable, viable and self-sustaining populations of the species distributed throughout the historic range. The USFWS also found that the status of the species continues to improve. None of the alternatives will directly affect Columbia spotted frogs or any habitat occupied by this species.

June Sucker is endemic to Utah Lake and may have spawned in streams on the National Forest prior to diversion of streams. No habitat use of Diamond Fork Creek is currently known to occur and no habitat is known to exist.

Leatherside Chub is listed as a species of special concern by the State of Utah. The most extensive leatherside chub survey in Diamond Fork was conducted in October and November of 1996 (Walser et al, 1997). Leatherside chub have not been found at the

Monks Hollow location (USDA and URMCC, 2000). Braided channels and backwater habitat where leatherside chub are most commonly found are not common in this reach.

Effects Analysis

The proposed alternatives would not impact Bonneville cutthroat trout habitat (see Effects Analysis, Soil and Water).

Implementation of either Alternative A or B would not impact any perennial stream channel or bankside vegetation. Trail users may impact streamside vegetation and upland areas. However, this would have little if any impact on water quality or stream habitat, and no impact on fish populations. Furthermore, Bonneville cutthroat trout are not found in the project area, and are absent or essentially absent from streams in, near or downstream of the project area. Implementation of either action alternative would result in no direct or indirect impacts on individual Bonneville cutthroat trout populations in this drainage or on the Forest.

No impacts would occur to Colorado cutthroat trout, Columbia spotted frogs, June sucker, or Leatherside chub.

Aquatic Wildlife: Management Indicator Species

Affected Environment

Management Indicator Species (MIS) are listed in Appendix B of the Uinta National Forest 2003 Land and Resource Management Plan. Aquatic MIS include Bonneville cutthroat trout (*Oncorhynchus clarki utah*) and Colorado River cutthroat trout (*Oncorhynchus clarki pleuriticus*).

Effects Analysis

As described in the preceding section, the action alternatives would not directly or indirectly impact Bonneville cutthroat trout or Colorado River cutthroat trout habitat or populations.

Cumulative Effects: Aquatic TES and MIS Wildlife

The cumulative effects analysis area for aquatic TES and MIS wildlife includes the entire Diamond Fork Watershed and a portion of the Soldier Creek Watershed (Cumulative Effects Map 2, Appendix A). Many of the past, present and future projects (e.g. CUP, Range Management, Springville – Rays Valley Road, Diamond Fork prescribed burns) have had, or would have effects on water quality and quantity, and aquatic wildlife (i.e. fish and amphibian) habitat in the watershed. Motorized recreation has been increasing in the Diamond Fork watershed in recent decades, and is projected to keep increasing. The Forest Service has taken action to harden parking sites, designate trails and otherwise keep impacts to soil and vegetation resources to a minimum, but a slight increase in OHV-related sedimentation into Diamond Fork Creek can be predicted. Under all alternatives, the rehabilitation of user-created trail would restore wildlife habitat and

reduce erosion and sediment introduction from these trails into the watershed, as well as allow the riparian area in lower Monks Hollow to recover. Similarly, existing problems from user-created trails would be mitigated as they are closed and rehabilitated. These effects would not vary by alternative, except to the extent that some of the alternatives may encourage or discourage illegal off-road trail use and development. In the experience and judgement of Forest Service recreation managers, the development of a more complete trail system (such as proposed with Alternative A or B) would likely result in a reduction in illegal off-route use and trail development. This would reduce impacts from this on wildlife and fisheries. Some of this potential benefit may be offset by potential attraction of and problems from more ATV users to the Monks Hollow area. However, the extent to which this might occur is impossible to accurately predict, and thus this analysis assumed no indirect effect (i.e. no beneficial reductions from any of the alternatives) differences between alternatives.

All of the alternatives considered for this project would have little or no effect on water quality or quantity, and aquatic wildlife habitat. Therefore, there would be no cumulative effect on fish or aquatic habitats or populations (including for Columbia spotted frog and Bonneville cutthroat trout) from implementation of any of the alternatives. Colorado River cutthroat trout do not occur with the project area or the Spanish Fork River or Diamond Fork Creek drainages, and therefore, this project would not have any cumulative effects to habitat or populations of this species.

In summary, implementation of Alternative A or B would have no cumulative effect on viability or habitat of the TES aquatic wildlife species: Bonneville cutthroat trout, Colorado River cutthroat trout, or Columbia spotted frogs.

None of the action alternatives would affect populations of Uinta National Forest MIS aquatics: Bonneville cutthroat trout or Colorado River cutthroat trout.

Plants

Plants: Endangered, Threatened, Sensitive and Candidate Species

Affected Environment

The following tables list Threatened, Endangered, and Candidate species (Table 2), and Forest Service Sensitive species (Table 3).

Table 2. Federally Threatened (T), Endangered (E) and Candidate (C) Species

Species	Suitable Habitat in the Project Area	Distribution
Ute-ladies' tresses (T) (<i>Spiranthes diluvialis</i>)	No	Early seral species in riparian habitat. Found on open floodplain areas in Provo, American Fork and Spanish Fork river drainages (USDA 2003).
Deseret Milkvetch (E) (<i>Astragalus deserticus</i>)	No	Occurs in mixed sagebrush-mountain brush-juniper communities on red conglomerate and sandy areas between 5,000 to 6,000 feet elevation (Welsh, et al., 1993).
Clay Phacelia (E) (<i>Phacelia argillacea</i>)	No	Green River shale formation on steep sparsely vegetated slopes (6,000-6,400 feet elevation) (Welsh et al, 1993).

Table 3. Region 4 Forest Service Sensitive Species

Species	Suitable Habitat in the Project Area	Distribution
Barneby woody Aster (<i>Aster kingii</i> var. <i>barnebyana</i>)	No	Rock outcrops, cliffs and ledges. On lower elevations restricted to northern exposures. It has been found mainly on the Mt. Nebo area (southern Wasatch Mts.). Elevation 5,000-11,750 ft (Tuhy 1991).
Dainty moonwort (<i>Botrychium crenulatum</i>)	No	Wet meadows, marshes, and bogs. On the Uinta N.F., known only from Silver Meadow, western Uinta Mts., Wasatch county. Elevation 9,400 ft (Williams 1999).
Garrett bladderpod (<i>Lesquerella garrettii</i>)	No	Alpine, subalpine talus, and rocks outcrops. Davis, Salt Lake, Utah, and Wasatch Counties. Elevation 8,900-11,400 ft (Tuhy 1991).
Rockcress draba (<i>Draba densifolia</i> var. <i>apiculata</i>)	No	Alpine tundra and talus in rock strips above timberline. Spruce-fir krummholz, moist soils on receding snowbanks. Uinta Mts. Rare in Wasatch range (Salt Lake County) and Deep creek Mts. (western Juab County) (Welsh et al. 1993).
Wasatch jamesia (<i>Jamesia americana</i> var. <i>macrocalyx</i>)	No	Rock crevices and cliffs on mountain brush and spruce-fir communities. At lower elevation, it occurs in protected, mainly north facing outcrops. Elevation 5,690-9,000 ft (Welsh et al 1993).
Slender Moonwort (<i>Botrychium lineare</i>)	No	It has been found at sea level in cool climates, in Utah is most likely at higher elevations (about 1500-3000 m) in mountains, specific habitats have ranged from meadow dominated by knee-high grass, shaded woods and woodlands, grassy horizontal ledges on a north-facing limestone cliff, and a flat upland section of a river valley (Natureserve 2004). There has been one documented population found on the Wasatch-Cache NF none on the Uinta NF (UDNR 2003a).



Effects Analysis

The Diamond Fork Watershed includes some areas of Green River shale that could be suitable habitat for clay phacelia. However, no clay phacelia plants have been found in those areas that have been surveyed within the watershed, which are over five miles from the project areas of the two action alternatives. Neither of the Monks Hollow action alternatives would have impacts to that unoccupied habitat. Populations for Ute ladies'-tresses orchid within the Diamond Fork watershed have been found only adjacent to Diamond Fork Creek itself. The orchids have not been found above about 6300 feet elevation. The Monks Hollow project areas are above this elevation, and overwhelmingly in upland areas. Neither of the action alternatives would add impacts to habitat or populations of the orchid. There is no habitat for the Desert milkvetch in the Diamond Fork watershed, so the Monks Hollow alternatives would have no effect on the species. Surveys (Farrar 2004) found no habitat or populations of the various sensitive plant species in the project areas, so the Monks Hollow alternative projects would have no impacts to the viability of those species.

Cumulative Effects

The Diamond Fork watershed and a portion of the Soldier Creek watershed (Cumulative Effects Map 2, Appendix A) is the cumulative effects analysis area for plants. As discussed in the Effects Analysis section, there would be no direct or indirect impacts to Threatened, Endangered or Sensitive plants from this project. Therefore, there would be no incremental impact of the proposed actions when added to other past, present, and reasonably foreseeable future actions.

Social Environment

Roadless Area Values and Characteristics

Affected Environment

The project is located within the 35,230-acre Diamond Fork (# 0418016) Inventoried Roadless Area (IRA) in the Diamond Fork Management Area. In total, the Diamond Fork Management Area contains parts or all of six IRA's, amounting to 84,630 acres, or 87 percent of the management area.

The Diamond Fork IRA contains range improvements such as fences and water developments, approximately 26 miles of "cherry stemmed" roads that extend into the area but are excluded from the IRA, two miles of unclassified roads, ten miles of non-motorized trail, 38 miles of motorized trail, nine miles of overhead utility lines, and an electronic transmission site.

The Diamond Fork IRA (Cumulative Effects Map 1, Appendix A) is the cumulative effects analysis area for impacts to IRA character.

Effects Analysis

Analysis Methods

The January, 2001 Roadless Area Conservation Final Rule (Roadless Rule) identified nine "Roadless Area Values and Characteristics" (USDA, 2001):

- High quality or undisturbed soil, water, and air.
- Sources of public drinking water.
- Diversity of plant and animal communities.
- Habitat for threatened, endangered, proposed, candidate, and sensitive species and for those species dependent on large undisturbed areas of land.
- Primitive, Semi-Primitive Non-Motorized, and Semi-Primitive Motorized classes of dispersed recreation.
- Reference landscape of a relatively undisturbed area.
- Natural appearing landscapes with high scenic quality.
- Traditional cultural properties and sacred sites.
- Other locally identified unique characteristics.

This analysis will focus on the effects that the alternatives would have on these nine values and characteristics in the Diamond Fork IRA. In addition, the analysis will discuss the relationship of the project to the 2001 Roadless Rule and subsequent interim direction.

Effects Common to Alternatives A and B

High quality or undisturbed soil, water, and air. The effects of the proposed alternatives on soils, water and air were discussed in the physical environmental effects section of this document. Alternatives A and B would not affect water resources and therefore would not affect water quality in the IRA. These alternatives would have only localized, very minor intensity, and short-duration effects on air quality and would not impact the overall quality of air in the IRA in any measurable way. Alternative A would affect approximately 0.7 acres of undisturbed soil (approximately 1.2 miles of new trail construction with a 5-foot tread width). Alternative B would affect approximately 1.3 acres of undisturbed soil (approximately 2.1 miles of new trail construction with a 5-foot tread width). This accounts for a negligible percentage of the IRA.

Sources of public drinking water. The effects of the proposed alternatives on water resources were discussed in the physical environmental effects section of this document. Alternatives A and B would not affect water resources and therefore would not affect sources of public drinking water.

Diversity of plant and animal communities. Alternative A would affect approximately 0.7 acres of plant habitat and Alternative B would affect approximately 1.3 acres of plant habitat in the 35,230-acre IRA. The effect of this amount of disturbance on plant diversity in the IRA would be miniscule. Alternatives A and B would not displace any animal species from the IRA. Any animal displacement would be localized and temporary, and the diversity of animals in the IRA as a whole would not be impacted.

Habitat for threatened, endangered, proposed, candidate, and sensitive species and for those species dependent on large undisturbed areas of land. The effects of Alternatives A and B on threatened, endangered, proposed, candidate, and sensitive species was discussed earlier in this document. Alternatives A and B would not significantly effect these species.

Big game species that are dependent on large undisturbed areas of land exist in the IRA. These species would only be temporarily displaced from the trail area during construction and subsequent trail use.

Primitive, Semi-Primitive Non-Motorized, and Semi-Primitive Motorized classes of dispersed recreation. The project area falls within a Semi-Primitive Motorized class of dispersed recreation (recreation opportunity spectrum). Alternatives A and B would be consistent with standards and guidelines for this recreation opportunity spectrum classification which was determined by the Forest Plan. Some non-motorized recreationists are expected to be displaced from the Monks Hollow trail as ATV use increases following construction of the connector trail. This use will likely be displaced to non-motorized or single-track motorized trails within the IRA or adjacent areas. Again, the Semi-Primitive Motorized recreation class containing the project has already been determined by the Forest Plan.

Reference landscape of a relatively undisturbed area. The IRA contains range improvements such as fences and water developments, approximately 26 miles of “cherry stemmed” roads that extend into but are excluded from the IRA, two miles of unclassified roads, ten miles of non-motorized trail, 38 miles of motorized trail, nine miles of overhead utility lines, and an electronic transmission site. The IRA does not provide a particularly good reference landscape of a relatively undisturbed area. Nevertheless, Alternatives A and B would impact an additional 0.7 and 1.3 acres, respectively, of the IRA.

Natural appearing landscapes with high scenic quality. The IRA contains range improvements such as fences and water developments, approximately 26 miles of “cherry stemmed” roads that extend into but are excluded from the IRA, two miles of unclassified roads, ten miles of non-motorized trail, 38 miles of motorized trail, nine miles of overhead utility lines, and an electronic transmission site. The IRA can not be characterized as a natural appearing landscape. There are areas within the IRA that have a natural appearance with high scenic quality. Alternative A would affect the natural appearance along a 1.2 mile corridor (new trail construction) within the IRA, and Alternative B would affect a 2.1 mile corridor within the IRA, but these alternatives would not significantly affect the overall “natural appearing landscape” character of the IRA which is already highly un-natural. In addition, the Visual Quality Objective for the project area was determined by the 2003 Forest Plan to be Modification (USDA 2003b). This classification provides that management activities may dominate the original characteristic landscape.

Traditional cultural properties and sacred sites. A heritage resource archaeological and historic site survey was conducted for both existing and proposed trails in the project area. It examined areas which might be directly or indirectly impacted by Alternatives A and B. No sites of any kind were found.

Other locally identified unique characteristics. Public scoping for this project has not identified any other unique characteristics within the IRA that could be affected by Alternatives A and B.

The 2001 Roadless Area Conservation Rule (Roadless Rule). The Roadless Rule did not preclude the construction of motorized trails within IRA’s. The Roadless Rule stated “Nothing in this [rule] . . . was intended to prohibit the authorized construction, reconstruction, or maintenance of motorized or non-motorized trails that are classified and managed as trails” (USDA, 2001). The intent of the Roadless Rule was to “provide lasting protection for inventoried roadless areas within the National Forest System in the context of multiple-use management” (USDA, 2001). The thrust of the rule was to establish prohibitions on road construction, road reconstruction, and timber harvesting in IRA’s.

Interim Direction. Because the Roadless Rule became the subject of numerous lawsuits, Forest Service Chief Dale Bosworth issued an interim directive for protection of IRA’s

which the agency is still following. The Chief's letter of June 7, 2001 (USDA, 2001a) described the interim directive in three parts:

- The Chief reserved for himself the decision authority for timber harvest and road construction in IRA's.
- The Chief instructed units to complete ongoing efforts to identify and properly map existing classified roads.
- The Chief instructed units to consider the long-term protection and management of unroaded portions of IRA's during forest plan amendment or revision.

The Chief's letter also directed that the decision authority for all other management actions and proposals should continue as currently delegated.

Alternatives A and B do not conflict with Roadless Rule or the interim direction provided by the Chief of the Forest Service.

Alternative C

The no-action alternative would not affect characteristics and values of the IRA.

Cumulative Effects

The cumulative effects analysis area for impacts to IRA is the Diamond Fork IRA, Cumulative Effects Map 1, Appendix A.

High quality or undisturbed soil, water, and air. As discussed above, Alternatives A and B would not affect water resources and therefore would not affect water quality in the IRA. Because none of the alternatives would affect water quality in the IRA, there is no cumulative effect when combined with other past, present and future projects.

Alternatives A and B would have only localized, very minor intensity, and short-duration effects on air quality and would not impact the overall quality of air in the IRA in any measurable way. Because none of the alternatives would affect the overall air quality of the IRA, there is no cumulative effect when combined with other past, present and future projects.

Alternative A would affect approximately 0.7 acres of undisturbed soil (approximately 1.2 miles of new trail construction with a 5-foot tread width). Alternative B would affect approximately 1.3 acres of undisturbed soil (approximately 2.1 miles of new trail construction with a 5-foot tread width). This accounts for a minute percentage of the IRA. Because the effect of the alternatives on undisturbed soil in the IRA is so small, the cumulative effect when combined with other past, present and future projects is insignificant.

Sources of public drinking water. Alternatives A, B and C would not affect water resources and therefore would not affect sources of public drinking water. Because none

of the alternatives would affect the IRA as a source of public drinking water, there is no cumulative effect when combined with other past, present and future projects.

Diversity of plant and animal communities. Alternative A would affect approximately 0.7 acres of plant habitat and Alternative B would affect approximately 1.3 acres of plant habitat in the 35,230-acre IRA, and Alternative C would have no effect. The effect of this amount of disturbance on plant diversity in the IRA would be miniscule and therefore the cumulative effect when combined with other past, present and future projects would not be significant.

Alternatives A, B and C would not displace any animal species from the IRA. Any animal displacement would be localized and temporary, and the diversity of animals in the IRA as a whole would not be impacted. Therefore there would be no cumulative effect when combined with other past, present and future projects.

Habitat for threatened, endangered, proposed, candidate, and sensitive species and for those species dependent on large undisturbed areas of land. Cumulative effects on threatened, endangered, proposed, candidate and sensitive species was discussed earlier in the terrestrial wildlife, aquatic wildlife, and plants sections of this document.

In summary, as stated in those sections, none of the alternatives would have cumulative effects on threatened, endangered, proposed, candidate and sensitive aquatic wildlife or plant species in the IRA.

Alternatives A, B and C would have no cumulative effect on habitat of the TES wildlife species: Canada lynx, peregrine falcon, greater sage grouse, fisher, spotted bats, northern goshawks, flammulated owls, and northern three-toed woodpeckers.

None of the alternatives would directly affect, but may have minor indirect and cumulative effects on Western yellow-billed cuckoos, Townsend's big-eared bats, and bald eagle.

Impacts would only occur to upland habitat dependent neo-tropical migratory birds and would not be significant.

Big game species that are dependent on large undisturbed areas would only be temporarily displaced from the trail area, not the IRA, during construction and subsequent trail use. When combined with other past, present and future projects there would be no cumulative effect on the IRA as habitat for big game.

Primitive, Semi-Primitive Non-Motorized, and Semi-Primitive Motorized classes of dispersed recreation. Some non-motorized recreationists are expected to be displaced from the Monks Hollow trail as ATV use increases following construction of the connector trail. This use will likely be displaced to non-motorized or single-track motorized trails elsewhere within the IRA or to adjacent areas.

Other past, present and future projects that are expected to have a cumulative effect on recreation in the IRA when combined with this project include reconstruction of the Monks Hollow trailhead (complete), completion of CUP including the construction of the asphalt road over the pipeline, and construction of the Diamond Fork group sites campground (planned). Each of these projects will enhance ATV use of the Monks Hollow trail. The reconstructed trailhead provides additional parking and a restroom, the paved road provides easy access, and the group sites campground would provide ideal camping facilities directly adjacent to the Monks Hollow trailhead. The net cumulative effect of these projects is expected to be increased ATV use of the Monks Hollow and connected trails, and displaced non-motorized use.

Again, the section of the IRA containing the project falls within the Semi-Primitive Motorized recreation class which has already been determined by the Forest Plan.

Reference landscape of a relatively undisturbed area. The following past, present and future projects have affected the IRA's suitability as a reference landscape:

- Historic Land Use Practices including road and trail building, stone quarrying, logging, water conveyance, homesteading, livestock grazing, and stream bank hardening.
- Strawberry Valley Project and Central Utah Project (CUP) activities described earlier.
- Springville Crossing-Rays Valley Road Reconstruction which resulted in a net loss of 10 acres of IRA in the Diamond Fork Management Area.
- Ongoing range management including grazing and range improvements such as fences and water developments.
- Other land uses including Special Use Permits authorizing maintenance of existing overhead utility lines and a transmission site.

The net cumulative effect of these projects is that the IRA does not provide a particularly good reference landscape of a relatively undisturbed area. Alternatives A would cumulatively impact an additional 0.7 of the IRA and Alternative B would impact and additional 1.3 acres of the IRA.

Natural appearing landscapes with high scenic quality. The following past, present and future projects have affected the IRA's suitability as a reference landscape:

- Historic Land Use Practices including road and trail building, stone quarrying, logging, water conveyance, homesteading, livestock grazing, and stream bank hardening.
- Strawberry Valley Project and Central Utah Project (CUP) activities described earlier.
- Springville Crossing-Rays Valley Road Reconstruction which resulted in a net loss of 10 acres of IRA in the Diamond Fork Management Area.
- Ongoing range management including grazing and range improvements such as fences and water developments.
- Other land uses including Special Use Permits authorizing maintenance of existing overhead utility lines and a transmission site.

The net cumulative effect of these projects is that the IRA can not be characterized as a natural appearing landscape. There are areas within the IRA that have a natural appearance with high scenic quality. Alternative A would affect the natural appearance along a 1.2 mile corridor (new trail construction) within the IRA, and Alternative B would affect a 2.1 mile corridor within the IRA, further reducing the overall natural appearance of the IRA. As discussed earlier the Visual Quality Objective for the project area was determined by the 2003 Forest Plan to be Modification (USDA 2003b).

Traditional cultural properties and sacred sites. None of the alternatives would affect cultural properties or sacred sites within the IRA. Therefore there is no cumulative effect when combined with other past, present and future projects.

Other locally identified unique characteristics. Public scoping for this project has not identified any other unique characteristics within the IRA that could be affected by Alternatives A, B or C. Therefore there is no foreseeable cumulative effect when combined with other past, present and future projects.

Recreation

Affected Environment

The Diamond Fork Management Area is located close to the Wasatch Front and is therefore a popular location for outdoor recreation. Recreational opportunities in this area include developed and dispersed camping, hiking, mountain biking, horseback riding, OHV use, rock climbing, fishing, hunting, wildlife viewing, soaking in hot springs, and pleasure driving.

The Recreation Opportunity Spectrum (ROS) is a framework for defining classes of outdoor recreation environments, activities, and experience opportunities. There are seven ROS classes: Primitive, Semi-primitive Non-motorized, Semi-primitive Motorized, Roaded Natural, Roaded Modified, Rural, and Urban. The project falls within ROS classes Semi-primitive Motorized, Roaded Natural, and Roaded Modified, which were determined by the Forest Plan.

Effects Analysis

Alternatives A and B would impact motorized (OHV) and non-motorized (hiking, mountain biking, horseback riding) trail use, and camping in the Diamond Fork Management Area.

As described in chapter one of this document, implementation of Alternative A or B would enhance OHV trail riding opportunities from the Monks Hollow trailhead. It is expected that the number of motorized trail users will increase on the Monks Hollow and connected trails. Although the trails will continue to be open to non-motorized users, the management objective for these trails will be motorized trail use. It is expected that some non-motorized trail users will be displaced to other trails such as the Fifth Water trail that will offer them more solitude and a non-motorized recreation experience.

It is also expected that by enhancing OHV trail riding opportunities the project would attract more OHV users to the area and increase developed camping in nearby campgrounds and dispersed camping where it is allowed.

Alternatives A and B would be consistent with ROS classes that were determined by the Forest Plan.

Alternative C would not affect recreation in the Diamond Fork Management Area.

Cumulative Effects

The cumulative effects analysis area for impacts to recreation is the Diamond Fork Watershed and a portion of the Soldier Creek Watershed as shown on Cumulative Effects Map 2, Appendix A. The following past, present and future projects have affected or would affect this analysis area:

- Historic Land Use Practices including road and trail building increased access and recreation opportunities.
- Strawberry Valley Project and Central Utah Project (CUP) enhanced recreation by creating more natural stream flows and increased access by construction of an asphalt road over the pipeline.
- The Diamond Fork Campground reconstruction resulted in a reduced camping capacity (approximately 33 percent smaller than the original facility) in favor of resource protection.
- Private land acquisition increased the amount of land to be managed for wildlife habitat and public access for fishing.
- Reconstruction of the Monks Hollow and Three Forks Trailheads improved parking and added vault toilets, informational kiosks and fencing to manage increasing use of these trailheads.
- Springville Crossing-Rays Valley Road Reconstruction improved access to the area.
- Prescribed Fire temporarily displaces recreation from burn units, but overall enhances recreation by improving forest health.
- Dispersed Camping has been prohibited in the lower 7.5 miles of the Diamond Fork Drainage for resource protection, and elsewhere popular dispersed sites will be hardened for continued use. The Red Ledges site has been identified for day use.
- The Spanish Fork District Ranger has signed a decision to design, construct, and operate the Diamond Fork Group Sites campground in Diamond Fork which would have a capacity of up to 475 PAOT (people at one time).

The net cumulative effect of all of these activities, in combination with Alternative A or B, is likely to be more overall recreation occurring in the Diamond Fork Management Area, but less unmanaged recreation. Recreation is already rapidly increasing in this

area, and the Forest Service is focused on managing this use while protecting the natural resources that draw people to this unique area.

Alternative C would have no cumulative effect when combined with these activities.

Cultural Resources

Affected Environment

A heritage resource archaeological and historic site survey was conducted for both existing and proposed trails in the project area. It examined areas which might be directly or indirectly impacted by the project. No sites of any kind were found.

Effects Analysis

The Utah State Historic Preservation Office has concurred that there would be no historic properties (significant sites) affected by the project.

Cumulative Effects

The cumulative effects analysis area is the Diamond Fork Watershed, Cumulative Effects Map 2, Appendix A. There would be no incremental impact of the proposed actions when added to other past, present, and reasonably foreseeable future actions in the Diamond Fork Management area.

Environmental Justice and Civil Rights

Affected Environment

Executive Order 12898 established environmental justice as a Federal agency priority. Federal agencies are to consider the disproportional effect their actions may have on minority and low income populations.

Environmental Effects

There would be no disproportional environmental effects on any minority or low income populations. None of the alternatives would have disproportional impacts on any group based on income, race, creed, religion, sex or sexual preference.

Cumulative Effects

There would be no incremental impact of the proposed actions when added to other past, present, and reasonably foreseeable future actions in the Diamond Fork Management Area.

IV. AGENCIES AND PERSONS CONSULTED

The Forest Service consulted the following individuals and Federal and State agencies during the development of this environmental assessment:

ID TEAM MEMBERS:

Duane Resare, Resource Assistant, ID Team Leader

Karen Hartman, Wildlife Biologist

Ron Smith, Fisheries Biologist

Denise VanKeuren, Ecologist

Jeremy Jarnecke, Hydrologist

Charmaine Thompson, Archaeologist

Renaë Bragonje, Range Specialist

Matt Keyes, Natural Resource Manager

FEDERAL AND STATE AGENCIES:

Central Utah Water Conservancy District

U.S. Fish and Wildlife Service

Utah Division of Wildlife Resources

Utah Reclamation Mitigation Conservation Commission

Utah State Historic Preservation Office

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VI. APPENDICES

Appendix A

Maps