United States Department of the Interior
Bureau of Land Management

Environmental Assessment
for the
Silverton Guides Helicopter Ski Terrain Exchange

Gunnison Field Office
210 West Spencer Ave, Suite A
Gunnison, CO 81230

DOI-BLM-CO-S060-2016-0022-EA

May 2017

BLM

U.S. Department of the Interior
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ENVIRONMENTAL ASSESSMENT

NUMBER: DOI-BLM-CO-S060-2016-0022-EA

CASE FILE/PROJECT NUMBER: COSO-1000-29-14

PROJECT NAME: Silverton Guides Helicopter Ski Terrain Exchange

PLANNING UNIT: Gunnison Field Office, Silverton Special Recreation Management Area and Alpine Triangle Special Recreation Management Area

LEGAL DESCRIPTION: New Mexico Principal Meridian, San Juan County, Colorado
Tps. 41 thru 43 N., Rs. 6 and 7 W

APPLICANT: Silverton Guides

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1. INTRODUCTION

1.1 BACKGROUND

The Bureau of Land Management (BLM) has received an application from Silverton Guides requesting to modify the lands within their existing Special Recreation Permit (SRP) authorizing guided helicopter skiing (heli-skiing) operations on BLM lands in the Silverton, Colorado area (see Vicinity Map and Figure 1).

The applicant developed their proposal in order to respond to issues with the existing heli-skiing terrain within Silverton Guides' SRP, to improve the economic viability of the company as an important component of the San Juan County economy, and to maintain the sustainability of this recreational offering on BLM lands. The existing SRP pods of Houghton, Cinnamon, Grouse Gulch, Poughkeepsie and Ross Basin are severely impacted by winds funneling through the Uncompahgre Gorge (see Figure 1).[1] High winds in these areas create poor quality and dangerous snow conditions, including increased avalanche danger. There is a need for Silverton Guides to improve the safety and quality of the heli-skiing experience they provide. In particular, there is a need to:

- Provide heli-skiing on less hazardous, wind-affected terrain
- Reduce the risk of avalanche hazards for heli-skiers
- Meet demands of guests by providing more varied, less challenging heli-skiing terrain, with more acreage below tree line

This Environmental Assessment (EA) has been prepared to disclose and analyze the environmental consequences of the *Silverton Guides Helicopter Ski Terrain Exchange* as proposed by Silverton Guides. Based on preliminary internal BLM and external public scoping, and evaluation of the context and intensity factors contained in 40 Code of Federal Regulations (CFR) §1508.27, the BLM has determined that an EA is necessary to review, analyze and document the anticipated effects to the human, physical, and biological environment as a result of the proposed changes to Silverton Guides' existing SRP.

The original SRP for heli-skiing in this area was issued to Telluride Helitrax in 1995 as a single-year permit. Telluride Helitrax operated under single-year SRPs until 2008, averaging 35 to 50 annual user days.[2] In 2008 Telluride Helitrax applied for a five-year (multi-year) SRP with an increase in annual user days across a larger area of terrain on BLM lands. The BLM completed an EA in 2008, the *Telluride Helitrax Special Recreation Permit EA*, to analyze potential impacts of issuing this multi-year SRP. The 2008 *Decision Record* approved the multi-year SRP encompassing 13,611 acres of BLM lands and 300 annual user days. This EA incorporates by reference the *Telluride Helitrax Special Recreation Permit EA* and *Decision Record* (CO-800-2006-037-EA). Silverton Guides subsequently acquired this SRP from Telluride Helitrax and operated under single-year permits from 2009 through 2014. In 2014 BLM issued

[1] Pods are defined as discrete areas of terrain separated from other skiable areas by topographic features and/or geography.

[2] An annual user day is defined as a guest visit to BLM lands for any portion of a day. Under a single user day a guest can take multiple ski runs.

Silverton Guides a five-year SRP encompassing the same 13,611 acres of BLM lands and 600 annual user days. Telluride Helitrax currently operates under a separate permit on the adjacent Uncompahgre and San Juan National Forests.

1.2 PURPOSE AND NEED

The BLM is responding to an application by Silverton Guides to exchange parts of the existing terrain used for heli-skiing within their SRP with other, nearby terrain located on BLM lands. The BLM's consideration of this application is required by the multi-use and sustainable yield mandate of Section 302 of the Federal Land Policy and Management Act, the agency's SRP regulating authority (43 CFR §2932), and resource objectives as defined in the Tres Rios Field Office (TRFO) Resource Management Plan (RMP). There is a need for BLM to review this application and determine whether authorizing guided heli-skiing under an SRP to Silverton Guides is consistent with the RMP and is an appropriate use of BLM lands (BLM 2015).

BLM is considering approval of this terrain exchange for Silverton Guides' SRP because heli-skiing is part of the range of quality recreational opportunities allowed and encouraged in the Silverton Special Recreation Management Area (SRMA) Recreation Management Zone (RMZ) 2 – Winter (RMZ-2) (BLM 2015). The activity contributes to the experience of visitors by allowing them to enjoy strenuous physical exercise, be close to nature, and enjoy the high alpine scenery. The continued provision of guided heli-skiing will help the BLM ensure that these types of recreational opportunities are accessible to people without specialized knowledge, skill, or equipment.

1.3 DECISION TO BE MADE

This EA documents the site-specific environmental analysis for the Proposed Action as well as the No Action Alternative. Based on the analysis documented within this EA, the Responsible Official—Field Manager, Gunnison Field Office—will decide whether to allow implementation of the Proposed Action, in whole or in part, or select the No Action Alternative. The Responsible Official is not limited to choosing the Proposed Action or the No Action Alternative, but may develop an entirely new alternative created from components of the No Action Alternative and the Proposed Action analyzed in this EA. The decision document will include a determination of the significance of the effects and assess the decision's consistency with the TRFO RMP (BLM 2015) and Alpine Triangle Resource Area Management Plan (RAMP) (BLM 2010). Should a Finding of No Significant Impact determination be reached, a decision by the Responsible Official would be documented in a Decision Record.

In addition to determining whether to approve implementation of an action alternative analyzed in this document, the Responsible Official will also specify project design criteria (PDC) to be implemented with the selection of an action alternative. The Responsible Official may also require additional mitigation not discussed within this document.

1.4 SCOPING AND PUBLIC INVOLVEMENT

In July 2015 an initial scoping notice was mailed to members of the public. In August 2015 a supplemental scoping notice with additional project information was mailed to approximately 226 community residents, interested individuals, public agencies, and other organizations. This notice was

specifically designed to elicit comments, concerns, and issues pertaining to the Proposed Action. In response to BLM's solicitations for public comment, approximately 230 letters were received. Subsequent to the scoping process, Silverton Guides and the BLM modified the Proposed Action in response to public feedback. Chapter 2, Section 2.1 – Alternatives Considered in Detail presents the modifications made to the Proposed Action.

BLM considered the information gathered through public scoping along with the input of the BLM Interdisciplinary Team (ID Team) in identifying specific resources that require in-depth analysis in Chapter 3 of this EA. The BLM identified specific areas of concern and classified them as being either "*issues*" or "*non-issues.*" *Issues* may warrant the generation of an alternative, can be addressed by PDC or mitigation, or generally require in-depth analysis and disclosure. *Non-issues* are beyond the scope of the project, are already decided by law, regulation or policy, or are not relevant to the decision.

BLM published the Preliminary EA on November 10, 2016. Notification of the Preliminary EA was sent to approximately 200 organizations and individuals. The document was available to view on the BLM project website, and hard copies were available at the BLM Gunnison Field Office and by request. BLM held a public open house at 1428 Green Street in Silverton, CO on November 15, 2016 from 11:00 a.m. to 6:00 p.m. The 30-day comment period on the Preliminary EA closed on December 12, 2016, and approximately 370 comments were received during this period. A Response to Comments is presented in Appendix C and changes have been made to the Final EA in response to issues raised.

1.5 ISSUES AND CONCERNS

Each *issue* below includes a list of indicators that were identified as a means of measuring or quantifying the anticipated level of impact on a particular resource. While some indicators are necessarily qualitative in nature, every effort was made to utilize indicators that are quantitative, measurable, and predictable. Together, issue statements and indicators provide the foundation for the analysis that is documented in this EA for each alternative. Comments or issues that will not be analyzed are summarized at the end of the section.

ISSUES TO BE ANALYZED

Human Environment

Recreation

Issue: The project may affect the recreational experience for users in the study area.

Study Area: Existing and proposed SRP areas

Analytical Indicators & Requirements:

- Quantification (acres) of existing and proposed heli-skiing terrain in the SRP area
- Discussion of avalanche hazards and other skier safety risks in the existing and proposed SRP areas
- Discussion of recreational experience for heli-skiers in existing and proposed SRP areas
- Discussion of existing recreational use (level of use, location of recreation, dispersal of use) in proposed SRP areas, including the Continental Divide National Scenic Trail (CDNST)

particularly backcountry skiing and snowmobiling, and potential conflicts with this use resulting from the Proposed Action. Quantify existing use to extent practicable with input from BLM ID Team and scoping comments

- Discussion of BLM management requirements, and changes to recreational management of the proposed SRP areas, including outcome-based recreation objectives

Noise

Issue: The project may affect noise levels in the study area.

Study Area: Existing and proposed SRP areas and adjacent BLM and private lands

Analytical Indicators & Requirements:

- Narrative discussion of existing noise levels in the study area and reference state OHV website for noise data related to motorized uses
- Narrative description of potential noise-related impacts associated with snow stability testing explosives
- Discussion of the helicopter flight plan and potential noise-related impacts of helicopter use in the study area

Social and Economic Resources

Issue: The project may alter certain socioeconomic characteristics of San Juan County and the Town of Silverton, Colorado.

Study Area: San Juan County, Colorado

Analytical Indicators & Requirements:

- Quantitative and qualitative analysis of potential effects to socioeconomic indicators in San Juan County, including: population, employment, Town/County tax revenue, tourism and visitor spending
- Narrative discussion of existing winter tourism levels and potential changes as a result of the project
- Disclosure of compliance with Executive Order 12898, Environmental Justice

Land Use/Wilderness/Wilderness Study Area

Issue: The project may alter land use patterns within the study area.

Study Area: Existing and proposed SRP areas and adjacent public lands

Analytical Indicators & Requirements:

- Narrative description of existing land uses and allocations within the study area, including BLM Wilderness Study Areas (WSAs)
- Discussion of consistency with management guidance in the TRFO RMP
- Discussion of potential impacts to members of the public and other BLM permit holders within the study area, including outfitter/guide permit holders, both during implementation and following implementation of the project

- Discussion of proximity (feet or miles) to federally designated Wilderness areas

Cultural Resources

Issue: The project may affect known or unidentified cultural resources in the study area.

Study Area: Existing and proposed SRP areas

Analytical Indicators & Requirements:

- Discussion of cultural surveys completed to date in the vicinity of the study area
- Description of known archaeological/cultural resources in the study area
- Discussion of any potential impacts to existing cultural resources in the study area

Physical and Biological Resources

Wildlife

Issue: The project may affect individuals, populations, and/or habitat values for federally Proposed, Threatened or Endangered wildlife Species (PTES), BLM sensitive species, migratory birds, and species of local concern (SOLC).

Study Area: Existing and proposed SRP areas and adjacent BLM lands

Analytical Indicators & Requirements:

- Identify PTES wildlife species, BLM sensitive species, migratory birds, and SOLC potentially present in the study area
- Describe the existing environmental baseline by quantifying current use in the study area (including existing backcountry skiing and heli-skiing in the existing SRP) and compare to proposed conditions
- Quantification (acres) and qualification of existing wildlife habitat and proposed alteration, fragmentation, or removal of wildlife habitat, by species. Include specifically lynx habitat
- Disclosure of effects to terrestrial PTES, BLM sensitive species, migratory birds, and SOLC
- Quantification and qualification of mitigation for impacts to lynx or other relevant species habitat, if necessary

Wetland Fens

Issue: The project may affect fens, a type of sensitive wetland, throughout the study area.

Study Area: Existing and proposed SRP areas

Analytical Indicators & Requirements:

- Identify fens and fen Potential Conservation Areas (PCA) within the study area (acres)
- Narrative description of fen communities, classifications and disclosure of anticipated temporary and/or permanent impacts (acres)
- Description of compliance with Executive Order 11990, Protection of Wetlands and Resource Category 1 fen mitigation (USFWS 1999)

ISSUES NOT ANALYZED

As a result of external and internal scoping, the ID Team determined that a number of resources are non-issues, and thus will not require further discussion, consideration, or analysis in this EA. These resource non-issues are detailed in Appendix A: Interdisciplinary Team Analysis Record Checklist.

2. DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

2.1 ALTERNATIVES CONSIDERED IN DETAIL

The range of alternatives considered for this analysis was bound by the Purpose and Need underlying the Proposed Action, as well as by the issues that arose from internal and external scoping (detailed in Chapter 1). The description for Alternative 2 – Proposed Action articulates the modifications to the Proposed Action that occurred subsequent to the scoping process in response to public feedback. The original Proposed Action presented during scoping is described in Section 2.4 – Alternatives and Concepts Considered but Eliminated from Detailed Analysis. The National Environmental Policy Act (NEPA) requires that an environmental analysis examine a range of alternatives, which are "reasonably related to the purpose of the project." The BLM considered one additional alternative, but it was determined to be unreasonable; therefore, it was eliminated from detailed analysis. A discussion of this alternative considered but eliminated from detailed analysis is included in this chapter, along with a brief explanation of the reasons for its elimination, following the discussion of alternatives considered in detail.

ALTERNATIVE 1 – NO ACTION

The No Action Alternative provides a baseline for comparing the effects of the action alternative. The No Action Alternative essentially reflects a continuation of existing management practices without changes, additions, or upgrades. Silverton Guides would continue to operate heli-skiing for 600 annual user days under their existing SRP within an area totaling 14,388 acres, including the Grouse Gulch, Cinnamon, Houghton, Poughkeepsie, and Ross Basin, California/Treasure, Bonita/Emery/McCarty, and Slagle/Tower pods (see Figure 1).[3] Snow stability testing and stability assessment activities would continue throughout the SRP area. No new facilities or recreational opportunities would be approved under the No Action Alternative.

ALTERNATIVE 2 – PROPOSED ACTION

The Proposed Action includes exchanging a portion of Silverton Guides' existing SRP used for heli-skiing with other nearby terrain. Following public scoping in July and August of 2015, Silverton Guides modified their proposal in response to comments received from the public and the BLM. In particular, Silverton Guides reduced the amount of proposed terrain to be added to the SRP in response to concerns about impacts to backcountry skiers. Additionally, No Fly Zones were created to reduce noise impacts. The Proposed Action now includes the removal of five heli-skiing pods and the addition of four to the heli-skiing SRP. Under the Proposed Action, Silverton Guides would no longer operate heli-skiing in the Grouse Gulch, Cinnamon, Houghton, Poughkeepsie, and Ross Basin pods (total area of 5,566 acres) and they would be removed from Silverton Guides' SRP. In exchange, the Illinois/Hancock, Southeast, Round, and Minnie/Maggie pods would be added to the SRP (16,252 acres) and utilized as heli-skiing

[3] The total acreage of terrain in the existing SRP differs from the numbers disclosed in the 2008 Telluride Helitrax EA due to more accurate spatial calculations performed for this EA.

terrain. Under the Proposed Action, the SRP area would increase by 10,686 acres to a total 25,074 acres. Table 1 outlines the pods proposed for the exchange, and is displayed in Figure 1.

Table 1. Summary of Terrain Exchange

Pod	Acres
REMOVED FROM SRP	
Grouse Gulch	617
Cinnamon	1,100
Houghton	2,488
Poughkeepsie	883
Ross Basin	478
Subtotal	***5,566***
ADDED TO SRP	
Illinois/Hancock	1,789
Southeast	10,628
Round	779
Minnie/Maggie	3,057
Subtotal	***16,252***
Net Increase in SRP	***10,686***
TOTAL SRP AREA	**25,074**

The currently permitted California/Treasure, Bonita/Emery/McCarty, and Slagle/Tower pods would remain in the SRP (8,823 acres). The proposed terrain exchange would not result in the construction of any infrastructure or other ground disturbing activity. Specific components of the Proposed Action are described below.

Landing Zones

Silverton Guides would use a helicopter to transport guests from the Silverton Mountain Ski Area (typically from the top of the chairlift) to the heli-skiing pods within the SRP area throughout the winter, as conditions allow. A helicopter would drop off guests at Landing Zones at higher-elevation points within the SRP and would then ski down with their guide to meet the helicopter at another Landing Zone. Landing Zones would have the following characteristics:

- No vegetation clearing, trimming or modification would occur.
- Lower elevation Landing Zones would be utilized only when vegetation is fully covered and protected by snow. This stipulation does not apply to ridgetop Landing Zones.
- Landing Zones will not be allowed in identified fens and an area 200 feet surrounding each fen.
- Landing Zones would not occur within cultural resource avoidance areas (see Figure 3).
- No Landing Zones or skier drop-offs would occur in the Weminuche Contiguous WSA or the Weminuche Wilderness.
- No structures, improvements or equipment storage would be allowed.
- No fueling would occur on BLM lands within the SRP.

- Temporary "wands" would be utilized at proposed Landing Zones for use by the helicopter pilot in determining wind direction and speed during landings and takeoffs. Wands may be placed at Landing Zones each winter season, but would be removed at the end of the season. Wands are made of natural sticks with biodegradable natural flagging material and are inserted into the snow.
- Flight and avalanche safety protocols require that the pilot and guides have multiple options for landings and ski runs on any given day based on changing wind and avalanche conditions. However, Landing Zones would not be allowed in identified cultural, fen, WSA and Wilderness areas.

No Fly Zones

In response to concerns raised through the scoping period, three No Fly Zones (areas where heli-skiing helicopters would be prohibited from entering) have been incorporated into the Proposed Action. The first is an area of approximately 4,700 acres around the Town of Silverton, the second is approximately 90 acres in the southern portion of the Southeast pod along the boundary with the Weminuche Wilderness area, and the third is approximately 800 acres in the Southeast pod where it overlaps with the Weminuche Contiguous WSA (see Figure 2). In addition to the No Fly Zones in the Southeast pod, pilots would be provided with defined geographic areas and required to record flight tracks using GPS in order to prevent landings in the Weminuche Wilderness area. The No Fly Zone along the Wilderness boundary would ensure that helicopters remain at least approximately 250 feet from the Wilderness area.

Typical Flight Corridors

Flight corridors to the proposed Southeast, Round, and Minnie/Maggie pods would typically head southeast from the existing Silverton Mountain Ski Area and pass approximately 4 miles to the east of the Town of Silverton. Once in the vicinity of County Road 2, the helicopters would turn to the south or north depending on the specific area being skied (see Figure 3). Typical flight altitudes would be more than 13,500 feet, 4,000 vertical feet higher than the Town of Silverton.

Annual User Days

The current SRP authorizes 600 annual heli-skiing user days. No changes to the operational dates or increases in total annual user days are proposed. Hours of helicopter operation would be limited to sunrise through sunset. daily. No nighttime heli-skiing operations are proposed.

Snow Stability Assessments and Avalanche Testing

Silverton Guides currently performs stability assessments throughout their existing SRP. Weather data from remote weather stations, seasonal historical records, field observations and data from the Colorado Avalanche Information Center (CAIC), are considered to produce the daily avalanche forecast for Silverton Guides Snow Safety Staff. Forecasts are confirmed by evaluations of daily weather, in-field stability tests and visual observations of the snowpack. Avalanche testing and stability assessment activity is proposed for the additional pods (Illinois/Hancock, Southeast, Round, and Minnie/Maggie) as well as the currently permitted pods that are proposed to be kept in the SRP. Existing avalanche and stability testing measures would be terminated in the pods proposed for removal from the SRP. Stability

assessments involve a number of procedures including ski cutting, avalanche forecasting, and some helicopter explosive deployment. The objective of stability assessments and avalanche testing is not to trigger avalanches, but rather to determine the stability of the snowpack prior to entering the terrain. On-the-ground stability testing could involve digging snowpits to look for weak snow layers, or ski cutting (a stability test where a skier or rider rapidly crosses an avalanche starting zone to see if an avalanche initiates) (National Avalanche Center 2017). Some helicopter explosive deployment is currently used and is proposed to continue in the remaining and additional pods. Stability testing via helicopter explosive deployment involves releasing and detonating an explosive in an area of terrain to see whether an avalanche is triggered. If an avalanche is triggered that is an indication of an unstable snowpack. Explosive testing occurs when required for guest and staff safety depending on the current and forecast snowpack status, weather, and avalanche conditions.

Prior to any explosive use, standard operating procedures include a thorough visual reconnaissance to assure the absence of individuals from the hazard areas (e.g., hikers, backcountry skiers or snowmobilers). No explosives would be utilized without an inspection of the avalanche path and run out zone for the presence of backcountry users and/or wildlife. Additionally, no explosives would be used in identified cultural resource avoidance areas (see Figure 3), within identified fens or an area within 200 feet of identified fens, within the Weminuche Contiguous WSA or Weminuche Wilderness, nor in any areas outside of identified heli-ski pods.

All use of explosives within the proposed SRP would be governed by the requirements outlined in federal regulations (14 CFR and 49 CFR). These regulations pertain to the use of explosive materials for the purposes of avalanche testing and control. All operations involving the storage, handling, dispensing, or expending of hazardous materials for the purpose of avalanche control would be conducted in accordance with these regulations.

Each winter season, prior to the commencement of operations, all personnel who will be involved with the use of explosives would participate in a minimum of four hours of refresher training in the use of explosives. All personnel would also participate in helicopter safety training with the contracted helicopter service provider.

A written report currently is, and would continue to be, provided to the BLM at the end of each season detailing the areas tested and the results.

2.2 PROJECT DESIGN CRITERIA (PDC) INCORPORATED INTO THE PROPOSED ACTION

In order to minimize potential resource impacts from the proposed projects, the PDC detailed below have been incorporated into the Proposed Action. PDC were identified by Silverton Guides during project planning and devised by BLM specialists in the pre-analysis and analysis phases to reduce potential environmental impacts associated with project elements and ensure compliance with law and/or regulations. Many of these measures are outlined in Section 2.1 – Alternatives Considered in Detail, but are enumerated again here for clarity. The potential effects of implementing the Proposed Action (disclosed in Chapter 3) assume these PDC are applied. Additional operational and monitoring requirements not relevant to the impact analysis are outlined in Appendix B of this EA. These PDC

(including Appendix B) incorporate design features identified in the 2008 Telluride Helitrax EA and Decision Record and subsequent Silverton Guides SRPs. This list supersedes all other previous lists.

- Helicopters are prohibited from No Fly Zones surrounding the Town of Silverton, the Weminuche Contiguous WSA, and the ridgeline along the Weminuche Wilderness boundary (approximately 250 feet from the Wilderness boundary).
- No Landing Zones or skier drop-offs would occur in the Weminuche Contiguous WSA or the Weminuche Wilderness.
- No vegetation clearing, trimming or modification would occur.
- Lower elevation Landing Zones would be utilized only when vegetation is fully covered and protected by snow. This stipulation does not apply to ridgetop Landing Zones.
- Landing Zones would not occur in identified fens and an area 200 feet surrounding each fen.
- Landing Zones would not occur within cultural resource avoidance areas (see Figure 3).
- No structures, improvements or equipment storage would be allowed.
- No fueling would occur on BLM lands within the SRP.
- Temporary "wands" would be utilized at proposed Landing Zones for use by the helicopter pilot in determining wind direction and speed during landings and takeoffs. Wands may be placed at Landing Zones each winter season, but would be removed at the end of the season. Wands are made of natural sticks with biodegradable natural flagging material and are inserted into the snow.
- Flight and avalanche safety protocols require that the pilot and guides have multiple options for landings and ski runs on any given day based on changing wind and avalanche conditions. However, Landing Zones would not be allowed in identified cultural, fen, WSA and Wilderness areas.
- Prior to any explosive use, standard operating procedures include a thorough visual reconnaissance to assure the absence of individuals from the hazard areas (e.g., hikers, backcountry skiers or snowmobilers). No explosives would be utilized without an inspection of the avalanche path and run out zone for the presence of backcountry users and/or wildlife.
- No explosives would be used in identified fens and an area 200 feet surrounding each fen.
- No explosives would be used in identified cultural resource avoidance areas (see Figure 3).
- Permittee is responsible for informing all clients that they will be subject to prosecution for knowingly disturbing historic sites or collecting artifacts.
- No explosives would be used in the Weminuche Contiguous WSA or the Weminuche Wilderness.
- No explosives would be used in areas outside of the permitted heli-ski pods.
- No explosives would be utilized without an inspection of the avalanche path and runout zone for the presence of backcountry users and/or wildlife.
- Hours of helicopter operation are generally limited to sunrise through sunset, and no nighttime flight operations will be permitted.

- Silverton Guides is responsible for obtaining permission from private landowners for use of private lands.
- Where possible, skiers and guides should avoid skiing in close proximity (about 160 feet) to visible willow patches in valley bottoms and alpine basins near timberline. In addition, where possible, Landing Zones should be sited to be as far as possible from willow patches and krummholz (stunted high elevation vegetation) areas, especially in basins near the heads of drainages. Skier pathways to and from approved Landing Zones should be planned, where possible, to minimize use and proximity to willow and krummholz areas.

2.3 SUMMARY COMPARISON OF ALTERNATIVES

Table 2. Comparison of Alternatives

	Alternative 1 – No Action	Alternative 2 – Proposed Action
SRP AREA (ACRES)		
SRP Terrain Exchanged	No Exchange	Remove 5,566 acres (Grouse, Cinnamon, Houghton, Poughkeepsie, Ross Basin pods) Add 16,252 acres (Southeast, Round, Minnie/Maggie, Illinois/Hancock pods)
Total SRP Area	14,388 acres	25,074 acres
Net Change SRP Area	0 acre	+ 10,686 acres
ANNUAL USER DAYS		
SRP Annual User Days	600	600

2.4 ALTERNATIVES AND CONCEPTS CONSIDERED BUT ELIMINATED FROM DETAILED ANALYSIS

The following alternatives were considered by the ID Team but were eliminated from further analysis.

ORIGINAL PROPOSED ACTION

The original proposal submitted by Silverton Guides to the BLM differs from the current Proposed Action in a number of ways. The original proposal included additional areas for inclusion in the SRP, did not include any No Fly Zones, and included heli-skiing in some cultural resource areas. In response to issues raised during the scoping period, Silverton Guides eliminated some below treeline terrain near County Road 2 from their proposal in order to reduce impacts to backcountry skiers and other winter recreationists. No Fly Zones near the Town of Silverton and Weminuche Wilderness area were incorporated into the proposal in response to concerns raised about noise and impacts to wilderness. Finally, cultural resource avoidance areas were incorporated into the proposal to reduce impacts to cultural resources. This alternative is eliminated from further analysis because the current Proposed Action would meet the Purpose and Need of the project with fewer resource impacts.

2.5 CONFORMANCE REVIEW

The Proposed Action is subject to, has been reviewed for, and been found to be in conformance with, the plans listed below (43 CFR 1610.5). The plan conformance review included consideration of Resource Direction (pgs. II-7 to II-125) and Area Direction (pgs. II-126 to II-157).

Table 3. Plan Conformance

Tres Rios Field Office Resource Management Plan	
Date Approved:	2015
Management Unit:	Silverton Special Recreation Management Area (SRMA)
Standard Management Direction	
Decision Number/Page:	2.15: Recreation, p. II-80
Decision Language:	The recreation management focus of the TRFO is to ensure the continued availability of resource-dependent outdoor recreation experiences that are suitable for the landscape and that are not readily available from other public or private entities. The TRFO recreation programs will emphasize the extraordinary natural, cultural and scenic resource values of the planning area and effectively manage the high public demand. The program will consider the proximity of the planning area to growing communities and recognize the need for public understanding of their stewardship role upon the TRFO.
Silverton Special Recreation Management Area	
Decision Number/Page:	2.15.49: Silverton SRMA, p. II-88
Decision Language:	During the winter months, there are similar opportunities ranging from extreme downhill skiing to snowmobiling, ice climbing, and cross-country skiing.
Decision Number/Page:	3.13: Silverton, Desired Condition 3.13.2, p. II-156
Decision Language:	Commercial summer and winter recreation opportunities are available through permitted outfitter/guides and the Silverton Mountain Ski Area.
Decision Number/Page:	Appendix E, Silverton SRMA, p. E-19
Decision Language:	The Winter RMZ would provide opportunities for regional and local recreationists to experience spectacular natural scenery, cultural landscapes, heritage tourism with interpretive opportunities, and winter recreation for motorized and non-motorized quiet activities in a natural appearing setting. Activities: snowmobiling, snowshoeing, cross-country and downhill (traditional and helicopter supported) skiing, ice climbing.
Alpine Triangle Recreation Area Management Plan	
Date Approved:	2010
Management Unit:	RMZ-1 – Alpine Backcountry RMZ-2 – Heritage Roads
Standard Management Direction	
Decision Number/Page:	2.3.3: Heli-skiing, p. 20
Decision Language:	Heli-skiing is a commercial activity that allows a company to ferry skiers to the top of a mountain in a helicopter, and then have a guide lead them down the slopes to be picked up again at the bottom of the hill. Commercial heli-skiing has been allowed on public lands within the Project Area through an annual permit with the Telluride Helitrax Company since 1995. The area covered under this permit only includes public lands in San Juan County managed by the BLM Columbine Field Office [now TRFO]. Silverton Mountain Ski Area is also permitted to use helicopters for skiing access, within their permitted ski area. Heli-ski operations are not allowed in designated Wilderness or WSAs. The one current permitted heli-skiing operation permit, Silverton Guides LLC, will be honored in all Recreation Management Zones. NOTE: This is now managed by the Gunnison Field Office.

Table 3. Plan Conformance

Decision Number/Page:	3.2.4: Recreation Management – Resource Protection, p. 56
Decision Language:	***Management Action 3:*** The use of motorized vehicles including street legal vehicles, ATVs, motorcycles, snowmobiles, heli-ski operations, and other motorized uses are prohibited in designated Wilderness or WSAs. Mechanized uses such as mountain bikes and game carts are also prohibited in these areas. As such, these activities would not be managed for in these areas.
Decision Number/Page:	3.2.6: Recreation Administration, pp. 60–61
Decision Language:	***Objective:*** Manage commercial outfitters and special events to encourage safe and professional services are offered to the public, and to minimize impacts to resources and other visitors. ***Management Action 1:*** Continue to authorize and monitor a variety of commercial recreation activities to provide essential service for the public. These activities could include hunting, fishing, rafting, jeep tours, backpacking, horse packing, heli-skiing, rock climbing, snowmobiling and more. The number of outfitters permitted, the areas they would be allowed to use, and the number of service days they would be granted may be regulated to maintain desirable experiences, avoid resource impacts, avoid overcrowding and reduce conflicts with other visitors.
Recreation Management Zone 1 – Alpine Backcountry	
Decision Number/Page:	3.1 Management Prescriptions, p. 29
Decision Language:	RMZ-1 is primarily to be managed for non-motorized uses, but that existing permits for heli-skiing will be honored.
Recreation Management Zone 2 – Heritage Roads	
Decision Number/Page:	3.1 Management Prescriptions, p. 31
Decision Language:	The Silverton Mountain Ski Area is located in this RMZ and would be a focus for winter management. Winter recreation activities such as snowmobiling, skiing, snowshoeing, dog sledding, and ice climbing may also be practiced in this RMZ.

OTHER LAWS, REGULATIONS, AND POLICIES

The decision is in compliance with applicable laws, regulations, and policies, including the following:

- Federal Land Policy and Management Act
- Endangered Species Act
- Migratory Bird Treaty Act and Executive Order 13186
- Clean Air Act
- Executive Order 11988, Floodplains
- Clean Water Act
- Federal Noxious Weed Act and Executive Order 13112
- Executive Order 11990, Wetlands
- National Historic Preservation Act
- Executive Order 12898, Environmental Justice
- American Indian Religious Freedom Act
- Wild and Scenic Rivers Act
- Wilderness Act

- BLM Manual 6840 – Special Status Species Management (MS-6840)
- BLM Manual MS-6330 Management of Wilderness Study Areas
- BLM Manual MS-6340 Management of Designated Wilderness
- 2009 Continental Divide National Scenic Trail (CDNST) Comprehensive Plan

3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL EFFECTS

Chapter 3 provides a description of the existing human, physical and biological resources throughout the study area, and presents comparative analyses of the direct, indirect and cumulative effects on those resources. This EA incorporates by reference the *Telluride Helitrax Special Recreation Permit EA* and *Decision Record* (CO-800-2006-037-EA).

Pursuant to the Council on Environmental Quality (CEQ) and Part 1502.2, Title 40 CFR, only those resource issues identified as potentially affected by the Proposed Action and alternatives or as resources of special concern are included in the following discussions. The project area does not contain any Areas of Critical Environmental Concern, Prime and Unique Farmlands, Floodplains, or Wild and Scenic Rivers; therefore, these elements will not be impacted.

Each section in Chapter 3 is organized according to the following headings:

SCOPE OF THE ANALYSIS

For each resource issue analyzed in detail in Chapter 3, the Scope of the Analysis is defined. The Scope of the Analysis varies by resource (e.g., it is not the same for recreation resources and wildlife), and in some cases, is larger than the project area. Background information regarding the resources analyzed or the nature of the analysis is also provided under the Scope of the Analysis heading.

AFFECTED ENVIRONMENT

The Affected Environment defines the existing conditions for a particular resource. The Affected Environment provides the baseline conditions for which the effects of the No Action and Proposed Action alternatives are analyzed and disclosed.

ENVIRONMENTAL EFFECTS

An environmental effect is defined as a modification of, or change in, the Affected Environment brought about by an action. Effects can vary in degree, ranging from only a slightly discernible change to a drastic alteration in the environment. Effects can be direct, indirect, or cumulative in nature. For this environmental analysis, the following definitions of direct, indirect and cumulative effects are used:

- *Direct effects* are caused by the action and occur at the same time and place (40 CFR 1508.8 (a)).
- *Indirect effects* are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth-inducing effects and other effects related to induced changes in the patterns of land use, population density, or growth rate, and related effects on water and air and other natural systems, including ecosystems (40 CFR 1508.8(b)).
- *Cumulative effects* are defined in the CEQ regulations (40 CFR 1508.7) as "…the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable actions regardless of what agency (federal or non-federal) or

person undertakes such other actions." Table 4 lists the past, present, and reasonably foreseeable future actions within the area that might be affected by the Proposed Action. The geographic scope used for analysis may vary for each cumulative effects issue.

Table 4. Past, Present, and Reasonably Foreseeable Actions

Action Description	Status		
	Past	Present	Future
Recreational Use	X	X	X
Heritage Tourism	X	X	X
Commercial Outfitter-Guide Activities (snowcat, snowmobile, guided skiing)	X	X	X
Livestock Grazing	X	X	X
Private Land Development	X	X	X
Nearby Heli-Skiing and Helicopter-Based Avalanche Mitigation and Testing Operations Permits	X	X	X
Abandoned Mine Reclamation	X	X	X
Silverton Mountain Ski Area	X	X	X
Kendall Mountain Ski and Recreation Area	X	X	X

3.1 RECREATION

SCOPE OF THE ANALYSIS

The temporal bounds of this analysis of recreation resources extend from the first heli-skiing permit in Silverton in 1995 through 2027 (including the five-year SRP analyzed here and the future reissuance of a five-year SRP assumed in 2022). The spatial bounds of the analysis include the current and proposed extent of Silverton Guides operations (including the Silverton Mountain Ski Area and existing and proposed SRP area) and surrounding public and private lands.

AFFECTED ENVIRONMENT

Silverton Guides currently offers guided heli-skiing throughout a permitted area of 14,388 acres (see Table 5).

Table 5. Summary of Existing SRP Pods

Pod	Acres
Grouse Gulch	617
Cinnamon	1,100
Houghton	2,488
Poughkeepsie	883
Ross Basin	478
Slagle/Tower	2,745
Bonita/Emery/McCarty	1,384
California/Treasure	4,693
TOTAL EXISTING SRP AREA	**14,388**

This terrain is located to the east and north of Silverton Mountain Ski Area, within a distance of approximately 7 miles of the ski area base. The guided heli-skiing experience offered by Silverton Guides is a unique recreational experience, which supports BLM's objectives for winter recreation in the Silverton SRMA (BLM 2015). The experience offers guests the opportunity to view spectacular scenery, develop alpine skiing skills, and enjoy strenuous physical exercise in a unique environment. However, the availability of the entire SRP area has been limited by avalanche concerns and snow conditions. Over the past four seasons Silverton Guides has used approximately 95 percent of their annual user days in one pod, Slagle/Tower. The applicant would like to increase the variety of terrain available in their SRP.

Overall, the Alpine Triangle SRMA is managed under a destination recreation-tourism strategy, whose target is to meet the needs of visitors throughout the U.S., offering both motorized and non-motorized recreation activities both in the summer and winter seasons. In order to meet this, the SRMA's objective relevant to heli-skiing is to "manage commercial outfitters and special events to encourage safe and professional services are offered to the public, and to minimize impacts to resources and other visitors." It will achieve this objective by continuing to authorize activities such as heli-skiing. The number of outfitters permitted, the areas they would be allowed to use and for how many days will be regulated to maintain desirable experiences and avoid conflicts with others. Conflicts with other users are currently avoided by required visual surveys of the terrain prior to any explosive use or heli-skiing.

Weather conditions and terrain in the overall Silverton area are known to result in avalanche-prone conditions. There are many known avalanche paths in the area and much of the study area is mapped showing active avalanche paths or potential avalanche areas (see Figure 4). (Note: Digital avalanche hazard data are not available for the Ross Basin, Poughkeepsie, Houghton, Cinnamon, and Grouse Gulch pods.) Avalanche mitigation programs overseen by the Colorado Department of Transportation and San Juan County are currently in place in the Silverton area, and are primarily focused on reducing the frequency of avalanches either reaching public roadways or triggering them & plowing the debris to prevent unplanned avalanches. These programs include active management to reduce the frequency of large and destructive natural avalanches by way of initiating a series of smaller, less destructive controlled avalanche cycles.

Silverton Guides is currently permitted for 600 annual heli-skiing user days. The season typically lasts from December through April. Silverton Guides uses one helicopter that holds six people, including the pilot, guide, and four guests. Flights originate from the top of the chairlift at Silverton Mountain Ski Area. Throughout the ski season, 600 annual user days could translate into 150 helicopter use days if the helicopter was filled to capacity with each use. It could translate into more than 150 days if the helicopter is not filled to capacity on each trip. With an optimal season of 120 days, this could amount to over one group of guests per day. Typically, a single user day will include multiple individual skiing runs; therefore, 600 annual user days can result in more than 150 helicopter trips. On each trip, the clients and guides are dropped off at the top of a run, picked up at the end of a run, and returned to the top for another run. This routing is repeated five or six times for each trip, resulting in approximately ten to twelve landings per day. (Unrelated to this analysis or permit, heli-skiing is also permitted within the Silverton Mountain Ski Area under a separate permit.)

The study area is located within the Silverton SRMA established in the TRFO RMP, which manages the area for two zones: Summer and Winter (BLM 2015). The Winter RMZ outlines recreation setting characteristics prescriptions ranging from backcountry to front-country. The existing heli-skiing operations throughout the SRP are consistent with the recreation setting prescriptions for this RMZ.

The study area is also located within the Alpine Triangle SRMA. The RAMP for this area defines three RMZs: 1 – Alpine Backcountry, 2 – Heritage Roads, 3 – Animas/Lake Fork Rivers (BLM 2010). The existing SRP area is located primarily within RMZ-2 where motorized use is common and skiing is an appropriate use. Section 3.4 below includes additional discussion of the RMZs and consistency with the Alpine Triangle RAMP.

The BLM uses the Forest Service's Recreation Opportunity Spectrum (ROS) framework to establish recreational settings within the planning area. The ROS system classifies recreation settings based on a range of physical, social, and operational characteristics. These classifications are used to prescribe appropriate uses per ROS setting. Per the TRFO RMP, the ROS class for the existing and proposed SRP area is Semi-Primitive Motorized and Primitive (BLM 2015). The existing heli-skiing use in the SRP is consistent with the Semi-Primitive Motorized ROS class.

Other winter recreational use in the study area includes backcountry or alpine touring skiing (including telemark skiing), nordic skiing, snowshoeing, hiking, snow biking, kite skiing, dogsledding, ice climbing and snowmobiling, etc. High levels of backcountry skier use in the area occur at/nearby the summit of U.S. Highway 550, and along County Road 110 across from the Silverton Mountain Ski Area.

In mid-January to early March 2016, the applicant collected visitor use data along County Road 2, particularly the King Solomon, Porcupine Gulch, Minnie Gulch, Maggie Gulch, Maggie Woods, and Cunningham areas (see Figure 1) (Silverton Guides 2017). The time period was selected to roughly coincide with the peak heli-ski operation season. On a daily basis they recorded the date, place, time, how many new ski tracks, old ski tracks, non-ski tracks, cars and snowmobile tracks were at each "trailhead/parking area" (See Appendix E for a copy of the report). The recorders did not ascertain if visitor use was attributed to just the ski runs/chutes visible from the road, or in part occurred in the upper reaches of these drainages. (Of note: most, if not all of the chutes/slopes where the applicant observed ski tracks are **not** included in the proposed Minnie/Maggie, Southeast and Round pods.)

Over this 48-day monitoring period the **maximum** number of cars seen at one trailhead/parking area was three. The **average** number of downhill users per week (# of new ski tracks divided by 8 weeks) ranged from 0 to 4.1. The most **new** ski tracks seen in a day at any given location was four. The greatest number of non-ski tracks and snowmobiles at any particular trailhead was three. The highest (combined) number of cars, non-ski tracks and snowmobiles at any one particular trailhead was six. From mid-February through the end of March 2017, BLM Gunnison Field Office staff conducted informal monitoring of trailheads along County Road 2 from Arrastra Gulch to Eureka. They noted on fourteen different days the number of cars, ski tracks and other information. The greatest number of cars at any trailhead was five vehicles (noted at Arrastra Gulch on March 12—some vehicles that park here are likely residents that live in the vicinity). The most vehicles observed at other trailheads was three. (See Appendix E for a copy of the report.)

The Minnie/Maggie and Southeast pods of the SRP overlap and are adjacent to the Continental Divide National Scenic Trail (CDNST) for a distance of approximately 3 miles on BLM-managed land. The Alpine Triangle RAMP states: "This trail [CDNST] would be maintained to provide seasonal foot, horse, and mountain bike access" (pg. 41). A management plan for the scenic trail was completed in 2009 and provides guidance "…to provide for high-quality scenic, primitive hiking and horseback riding opportunities and to conserve natural, historic, and cultural resources along the CDNST corridor" (CDNST 2009). The management plan aims to protect the visual quality along the trail, and stipulates that the trail should be at least 0.5 mile from motorized uses. The plan also states that "motor vehicle use by the general public is prohibited on the CDNST, unless that use is consistent with the applicable land use management plan" (pg. 19); in the case of over-snow vehicles, [motorized use] is allowed … on public lands and the use will not substantially interfere with the nature and purposes of the CDNST" (pg. 20). Though helicopter use is not specifically mentioned in the CDNST management plan, it is consistent with over-the-snow motorized travel. Within the SRP area, the CDNST is primarily used during the snow-free season. There is no documented winter use of the trail due to the terrain, snowpack, distance from a parking area, and exposure during winter months.

The Silverton Snowmobile Club maintains a network of groomed trails near County Roads 110 and 2. These trails traverse through the Southeast, Minnie/Maggie, and California/Treasure pods. Grooming of the snowmobile trails typically doesn't occur until later in the season, after the avalanche danger has decreased as large, natural avalanche releases have occurred. For example, in 2016 grooming didn't start until February 1 and in 2017 no grooming had yet occurred as of late March (Silverton Snowmobile Club 2017). Snowmobile use in the area occurs. Incidental observations indicate that use has been increasing in recent years, but that it does not result in more encounters than expected in RMZ-2. Additionally, there are four other permitted guides offering ice climbing, alpine climbing, backcountry and nordic skiing, avalanche education, and winter mountaineering in the project area.

The existing heli-skiing operations in the SRP result in infrequent and minor conflicts of use. Noise from helicopter flyovers, snow stability testing, and skier presence can adversely impact the recreational experience for backcountry skiers by changing the feeling of remoteness. The existing operations likely minimally impact snowmobile users as they are accustomed to the noise of motorized recreation. Silverton Guides currently surveys the area intended for heli-skiing and snow stability testing for other recreational users prior to use. If the area is occupied, they ski and conduct testing elsewhere.

A summary of recreation and avalanche hazard areas in the study area is presented in Table 6.

Table 6. Existing Recreation Summary

Pod	Status	Affected Environment
Ross Basin	Existing SRP – To Be Removed	This pod in the existing SRP is remote and receives low backcountry skier use. The terrain is prone to wind scoured snow, resulting in a low quality recreational experience.
Slagle/Tower	Existing SRP – To Remain	This pod in the existing SRP is remote and receives low backcountry skier use. The quality of ski terrain is high with relatively low avalanche risk and below-treeline terrain. Approximately 94% of this pod is mapped as an avalanche hazard area (85% active snow avalanche path and 9% potential avalanche area).
Bonita/Emery/McCarty	Existing SRP – To Remain	This pod in the existing SRP is remote and receives low backcountry skier use. The quality of ski terrain is high with below- treeline terrain. Approximately 86% of this pod is mapped as an active snow avalanche path.
California/Treasure	Existing SRP – To Remain	This pod in the existing SRP is remote and receives low backcountry skier use. The area receives moderate snowmobile use. The quality of ski terrain is high with generally good snow conditions. Approximately 67% of this pod is mapped as an avalanche hazard area (61% active snow avalanche path and 6% potential avalanche area).
Poughkeepsie	Existing SRP – To Be Removed	This pod in the existing SRP is remote and receives low backcountry skier use. The terrain is prone to wind scoured snow resulting in a low quality recreational experience.
Houghton	Existing SRP – To Be Removed	This pod in the existing SRP is remote and receives low backcountry skier use. The terrain is prone to wind scoured snow resulting in a low quality recreational experience.
Cinnamon	Existing SRP – To Be Removed	This pod in the existing SRP is remote and receives low backcountry skier use. The terrain is prone to wind scoured snow resulting in a low quality recreational experience.
Grouse Gulch	Existing SRP – To Be Removed	This pod in the existing SRP is remote and receives low backcountry skier use. The terrain is prone to wind scoured snow resulting in a low quality recreational experience. A portion of this pod is located within the Handies Peak WSA.
Round	Proposed SRP	This pod contains a large proportion of private land, is approximately 2 miles from County Road 2, and receives low backcountry skier and snowmobile use. The terrain is generally wind protected. Approximately 99% of this pod is mapped as an active snow avalanche path.
Southeast	Proposed SRP	This pod receives moderate snowmobile use on groomed trails maintained by the Silverton Snowmobile Club. Moderate backcountry ski use occurs in the Cunningham, Porcupine, Minnie, and Maggie areas adjacent to County Road 2, which are mostly not within the pod. This pod is adjacent to the Weminuche Wilderness area and a portion overlaps the Weminuche Contiguous WSA. The terrain in the pod is varied, includes treed areas, and is generally wind protected. This pod has some groomed cross country ski activity on the upper and lower Cunningham Loop Road. Two egress ski out corridors are identified in this zone to allow for the possibility of vehicle pick-up on County Road 2. Approximately 79% of this pod is mapped as an avalanche hazard area (7% active snow avalanche path and 7% potential avalanche area).

Table 6. Existing Recreation Summary

Pod	Status	Affected Environment
Minnie/Maggie	Proposed SRP	This pod is approximately 2 miles from County Road 2 and receives moderate snowmobile use on groomed trails maintained by the Silverton Snowmobile Club and low backcountry ski use. This pod is adjacent to the Weminuche Wilderness area. Terrain in this pod is generally moderate and wind protected. Approximately 91% of this pod is mapped as an active snow avalanche path.
Illinois/Hancock	Proposed SRP	This pod is adjacent to County Road 110 and offers high quality skiing below treeline. Observations indicate that backcountry ski and snowmobile use is low despite accessibility. Approximately 65% of this pod is mapped as an avalanche hazard area (38% active snow avalanche path and 27% potential avalanche area).

Source: CAIC Highway Avalanche Atlas 2014; Summer et al. 1976a,b,c,d
Notes: Avalanche hazard data are not available for the Ross Basin, Poughkeepsie, Houghton, Cinnamon, and Grouse Gulch pods.

ENVIRONMENTAL EFFECTS

Direct and Indirect Environmental Effects

Alternative 1 – No Action

Under Alternative 1, recreation in the area would not change from existing conditions. No new terrain would be authorized for heli-skiing. Silverton Guides would continue to offer heli-skiing for 600 annual user days in the existing SRP. Minimal user conflicts would continue throughout the SRP. No new impacts to users of the CDNST would occur. Weather conditions would likely continue to limit the variety of terrain available for use as described in the Affected Environment section. Avalanche safety concerns would persist in the existing pods and the snow quality and recreational experience could continue to limit the amount of heli-ski use in the pods that are proposed to be removed from the SRP.

Alternative 2 – Proposed Action

Under the Proposed Action five pods would be removed from the SRP (5,566 acres) and four pods would be added (16,252 acres) resulting in a total SRP area of 25,074 acres. Silverton Guides would be responsible for obtaining permission from private landowners for any use of private lands. The SRP only permits use on public lands. Alternative 2 does not include any additional annual user days.

Table 7. Summary of Terrain Exchange

Pod	Acres
REMOVED FROM SRP	
Grouse Gulch	617
Cinnamon	1,100
Houghton	2,488
Poughkeepsie	883
Ross Basin	478
Subtotal	***5,566***
ADDED TO SRP	
Illinois/Hancock	1,789
Southeast	10,628
Round	779
Minnie/Maggie	3,057
Subtotal	***16,252***
Net Increase in SRP	***10,686***
TOTAL SRP AREA	**25,074**

To minimize flying time for guests Silverton Guides would likely continue to focus user days in the Slagle/Tower, Bonita/Emery/McCarty, and California/Treasure pods. However, in certain weather conditions, the Illinois/Hancock, Southeast, Round, and Minnie/Maggie pods would offer greater variety of high quality terrain.

All the proposed pods contain terrain mapped as avalanche hazard areas (see Table 6). Silverton Guides would perform snow stability assessments in these areas as described in Section 2.1. Terrain closures for snow stability tests would not be permitted.

Heli-skiing in the proposed pods would result in increased opportunities for user conflicts. Increased helicopter use in the Southeast, Round, and Minnie/Maggie pods would result in flyover noise for backcountry skiers or snowmobilers in the area, and increased skier traffic would impact the backcountry recreation experience. While impacts to backcountry skiers and snowmobilers are possible, the frequency of helicopter flights to the proposed SRP pods is anticipated to be a relatively low proportion of the total trips.

No impacts are expected on users of the CDNST, due to the temporal separation of through-hiking and heli-skiing. The trail is not identifiable in winter since it is covered by deep snow. If winter non-motorized or mechanized use on the trail were to occur, additional analysis would be conducted to assess consistency with protection of recreational opportunities on the trail (CDNST 2009).

The TRFO RMP and Alpine Triangle RAMP emphasize heli-skiing as an appropriate recreational use in all of its RMZs (see more detailed discussion of RMZs in Section 3.4 – Land Use/Wilderness/Wilderness Study Areas). According to the Alpine Triangle RAMP, “Winter recreation is common, although less utilized than other seasons. Motorized vehicles and equipment will likely be present. Evidences of human activities are evident and impacts may be visible. Management would emphasize maintaining natural

scenic quality, and elements of human intrusion, both modern and historic, are evident but not overpowering."

The Proposed Action would be consistent with recreation management direction in the Alpine Triangle RAMP. Within the proposed pods (located almost entirely within RMZ 2 – Heritage Roads), according to the Alpine Triangle RAMP (pg. 32), social encounters "may reach 20 to 30 encounters with other parties in popular areas for snowmobiling, cross country skiing or ice-climbing, but would more typically be in the range to three to seven encounters." A social encounter is defined as one person or group meeting another person or group. It is anticipated that under the Proposed Action use east of County Road 2 could increase by a maximum of 600 user days, yet would still be within the prescribed settings described in the Alpine Triangle RAMP. During the user surveys, the data suggest there was little observed usage of the terrain immediately east of San Juan County Road 2. By improving the quality and variety of the ski terrain in the SRP the Proposed Action would contribute to the overall quality of recreational offerings on BLM lands, consistent with management objectives.

The Proposed Action would be consistent with recreation management direction in the TRFO RMP, including the ROS class of Semi-Primitive Motorized. A portion of the Southeast and Round pods are within areas with an ROS class of Primitive, but the No Fly Zone in this area would ensure that there would be no Landing Zones. However, skier use in these areas would be consistent with the objectives of the Primitive ROS class.

Cumulative Effects

Alternative 1 – No Action

Alternative 1 would result in no direct or indirect impacts and would, by definition, not result in any cumulative effects.

Alternative 2 – Proposed Action

Across Colorado, including this area of San Juan County, there is increased interest in motorized and non-motorized winter recreation. The Proposed Action would add cumulatively to the quality and variety of terrain for heli-skiing on public lands and the potential for additional recreation user encounters. Silverton Mountain Ski Area, authorized under a separate permit, experiences a high level of concentrated recreational use between December and April, annually. Silverton Mountain Ski Area offers heli-skiing within the ski area boundary; there are approximately four times the number of helicopter flights within the ski area compared with the SRP area. This experience contributes substantially to the amount of winter recreation in the study area. The Kendall Mountain Ski and Recreation Area, located in the Town of Silverton, and other outfitters and guides also contribute to the range of winter recreational opportunities offered in the study area including backcountry skiing, snowshoeing, ice skating, and other activities. Telluride Helitrax presently holds a similar permit for commercial heli-skiing on the adjacent Uncompahgre and San Juan National Forests.

3.2 NOISE

SCOPE OF THE ANALYSIS

The temporal bounds of this noise analysis extend from the first heli-skiing permit in Silverton in 1995 through 2027 (including the five-year SRP analyzed here and the future reissuance of a five-year SRP assumed in 2022) and includes the season of operation, generally December to April, annually. The spatial extent of this noise analysis includes the existing and proposed SRP area and adjacent public and private lands in the vicinity of the Town of Silverton.

AFFECTED ENVIRONMENT

Existing sources of noise in the study area in the winter include primarily snowmobiles, helicopters, and snow stability/avalanche blasting. According to the recreation setting prescriptions for RMZ-2 – Heritage Roads, in the Alpine Triangle RAMP, vehicle noise in this area is common (BLM 2010). Silverton Guides currently operates guided heli-skiing in the Slagle/Tower, Bonita/Emery/McCarty, California/Treasure, Ross Basin, Poughkeepsie, Houghton, Cinnamon, and Grouse Gulch pods. These pods are generally located north of the Silverton Mountain Ski Area, and flight paths are generally no closer than approximately 3 miles from the Town of Silverton. Silverton Guides currently uses a Eurocopter AS 350 B3 helicopter to transport guests to heli-skiing terrain. Federal regulations (14 CFR §36) require that helicopters not exceed specific noise thresholds, as measured during takeoff, flyover, and approach. Eurocopter helicopters have been noise certified and noise levels of this type of helicopter are rated 87.1 dB at flyover, 89.8 dB at takeoff, and 91.4 dB at approach (FAA 2001).[4] Silverton Guides' AS 350 B3 is certified at 84.4 dB at ground level at maximum power, which is within the defined noise threshold. Sound levels at 80 dB are characterized by EPA as "annoying" and are comparable to the sound of a hair dryer, and 90 dB is "very annoying" and comparable to the sound of city traffic (EPA 1981).

The Town of Silverton has a noise ordinance specific to the operation of helicopters (6-5-21) that states:

A) It shall be unlawful for any person to land a helicopter inside the municipal boundaries of the Town of Silverton.

B) It shall be unlawful for any person to operate a helicopter over the corporate limits of the Town at an altitude insufficient to insure a safe landing in the event of a power failure. Helicopters with suspended loads are prohibited from flying over Town.

C) Operations and landings of helicopters for emergency purposes are excluded from the provisions of the section.

Silverton Guides' current operations are consistent with this ordinance.

[4] Helicopter noise is measured in Effective Perceived Noise level in decibels (EPNdB), which indicates the relative loudness of an aircraft passing by and represents an integrated sum of loudness over the period within which the noise from the aircraft is within 10 dB of the maximum noise.

Explosive charges are currently used for snow stability testing within Silverton Guides' existing SRP, including the Slagle/Tower, Bonita/Emery/McCarty, California/Treasure, Ross Basin, Poughkeepsie, Houghton, Cinnamon, and Grouse Gulch pods. Use of explosive charges currently occurs infrequently (for example, 11 total missions used explosive charges during the 2015/16 season) and results in minimal noise impacts in the Towns of Silverton, Ouray, Telluride, and Ophir.

Recreational snowmobile use also results in noise impacts throughout the study area during the winter. Snowmobile use is permitted per management direction for the Silverton SRMA. As described in Section 3.1 – Recreation, snowmobile use does occur in the study area. Colorado Revised Statute 25-12-110 requires that snowmobiles shall not emit more than 90 dBA if manufactured on or after July 1, 1972 and before July 2, 1975, or 88 dBA if manufactured on or after July 2, 1975 when measured using the state approved process for measurement (SAE J2567). Sound levels at 90 dB are characterized by EPA as "very annoying" and are comparable to the sound of city traffic (EPA 1981).

ENVIRONMENTAL EFFECTS

Direct and Indirect Environmental Effects

Alternative 1 – No Action

Under Alternative 1, noise impacts in the area would not change from existing conditions. No new terrain would be authorized for heli-skiing under Alternative 1. Helicopters would continue to operate in the vicinity of the Silverton Mountain Ski Area and the Slagle/Tower, Bonita/Emery/McCarty, California/Treasure, Ross Basin, Poughkeepsie, Houghton, Cinnamon, and Grouse Gulch pods. Flight paths would remain north of the Town of Silverton. Explosive charges would continue to be used for snow stability testing throughout the existing SRP. Recreational snowmobile use would continue in the study area, resulting in noise impacts.

Alternative 2 – Proposed Action

The exchange of heli-skiing terrain in Silverton Guides' SRP could result in changes to noise impacts in the study area. Helicopter use would shift from areas north of Silverton Mountain Ski Area (Ross Basin, Poughkeepsie, Houghton, Cinnamon, and Grouse Gulch pods) to include some areas closer to the Town of Silverton (Illinois/Hancock, Round, Southeast, and Minnie/Maggie pods). A No Fly Zone over the Town of Silverton would ensure compliance with town noise ordinances. Compared to existing conditions, helicopter flights and blasting locations would be nearer to the Town of Silverton, resulting in additional noise impacts. The helicopter flight corridor would be approximately 4 miles from the Town of Silverton and hours of operation would be limited to approximately sunrise to sunset, which would limit the extent and duration of impacts.

The relocation of some heli-skiing pods to the south and east could reduce potential noise impacts (from helicopters and explosives) to the Town of Ouray (located approximately 7 miles from the existing SRP area and 10 miles from the proposed SRP pods). Located nearer to the proposed heli-skiing pods, there could be increased noise impacts in the Towns of Ophir and Telluride (approximately 8 miles from the proposed pods), but these impacts are expected to be minor.

Helicopter use in the Southeast pod would potentially result in increased noise in the Weminuche Wilderness area and the WSA. A No Fly Zone along the Wilderness boundary and in the Weminuche WSA would help reduce potential noise impacts, but noise impacts are still likely. See Section 3.4 – Land Use/Wilderness/Wilderness Study Areas for additional discussion of impacts to Wilderness and WSAs.

Cumulative Effects

Alternative 1 – No Action

Alternative 1 would result in no additional direct or indirect impacts and would, by definition, not result in any cumulative effects.

Alternative 2 – Proposed Action

Silverton Mountain Ski Area, authorized under a separate permit, operates heli-skiing within the ski area. There are approximately four times the number of helicopter flights within the ski area compared with the SRP area. Snow stability explosive use is also much more frequent within the ski area, occurring almost daily. These activities result in noise impacts in the Town of Silverton and in backcountry ski areas adjacent to the ski area. Recreational snowmobile use has been increasing in recent years, resulting in gradually increasing noise levels in the study area. Considered cumulatively with other motorized recreation, heli-skiing, and avalanche testing and mitigation programs, this project could lead to increased noise levels in the Town of Silverton. Since the helicopter use would be shifted further southeast of the existing Silverton Mountain Ski Area and across a larger area, the project would not change overall noise levels associated with Silverton Guides operations, but redistribute it. Telluride Helitrax presently holds a similar permit for commercial heli-skiing on the adjacent Uncompahgre and San Juan National Forests. Some noise may be attributed to the operation over the communities of Telluride and Ophir. While the project could cumulatively contribute to increased noise in the Towns of Silverton and Ophir, overall impacts in the region would likely not be affected.

3.3 SOCIAL AND ECONOMIC RESOURCES

SCOPE OF THE ANALYSIS

The temporal bounds of this analysis of social and economic resources extend from the first heli-skiing permit in Silverton in 1995 through 2027 (including the five-year SRP analyzed here and the future reissuance of a five-year SRP assumed in 2022). The spatial extent of this analysis includes the San Juan County, Colorado.

AFFECTED ENVIRONMENT

Housing and Population

The U.S. Census Bureau estimates that the full-time population of San Juan County was 701 in 2015 (U.S. Census Bureau 2015). According to population projections prepared by the State Demographer, San Juan County is expected to gain approximately 80 new permanent residents between 2010 and 2030, with an annual average growth rate of 0.5 percent (State of Colorado 2015). This reverses decades of negative population growth between 1970 and 2000 as mining jobs disappeared. The population growth experienced since 2000 is primarily due to “amenity migration”—people moving to the county for quality

of life issues such as outdoor recreation opportunities, and the businesses and jobs that support these opportunities (R9 EDDSC 2015).

As of 2013 there were 765 total housing units in San Juan County, 45 percent of which were occupied and 55 percent of which were vacant. Many of the vacant homes are owned by second homeowners (R9 EDDSC 2015). The population growth of full-time residents amounts to about one additional household per year with an average household size of two people. Average rent in the county is $695 per month and the median home price is $236,000. Although this is affordable when compared to many other mountain communities in the state and region, residents surveyed in the San Jan County Housing Market Study felt that there were not high quality rental options especially for seasonal employees. The majority of the housing stock consists of single-family dwellings, many of which are in poor condition or have high utility costs during the winter (Graves 2015).

Currently, Silverton Mountain Ski Area provides several units of workforce housing to their 40 employees, half of which are directly involved in the Silverton Guides heli-skiing operation.

Economic Considerations

Trends indicate slow but continued economic growth in San Juan County, mostly due to anticipated increases in recreational and heritage tourism (R9 EDDSC 2015). Tourism is the dominant industry in San Juan County and accounts for 47 percent of its jobs according to a Base Analysis (R9 EDDSC 2015), far exceeding the contribution from any other industry. Silverton Mountain is the largest employer in the county, with 40 employees. It also contributes indirectly to the retail, lodging, and service sectors who provide other services to visitors that come to Silverton primarily for skiing. According to Silverton Guides, the average guided skier stays in Silverton for 2.7 days and spends $508 per visit. The average helicopter-guided skier typically spends $593 per visit, an additional $85.

Heli-skiing is an essential part of the business for Silverton Mountain Ski Area and Silverton Guides both in terms of the revenue it generates and the competitive advantage it creates when compared to other ski resorts in Colorado. Silverton is the only outfitter that provides single-run heli-skiing, which makes the experience relatively affordable when compared to other outfitters, which only offer half-day and full-day trips for much higher prices.

Environmental Justice

Executive Order 12898 on Environmental Justice requires all federal agencies to identify and consider disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority or low-income populations.

The U.S. Census Bureau showed that for the five-year estimate for 2010–2014, 16.5 percent of San Juan County's population lived below poverty level (U.S. Census Bureau 2015). It also indicated an increase in ethnic diversity, over previous counts: between 2000 and 2010 the Hispanic or Latino population increased approximately doubled from 41 to 84 residents. Persons of Hispanic origin (any race) now make up 12 percent of San Juan County's total permanent resident population. This is less than the statewide distribution—in 2015 the State of Colorado was 21.3 percent Hispanic (U.S. Census Bureau 2015).

ENVIRONMENTAL EFFECTS

Direct and Indirect Environmental Effects

Alternative 1 – No Action

Under Alternative 1, no changes would occur to the heli-skiing operations of Silverton Guides. The business would continue to operate within the existing SRP area. Under Alternative 1, there would be no increase in the variety of terrain available for heli-skiing, which could result in a gradual decrease in visitation if guests choose other heli-skiing outfitters. This could have an impact on the number of visitors and viability of the Silverton Guides' business, which could result in decreases in indirect spending in the Town of Silverton and San Juan County and decreased employment by Silverton Guides. The impacts are difficult to determine and are based on factors that cannot be accurately predicted, such as skiing conditions, skier preferences, etc.

No predominantly low income or minority populations were identified in the study area. Additionally, the No Action alternative would result in no changes from the existing condition and would not result in disproportionately high and adverse human health or environmental effects on minority and low-income populations.

Alternative 2 – Proposed Action

The Proposed Action includes no changes to the number of annual user days; therefore, visitation is not anticipated to change from existing conditions. However, the proposed changes to the SRP would increase the variety of terrain available for heli-skiing (see Section 3.1 – Recreation). This improvement in visitor experience would allow Silverton Guides to remain viable in Colorado's competitive skiing market. By maintaining a high quality recreational experience, Silverton Guides would continue to operate and contribute to the economic vitality of San Juan County.

No predominantly low income or minority populations were identified in the study area. Additionally, due to the location of the project away from inhabited areas and the small scale of direct and indirect impacts, the Proposed Action would not result in disproportionately high and adverse human health or environmental effects on minority and low-income populations.

Cumulative Effects

Alternative 1 – No Action

Under Alternative 1, the contribution of Silverton Guides to the economy of San Juan County could diminish. Other factors such as abandoned mine reclamation could further reduce tourism in the area. This effect could be countered by increasing motorized and dispersed recreation tourism year-round.

Alternative 2 – Proposed Action

Trends indicate slow but continued economic growth in San Juan County, mostly due to anticipated increases in recreational and heritage tourism (R9 EDDSC 2015). Across Colorado, including this area of San Juan County, there is increased interest in motorized and non-motorized winter recreation. The Proposed Action would add cumulatively to the quality and range of recreational opportunities available on public lands, contributing to the tourism economy of San Juan County. Considered cumulatively with

other recreation opportunities such as Silverton Mountain Ski Area and Kendall Mountain Ski and Recreation Area, other guide-outfitters, and increased backcountry skiing and snowmobile use, the Proposed Action would contribute a positive economic benefit to the economy and residents of the Town of Silverton and San Juan County.

3.4 LAND USE/WILDERNESS/WILDERNESS STUDY AREAS

SCOPE OF THE ANALYSIS

The temporal bounds of this analysis of land use, Wilderness, and WSAs extend from the first heli-skiing permit in Silverton in 1995 through 2027 (including the five-year SRP analyzed here and the future reissuance of a five-year SRP assumed in 2022). The spatial extent of this analysis includes the existing and proposed SRP area and adjacent public and private lands.

AFFECTED ENVIRONMENT

Heli-skiing has been allowed on BLM lands within the SRMA since 1995, originally through an SRP issued to Telluride Helitrax and subsequently Silverton Guides.

The study area is adjacent to the federally designated Weminuche Wilderness area and overlaps the Handies Peak and Weminuche Contiguous WSAs. The Grouse Gulch pod, in the existing SRP, currently overlaps the Handies Peak WSA. The existing SRP is not adjacent to any Wilderness area—the closest point, the Slagle/Tower pod, is 1.7 miles from the Weminuche Wilderness area. The Southeast pod (currently unpermitted) overlaps the Weminuche Contiguous WSA. The proposed Southeast and Minnie/Maggie pods are adjacent to the federally designated Weminuche Wilderness area.

The existing SRP area is managed under two BLM Plans, the TRFO RMP (BLM 2015) and the Alpine Triangle RAMP (BLM 2010). The project area is managed in the TRFO RMP as the Silverton SRMA, and in the Alpine Triangle RAMP as part of the Alpine Triangle SRMA. Therefore, management direction for the project area is provided in both documents.

The TRFO RMP cites helicopter-supported skiing as an appropriate winter use in the Silverton SRMA (BLM 2015).

The Alpine Triangle RAMP defines three RMZs for the SRMA: 1 – Alpine Backcountry, 2 – Heritage Roads, and 3 – Animas & Lake Fork Rivers. Each are managed based on a recreational setting that determines the level of development allowed, the types of facilities that are appropriate, and the recreation opportunities that one will experience. Ultimately, a wide range of opportunities and experiences provided in their appropriate settings will optimize benefits for visitors, residents, neighboring communities, and the environment.

The existing SRP area is within RMZ-1 and RMZ-2 areas. The Ross Basin and Poughkeepsie pods are in RMZ-2. The Houghton, Cinnamon, and Grouse Gulch pods are within areas managed both as RMZ-1 and RMZ-2, with the eastern parts of these pods managed as RMZ-1 and the western areas as RMZ-2. Although RMZ-1 is to primarily be managed for non-motorized uses, “existing permits for heli-skiing will be honored.” Heli-skiing is not a primary activity for this zone but aspects of the experience of heli-skiing are aligned with the targeted experiences and anticipated benefits for this zone. Much of RMZ-1

contains lands that are also designated Wilderness Areas or WSAs. Therefore, the recreation setting and activities allowed in RMZ-1 are aligned with wilderness characteristics, focusing on dispersed recreation "in a setting that is primarily a naturally appearing landscape where the sights and sounds of human caused disturbance are not readily noticeable" (BLM 2010). Visitors to RMZ-1 can expect a "low number of social encounters that would offer opportunities for solitude and introspection" (BLM 2010). In the proposed new pods, the only area within RMZ-1 is the portion of the Southeast pod that contains the Weminuche Contiguous WSA.

Heli-skiing is not permitted in federally designated Wilderness or BLM WSAs (BLM 2012). Wilderness and WSAs are primarily in RMZ-1, but not all lands in RMZ-1 are designated as such. The Alpine Triangle RAMP states that, "the one current permitted heli-skiing operation permit, Silverton Guides LLC, will be honored in all Recreation Management Zones (RMZs)" (BLM 2010). Therefore, heli-skiing can operate in the RMZ-1 areas that are not designated as Wilderness or WSAs. It also notes that avalanche danger is an inherent part of this activity.

RMZ-2 contains the Silverton Mountain Ski Area and allows many types of winter recreation activities in both rural and less developed settings. Skiing is a primary activity for this zone and is well aligned with the targeted experiences and anticipated benefits for this zone. This RMZ receives heavy use; visitors can expect 100 or more social encounters in a day in the summer and 20 to 30 in the winter (BLM 2010).

Overall, the Alpine Triangle SRMA is managed under a destination recreation-tourism strategy, whose target is to meet the needs of visitors throughout the U.S., offering both motorized and non-motorized recreation activities both in the summer and winter seasons. In order to meet this, the SRMA's objective relevant to heli-skiing is to "manage commercial outfitters and special events to encourage safe and professional services are offered to the public, and to minimize impacts to resources and other visitors." The BLM will achieve this objective by continuing to authorize activities such as heli-skiing. The number of outfitters permitted, the areas they would be allowed to use and for how many days will be regulated to maintain desirable experiences and avoid conflicts with others. Conflicts with other users are currently avoided by required visual surveys of the terrain prior to any explosive use or heli-skiing.

Five other outfitters are permitted in study area: four for mountaineering, ice climbing, and backcountry skiing, and one for the Silverton Snowmobile Club for snowmobile trail grooming.

ENVIRONMENTAL EFFECTS

Direct and Indirect Environmental Effects

Alternative 1 – No Action

Under Alternative 1, no changes would occur to the heli-skiing operations of Silverton Guides. The outfitter would continue to operate within the existing SRP area. Use numbers would not change from existing conditions. The operations would occur in both RMZ-1 and RMZ-2 areas within the Alpine Triangle SRMA, including the Handies Peak WSA, which currently allow and manage Silverton Guides' permit as the only heli-skiing outfitter in the area.

Alternative 2 – Proposed Action

The Proposed Action could result in changes to recreation use patterns in the Alpine Triangle SRMA. Helicopter use would shift from areas mostly north of Silverton Mountain Ski Area (Ross Basin, Poughkeepsie, Houghton, Cinnamon, and Grouse Gulch pods) to some areas closer to the Town of Silverton (Illinois/Hancock, Round, Southeast, and Minnie/Maggie pods). Removing the Houghton and Cinnamon pods from the SRP would reduce heli-skiing in RMZ-1, where it is allowed but non-motorized uses are preferred. Removing the Grouse Gulch pod from the SRP area would remove the overlap with the Handies Peak WSA. The additional pods of Round, Southeast, and Minnie/Maggie are all primarily in RMZ-2 where skiing and motorized uses are allowed. A small portion of the Southeast pod—the area that overlaps with the Weminuche Contiguous WSA—is in RMZ-1 where existing heli-skiing permits are honored but non-motorized uses are preferred. This area of the Southeast pod would also be a No Fly Zone; no landings or skier drop-offs would be allowed, but skiers could ski into the area from a landing zone outside of the WSA.

Heli-skiing in the Southeast and Minnie/Maggie pods could result in noise impacts to users in the Weminuche Wilderness area and Weminuche Contiguous WSA. A No Fly Zone over the Weminuche Contiguous WSA and along the ridge bordering the Weminuche Wilderness area would minimize the chance of helicopter flyovers or landings in these areas, but the proximity of activity to these protected areas could impact Wilderness characteristics. Any guests that would ski into the Weminuche Contiguous WSA would reduce the atmosphere of remoteness in this area. Helicopters flying and landing in the Round, Southeast, and Minnie/Maggie pods could impact wilderness values by increasing noise and being visible from the Wilderness and WSA.

However, while the BLM has a responsibility to protect federally designated Wilderness areas, this responsibility is limited to the physical bounds of the Wilderness area and does not include the protection or management of "buffer areas." This condition is supported by the Congressional Record for the U.S. Senate (S126622, October 2, 1984, Section 9 "Buffer Areas") which states:

> *"The Congress does not intend that the designation of a Wilderness area under this act lead to the creation of protective perimeters or buffer zones around such Wilderness areas. The fact that non-Wilderness activities or uses can be seen or heard from areas within a Wilderness shall not preclude such activities or uses up to the boundary of the Wilderness area."*

Based on the user surveys conducted in 2016 and 2017 (see discussion under 3.1 Recreation), the Proposed Action would not result in social encounters higher than described in the Alpine Triangle RAMP. Over the 48-day monitoring period in 2016, the **maximum** number of cars seen at one trailhead/parking area was three. Assuming that each car was a different party, on those days and at those times the minimum social encounters could range from zero, (i.e. no party saw any of the other parties) to a maximum of three or more (more, if someone hiked, skied, or snowmobiled into a drainage without leaving a vehicle and contacted all three parties).

The **average** number of downhill users per week (number of new ski tracks divided by 8 weeks) ranged from 0 to 4.1. The greatest number of **new** ski tracks seen in a day at any given location was four. Thus,

social encounters could range from zero if no individuals or groups encountered each other, to four or slightly higher if a snowmobiler encountered a skier.

The greatest number of non-ski tracks and snowmobiles at any particular trailhead was three. The highest (combined) number of cars, non-ski tracks & snowmobiles at any one particular trailhead was six. If each of these was a separate party, and a backcountry user encountered all other groups, the maximum number of encounters with other users would be five. This number is within the more typical three to seven range prescribed for RMZ 2.

If the applicant sent three groups of heli-skiers in only one drainage on a given day that could potentially add three more social encounters. Added to the **maximum** possible number of groups seen in a particular drainage, this would be eight visitor encounters in a day. This number of encounters would be greater than the typical range of three to seven encounters, but well below twenty to thirty as allowed for RMZ 2. (A heli-skier group is composed of one guide and up to four clients. A helicopter can hold a maximum of six people: pilot, guide and four clients. A heli-ski group would be counted as one social encounter if they passed by any other user/group.)

No impacts are anticipated to other permitted outfitters in the SRMA. Silverton Guides' operations would not preclude use of this area by other backcountry ski outfitters, and impacts to the recreational experience offered would be minimal, as these guides would likely take guests a reasonable distance from plowed roads, whereas the helicopter operations would be even further into the backcountry. Some snowmobilers have designated routes, which can be avoided by the helicopter guides. Silverton Guides is the only heli-skiing outfitter permitted and the BLM has not received any other applications.

Cumulative Effects

Alternative 1 – No Action

Alternative 1 would result in no additional direct or indirect impacts and would, by definition, not result in any cumulative effects.

Alternative 2 – Proposed Action

Across Colorado, including this area of San Juan County, there is increased interest in motorized and non-motorized winter recreation. The Proposed Action would add cumulatively to the quality and range of recreational opportunities available in both RMZ-1 and RMZ-2 zones in the Alpine Triangle SRMA. The Proposed Action, when combined with other past, present, and future noise-generating activities in the study area (including other helicopter use and motorized recreation), could cumulatively impact the Wilderness characteristics of the Weminuche Wilderness area and Weminuche Contiguous WSA. Gradual increases in use and human presence in these areas would detract from the remote character of these areas. However, past heli-skiing activity in the Handies Peak WSA (currently authorized in the existing SRP as a no landing zone) would be alleviated in the Proposed Action and the wilderness characteristics could improve in this area, contributing to the long-term integrity of the Handies Peak WSA.

3.5 CULTURAL RESOURCES

SCOPE OF THE ANALYSIS

Section 106 of the National Historic Preservation Act (NHPA) requires that federal agencies take into account the effects of a federal undertaking on any cultural resource that is included in or eligible for inclusion in the National Register of Historic Places (NRHP). Cultural resources may refer to sites, areas, buildings, structures, districts, and objects that possess scientific, historic, and/or social values of a cultural group or groups as specified by 36 CFR 296.3.

This assessment is based on archaeological sources that indicate the historic and prehistoric utilization of lands, such as hunting, gathering, grazing, timber harvesting, and natural resource transport, within and adjacent to the proposed Project Area. NRHP eligibility is evaluated in terms of the significance and integrity of the resource. The criteria for assessing significance include: association with events that have made a significant contribution to the broad patterns of our history (Criterion A); association with the lives of significant persons (Criterion B); engineering, artistic, or architectural values (Criterion C); and/or has yielded or has potential to yield information important in understanding history or prehistory. The NRHP eligibility of cultural resources is determined by the BLM Archaeologist in consultation with the State Historic Preservation Officer (SHPO).

The Area of Potential Effects (APE) as defined in 36 CFR 800.16(d) is the geographic area or areas within which an undertaking may directly or indirectly impact the character or use of historic properties, if any such properties exist. The APE is influenced by the scale and nature of an undertaking and may be defined differently for different kinds of effects caused by the undertaking. The APE for the Proposed Action includes seven pods and totals 25,074 acres and the APE for the No Action alternative includes eight pods totaling 14,388 acres. The study area for this assessment includes all lands within the existing and proposed SRP areas. Six primary sources were consulted for this analysis:

- BLM Gunnison Field Office cultural resource records
- Office of Archaeology & Historic Preservation (OAHP)/Colorado Historic Preservation Offices' (SHPO) Compass database and OAHP GIS database
- OAHP cultural resource site forms
- National Register nomination forms
- Historic USFS topographic quadrangles
- Aerial imagery

A cultural report has been prepared and is in the project file (Metcalf 2016). This document is hereby incorporated by reference and summarized below. This analysis also incorporates analysis completed for the 2008 Telluride Helitrax EA.

Tribal and Native American Religious Concerns

American Indian religious concerns are legislatively considered under several acts and Executive Orders, namely the American Indian Religious Freedom Act, the Native American Graves Protection and Repatriation Act, and Executive Order 13007 (Indian Sacred Sites). In summary these require, in concert

with other provisions such as those found in the NHPA and Archaeological Resources Protection Act of 1979 (ARPA), that the federal government carefully and proactively take into consideration traditional and religious Native American cultural and life and ensure, to the degree possible, that access to sacred sites, the treatment of human remains, the possession of sacred items, the conduct of traditional religious practices, and the preservation of important cultural properties are considered and not unduly infringed upon. In some cases, these concerns are directly related to historic properties and archaeological resources, and elements of the landscape without archaeological remains may also be involved. Identification of these concerns is normally completed during the land use planning efforts, reference to existing studies, or via direct consultation.

The following tribes were notified of this undertaking at face-to-face consultation meetings in October 2016: the Ute Indian Tribe and the Ute Mountain Ute Indian Tribe. A certified memo describing the project was mailed to the Southern Ute Indian Tribe in November of 2016. The tribes were asked to identify traditional cultural places or any other areas of traditional cultural importance that need to be considered within the area of potential effect. The BLM Gunnison Field Office did not receive any comments or concerns from the tribes. As a result, there are currently no known areas of Native American Religious Concern located within the project area.

AFFECTED ENVIRONMENT

The BLM lands surrounding the Town of Silverton were used by the Ute tribes until the 1860s when they ceded their rights to the San Juan Mountains, opening it to prospectors for mining. Heavy mining activity occurred into the 1890s, when the crash in value of silver put an end to most mining activity in the area. Mining of other metals continued throughout the 20th century and is still evident today in the Gladstone and Eureka areas north and east of Silverton. Hard rock mining resources and their supporting industries are the primary cultural resources found in the study area.

Fifty-nine cultural resource inventories have been conducted in this area over the last 35 years; 46 studies had been completed prior to 2006 and are included in the 2008 Telluride Helitrax EA. As part of the cultural resource records update for this EA, 13 cultural resource inventories have been conducted since the 2008 study. The extensive information from these previous surveys and inventories is sufficient so that additional surveys for the purposes of this EA are not necessary.

This analysis determined that 301 cultural resources are located within the study area, 225 of which are sites and 76 are isolated finds; this number of resources is reflective of both the study completed for the 2008 Telluride Helitrax EA and the current study (Metcalf 2016). This number of sites demonstrates that the study area contains a moderate to high site density. Six historic sites and districts are listed on the NRHP and two on the State Register of Historic Places. Ninety-six of the sites are officially eligible, or potentially eligible, for listing on the NRHP. Thirty-three distinct Smithsonian Trinomial site numbers are assigned to resources within the Silverton Historic District, four site numbers are assigned to resources within the Sound Democrat Mill and Mine/Silver Queen Mine Historic District, two are associated with the Animas Forks Townsite, and three with the Gold Prince Mill Complex. All of the 96 sites are associated with historic mineral exploration and extraction.

All eligible and potentially eligible sites with standing architecture were compared to known avalanche hazard areas defined on the San Juan County "Snow Hazard Avalanche" maps or defined as an avalanche path within the "Avalanche Atlas" for San Juan County. The sites in these areas are determined to be at risk from human caused avalanches associated with snow stability testing or helicopter landings.

As a component of their current operations, Silverton Guides avoids 22 identified cultural resource avoidance areas in order to prevent impacts from helicopters, skiers, and snow safety procedures.

ENVIRONMENTAL EFFECTS

Direct and Indirect Environmental Effects

Alternative 1 – No Action

Under Alternative 1 no changes would occur to the heli-skiing operations of Silverton Guides. The outfitter would continue to operate within the existing SRP area. Silverton Guides would continue to avoid the 22 identified cultural resource avoidance areas, and there would be no impact to cultural and historic resources.

Alternative 2 – Proposed Action

Historic properties could be directly impacted by snow stability testing and helicopter landings. Snow stability testing could result in an adverse effect to historic properties with standing architecture within avalanche hazard areas. Human-triggered avalanches could demolish standing architecture, which typically contributes to the significance of historic mining sites. Historic properties do not have to be within a direct avalanche path to be impacted. They can be located near a direct avalanche path or within an area to which an avalanche can propagate to. The area receives significant snowfall that would obscure or bury standing architecture or significant features. Helicopters landing within the boundaries of eligible and potentially eligible historic sites with standing architecture and other significant features could result in the crushing of those features that contribute to the significance of the sites. There should be no indirect effects to historic properties from the Proposed Action.

Under the Proposed Action potential impacts to four historic properties containing standing structures in the Ross Basin, Poughkeepsie, Houghton (n=1), Cinnamon (n=2), and Grouse Gulch (n=1) pods would be eliminated because these pods would no longer be used for heli-skiing. However, heli-skiing and snow stability testing would occur in the vicinity of 25 National Register eligible or potentially eligible historic properties containing standing structures: 14 sites within the California Treasure, Bonita/Emery/McCarty, Slagle/Tower Mountain (in the existing SRP area) and 11 sites within the Southeast, Minnie/Maggie, and Illinois/Hancock, and Round pods. Twenty-two cultural resource avoidance areas were defined in the 2008 Telluride Helitrax EA; 25 historic structures are situated within these 22 avoidance areas. As a result of updated studies completed for this EA, seven cultural resource avoidance areas have been defined. Three of the avoidance buffers are expansions on the 2008 resource avoidance buffers. The remaining four historic sites are included in the current avoidance analysis and located within avalanche or potential avalanche hazard zones.

The cultural resources records inventory conducted by Metcalf (2016) lists thirteen previous surveys conducted since the 2008 Telluride Helitrax EA; a total of 181 cultural resources have been recorded or

re-visited/re-evaluated since the initial 2008 study. Of the 181 resources, 145 of them are located within the project APE, including resources located within pods that will be removed from the SRP. Seventy-eight of the 144 resources are historic sites, four are defined historic districts, and 62 are historic isolated finds. The four historic districts and four historic sites are currently listed on the NRHP, 23 of the 78 sites are officially eligible for listing on the NRHP, one is noted as field eligible, and two historic sites are potentially eligible (i.e., unevaluated, need data) for the NRHP. The remaining 46 are not eligible for the NRHP (45 officially, 1 field). Impacts to these sites would be avoided through the cultural resource avoidance areas incorporated into the Proposed Action (see Figure 3). No helicopter landings or snow stability test blasting would be permitted in the areas surrounding historic resources. In order to avoid these sites, the cultural resource avoidance areas would be updated for the new SRP and the Silverton Guides employees would be required to have this data loaded on a GPS during all helicopter operations. In total, the Proposed Action includes 30 cultural resource avoidance areas designed to protect the historic properties. Each avoidance area includes the site itself and the avalanche prone terrain above the site.

Cumulative Effects

Alternative 1 – No Action

No explosives would be used in the identified cultural resource avoidance areas. Therefore, Alternative 1 would result in no direct or indirect impacts and would, by definition, not result in any cumulative effects.

Alternative 2 – Proposed Action

No explosives would be used in the identified cultural resource avoidance areas. Therefore, Alternative 2 would result in no direct or indirect impacts and would, by definition, not result in any cumulative effects.

3.6 WILDLIFE

SCOPE OF THE ANALYSIS

The spatial extent of this wildlife analysis includes the existing and proposed SRP area and surrounding public and private lands. For Canada lynx, Lynx Analysis Units (LAUs) are considered the appropriate scale at which to analyze the effects of management actions on lynx habitat because LAUs are delineated at a scale that approximates an area with enough habitat to support a reproductive female lynx (Ruediger et al. 2000, Interagency Lynx Biology Team 2013). LAUs were developed for public lands in southwest Colorado, including the Bureau of Land Management (Schultz et al. 2006). The proposed allowable use areas (AUAs) are within the Silverton BLM LAU, which was the spatial extent of the analysis of project effects on lynx. The temporal bounds of this analysis extend from the first heli-skiing permit in Silverton in 1995 through 2027 (including the five-year SRP analyzed here and the future reissuance of a five-year SRP assumed in 2022). Species analyzed were identified as federally listed proposed, threatened, or endangered or BLM sensitive. A 2016 Biological Assessment and 2016 Biological Evaluation have been prepared and are in the project file (Bowers 2017a,b). These documents are hereby incorporated by reference and summarized below.

AFFECTED ENVIRONMENT

Threatened and Endangered Species

There are three federally listed species with habitat in, or immediately adjacent to, the project area: Canada lynx, North American wolverine, and Uncompahgre fritillary butterfly. There is no designated critical habitat for any listed species within, or near, the project area. Species without habitat presence, as presented in Table 8, have been excluded from further analysis in this section, and the Proposed Action would have "no effect" on these species.

The Canada lynx was listed as threatened in the contiguous United States as a distinct population segment (DPS) under the ESA in 2000. The Lynx Conservation Assessment and Strategy (LCAS) (Ruediger et al. 2000) was developed to provide an approach for conservation of lynx on federal lands and to assist with Section 7 consultation. The LCAS was revised in August 2013 by the Interagency Lynx Biology Team, incorporating the best available science that had been published since the previous edition (Interagency Lynx Biology Team 2013).

Table 8. Federally Listed Species Considered in Analysis

Species	Federal Status	Habitat Present In Study Area?	Species or Habitat Affected by Proposed Action?
Canada lynx (*Lynx canadensis*)	Threatened	Yes – mature spruce-fir and willow-riparian areas; a significant portion of the Silverton-Lake City linkage area is also in study area	Yes – snow compaction, disturbance effects from human presence, helicopter and snow stability testing activities
North American wolverine (*Gulo gulo luscus*)	Proposed Threatened	Yes – deep persistent snow cover in subalpine cirques near talus slopes and rock outcrops present in study area	Yes – if wolverine occur in project area, disturbance effects from human, helicopter and snow stability testing activities
Uncompahgre fritillary butterfly *(Boloria acrocnema)*	Endangered	Yes – field confirmed snow willow patches in study area but no known colonies exist in the project area.	No – protected by snow cover
Southwestern Willow flycatcher (*Empidonax traillii extimus*)	Endangered	No – associated with riparian shrub dominated habitats in broad lowland floodplains	No – no suitable habitat in the project area
Bonytail chub *(Gila elegans)*	Endangered	No – species does not occur downstream in San Juan River basin	No – no water depletions from the Animas River basin
Colorado pikeminnow *(Ptychocheilus lucius)*	Endangered	No – but species occurs downstream in San Juan River basin	No – no water depletions from the Animas River basin
Humpback chub *(Gila cypha)*	Endangered	No – species does not occur downstream in San Juan River basin	No – no water depletions from the Animas River basin
Razorback sucker *(Xyrauchen texanus)*	Endangered	No – but species occurs downstream in San Juan River basin	No – no water depletions from the Animas River basin

BLM Sensitive Species

BLM policy designates sensitive species to ensure these species receive full consideration in the NEPA process (BLM 6840 Manual Direction, Release 6-121, January 17, 2001). Table 9 (below) lists the species designated as Sensitive by the BLM in the state of Colorado that are known to occur, may occur, or have habitat on lands managed by the Gunnison Field Office.

Table 9. BLM Sensitive Fish and Wildlife Species for the Gunnison Field Office.

Species	Habitat Present In Allowable Use Areas (AUA)?	Species or Habitat Impacted by Proposed Action?	Project Impact Determination
BIRDS (9)			
American peregrine falcon (*Falco peregrinus anatum*)	Yes – suitable nesting cliffs and foraging habitat in AUA	No – species not present in AUA during winter, and Proposed Action will not alter habitat structure	No Impact
Bald eagle (*Haliaeetus leucocephalus*)	No – no large bodies of water of which this species is associated with occur in the AUAs.	No	No Impact
Black swift (*Cypseloides niger*)	Yes – suitable nesting cliffs and foraging habitat in AUA	No – species not present in AUA during winter, and Proposed Action will not alter habitat structure	No Impact
Brewer's sparrow (*Spizella breweri*)	No – sagebrush habitat not present in project area	No	No Impact
Burrowing owl (*Athene cunicularia*)	No – AUAs occur much higher in elevation than the species elevational threshold, not known to occur in San Juan County	No	No Impact
Ferruginous hawk (*Buteo regalis*)	No – no suitable extensive grassland or prairie dog colonies in AUA, not known to occur in San Juan County	No	No Impact
Golden eagle (*Aquila chrysaetos*)	Yes – suitable foraging and nesting habitat	Yes	Proposed Action may impact individuals but is not likely to result in a trend toward federal listing or a loss of species viability rangewide
Gunnison sage grouse (*Centrocercus minimus*)	No – no sagebrush in AUA; not known to occur in San Juan County	No	No Impact
Northern goshawk (*Accipter gentilis*)	Yes – foraging and nesting habitat in AUA	No – species not present in AUA during winter, and Proposed Action will not alter habitat structure	No Impact
FISH (1)			
Colorado River cutthroat trout (*Oncorhynchus clarkii pleuriticus*)	No – no conservation populations in or downstream of AUA	No – Proposed Action will not alter aquatic habitat structure, and no water depletions from Animas River basin	No Impact

Table 9. BLM Sensitive Fish and Wildlife Species for the Gunnison Field Office.

Species	Habitat Present In Allowable Use Areas (AUA)?	Species or Habitat Impacted by Proposed Action?	Project Impact Determination
MAMMALS (3)			
Gunnison's prairie dog (*Cynomys gunnisoni*)	No – AUA too high in elevation, no open parks, not known to occur in San Juan County	No	No Impact
Rocky Mountain bighorn sheep (*Ovis canadensis*)	Yes – suitable summer habitat and marginal winter habitat	Yes	Proposed Action may impact individuals but is not likely to result in a trend toward federal listing or a loss of species viability rangewide
Townsend's big-eared bat (*Corynorhinus townsendii*)	No – AUA too high in elevation, no ponderosa pine	No – no habitat changes due to design criteria	No Impact
AMPHIBIANS (2)			
Boreal toad (*Bufo boreas boreas*)	Yes – riparian areas in the lower elevations of the project area harbor potential habitat for the species. However, the species is not known to occur in San Juan County, and annual surveys for toads in the Silverton area have failed to detect evidence of toads at any locations on BLM or National Forest lands.	No. If toads were present in the AUAs it is unlikely that project related actions would affect toad habitat or individuals because the depth of snow cover required for heli-skiing operations is sufficient to protect animals and habitat from project related impacts.	No Impact
Northern leopard frog (*Lithobates pipiens*)	No – AUA too high in elevation, not known to occur in San Juan County	No	No Impact
PLANTS (11)			
Aromatic Indian breadroot (*Pediomelum aromaticum*)	No – AUA too high in elevation, not known to occur in San Juan County	No	No Impact
Comb wash buckwheat (*Eriogonum clavellatum*)	No – AUA too high in elevation, not known to occur in San Juan County	No	No Impact
Cushion bladderpod (*Physaria pulvinata*)	No – AUA too high in elevation, not known to occur in San Juan County	No	No Impact
Dolores River skeletonplant (*Lygodesmia grandiflora* var. *doloresensis*)	No – AUA too high in elevation, not known to occur in San Juan County	No	No Impact

Table 9. BLM Sensitive Fish and Wildlife Species for the Gunnison Field Office.

Species	Habitat Present In Allowable Use Areas (AUA)?	Species or Habitat Impacted by Proposed Action?	Project Impact Determination
Fragile rockbrake (*Cryptogramma stelleri*)	Yes – cool, moist forested rocks and alpine habitats.	No. If the species is present in the AUAs it is unlikely that project related actions would affect habitat or individuals because the depth of snow cover required for heli-skiing operations is sufficient to protect plants and habitat from project related impacts.	No Impact
Gypsum Valley cateye (*Cryptantha gypsophila*)	No – AUA too high in elevation, not known to occur in San Juan County	No	No Impact
Jones's bluestar (*Amsonia jonesii*)	No – AUA too high in elevation, not known to occur in San Juan County	No	No Impact
Kachina fleabane (*Erigeron kachinensis*)	No – AUA too high in elevation, no ponderosa pine forests with aspen occur in project area.	No	No Impact
Lone Mesa snakeweed (*Gutierrezia elegans*)	No – AUA too high in elevation, not known to occur in San Juan County	No	No Impact
Naturita milkvetch (*Astragalus naturitensis*)	No – AUA too high in elevation, not known to occur in San Juan County	No	No Impact
Pagosa Springs bladderpod *(Physaria pruinosa)*	No – AUA too high in elevation, not known to occur in San Juan County	No	No Impact

Species of Local Concern

White-tailed Ptarmigan (a SOLC) are known to occur in the area around the Town of Silverton and the U.S. Highway 550 corridor. Populations have been reported to be in decline in this area and recreational activities, including backcountry skiing, are factors that reduce abundance and distribution of winter food for ptarmigan in Colorado (Hoffman 2006).

Migratory Birds

Under Executive Order 13186, Responsibilities of Federal Agencies to Protect Migratory Birds, all federal agencies are charged with the conservation and protection of migratory birds and their habitats. In response to this order, the BLM and the U.S. Fish and Wildlife Service (USFWS) entered into a memorandum of understanding to promote this conservation of migratory bird populations. A total of 13 bird species identified by the USFWS as birds of conservation concern have potential habitat in the study area: Black Rosy Finch, Black Swift, Brown-capped Rosy Finch, Cassin's Finch, Fox Sparrow, Golden

Eagle, Grace's Warbler, Olive-sided Flycatcher, Peregrine Falcon, Prairie Falcon, Short-eared Owl, Veery, and Williamson's Sapsucker.

ENVIRONMENTAL EFFECTS

Direct and Indirect Environmental Effects

Alternative 1 – No Action

Under Alternative 1, there would be no changes from Silverton Guides' current operations. Impacts to PTES, BLM sensitive, and SOLC would continue throughout the existing SRP area, including impacts resulting from skier presence, snow compaction, and helicopter and blasting disturbance.

Alternative 2 – Proposed Action

Threatened and Endangered Species

Canada Lynx

The Proposed Action "may affect but is not likely to adversely affect" the Canada lynx and lynx habitat in the project area. The study area contains denning and winter habitat, generally at the lower elevations of the pods where spruce-fir communities occur. The study area (25,074 acres) represents a 74 percent increase in area from that permitted under the company's current 5-year permit (14,388 acres). There are 873 acres of mapped lynx habitat in the currently permitted SRP. In the study area, there are 3,337 acres of mapped lynx habitat, which is approximately 9 percent of the habitat in the LAU and 23 percent of the habitat in the LAU owned by the BLM. The Southeast, Minnie/Maggie, and Round ski pods all occur entirely within the Silverton-Lake City linkage area. Together, these pods comprise 13,684 acres across both BLM and private lands. The Silverton-Lake City linkage area totals 36,634 acres; therefore, these ski pods comprise approximately 37 percent of the Silverton-Lake City linkage area.

Three primary sources of direct and indirect effects to lynx and lynx habitat are possible from the Proposed Action: (1) increased snow compaction, (2) disturbance caused by skiers, and (3) disturbance caused by the use of helicopters and explosives for snow stability testing. Physical alteration of lynx habitat is not expected from implementing the Proposed Action due to design criteria prohibiting clearing, trimming, or modification of vegetation at landing sites or within the AUAs.

The amount of increase in snow compaction from project implementation is expected to be negligible because of the generally disconnected nature of landing zones and ski runs from other compacted routes. Because foot and ski access into the AUAs during winter is difficult, the AUAs are generally far from most sources of human-caused snow compaction and preferred over snow travel routes.

The Proposed Action has the potential to affect lynx productivity, movement, and dispersal patterns, primarily through disturbance affects to lynx and lynx habitat. There would be no increase in skier days as part of the Proposed Action but the proposed ski pods have more lynx habitat than the currently permitted ski pods. Heli-skiing would increase the distribution of skiers in areas with lynx habitat within the LAU, thereby increasing potential for skier disturbance to lynx that may be using the area. Snow stability testing carried out in basins that lie near timberline are another potential source of disturbance to lynx. Overall, however, the degree of risk of disturbance to individual lynx is expected to be generally low in intensity

because it will be irregular in nature, brief in duration, and dispersed across the 25,074 acres of AUAs. For these reasons, effects of disturbance on individual lynx would be insignificant and discountable.

The proposed activities are described by the 2013 LCAS as activities that are not likely to have a substantial effect on lynx populations or habitat. Two tiers of anthropogenic influences were developed in the 2013 LCAS based on risk factors for Canada lynx in core areas. The first tier of factors includes those that have the potential to negatively affect lynx populations and habitat, while the second tier factors have potential to affect individual lynx but are not likely to have a substantial effect on lynx populations or habitat. The Proposed Action would be considered under recreation management, which are activities that are considered a second-tier factor.

The project would be fully consistent with three of the four conservation measures in the LCAS pertaining to recreation (Interagency Lynx Biology Team 2013, p. 94). Lynx habitat connectivity would be maintained because there would be no changes to lynx habitat and any changes to habitat effectiveness as a result of disturbance would be short-term and temporary. No facilities or concentrated recreational use areas would be developed as a result of this proposal. No designated over-the-snow routes or snowmobile play areas are being proposed.

The fourth conservation measure in the LCAS specific to recreation, to direct activities away from linkage areas, is only partially met. The Proposed Action does not include any facility development but would result in a net increase of a recreational activity within an identified linkage area. However, given the lack of foraging habitat in linkage areas, transient lynx would move through the area quickly. Heli-ski activities on any given day would be brief and dispersed and if there were dispersing or transient lynx in the area at the same time as heli-skiers they could avoid activities because of the limited duration and because any tracks left by skiers will not change the ability of the lynx to cross the area. Overall, effects to the Silverton-Lake City linkage area as a result of the Proposed Action are insignificant and discountable.

North American Wolverine

The Proposed Action is not likely to jeopardize the continued existence of North American wolverine, as there are currently no wolverine population in the State of Colorado. The available scientific and commercial information does not indicate that other potential stressors such as land management, recreation, infrastructure development, and transportation corridors pose a threat to the distinct population segment (DPS) of the wolverine (78 FR 7863). If individual wolverines were present in the study area, project activities are likely to be focused on the areas providing core wolverine denning and foraging habitat. March and April is the time of year snow conditions are most favorable for heli-skiing. It is also the time of year when female wolverines dig and use natal dens and are thought to be most sensitive to disturbance (Copeland 1996). Although helicopter use and backcountry skiing activities have been shown to pose a disturbance risk to individual wolverines (Krebs et al. 2007), the best scientific information available does not substantiate recreational activities as a threat to wolverine (78 FR 7863). There would be no change in service days as a result of the Proposed Action. Additionally, there is currently no wolverine population in the State of Colorado; therefore, the recreational activities in the Proposed Action are not considered a threat to the wolverine.

Section 7 (a) (4) of the ESA requires conferencing with USFWS when a Proposed Action is likely to jeopardize the continued existence of a proposed species or destroy or adversely modify proposed critical habitat. Because the Proposed Action is not likely to jeopardize the continued existence of North American wolverine, conferencing is not required.

Uncompahgre Fritillary Butterfly

The Proposed Action would not affect butterfly host plants (snow willow) because no habitat modification is permitted at helicopter landing sites and landings are permitted only when vegetation is fully covered and protected by snow. Given the slope and aspect preferences of snow willow growing sites, it is unlikely that helicopter landings will occur on snow willow sites. It is expected that skiers leaving a landing zone would quickly ski through and out of terrain that hosts snow willows. In addition, when slopes suitable for snow willow have sufficient snow cover to make them attractive for use by skiers, the plants are likely to be covered by snow that is deep enough to protect the plants from potential physical damage by passing skiers. For these reasons, it is unlikely that project activities would affect snow willow plants and thus effects to the butterfly or its habitat are unlikely. Therefore the Proposed Action would not affect butterfly habitat or snow willow plants and thus would not cause direct, indirect or cumulative effects to the butterfly.

BLM Sensitive Species

Of the 26 species designated as sensitive by the BLM in the state of Colorado that may occur on lands managed by the Gunnison Field Office (Table 9), seven have habitat in the proposed Silverton Guides SRP AUAs. These species are: American peregrine falcon, black swift, golden eagle, Northern goshawk, Rocky Mountain bighorn sheep, boreal toad, and fragile rockbrake. There are three primary sources of direct and indirect effects to BLM designated sensitive species from the Proposed Action: increased snow compaction, disturbance caused by skiers, and the use of helicopters and explosives for snow stability testing. Project design criteria prohibit any habitat modifications or structural improvements during project-related activities and thus the Proposed Action would not alter current habitat conditions for BLM designated sensitive species. The amount of increase in snow compaction from project implementation is expected to be very small because of the generally disconnected nature of landing zones and ski runs from other compacted routes (see Biological Assessment for Silverton Guides Helicopter Ski Terrain Exchange project). It is unlikely that the peregrine falcon, black swift, and Northern goshawk would be present in allowable use areas during winter when project activities would occur. Moreover, though incidental bighorn sheep could occur in the project area, impacts from the Proposed Action would be limited to disturbance that is brief in duration and is not expected to impact populations or the species. Further, it is unlikely that individuals or habitat for the boreal frog or fragile rockbrake would be impacted by project activities as the project areas would be protected by deep snow, buffering them from any potential impacts. For this reason, project-related activities are unlikely to disturb individuals that might be present in suitable nesting or foraging habitat.

Species of Local Concern

Helicopter activity, particularly at Landing Zones, and skier traffic under the Proposed Action could likely impact Ptarmigan. Impacts to White-tailed Ptarmigan in the Ross Basin, Poughkeepsie, Houghton, Cinnamon, and Grouse Gulch pods (totaling 5,566 acres) would cease under the Proposed Action. However, inclusion of 16,252 acres of new ski terrain, not previously permitted, would substantiate an

increased risk of disturbance to Ptarmigan wintering in those areas. Should the Proposed Action be approved, impacts to wintering Ptarmigan could occur across 25,074 acres, a 74 percent increase in land area as compared to Silverton Guides current SRP (14, 388 acres).

However, a design feature of the Proposed Action would require skiers and guides to avoid skiing in close proximity to visible willow and krummholz areas when possible. Project design criteria also specify that Landing Zones should be placed as far as possible from willow patches and krummholz. These design criteria would reduce the potential for disturbance to Ptarmigan populations that are known to be vulnerable and thought to be declining, in part, from winter recreation.

Migratory Birds

As described above, the Proposed Action "may impact individuals but is not likely to result in a trend toward federal listing or a loss of species viability rangewide" for the golden eagle. There would be no other impacts to migratory birds.

Cumulative Effects

Alternative 1 – No Action

Silverton Guides' operations would continue to contribute cumulatively to impacts on wildlife connectivity in the study area. Activities such as private land development and increased recreation would continue to impact wildlife habitat.

Alternative 2 – Proposed Action

Because Silverton Guides and Telluride Helitrax have provided heli-skiing services on BLM lands around Silverton since 1995 under one-year annual and five-year SRPs, heli-skiing operations are part of the historic environmental baseline and affected environment for this landscape.

The Silverton area experiences a moderate level of human activity year-round. The Proposed Action, considered cumulatively with existing dispersed winter recreation in the area (including backcountry skiers, snowshoers, walkers, and snowmobilers) would contribute to increased levels of human disturbance to local wildlife species. During the summer, most BLM and county roads are busy with recreation use, four-wheel drive and ATV use, and dispersed camping. Continued seasonal residential development on small private land in-holdings scattered throughout the study area would also increase human presence and associated impacts to wildlife.

The effect of continued private land development on lynx habitat and function of the Silverton-Lake City linkage area is the likely slow and small-scale fragmentation of lynx habitats and movement corridors within the linkage area.

The Proposed Action would not increase cumulative impacts to North American wolverine, as there is no change to the number of annual user days. However, effects would be relocated from the area north of Silverton Mountain Ski Area to pods further south and distributed across a greater area. This wider distribution of human presence, combined with nearby heli-skiing operations (Telluride Helitrax) in potential wolverine habitat would contribute to cumulative impacts to wolverine if they were present. In addition, heli-skiing and helicopter-based snow stability testing and control activities are authorized at the

Silverton Mountain Ski Area under a separate permit. Together, the combined area of previously approved permits for heli-skiing and helicopter-based avalanche testing operations permits, along with the Proposed Action, are large in comparison to the amount of potential wolverine habitat on BLM lands and immediately adjacent National Forest System lands.

The Proposed Action combined with ongoing recreation and development in the area around the Town of Silverton could lead to a general avoidance of the area by golden eagles. However, this impact is not measurable and depends more on individual eagle tolerance and behavior. Given the expansive availability of suitable and adjacent habitat, potential effects are inconsequential to the viability of the species.

Helicopter noise and close proximity could influence short-term behavior patterns of incidental bighorn sheep in the project area during the winter. However, large expanses of suitable habitat occur both within and adjacent to the project area and thus, potential effects are inconsequential to the viability of the species.

Because no direct or indirect effects are anticipated to any other BLM sensitive species, by definition there would be no cumulative effects.

3.7 WETLAND FENS

SCOPE OF THE ANALYSIS

The spatial extent of this wetlands analysis includes the existing and proposed SRP area and surrounding public and private lands. The temporal bounds of this analysis extend from the first heli-skiing permit in Silverton in 1995 through 2027 (including the five-year SRP analyzed here and the future reissuance of a five-year SRP assumed in 2022). A Wetlands and Waters of the U.S. Assessment has been prepared and is in the project file (Knox 2016).

AFFECTED ENVIRONMENT

The Clean Water Act of 1972 regulates activities that have the potential to impact Waters of the U.S. (WOUS). Further, Executive Order 11990 requires federal agencies to avoid and minimize impacts to wetlands to the extent practicable. The study area was investigated for the presence and extent of wetlands and/or watercourses that could qualify as WOUS as defined by the U.S. Army Corps of Engineers (USACE). There would be no ground disturbance or fill placed in wetlands during project implementation.

Fens are peat-accumulating wetlands that have developed over millennia in areas of stable groundwater and low sediment transport. In the San Juan Mountains of Colorado high elevation fens are common and known for their small size (average 3 acres) and high biodiversity (Chimner et al. 2010). Fens are a type of wetland that may not qualify as WOUS because of their occasional lack of connection to other WOUS. Fens are a non-renewable resource protected by the USFWS as a Resource Category 1, a protection stipulating that there can be no mitigation for loss of fens (USFWS 1999).

The National Hydrology dataset was queried to evaluate the watershed(s) in which the project occurs. The project planning area occurs within two watersheds: 1) Upper Uncompahgre River; and 2) Headwaters of

the Animas River. However, the vast majority of the project area drains into the Headwaters of the Animas River. All of these rivers are designated WOUS by the USACE.

The USFWS National Wetlands Inventory database and the CNHP Wetland Mapper database were queried to ascertain presence of known wetlands and fens within the project area. An area along Cement Creek was identified by the CNHP as the Cement Creek Iron Fen PCA because of its "High Biodiversity" value. The TRFO also nominated it for a BLM Area of Environmental Concern. Cinnamon Pass PCA is also an area with fen plant communities.

Fen peat is susceptible to damage in winter by freezing if the insulating layer of snow is removed or compacted. Fens do not freeze under snow in the winter so helicopter landings could have impacts on peat accumulation and temperatures. The first application of weight on snow generally results in the most snow compaction (Cooper and Arp 2002). If peat is damaged during freezing, this allows oxygen into the system and slows/prevents peat accumulation. Fen plant phenology may be delayed and fen plant pollinators may be unable to pollinate fen plants at the opportune time. Three CNHP and Forest Service listed sensitive species, Baltic sphagnum (*Sphagnum balticum*), Chamisso's cottongrass (*Eriophorum chamissonis*), and Lesser panicled sedge (*Carex diandra*), could be present in these fen areas. Baltic Sphagnum is a moss species found only in high elevation iron fens in the Silverton area of Colorado and in parts of Canada. In Colorado this species is threatened by acid mine spills and human impacts in iron fens. Chamisso's cottongrass is found in high elevation fens near Cinnamon Pass. It is also found in Alaska, Oregon, Idaho, Wyoming, North Dakota, Minnesota, Wisconsin, northern Europe, and Canada. This species is vulnerable to habitat hydrologic alterations, recreational use, and livestock grazing. Lesser panicled sedge is found in high elevations fens on Molas Pass. It is also found widespread across Alaska, California, Wyoming, Utah, plus many other states, and Europe.

Table 10 shows the acreage of fens in the study area, including basin, sloping, and iron fens.

Table 10. Fens within the Study Area

Pod Name	Acres of Fen(s)
California/Treasure	352.2
Bonita/Emery/McCarty	9.4
Slagle/Tower	22.3
Illinois/Hancock	191.1
Minnie/Maggie	0.0
Southeast	67.8
Round	5.4
TOTAL	**648.2**

ENVIRONMENTAL EFFECTS

Direct and Indirect Environmental Effects

Alternative 1 – No Action

Under Alternative 1, there would be no changes from Silverton Guides' current operations. Silverton Guides would continue to operate heli-skiing within their existing SRP area. Under this alternative no impacts to WOUS or fens would be incurred because heli-skiing does not result in surface disturbance. All skier use occurs during periods of snow cover, which shields most wetlands from impacts. Under their current SRP, Silverton Guides minimizes impacts to wetlands, including fens, by avoiding landing within 200 feet of identified wetlands. If landing on the wetland is unavoidable, any individual site is not used more than two consecutive days, and is not used more than four days in a season. Due to these measures, and the fact that any wetlands present would be covered by snow during the season of use, no impacts would occur. Because this alternative does not impact wetlands, it is in compliance with Executive Order 11990.

Alternative 2 – Proposed Action

The Proposed Action would not impact any WOUS, including wetlands and fens. There would be no ground disturbance or fill in wetlands. Landing Zones and snow stability testing would not occur within 200 feet of identified fens, thus impacts to fens and the Cement Creek Iron Fen PCA would be avoided. Impacts to Baltic sphagnum populations would also be avoided through this PDC. Because this alternative does not impact wetlands, it is in compliance with Executive Order 11990. Because this alternative does not impact fens, it is in compliance with the Resource Category 1 fen mitigation (USFWS 1999).

Cumulative Effects

Alternative 1 – No Action

Alternative 1 would result in no direct or indirect impacts and would, by definition, not result in any cumulative effects.

Alternative 2 – Proposed Action

The Proposed Action would result in no direct or indirect impacts and would, by definition, not result in any cumulative effects.

4. TRIBES, INDIVIDUALS, ORGANIZATIONS, OR AGENCIES CONSULTED

Tribal governments and federal, state, and local agencies were consulted as appropriate throughout this EA process. These entities include:

4.1 TRIBAL GOVERNMENT

The following tribes were notified of the undertaking at face to face consultation meetings in October 2016: the Ute Indian Tribe and the Ute Mountain Ute Indian Tribe. A certified memo describing the project was mailed to the Southern Ute Indian Tribe in November of 2016. They were asked to identify traditional cultural places or any other areas of traditional cultural importance that need to be considered within the area of potential effect. The BLM Gunnison Field Office did not receive any comments or concerns from the tribes. As a result, there are currently no known areas of Native American Religious Concern located within the project area.

4.2 FEDERAL AGENCIES

U.S. Fish and Wildlife Service

4.3 STATE AGENCIES

Colorado Department of Transportation

State Historic Preservation Office

Colorado Parks and Wildlife

4.4 LOCAL AGENCIES

Town of Silverton

Town of Telluride

Town of Ouray

San Juan County

Hinsdale County

San Miguel County

Ouray County

5. LIST OF PREPARERS

Members of the project team who participated in the impact analysis and preparation of this EA are listed below, along with their areas of responsibility.

Elijah Waters	Gunnison Field Manager, Deciding Officer
Stuart Schneider	Associate Field Manager

5.1 BLM CORE INTERDISCIPLINARY TEAM REVIEWERS

Marnie Medina	Realty/NEPA Specialist, Project Leader
Kristi Murphy	Outdoor Recreation Planner
Megan Mast	Park Ranger
Liz Francisco	Archaeologist
Matt Dayer	Park Ranger
Kathy Brodhead	Wildlife Biologist
Gay Austin	Wetlands

5.2 BLM EXTENDED INTERDISCIPLINARY TEAM REVIEWERS

Martin Weimer	NEPA Specialist, Rocky Mountain District
Andrew Breibart	Hydrologist
Rebecca Bruno	Cadastral Survey
David Lazorchak	Geologist
Jake Schmalz	Range/Weeds
Derek Chodorowski	Law Enforcement
Jim Lovelace	Outdoor Recreation Planner

5.3 CONSULTANT TEAM

The CEQ provides guidance for contracting NEPA documentation at 40 CFR 1506.5(b) and (c). “Third party contract” refers to the preparation of an Environmental Impact Statement or EA by contractors paid by the applicant. Because the proposed SRP changes were proposed by a non-federal party (i.e., the Proponents), the BLM determined that it is appropriate for a third-party contractor to be used for preparation of this EA. Contracting an environmental document does not in any way reduce or eliminate the BLM’s active role in the NEPA process. The BLM is responsible for all content within the EA document and the supporting materials, which must be included in the project file. Additionally, the findings in this analysis are those of the BLM, not of the contractor, and the decision must reflect a review of this NEPA document (BLM 2008a).

A Memorandum of Understanding (MOU) was executed between the BLM and the Proponent, establishing the roles and responsibilities of each party, including the contractor. Among other things, the

MOU specifies that all costs of using a contractor to prepare environmental documents will be borne by the Proponent. The MOU describes the responsibilities of the BLM and the Proponent in the administration of the MOU and in oversight of, and communication with, the contractor and the Proponent. The MOU is contained in the project file.

SE GROUP

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Shawn Knox	Ecologist
Clay Bowers	Ecologist

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7. FIGURES