USDA Forest Service
U.S. DEPARTMENT OF AGRICULTURE

Medicine Bow-Routt National Forests, Hahns Peak/Bears Ears Ranger District August 2023

Mad Rabbit Trails Project

Final Environmental Assessment

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***Cover Photo**: Rabbit Ears Peak, 2015*

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Introduction

The Forest Service is proposing to develop, manage, and rehabilitate trails on the Hahns Peak/Bears Ears Ranger District to improve recreational opportunities, while protecting resources. We prepared this environmental assessment to comply with the National Environmental Policy Act and other relevant policy and regulations.

This environmental analysis was prepared according to the Council on Environmental Quality's 1978 regulations for implementing the procedural provisions of the National Environmental Policy Act (40 Code of Federal Regulations (CFR) sections 1500-1508, as amended). The Council on Environmental Quality issued revised regulations for implementing the procedural provisions of the National Environmental Policy Act, effective September 14, 2020. The revised regulations provide the responsible official the option of conducting an environmental analysis under the 1978 regulations if the planning process was initiated prior to September 14, 2020 (40 CFR section1506.13, 85 FR 137, page 43373, July 16, 2020). Likewise, application of the more recent revised Council on Environmental Quality's regulations of May 20, 2022, is discretionary for planning processes initiated prior to that date. For the proposed project, two public input opportunities were provided prior to the issuance of the Council on Environmental Quality 2020 and 2022 revised regulations (see Public Involvement and Coordination section), therefore the responsible official decided to complete the environmental analysis under the 1978 regulations.

This environmental assessment describes the actions included in the Mad Rabbit trails project, how public input was used to modify the proposed action, the analysis of potential effects to resources from the action alternatives, and the potential significance of effects. Additional documentation is available in the project record at the Hahns Peak/Bears Ears Ranger District.

Based on the information included in this environmental assessment and the project record, the responsible official may decide which portions of the no-action alternative and the proposed action to implement. The responsible official will also use this information to determine the significance of effects and whether preparation of an environmental impact statement is needed.

Background

The community of Steamboat Springs, Colorado, and its surrounding area is attracting a growing number of visitors and residents with interests in a variety of outdoor recreation experiences. The Routt National Forest National Visitor Use Monitoring (USFS 2017) program showed 1,585,000 site visits in 2012 compared to 1,946,000 in 2017, which is a 23 percent increase in visitation. The Colorado Statewide Comprehensive Outdoor Recreation Plan (Colorado Parks and Wildlife 2019) reports that approximately 92 percent of Coloradans participate in recreation in the outdoors at least once every few weeks and identifies that the state expects to have a 17 percent population growth rate from 2019 to 2029.

This increase in the recreating population in Colorado and the Routt National Forest has contributed to heavy use of system trails in the vicinity of Steamboat Springs, which can cause use conflicts, safety issues, resource damage, and an overall undesirable outdoor experience. It has also contributed to unauthorized, non-system (user-created or social) trail development, as recreationists seek to find their desired trail experience, whether that be an uncrowded area or a challenging single track. These non-system trails are not engineered, often do not meet Forest Service trail standards, and can result in resource damage. While the Forest Service has some existing methods

to address non-system routes, additional methods are needed in the project area including restricting bicycles to designated routes across the entire project area and more wholistic restoration methods for non-system trail rehabilitation.

Community engagement around recreation near the town of Steamboat Springs has identified strong interest in developing a variety of new trails to benefit residents and visitors alike. Through multiple community conversations, the Forest Service has identified opportunities to decommission non-system trails and develop a sustainable designated trail network that meets a wide range of user abilities while minimizing impacts to natural resources.

Project Area

The Mad Rabbit Trails project area includes approximately 127,124 acres of National Forest System lands north and east of the town of Steamboat Springs, Colorado, in Routt, Grand, and Jackson counties. Most of the project is located on the Hahns Peak/Bears Ears Ranger District, and a portion of the project area is on the Parks and Yampa Ranger Districts of the Medicine Bow-Routt National Forests and Thunder Basin National Grassland (hereafter referred to as the "project area"). The project area encompasses the Mad Creek, Rocky Peak, Gunn Creek, Buffalo Pass, Fish Creek, Rabbit Ears Pass, and Steamboat Ski Resort areas (figure 1).

Note that the project area may be different than the analysis area identified in the resource analyses. Forest Service resource specialists may identify an analysis area that is appropriate for a particular resource due to the geographic scope of the habitat or area that influences each resource (such as a watershed). This analysis area may be larger or smaller than the project area where activities are planned to occur.

Purpose and Need for Action

The purpose for the Mad Rabbit trails project is to provide designated and sustainable trail-based recreation opportunities in consideration of other resources.

There is a need for this project because:

- The existing National Forest System trails and trailheads in the project area do not meet current and anticipated recreational trail use of National Forest System lands adjacent to the community of Steamboat Springs to accommodate a wide range of user abilities.
- Several unauthorized non-system trails exist, some sections of which are causing resource damage; and
- There is no mechanism in place to prevent off-trail bicycle travel across the entire project area.

Each of these needs is described in greater detail below.

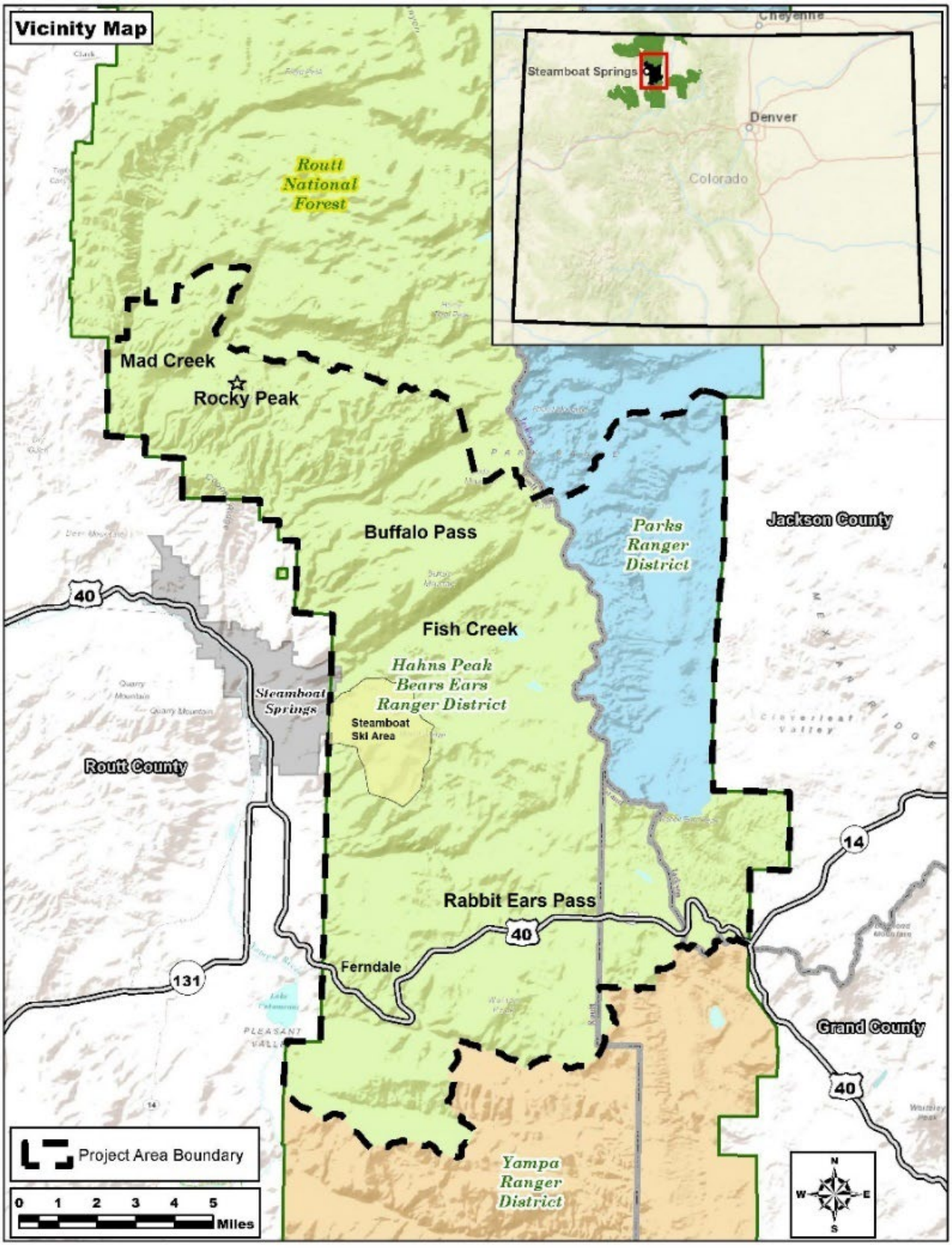

Figure 1. Vicinity map of Mad Rabbit trails project area.

Need to Expand Existing Trail System

The existing trails and trailheads do not meet the current and anticipated trail use to accommodate a wide range of trail use classes. Because the existing trail network does not meet the desired experience, users have begun to establish unauthorized non-system trails to create some of the desired long-distance trails and loop opportunities. The use that this unauthorized trail network is receiving creates damage to wetlands, meadow habitats, and disturbs elk and other wildlife, especially in key habitat areas. These unauthorized trails are also not built to Forest Service standards and create safety issues as a result. The demand for the existing system trails, which were not built for the level of use currently being experienced or the range of opportunities desired by users identified during public scoping, may also lead to trail use that exceeds the desired recreation opportunity spectrum and increased trail user conflicts. With the increased trail use is an increased need for parking and other amenities at existing trailheads and additional trailheads to be constructed along the Highway 40 corridor. There is also a need to control dispersed camping at trailheads and the potential resource damage and public safety issues that could result.

Need to Reduce Resource Damage Caused by Non-System Trails

Some of the unauthorized, non-system trails are causing resource damage because they were not located using a Forest Service environmental planning process to reduce effects to wildlife, wetlands, botany, cultural resources, and other resources. There is summer use occurring on trails designed and designated for winter use, resulting in user created trails being established through wetlands and habitat for rare plant species. In other portions of the project area, such as the Rocky Peak area, user created trails have been established on National Forest System lands with key habitat components for winter range, elk production and summer concentration areas. Conversations with Colorado Parks and Wildlife have led to mutual agreement that non-system trails and associated impacts need to be addressed concurrently with adding any proposed trails in more sustainable locations. Throughout the document the unauthorized, non-system trails will be referred to as: user created trails, seasonal trails, unauthorized trails, non-system trails, and social trails. All these terms refer to trails that have been constructed or formed through repeated use but were not approved or constructed by the Forest Service. There is a need for more comprehensive restoration methods for non-system routes beyond existing approved methods to better restore impacted areas and prevent re-establishment of non-system routes.

Need to Implement a Mechanism to Prevent Off-Trail Bicycle Travel

Across the entire project area, there is a need to implement a closure order that restricts non-motorized wheeled vehicle use on National Forest System lands to designated routes. Closure orders restricting non-motorized wheeled vehicles to designated routes already exist in the Steamboat Ski Area and Buffalo Pass area. This project does not propose to change any over-the-snow use in the project area.

While some of the unauthorized trails in the project areas were user created through the cutting of trees and digging of tread, which is illegal trail construction, other non-system trails were formed through repeated use by cross-country bicyclists operating as dispersed recreation. Without an enforcement mechanism in place to deter the use of unauthorized routes, the only way illegal use

can be ticketed is if someone is caught in the act of trail construction (36 CFR 261.10(a)) or causing resource damage (36 CFR 261.9(a)).

There is a need for an enforcement mechanism that makes it illegal for bicycles to travel off designated routes to reduce social trail development. The project is proposing rehabilitation of unauthorized trails, and without a mechanism to prevent unauthorized travel, it will be more challenging to prevent user re-establishment of unauthorized trails. The Forest Service has found closure orders to be effective on other parts of the Hahns Peak/Bears Ears district once system trails were expanded and non-system trails were rehabilitated.

Forest Plan Guidance

The proposed activities would support the following Routt National Forest Land and Resource Management Plan (Routt Forest Plan) (USDA Forest Service 1998) components by:

- Providing a wide variety of outdoor recreational opportunities and experiences to meet the full range of visitor expectations. (Routt Forest Plan, chapter 1, page 2);
- Cooperating with local governments and communities to develop opportunities that contribute to economic viability (Routt Forest Plan, chapter 1, page 2);
- Managing trail development at a broad scale to coordinate with trail systems developed by municipalities, counties, states, other federal agencies and partners (Routt Forest Plan, chapter 1, page 17);
- Planning different accessibility challenge levels, depending on the nature of the improvement and the principal form of recreation being provided (Routt Forest Plan, chapter 1, page 17);
- Developing new trails while considering proximity to population centers, feasibility of loop trails, types of trail users to be served, accessibility, features and attractions, partnership opportunities and protection of habitats and wilderness (Routt Forest Plan, chapter 1, page 18); and
- Maintaining consistency with management area direction, as provided in the Routt Forest Plan (see appendix E: Forest Plan Compliance for a map of management areas and a description of the project's compliance with applicable forest plan standards).

Public Involvement and Coordination

We began the public involvement process for the Mad Rabbit trails project in January 2018 with a solicitation for comment on two different alternative approaches to providing sustainable, trail-based recreation opportunities in the Mad Creek, Rocky Peak, and Rabbit Ears Pass areas. The project first appeared in the January 2017 Schedule of Proposed Actions (https://www.fs.usda.gov/project/?project=50917).We received approximately 420 emails, letters, and comments during the 2018 scoping request. This included communication with a Southern Ute tribal representative and a Northern Cheyenne tribal representative, both requesting additional information as cultural surveys were completed. The planning team modified the proposed action based on the comments received, and in July 2019 a preliminary proposal was sent out to the public for additional comment. We received comments from approximately 270 individuals and organizations.

On October 24, 2022, we published a legal notice of the 30-day comment opportunity for the draft environmental assessment. We received 744 comment letters during this period. The interdisciplinary team evaluated comments and prepared responses to comments that were published on the project webpage. The interdisciplinary team and responsible official considered all comments received and used them to help refine the proposed action, identify relevant issues for analysis in the environmental assessment, explore potential alternatives, and correct errors in the record. Changes made to the environmental analysis and proposed action in response to 30-day comments are summarized in the Changes Made to the Proposed Action and Environmental Analysis section. The pre-decisional administrative review process (36 CFR 218, subparts A and B) and outcomes for this project are described in the decision notice.

In addition to the formal comment opportunities, we worked with partners such as Colorado Parks and Wildlife, Colorado Department of Natural Resources, Routt Recreation and Conservation Roundtable, Routt County Riders, Keep Routt Wild, Steamboat Adaptive Recreational Sports, Yampatika, and other individuals and organizations, to gather input related to natural resource and recreation management on the Medicine Bow-Routt National Forests.

Discussions have occurred with Colorado Parks and Wildlife throughout the project development process. In December 2020, the Forest Service and Colorado Department of Natural Resources signed a memorandum of understanding to have representatives from the Colorado Department of Natural Resources and Colorado Parks and Wildlife attend interdisciplinary planning team meetings to coordinate on the Mad Rabbit trails project. Both agencies agreed to work together on the shared goal of caring for the economic, ecological, and social components of the Steamboat Springs area community and the surrounding National Forest System lands.

Changes Made to the Proposed Action and Environmental Analysis

Development of this proposed action was an iterative process. As we gathered more information about the proposal, engaged with partners, and considered public comment, the responsible official made changes to incorporate those ideas. The public comments received in 2018 and 2019 resulted in changes to the proposed action to address public concern. Additional Forest Service field work resulted in further refinement of the proposed action. Some proposed trail alignments were shifted or removed to avoid wetlands, sensitive wildlife areas, or for other resource concerns. These changes can be seen when comparing the maps of the 2018, 2019, 2022 proposed action (available at https://www.fs.usda.gov/project/?project=50917) and final map (figure 3) in this environmental assessment.

Following is a summary of key changes made to the environmental analysis and proposal in response to public involvement and comments.

Rocky Peak and Mad Creek Area

- Removal of several proposed trail additions to the national forest trail system near Rocky Peak and Mad Creek. As is described in greater detail below in the Alternatives Considered but Dismissed from Analysis section, trails were not added to the system in the Mad Creek area due to concerns about potential effects to road maintenance needs on roads leading to trailheads, limited opportunities for trailhead expansion, and sensitive wildlife habitat.

- Addition of trail 33 and 34 to the national forest trail system to provide for more sustainable management of Forest Service administrative roadbeds most often used as trails.

Fish Creek Area

- Addition of trail 32 to the national forest trail system to allow a very popular route along an administrative roadbed to be additionally managed as a National Forest System trail.
- Removal of proposed trail additions in the Fish Creek area due to concerns that this proposed trail could lead to fragmentation of habitat in the Long Park Roadless Area.

Long Park Colorado Roadless Area

- Removal of several trails between U.S. Highway 40 and the Steamboat Ski Resort due to concerns about potential fragmentation of habitat in the center of the Long Park Roadless Area, where there are relatively few existing trails.

Rabbit Ears Pass Area

- Removal of proposed trails 10 and 13, and improvements at Muddy Creek trailhead due to concerns about the location of proposed trail 10 in areas zoned for summer non-motorized recreation in the Routt Forest Plan, sensitive wildlife habitat, and hydrologically sensitive areas.

Ferndale Area

- Removal of several trails and bike skills zones in the West Summit and Ferndale area due to concerns about the level of proposed development within the Long Park Colorado Roadless area and potential effects to sensitive wildlife habitat.
- Removal of trail 24 (approximately 3 miles) and a portion of trail 22 (approximately 0.5 mile) to reduce trail density and impacts to big game habitat.

Other Changes

- Addition of a seasonal closure to the trail 14 area in the Fox Curve and Dumont areas from May 15 to June 30 each year to protect elk calving, subject to a variance for winter recreation access (see appendix A, design element 44 for details).
- Addition of the following provision for the Long Lake non-system route (see appendix A, design element 5): If a sustainable alignment is found along the Long Lake non-system route based on Forest Service field surveys, we may reroute the existing Mountain View trail (west of Long Lake) onto this alignment rather than decommissioning it.
- Addition and revision of project design elements (appendix A) to address resource concerns and public comments.
- Where applicable, revised estimates for vegetation based on recent updates to Forest Service vegetation data (https://www.fs.usda.gov/nrm/fsveg/index.shtml).
- Other edits and updates to the environmental analysis including maps.

Alternatives

Alternatives Considered but Dismissed from Analysis

The following alternatives were considered by the responsible official but dismissed from the analysis. Rationale for dismissal is provided for each alternative.

Proposed Actions (2018 or 2019) as Scoped to the Public

We received comments from members of the public and partner agencies, such as Colorado Parks and Wildlife and Colorado Department of Natural Resources, expressing concern about the number and miles of new trails proposed in the 2018 and 2019 proposed action and the locations of certain trails. The concerns focused on the potential effect to sensitive habitat for elk and potential effects to characteristics of Colorado Roadless Areas within the project area.

The planning team considered the written comments received from the public and held multiple meetings with Colorado Parks and Wildlife and Colorado Department of Natural Resources to discuss the concern that these agencies had with specific trail segments. Based on these discussions, we reduced the 2018 proposal from approximately 79 miles to 52 miles of trail, at the time, by eliminating trail segments in seasonal elk habitat that were of particular concern. We also proposed seasonal closures on trails in the Ferndale area to protect elk production habitat and calving (May 15 to June 30). (In response to 30-day public comments in 2022, we further reduced the total proposed trail mileage, added a seasonal closure area, and made other changes to the proposed action and environmental analysis.) For more details, refer to the Changes Made to the Proposed Action and Proposed Action sections. Following meetings between Colorado Parks and Wildlife, Colorado Department of Natural Resources, and the Forest Service, there was no need to analyze either the 2018 or 2019 proposal in detail because they did not address the concerns raised by Forest Service resource specialists and the partner agencies.

Development of All Mountain Bike Trails at the Steamboat Ski Resort

We received comments from the public and Colorado Parks and Wildlife asking if all additional bike trails on the district could only be considered at the Steamboat Ski Resort.

Although the ski area does offer certain types of mostly downhill specific mountain bike opportunities in the project area, it does not meet the visitor demand for semi-primitive trail experiences that can accommodate a wide variety of user abilities and trail classes across the project area. We continue to see visitors exploring non-system trails within areas of existing recreation infrastructure (roads, trailheads, campgrounds, day use areas). The proposal identifies areas for trail development to meet a wide variety of user abilities and trail classes in the project area in the vicinity of existing recreation infrastructure while minimizing impacts to other resources. Based on public comment received and visitor use of the project area, it does not appear

that additional trails at the ski area would fully meet the recreation needs of the public and would not provide enough opportunities for a wide range of abilities and experiences.

Development of a Gravity Fed Downhill Mountain Bike Park in the Ferndale Area

We received comments from the public in support of a gravity fed downhill mountain bike park in the Ferndale area that would allow users to begin at a higher elevation to ride downhill quickly while navigating man-made obstacles, as was proposed in the 2018 request for public input.

The planning team considered different trail densities for the Ferndale area and decided to modify the proposal to include a diverse set of trails managed for a semi-primitive recreation experience with seasonal closures to protect sensitive habitat for big game, and protect other characteristics of the Long Park Colorado Roadless Area, both of which were concerns expressed by members of the public, Colorado Department of Natural Resources, and Colorado Parks and Wildlife. The proposed action proposes three trails (23, 25, 27) within the Ferndale area that would have seasonal closure (May 15 to June 30) to protect elk calving habitat (see design element 44 in appendix A).

Eliminate Proposed Trails from Ferndale and Relocate South of U.S. Highway 40

We received comments from the public and Colorado Parks and Wildlife suggesting that instead of adding new trails to the Ferndale area, we should explore new trails south of U.S. Highway 40. The commenters suggest the areas south of U.S. Highway 40 might have less sensitive habitat for big game.

The planning team explored potential trail opportunities on both sides of U.S. Highway 40 to meet a diversity of opportunities and ultimately determined that trails using existing infrastructure on the north side of the highway made the most sense as there are several winter trailheads that can be used for summer access. Adding new trails on the south side of U.S. Highway 40 would require developing several new trailheads, and certain potential trailhead locations raised safety concerns due to their entrance and exit location on U.S. Highway 40 identified through coordination with the Colorado Department of Transportation.

Decommission All Non-System Routes and Do Not Add New Trails

We received comments from the public and Colorado Parks and Wildlife asking why the project proposes new trails, when the commenters would prefer to see all non-system routes rehabilitated with no new trails constructed.

The Forest Service has seen an increased demand for a diversity of trail-based recreation on the National Forest System land adjacent to Steamboat Springs near existing recreation infrastructure. Part of this demand is currently being met by unauthorized use of non-system routes, which are not planned or maintained in a manner that protects other forest resources. If non-system trails are removed, we do not believe that this demand for trail-based recreation will decrease, and the proposed action would not meet the goal of providing a broad diversity of trail opportunities. As described earlier, the Routt Forest Plan identifies several goals related to expanding recreation opportunities on National Forest System lands in cooperation with local communities. This project proposes a managed, sustainable trail system on National Forest System lands to prevent and reduce damage from unmanaged recreation.

Development of More Trails

We received comments from the public on the 2019 proposed action, asking for more trails than were proposed. The 2018 proposal sent out for public input proposed between 68 and 79 miles of new trail construction. The 2019 proposal included 51 miles of new trail construction. Through the planning process, we have worked with the public and agency partners, such as Colorado Parks and Wildlife and Colorado Department of Natural Resources, to find the appropriate balance between new trail opportunities and protection of forest resources and wildlife habitat. The responsible official believes the proposed activities presented in this assessment strike a balance between managing increased trail-based recreation and providing areas without trails for other resource benefits and that analyzing an alternative with more trails at this time, would not address the concerns expressed by the public and partners on this project.

Trail Management in the Mad Creek and Rocky Peak Area

We received comments from members of the public who were concerned there were no system trails proposed in the Mad Creek and Rocky Peak area and popular non-system trails in this area were proposed for decommissioning.

The planning team considered the construction of system trails in the Mad Creek and Rocky Peak area and adjustments to the trailheads that access them in a proposal presented to the public for input in 2018. The proposed trails and trailhead changes were removed from the current proposed action due to concerns about limited management opportunity for roads and trailheads adjacent to private lands. We also decided that decommissioning the non-system trails in the Mad Creek and Rocky Peak areas would reduce resource impacts (see Botany section) and protect important seasonal habitat for big game (see Wildlife section) through closure of non-system trails that are not part of a Forest Service-managed trail network.

No-Action Alternative

Taking no action means the Forest Service would not implement the proposed action, although all other ongoing authorized activities would continue in the project area. No trails would be added to the current Routt National Forest trails system to accommodate a range of user abilities and opportunities to meet the current and anticipated volume of recreational trail use adjacent to the community of Steamboat Springs.

Recreation on approximately 44 miles of unauthorized, non-system routes would continue and could increase, potentially adding to resource impacts over time due to use on trails not built to Forest Service trail standards. However, signage and education would continue to be used to address impacts from non-system trails. Forest Service enforcement of non-system trail construction (36 261.10(a)) and resource damage (36 CFR 261.9(a)) will continue to address creation of non-system routes when violators are caught in the act. Existing closure orders and enforcement would remain on Buffalo Pass and the Steamboat ski area to prevent bicycle travel from occurring off designated routes, however no closure order would be implemented to prevent bicycle travel from occurring off designated routes across the entire project area. Without a closure order across the entire project area and additional methods for restoring non-system routes, development and use of non-system routes may increase above current levels. No trailheads construction or reconfiguration would occur to provide increased capacity and visitor services along U.S. Highway 40, causing resource impacts that will continue and worsen over time as the use increases.

The no-action alternative also represents the existing condition (or affected environment) and the current management of the resource (figure 2). It represents potential effects to resources if unauthorized, non-system trail use continues to increase in the project area based on anticipated recreational use.

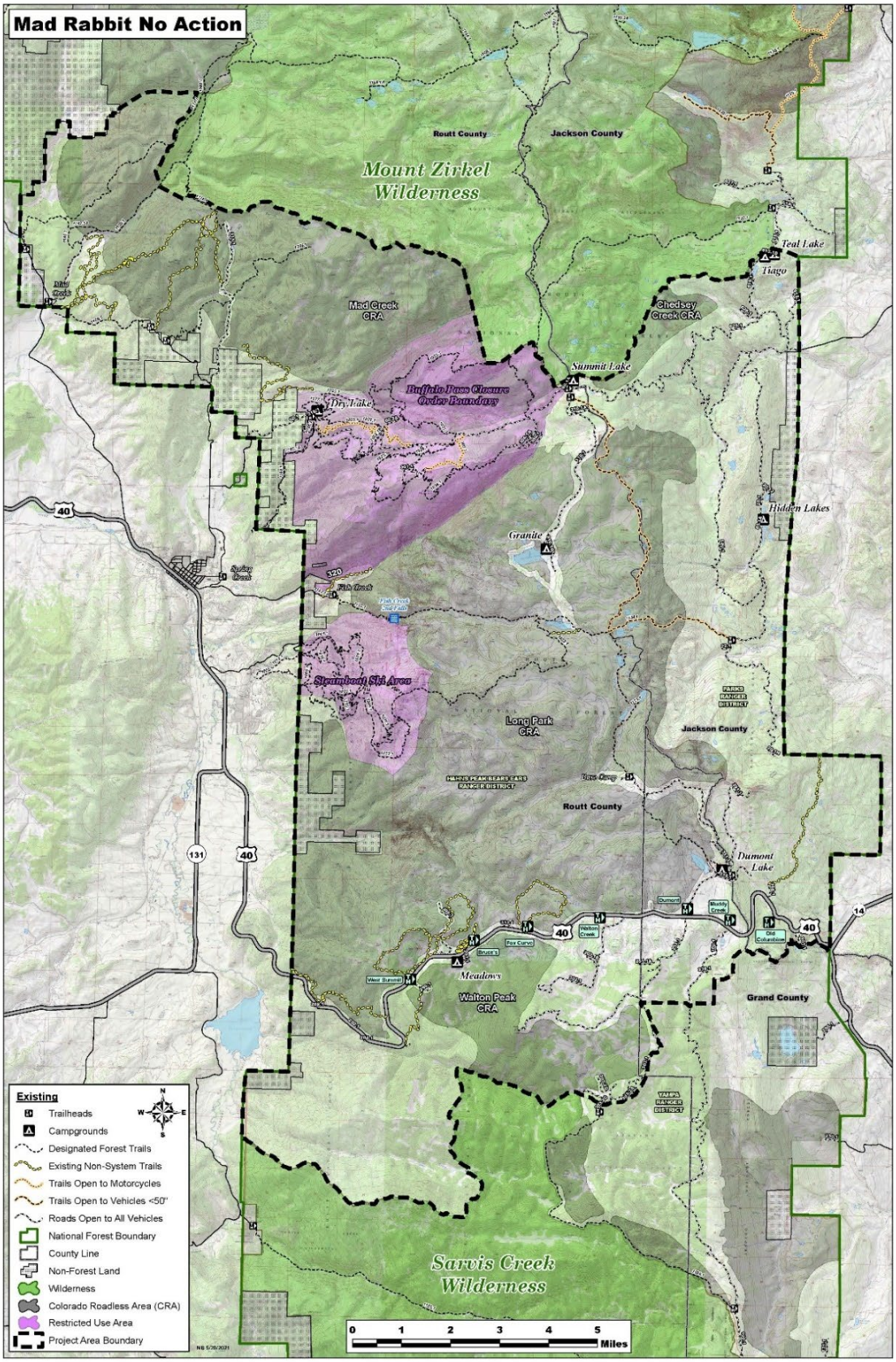

Figure 2. No-action alternative (existing condition within the project area)

Proposed Action

We designed the proposed action to meet the purpose and need, and we made modifications during the planning process to reduce resource impacts and to consider public and partner concerns, as described above. The proposed action includes the following activities, which are described in greater detail below and shown in figure 3:

- Construction and improvement of approximately 49 miles of new trail[1] (see appendix B: Proposed Trail Construction, for details about each segment)
    - Approximately 41 miles would be designated as non-motorized trail
    - Approximately 4 miles of administrative roads would be designated dual purpose administrative roads and non-motorized trail
    - Approximately 4 miles would be designated as trails open to motorized use for off-highway vehicles 50 inches or less in width
- Rehabilitation and closure of approximately 36 miles of existing unauthorized non-system trails
- A *restricted use area* designation that would restrict non-motorized wheeled vehicle use on National Forest System lands across the entire project area to designated roads and trails when there is less than an average 12” snow depth. This project does not change over-the-snow use in the project area (that is, fat tire bikes in winter conditions).
- Changes to trailheads, including:
    - Creation of two new summer trailheads along Highway 40 to increase parking capacity and provide access to newly constructed trails.
    - Reconfiguration of Ferndale Day Use Area to increase parking capacity for trail users.
    - Add summer amenities to four existing winter trailheads along U.S. Highway 40 to accommodate summer recreation use.
- If necessary, restrictions to dispersed camping and campfires at trailheads in the project area.
- Project specific design elements to protect resources and ensure compliance with law, regulation, or policy (see appendix A).
- Closure of trailhead and trails in Ferndale area and trail 14 area from May 15 to June 30 each year to lower impacts to elk calving areas.

[1] Approximately 49 miles of new trail are proposed including non-motorized trails (41 miles), motorized trails (4 miles), and dual designation of existing level 1 administrative roads as trail (4 miles). However, new trail disturbance would be approximately 44 miles total including new non-motorized and motorized trails; dual designation routes are not included in this figure since they already exist as level 1 administrative roads with ongoing recreation use.

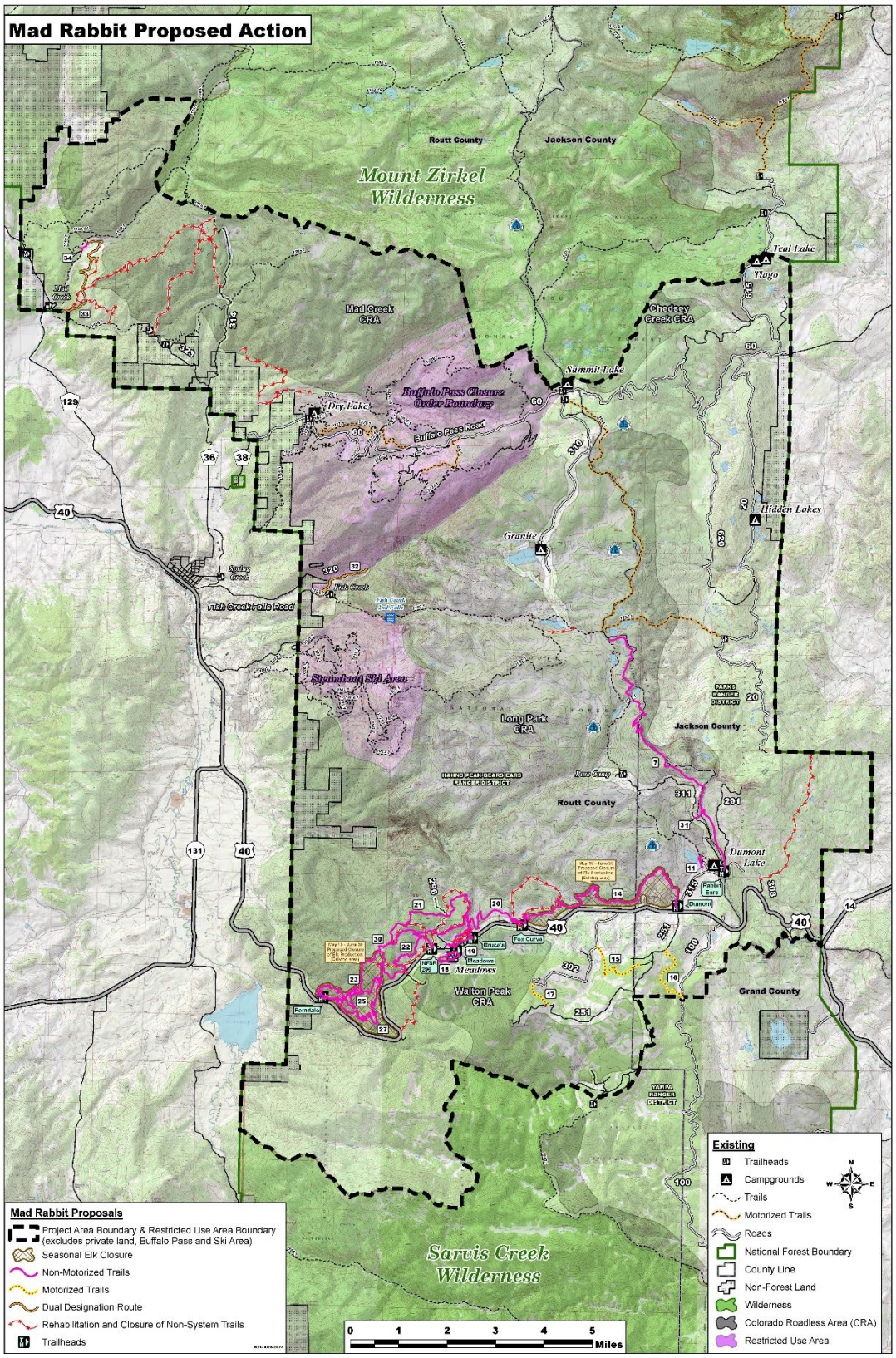

Figure 3. Elements of the proposed action

Proposed Trail Management Activities

New Trail Construction and Designations

This project proposes 19 new trail segments totaling 49 miles of new National Forest System trail to provide trail-based recreation opportunities that can be managed to accommodate increased recreation demand and reduce the effects of dispersed recreation on resources such as wildlife and hydrology. Some of these trails will require new construction or reconstruction of non-system routes to bring them up to Forest Service trail standards, and some of these trails will add a trail designation to existing National Forest System administrative roads. (Refer to appendix B: Proposed Trail Construction for detailed information about each trail segment, including trail class, and the rationale for proposing the trail; and appendix D: Trail Class Matrix for parameters for each type of National Forest System trail class.) Trail construction includes removing trees and ground vegetation along the trail alignment, digging the tread to trail class specifications, installing bridges where needed, and installing trail signs.

Closure and Rehabilitation of Unauthorized Non-System Trails

Approximately 36 miles of known non-system trails would be closed and rehabilitated to protect resources (figure 3). Project design elements 5 and 6 (appendix A) apply specifically to rehabilitation and closures to provide more comprehensive methods of restoring impacted areas compared to the no action alternative. If additional non-system trails are discovered, they will be closed and rehabilitated following a review of environmental effects.

Restricted Use Area Designation

To deter further unauthorized user-created trail development and to protect resources, a *restricted use area* designation (or closure order) would be implemented to prohibit mountain bike and all other wheeled vehicle use off designated National Forest System trails and roads across the entire project area (127,124 acres). Exemptions to the restricted use closure include persons with a permit authorizing the prohibited activity, bicycle use (for example, fat-tired bikes) where snow depths average 12 inches or greater, any Federal, State, or local officer or member of a rescue or fire organization in performance of an official duty, any Forest Service personnel or persons designated by the Forest Service performing an official duty, and non-motorized game carts used for game retrieval during hunting seasons.

This designation would include the Buffalo Pass Restricted Use Area and the Steamboat ski area, where restricted use area designations already exist.

Trailhead Management and Dispersed Camping Restrictions

The project proposes modifications to four existing trailheads, construction of two new trailheads along U.S. Highway 40, and the Ferndale picnic area would be re-opened as a summer trailhead. Table 1 provides a summary of the proposed trailheads and figure 4 provides a map of the trailheads with proposed changes.

Table 1. Proposed trailhead construction and reconfiguration

Trailhead Name	Trails Accessed	Management Area	Winter Use	Summer Use	Description
Ferndale	23, 25, 27	4.2	None	New	This is a decommissioned picnic day use area. Summer access for trails 23, 25, and 27 is proposed at this location.
National Forest System Road 296	21, 22, 30	4.2	Future	New	Summer access for trails 21, 22 and 30 is proposed at this location. This trailhead can serve winter and summer use. Winter use is contingent on implementation of the Rabbit Ears Winter Parking Environmental Assessment 2014 decision.
Meadows	18	4.3	Future	New	Summer access for loop trail 18 is proposed. This trailhead can serve winter and summer use. Winter use is contingent on implementation of the Rabbit Ears Winter Parking Environmental Assessment 2014 decision.
Bruce's	19	4.2	Existing	New	This trailhead currently serves winter use. Summer access for trail 19 is proposed.
Fox Curve	14, 20	4.2	Existing	New	This trailhead currently serves winter recreation use. Summer access for trails 14 and 20 are proposed.
Dumont	14	4.2	Existing	New	This trailhead currently serves winter recreation use. Summer access for trail 14 is proposed.
Rabbit Ears	7, 31	4.2	None	Existing	This trailhead serves summer recreation use on the Continental Divide National Scenic Trail. Additional summer use for proposed trails 7 and 31 is proposed.

These trailheads could include kiosks and restrooms as use determines the need for these amenities. In some locations existing restrooms would be upgraded to accommodate the anticipated increase in use. All of these trailheads may have a dispersed camping and campfire restriction put in place to maintain them as day use only as determined necessary by the district ranger. These dispersed camping restrictions may be expanded to adjacent areas as determined necessary in the future based on forest plan direction (Routt Forest Plan, chapter 1, page 16 – Dispersed Recreation Standard 1).

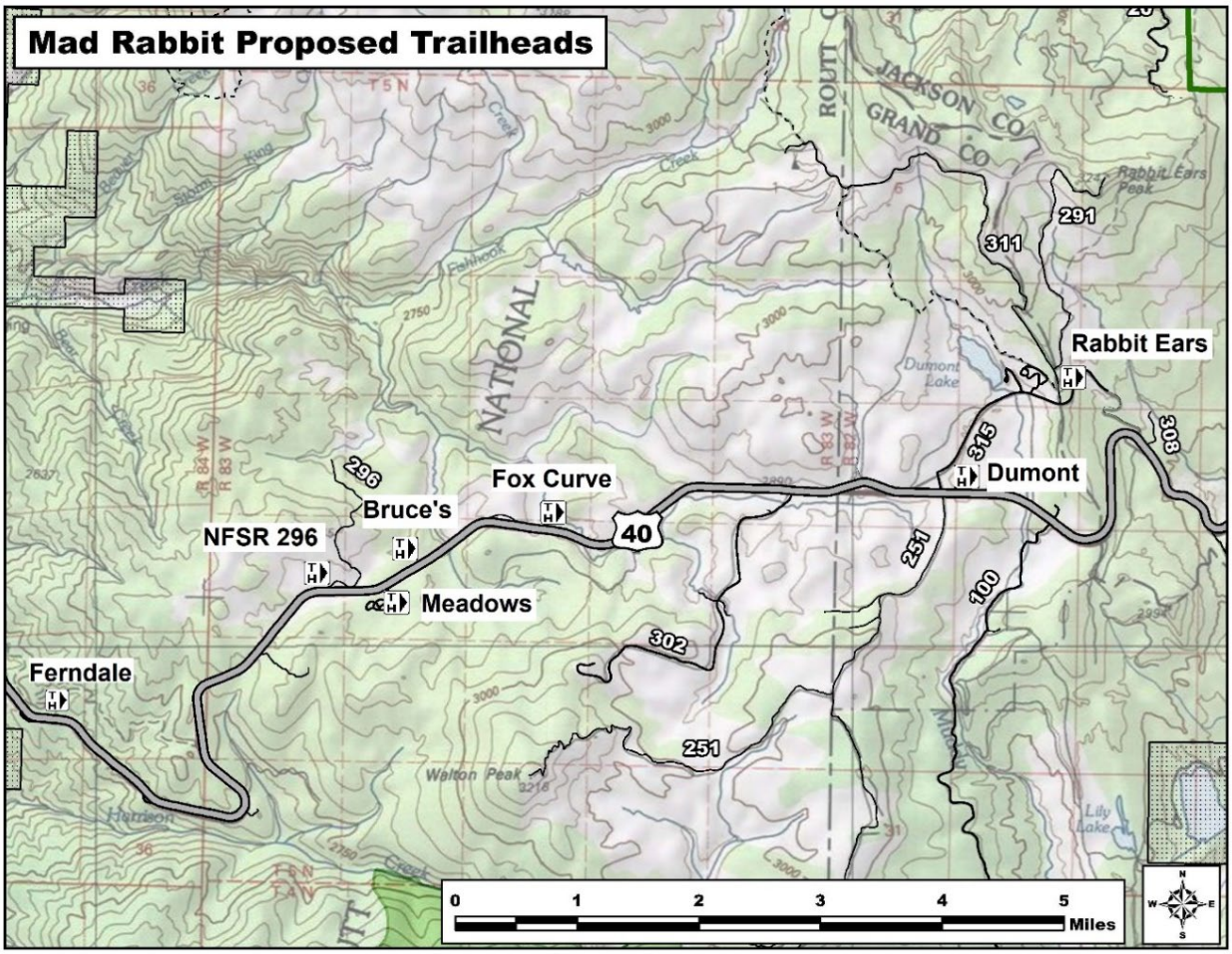

Figure 4. Locations of trailheads where changes are proposed

Decision to be Made

An environmental assessment is a document that discloses the environmental consequences of implementing the proposed action or alternatives to that action. It is not a decision document. It instead documents the analysis upon which the decision can be reached. The decision will be made by the district ranger of the Hahns Peak/Bears Ears Ranger District and documented in a decision notice.

The district ranger will determine if sufficient site-specific environmental analysis has been completed and whether the proposed action would result in significant impacts to the human environment. If any impacts are significant, then the Forest Service will determine if modifications to the proposed action could occur to mitigate the impacts so an environmental impact statement would not be necessary. If no significant effects are identified and an environmental impact statement is not needed, the Forest Service will document this determination in a finding of no significant impact along with the decision notice.

The district ranger will also determine whether the proposed action and alternatives comply with applicable laws, forest plan standards and goals, and Forest Service policy.

Finally, the district ranger will decide whether to approve the proposed action as is, or some combination, modification, or portion of the alternatives analyzed in this environmental assessment. Specific decisions that the district ranger will make include the following:

- which of the new trails analyzed in this document will be constructed;
- what class of trail construction will occur, and what uses will be allowed;
- what roads will be added to the national forest trail system;
- what decommissioning activities will occur on non-system routes;
- whether to allow trailhead construction to occur, and where;
- whether to approve trailhead expansion for summer recreation use and at what trailheads; and
- whether to restrict wheeled vehicles on non-system trails across the project area.

Environmental Impacts of the Alternatives

This section describes the environmental effects of the alternatives on the resource area as they relate to the issues. Direct effects are caused by the action and occur at the same time and place as the action taken. Indirect effects are caused by the action and are later in time or farther removed in distance but are still reasonably foreseeable (likely to occur within the life of the project).

Council on Environmental Quality regulations require assessment of cumulative impacts, defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions" (40 CFR 1508.7). Cumulative impacts occur when the effects of an activity, or activities, overlap in space and time with effects of the proposed project. Per the Council on Environmental Quality, "Generally, agencies can conduct an adequate cumulative effects analysis by focusing on the current aggregate effects of past actions without delving into the historical details of individual past actions." The interdisciplinary team considered past, present, and reasonably foreseeable future actions relevant to the proposal, including how they may have contributed to existing conditions and trends. Appendix C lists cumulative projects or actions considered by the interdisciplinary team as part of the environmental analysis and review. Cumulative effects are also discussed in the analysis of each resource.

Issues Analyzed in Detail

The following issues were analyzed in more detail to determine the potential for significant effects:

- **Issue 1 - Recreation:** The proposed activities would designate a sustainable National Forest System trail network that can accommodate a wide range of user abilities to accommodate the increased demand for trail-based recreation opportunities in the project area.
- **Issue 2 - Wildlife:** The public and partner agencies expressed concerns that the proposed trail network could have impacts to wildlife habitat effectiveness for threatened, endangered, and sensitive species and big game in sensitive habitat areas such as winter range and production areas.
- **Issue 3 - Colorado Roadless Areas:** The public and partner agencies expressed concerns that the proposed trail network could have an effect to Colorado Roadless Area characteristics within the project area.

No other potentially significant issues were identified. However, other issues were analyzed as required by other law, regulation, or policy; or due to public interest

Other Concerns

Concerns were raised by the public and resource specialists during project development. The project's interdisciplinary team considered these concerns to determine which could be dismissed from formal analysis because they: 1) were already addressed by law, regulation, or policy; 2) were outside the scope of the decision to be made; or 3) would be addressed with project design or project design elements. Some concerns raised by the public or members of the interdisciplinary team were identified and analyzed as issues (as described above), displaying a cause-and-effect relationship from the proposed activities. Table 2 provides a summary of the concerns identified but not analyzed in detail.

Table 2. Concerns considered but not analyzed

Concern	Rationale for not carrying forward to analysis
Electric-powered bikes (e-bikes): Concern that e-bike speeds would cause damage to resources, including wildlife. Additional concerns that trails would not be designed for increasing e-bike use.	Currently, e-bikes are allowed on motorized routes and managed like other motorized vehicles to address resource and user conflict concerns. Three new motorized trails are proposed that would be open to e-bikes. The effects of the proposed motorized trails are analyzed in this analysis. Due to inconsistency with the Forest Plan, the Forest is neither proposing nor evaluating designating e-bike use on non-motorized trails as part of this proposal.
Trail Management: Reduce use conflicts and address safety concerns through trail management, including single-use, directional-use, multi-use, and motorized-use.	The proposed action's multiple-use design is consistent with forest plan and management area direction, and Forest Service policy (FSM 2350.2.2). User group conflicts will be reduced through trail design, management, and education (such as signs and social media).
Invasive plant species: Concern that increased trails and use of recreation facilities will lead to spread of invasive plant species.	Project design features identify the ongoing treatment of invasive plant species that will occur on National Forest System lands, including areas within the project area where activities are proposed. Noxious weed treatment along U.S. Highway 40 would continue to occur under the jurisdiction of the Colorado Department of Transportation.
Conflict with domestic sheep: Concern that increase recreation use could create conflict between recreationists and livestock protection dogs.	Forest staff have discussed the project with the grazing permittee and will continue to work with the permittee to reduce detrimental effects to sheep operations, while reducing conflict with recreationists using trails within grazing allotments. These measures are outlined in project design elements. This project will not change the permittees' ability to graze on the allotments.

Concern	Rationale for not carrying forward to analysis
Lack of resources for trail and facility maintenance: Concern that there are not enough resources to manage and maintain current facilities and that this problem will grow with expanded trail network and additional facilities.	The Forest has several partnerships that help maintain trails and educate users through volunteers within the project area. It has received funding from the Trail Maintenance Endowment fund, Colorado Parks and Wildlife off-highway vehicle and non-motorized grant program, Great American Outdoors Act and other trail grants for trail related projects the past few years. The Forest is considering additional programs, such as "adopt a trail", to further increase capacity to maintain trails and associated trailheads.
Dispersed camping across the entire project area: Concern that there will be dispersed camping at Lower Bear Trailhead and other locations.	Dispersed camping is managed in accordance with the forest plan and appropriate travel plan restrictions. Education, engineering, and enforcement are used to address issues concerning dispersed camping. All the trailheads in the project may be subject to proposed dispersed camping restrictions.
Winter use: Concern that winter use will be allowed on both the new trail system and the existing winter trail system, leading to displacement of big game.	Summer trails are separate from designated winter recreation routes. Non-system routes on winter routes are proposed to be decommissioned. Winter recreational use is subject to existing Forest winter recreation management guidelines and regulations (such as winter wildlife closures, winter recreation area designations). Constructing new summer trails would not affect winter use. Refer to the wildlife section for analysis of effects to big game from proposed activities.
Human caused ignitions: Concern that increased recreation access will result in more human caused fires.	The Forest addresses human caused fire concerns through education, engineering, and enforcement when fire restrictions are in place. No overnight camping or campfires are allowed within one-quarter mile of many trailheads across the project area.
Public safety and increased traffic: Concern that increased recreation access will strain rescue and public safety services, especially along U.S. Highway 40; concern regarding increased vehicle volume and associated concerns (safety, carbon emissions, etcetera).	Trails will be managed according to FSM 2350.2.2 in addition to education and signage to address health and safety concerns. There are small increases in traffic along US Highway 40 expected, specifically during busy times and near trailheads, with implementation of the trails and trailheads in this proposal compared to overall traffic volumes along US Highway 40 identified in the East Steamboat Springs US Highway 40 Access Study and in coordination with Colorado Department of Transportation (CDOT) but there would be no substantial changes in overall traffic volume. The Forest Service will continue to work with CDOT based on vehicle use patterns at access points associated with this project along US Highway 40 to manage for vehicle flow, safety concerns and other concerns related to Forest Service road and trailhead traffic.
Recreation Special Uses: Desire for outfitter and guide access to trail system	Permitted recreation activities (event or outfitting and guiding) will be permitted on a case-by-case basis, in accordance with the forest plan and agency direction. Refer to the recreation section for more discussion on recreation special uses.

Concern	Rationale for not carrying forward to analysis
Revegetation: Areas disturbed during trail construction and trail restoration should be revegetated to prevent soil loss, sediment delivery to streams, and to reduce the risk of invasive species establishment.	All revegetation measures will be in accordance with the Medicine Bow-Routt National Forest's Revegetation Guide. Design elements are part of the proposed action to ensure that proper revegetation measures are implemented. The botany, hydrology, and soil reports discuss the effects of non-system trail rehabilitation.

Issue 1 - Recreation

The Mad Rabbit trails project proposes to develop, manage, and rehabilitate trails in the project area to improve recreational opportunities to meet current and anticipated use while protecting resources in the project area (FSM 2310 Sustainable Recreation Planning).

Analysis Methodology

Analysis is qualitative and quantitative in nature to determine the direct, indirect, and cumulative effects of the no-action alternative and proposed action alternative. Extensive research and public and partner engagement were used to identify types and locations of existing and potential new recreation opportunities both qualitatively (experience desired by user, technical and physical challenge, emotional connection, health, and wellbeing benefits) and quantitative (miles of trail, number of types of trails, trail surveys, and public scoping). Public outreach included several collaborative group meetings represented by a wide diversity of trail user groups and conservation groups to gain individual input from each perspective, two preliminary project public comment periods in 2018 and 2019 and meetings with a variety of partners who have interest in the project.

In addition to public input, research in recreation planning (Selin et al., 2020) and Forest Service Handbook 2309.18 Trails Management Handbook was used to ensure proposed trails met a diversity of existing recreational trail uses and desires (USDA Forest Service 2017; RPI Consulting LLC 2019; Colorado Parks and Wildlife 2019; Forest Service public scoping); considered equity, inclusion, and well-being (Havlick et al. 2021; Kondo et al. 2018); and followed sustainable trail design to lower trail maintenance needs over the long-term. Minimizing impacts to other resources was an important part of trail location and layout using resources like Forest Service manual 2310 Sustainable Recreation Planning, other resources like Colorado's Guide to Planning Trails with Wildlife in Mind (Colorado Trails with Wildlife in Mind Taskforce 2021), feedback provided by a wide range of resource specialists both internally within the Forest Service and from partners such as Colorado Parks and Wildlife and Colorado Department of Natural Resources.

The direct, indirect, and cumulative recreation effects for each alternative were determined and guided using recreation resource objectives and indicators and measures for assessing effects. Project objectives were identified to address concerns brought up in the purpose and need to provide designated and sustainable trail-based recreation opportunities in the project area. Indicators and measures for the recreation resource were developed to determine the changes in the conditions to both the quantity of trails and social attributes of the area under both alternatives. To determine when indicators are met, measures were defined: miles of trail, types of trail class (described in appendix D: Trail Class Matrix), miles of looped opportunities, miles of long-distance opportunities, miles of non-system trails, numbers of trailheads, semi-primitive recreation opportunity spectrum class social settings, and un-sustainable dispersed camping or off-trail bicycle use.

Recreation directives and resources used to guide recreation objectives, indicators, and measures are listed below and located in the project record:

- Forest Service Manuals 2300 Recreation, Wilderness, and Related Resource Management, 2310 Sustainable Recreation Planning and 2350 Trail, River and Similar Recreation Opportunities, Forest Service Handbook 2309.18 Trails Management Handbook
- Routt National Forest Land and Resource Management Plan, USDA Forest Service, 1998
- National Strategy for a Sustainable Trail System, USDA Forest Service, 2017
- Region 2 Rocky Mountain Region Trails Strategy, USDA Forest Service, 2020
- Continental Divide National Scenic Trail Comprehensive Plan, USDA Forest Service, 2009

Affected Environment

Existing Condition

Analysis of the direct and indirect effects of the no-action alternative includes a description of the existing conditions that define the project objectives. The purpose and need of the proposed action in the Mad Rabbit trails project area on the Routt National Forest is based on the existing conditions that follow and described in the no-action alternative.

Increasing Population

Populations are increasing in both the Steamboat Springs area and in further distant areas that supply visitors to the Routt National Forest, such as the Colorado Front Range area. The Routt National Forest has experienced corresponding increases in visitation. A brief description of the state and county population trends and forest visitation trends describes the existing condition of the population of users and projects the future volume of potential recreation users in the project area. These population increases correlate to an increase in the volume of trail users and demand for a diversity of trail opportunities that are designed to facilitate this increased use. Management area and Continental Divide National Scenic Trail recreation opportunity spectrum settings may be exceeded more regularly. In addition, there is an increase in the creation and use of non-system trails. There is increased potential for use conflicts with an increasing population using limited out and back trail opportunities on Rabbit Ears Pass in addition to increased potential for resource impacts from a lack of properly designed and designated trails.

Forest Visitation Trends

Every 5 years the Forest Service National Visitor Use Monitoring (USDA Forest Service 2017) program provides reliable forest level information about the volume of recreation visitors and visitor demographics for the Routt National Forest. The wide volume of recreation traffic on the Forest shows an increase in visitation comparing 2017 to 2012 national visitor use monitoring results. Results in 2012 showed 1,585,000 site visits. In the 2017 report the Routt National Forest showed approximately 1,946,000 site visits. A site visit is one person recreating on National Forest System lands for an unspecified amount of time.

The results from 2017 national visitor use monitoring show site visits to Steamboat Ski Resort, located on National Forest System lands, as the primary activity involving downhill skiing (49 percent). The next highest reported primary activity was hiking and walking (25 percent). Bicycling is the third highest primary activity reported. Approximately one-third of Routt National Forest visitors live locally (within 25 miles), one-third live between 25 and 200 miles (highest

percentage from the front range of Colorado), and one-third live farther than 200 miles. Half of visits to this national forest last less than 4 hours, although the average duration is about 10 hours. The median length of visits to overnight sites is about 39 hours indicating a two-or three-night stay is common. Over 50 percent of visits are from people who visit at most five times per year. Very frequent visitors are also common: nearly 25 percent of visits are made by people who visit more than fifty times per year (USDA Forest Service 2017).

State Population Trends

The population of Colorado increased by 1.2 million people between 2000 and 2016. Almost 60 percent of the growth is by people who moved to Colorado, and most of the new residents are between the ages of 19 and 34 years old. Colorado is the seventh fastest growing state in the nation with a 10-year population growth rate of 17 percent. The state's population could increase to nearly 8.5 million people by 2050, according to the Colorado State Demography Office. Recreation areas are becoming increasingly crowded. Often, there are reports of no available parking and conflicts occurring between different types of outdoor recreationists. The rapidly increasing population will only exacerbate these challenges.

Crowding was ranked third of the top three barriers to Coloradan's recreation participation. Crowding is also a core management issue among land managers. Land managers are struggling with basic upkeep of the areas and structures they oversee while at the same time lacking the capacity to handle increasing public demand. Of the top ten activities in Colorado walking is most popular and hiking and backpacking is second. The number of days Coloradans recreate on a trail grew 44 percent between 2012 and 2017. Spending profiles increased across most activities with trail sports, snow sports, recreational vehicle camping, and running contributing to the largest increases. Nearly 45 percent of Colorado is public land. Fifty eight percent of the trails in Colorado are on federal lands managed by the Forest Service and Bureau of Land Management. (Colorado Parks and Wildlife 2019).

County Population Trends

Routt County and the City of Steamboat Springs, Colorado population is increasing. Between 2017 and 2018, Routt County saw 73 percent of its growth coming from people moving to the area from another state; most were in their 50s and 60s and seeking a good place to retire. In 2017 almost 20 percent of the population was over 55 years old; an increase of 2 percent in one year (Steamboat Pilot, May 5, 2019, article, Hasenbeck, Eleanor C.).

City of Steamboat Springs Trail Use and Economic Impact Study

In the summer (June-Sept) of 2018 the city of Steamboat Springs hired a trail consulting firm to identify the quantity and location of trail use in addition to other information (economic impact, demographics, user preference, etc.) on three popular trail systems (Emerald Mountain, Spring Creek, and Buffalo Pass) which are close to the city. A report was published in 2019 with the findings. A total of 730 trail user surveys were conducted on trails in addition to several trail counters located throughout these trail systems.

An estimated 31,300 to 43,500 annual visitor days were identified on these trail systems with spending between $17.3 million to $24.1 million per season in the area on lodging, food, entertainment, and other associated expenses. The most direct economic benefits came from visitors staying at least 1 night, 86 percent of visitors stayed for 2 or more nights. Sixty-five percent of respondents identified their trail activity as a primary reason for visiting Steamboat Springs

identifying Steamboat Springs as a destination location for trails. It is estimated that between 300-400 jobs are supported by trail visitation.

In addition to the economic benefits visitors identified wellbeing and physical health as additional benefits to trail activities. Approximately 66 percent of respondents were year-round residents, 10 percent part-time residents and 24 percent visitors. Of the visitors, 45 percent were from outside Colorado and 55 percent in Colorado (with most coming from the Front Range area). At the time of the survey the Buffalo Pass trail system, located on National Forest System lands, had been recently constructed and accounted for 18 percent of the use. Buffalo Pass was identified as a popular location due to scenic trails, higher elevation, uncrowdedness, newer in construction and higher levels of difficulty.

A small majority, 54 percent, of full-time residents identified convenient location as an important factor for trails and 42 percent chose time and distance. Near all, 97 percent, of full-time residents used trails at least weekly and four out of five full time residents used trails a few times a week or daily. Walking and bicycling were similarly popular among full-time residents; 46 percent prefer walking or running while 54 percent prefer biking. Full-time residents' preference towards trail activity was 36 percent mostly biking; 24 percent mostly hiking; 5 percent mostly running, 34 percent a mix of biking, hiking, and running; and 1 percent other. Full time residents were found 51 percent of time on Emerald Mountain, 27 percent on Buffalo Pass and 22 percent on Spring Creek. Minimizing impacts to natural resources was rated as very important by 91 percent of full-time residents.

Visitors from out of town used tent camping or recreational vehicles (23 percent), paid or rented lodging (43 percent), second home or timeshares (11 percent), and 23 percent stayed with family or friends for their overnight stay. Out of town visitors engaged in hiking (52 percent), running, or walking (34 percent), cycling or biking (21 percent), watching athletic event (9 percent), horseback riding (9 percent,) and participating in an athletic event or competition (5 percent). Out of town visitors were found 42 percent of time on Buffalo Pass, 36 percent on Emerald Mountain and 22 percent on Spring Creek.

Typical trail outings ranged from less than 1 hour (5 percent), 1 to 3 hours (75 percent), and over 3 hours (20 percent). Average length of trail outings was 10 percent traveling 3 miles or less, 75 percent traveling 4 to 15 miles, and 15 percent traveling more than 15 miles in a trip. Common reasons for choosing a specific trail include recommendation, convenient location, time and length, technical difficulty, physical exertion level, quality of trail, scenery, and environment and to a lesser extent to avoid other users and they are routine or familiar. (RPI Consulting LLC 2019)

Trail System

There are 145 miles of existing designated Forest Service trails in the project area. The Mad Creek and Rocky Peak areas currently have approximately 15.7 miles of non-motorized trails. The Buffalo Pass and Fish Creek areas currently have approximately 54.2 miles of non-motorized trails and 15.4 miles of motorized trails. The Steamboat Ski Resort area has approximately 53.4 miles of non-motorized trails. The Rabbit Ears Pass and Ferndale areas currently have approximately 6.5 miles of non-motorized trails. The Forest Service receives support from a variety of partners such as Colorado Parks and Wildlife, Routt County Riders, Friends of Wilderness, the Trail Maintenance Endowment fund, and other sources to help manage and maintain the existing trail system.

Currently there are limited trails within the Rabbit Ears Pass and Ferndale areas providing limited quantity and types of trail experiences. There is a lack of connectivity (looped opportunities), diversity of trail experiences, range of technical and physical difficulties, length (long distance trails that are 4 miles or greater) and accessible trails on National Forest System lands along the Rabbit Ears Pass and Ferndale areas. This area is easily accessible from Steamboat Springs and is near existing recreation infrastructure such as Meadows and Dumont Lake campgrounds and several existing winter trailheads. There are a variety of non-system trails that are being used in the project area.

*Non-System Trails***.** Scattered non-system (user-created or social) trails primarily exist in the Mad Creek, Rocky Peak, Ferndale and Rabbit Ears Pass areas that are being used for non-motorized activities of hiking, biking, horseback riding, and for hunting access by the public. These trails have developed outside of any environmental planning or review, and they are not approved by the Routt National Forest. Non-system trails have developed due to a lack of diversity of trail opportunities, looped opportunities, and number of desired trails near existing recreation infrastructure along popular recreation corridors such as Rabbit Ears pass. Loop trails are desirable as they reduce encounters with returning visitors on the same trail and provide different scenery and experiences for similar mileages of an out and back trail. Many of these non-system trails, which were never designated for summer use by the Forest Service using guidelines for sustainable trail design, are causing resource damage. Forest Service policy (FSM 2350.3) states to not maintain unauthorized (non-system) trails, which means trails aren't maintained to multi-use Forest Service trail standards and there aren't opportunities to work with partners to maintain these routes. The non-system trails do not incorporate feedback from resource specialists to minimize impacts to other resources and do not use best practices such as the Watershed Condition Classification Technical Guide (USDA 2011) and Colorado's *Guide to Planning Trails with Wildlife in Mind*. Some of these routes lead the public through private land, causing trespass issues with landowners. Portions of these non-system routes are in the Mad Creek, Long Park and Walton Peak Colorado Roadless Areas.

Designated winter non-motorized trails (1A, 1B, 2B, 1D Bruce's) along U.S. Highway 40 are being used for activities including hiking, biking, hunting and horseback riding in the summer months. This has established non-system summer routes on and adjacent to the winter trails. The routes do not meet Forest Service trail class standards for summer non-motorized users and are not designed to provide a diversity of summer trail opportunities. Natural resource damage is occurring because the winter trails were designed to be used when winter conditions exist.

Forest System Road 128, Forest System Road 320

Existing Forest System Road 128 and 320 are open to non-motorized hiking, biking, and horseback riding. The roads are designated as level 1 for administration use only and closed to the public for vehicle travel but receive high levels of public use for non-motorized recreation. Forest System Road 128 at Mad Creek Trailhead does not have a connector trail to create a loop with trail 1100 causing users to be unsatisfied with this non-motorized route experience of travelling out and back. Users are making their own routes in the area seeking looped opportunities, which is causing resource damage. Forest System Road 320 at the Fish Creek Falls trailhead is used extensively by the public and partners for hikes to the Uranium mine interpretive site. Traditional Forest Service appropriated funds cannot be used to maintain these routes to trail class standards because the routes are not designated on the Routt National Forest official system of trails.

Accessible Trail Opportunities

Fish Creek Falls day-use area has a paved accessible trail to an overlook of the lower Fish Creek Falls. This adaptive trail provides interpretive signage and scenic views for adaptive users seeking a trail class 5 opportunity. The existing accessible trail opportunities in the Rabbit Ears Pass area that meet Forest Service Trail Accessibility Guidelines are limited. There currently exists an accessible fishing pier at Dumont Lake day use area but no accessible lakeside access. Adaptive partners in the area have voiced interest in having a broader diversity of adaptive trail opportunities including lakeside access to Dumont Lake day use area and additional opportunities for adaptive users in the trail class 3-4 range, which could be used by adaptive offroad hand cycles.

Continental Divide National Scenic Trail

The section of the Continental Divide National Scenic trail from Dumont Lake to Round Lake is a popular non-motorized trail. It is one of the few designated non-motorized Forest Service trails on Rabbit Ears Pass. It provides a connection between Rabbit Ears Pass, Buffalo Pass, the Steamboat ski area, and the broader Continental Divide National Scenic Trail system providing a longer trail experience. It provides day use access to a few remote, scenic lakes, either from two trailheads or the Dumont Lake campground. Although the current use and conflicts are not exceeding the semi-primitive recreation opportunity spectrum class management designation, predicted future growth in trail use in the Steamboat area could cause the use to exceed recreation opportunity spectrum guidelines. Long-distance trail events are not recommended per management direction for the Continental Divide National Scenic Trail (Continental Divide National Scenic Trail Comprehensive Plan).

Motorized Trail Loops

Motorized routes on Forest System Roads 100, 302, and 251 do not have connector trails causing users to be unsatisfied with this motorized experience of travelling out and back on motorized routes in the area. These users desire more motorized looped and long-distance trails in this area.

Trailheads and Access

There are currently a few summer trailheads in the project area which access existing designated summer trails. There are also a few winter trailheads on Rabbit Ears Pass which are used for dispersed summer recreational use, some of which are accessing non-system summer routes in the area. Many trailheads in the project area are popular due to their proximity to Steamboat Springs and access via a paved or improved dirt road. The Ferndale picnic day use area is closed but receives some dispersed recreational use from visitors accessing the area surrounding the closed picnic ground. There is no special-order prohibiting camping and campfires at some trailheads in the Mad Rabbit trails project area. Impacts are occurring at trailheads from unsustainable dispersed camping or a lack of adequate recreational infrastructure (toilet, kiosk, hardened parking spaces). Impacts include illegal campfires, human waste and garbage disposed on site, and parking off hardened surfaces onto vegetation.

Outfitter and Guide Services

Existing outfitting and guide opportunities in the project area include adaptive fishing and trail excursions, interpretive hikes, off-highway vehicle tours, shuttle services, short and long-distance recreational trail events and trips, hunting and other opportunities. Current and potential new outfitter and guides are interested in a broader diversity of trail opportunities for outfitting, guiding and recreation events in the project area.

Effects of the No-Action Alternative

Direct and Indirect Effects

Selection of the no-action alternative means the Routt National Forest would not continue to move towards managing sustainable recreation and trails to meet forest goals, standards, guidelines, direction, and recreation opportunity spectrum class definitions for management areas identified in the Routt Forest Plan. Under the no-action alternative, no new trails would be added to the current Routt National Forest trails system in the Mad Rabbit trails project area. Table 3 provides a comparative summary of effects to recreation between the no-action and proposed action alternatives.

Under the no-action alternative, there would continue to be approximately 145 miles of National Forest System trail in the project area. Routes in the Rabbit Ears Pass and Ferndale areas would remain limited. There would also be limited tools for addressing the 44 miles of unauthorized, non-system trails being used by the public. The outcome of this is a current and future trail system that does not provide opportunities for multiple trail experiences in desired locations near existing recreation infrastructure and does not meet the current and anticipated volume of recreational trail use adjacent to the community of Steamboat Springs. There would be no additional trail-based economic benefits to local communities from adding different types of trail opportunities. Public and partner input desiring a more diverse trail system that meets multiple user interests would not be incorporated. Trail partnership opportunities (volunteer, funding) to maintain a sustainable designated trail system in the project area would be focused on existing trails, while partnership opportunities to maintain a sustainable designated trail system along Rabbit Ears pass would be more limited.

There would be no trail class 2, 3 and 4 non-motorized trails created, no trail class 3 motorized trails created, and long-distance trail opportunities would remain limited in the Rabbit Ears area. In addition, no additional adaptive opportunities would be created at Dumont Lake day use area to provide lakeside access, near the Meadows campground, and no additional trail class 3 or 4 trails would be added accessible to adaptive users. No additional connecting loop trails for motorized and non-motorized users would be created and use conflicts on limited out and back trails would increase. Loop trails are desirable as they reduce encounters of returning visitors on the same trail and provide different scenery and experiences for similar mileages of an out and back trail. High encounters with other trail users could cause recreation opportunity spectrum social classes to exceed defined limits decreasing user satisfaction with anticipated trail experiences. This would especially be evident on the Continental Divide National Scenic Trail. The no-action alternative would not affect the purpose for which the Continental Divide National Scenic Trail was designated, result in disruption of the continuous nature of the trail, affect opportunities for maximum recreation, or affect any special characteristics.

Under the no-action alternative about 44 miles of non-system user routes would likely continue to be present and potentially expand due to more limited approved methods of addressing non-system trails leading to increasing resource damage that could worsen over time as the population increases. One method in which non-system trails are being created is through dispersed bicycle use off trails as mountain bikers seek loop and multiple trail class experiences. Hikers are also creating non-system trails by seeking loop opportunities instead of an out and back trail experience and looking for the shortest route from parking areas to Dumont Lake. Some non-system trails lead visitors, who are otherwise unaware, across private property. The use of winter non-motorized trails that are designed to be used during winter conditions will continue by summer recreationists and

likely increase over time. Non-system trails are not designed and maintained to Forest Service trail standards to provide a diversity of trail class experiences and avoid sensitive resources which can degrade the recreational trail experience and cause resource impacts.

Under the no-action alternative, no new trailheads for summer recreation users would be constructed nor existing trailheads modified to accommodate the anticipated increase in year-round users. Users would continue to disperse camp in unsustainable areas at the trailheads. These areas would continue to experience resource damage that dispersed camping on unsustainable areas causes including trash accumulation, human waste, illegal campfires and soil compaction and vegetation loss. Impacts from inadequate recreational infrastructure at existing trailheads would continue and likely increase. This will worsen over time as the population increases and users seek forest access and dispersed camping areas that are close to urban centers in the project area.

No additional trails would be added to broaden the diversity of trail opportunities available for trail-based outfitting, guiding and recreation events as described in the existing condition. This would limit the Forest Service's ability to manage for an increasing demand for a diversity of these trail-based services. On the other hand, there could be a benefit to hunting outfitters and the general public who hunt that are interested in using the area in close proximity to U.S. Highway 40 on Rabbit Ears Pass for hunting in dispersed areas where limited designated trails currently exist.

Effects of the Proposed Action

Analysis of the direct and indirect effects of the proposed action on recreation resources addresses how the proposed action would affect the existing conditions as described at the beginning of this section.

Direct and Indirect Effects

Selection of the proposed action alternative would move the Routt National Forest toward meeting the intent of sustainable recreation and trails. That is to provide a diversity of opportunities that meet the current and expected future demand for trail-based recreation near the City of Steamboat Springs while also minimizing impacts to other resources. The proposed action would also move the Forest towards meeting Forest goals, standards, guidelines, and direction, and meet recreation opportunity spectrum class definitions for management areas as outlined in the forest plan.

Trails are located close to the City of Steamboat Springs and existing recreation infrastructure to meet the desire for easy access to these types of opportunities, and to provide additional economic benefits to local communities. Trail user needs are addressed by developing connecting or loop opportunities of varying distances—from short excursions to long-distance backcountry excursions. This provides a variety of experiences and technical difficulties for different user types and includes viewpoints and interesting natural features for scenic and emotional connection to the outdoors and public lands. Partnership opportunities (volunteer maintenance, trail ambassadors, trail funding, etcetera) to construct, maintain and manage a sustainable designated trail system (removal of non-system trails and construction of Forest Service designated trails) within the project area would be expanded along Rabbit Ears pass.

Input from Forest Service resource specialists, partners like Colorado Parks and Wildlife and Colorado Department of Natural Resources and best practice guides like the Watershed Condition Classification Technical Guide (USDA 2011) and Colorado's *Guide to Planning Trails with Wildlife in Mind* (Colorado Trails with Wildlife in Mind Taskforce 2021) were used to minimize impacts to other resources and helped identify trail location and layout that also provides a diversity of recreational trail experiences.

Population Increasing

The proposed action alternative would address many effects of an expected increase in trail users identified in the existing condition by creating a network of sustainable trails and trailheads that improve access and provide a connection to the outdoors while minimizing impacts to wildlife and other natural resources. Use conflicts and resource impacts would be reduced through a combination of proper trail design, a diversity of trail experiences being provided, education, engineering, and enforcement. Trail design, education, engineering, and enforcement have been shown to be successful in reducing incidence of unsuitable recreation on public lands (Hidalgo and Hershaw 2012, Neumann and Mason 2019, Zeidenitz et al. 2007). Crowding would be reduced at trailheads and on trails by increasing the number of trailheads and providing several new looped opportunities which reduces the number of trail encounters when compared to out and back trails.

There is a possibility for use conflict to increase between dispersed recreational activities and trail-based recreation users, such as hunters who have historically used dispersed areas in close proximity to Highway 40 along Rabbit Ears Pass. While there is some existing non-system trail use in these areas, it is expected that use would increase on a designated trail system. Trail alignments were focused near Highway 40 to preserve larger undeveloped areas which allow dispersed recreational activities such as hunting to continue in the undeveloped areas beyond proposed trails. There would be improved hunting access to these undeveloped areas using the proposed trail system.

The proposed action would have an overall positive effect to managing increasing visitation and reducing use conflicts in the project area. While there are some use conflicts expected from the proposed action, overall, the proposal is designed to provide a diversity of loop trail opportunities to cut down on the number of trail encounters which lowers use conflicts when compared to limited out and back trails in desired locations along Rabbit Ears Pass and Ferndale. This follows management direction (Forest Service Manual 2310 and Forest Service Handbook 2309.18) and public input for the desired semi-primitive recreational trail experience while also preserving undeveloped areas for natural resource reasons and dispersed recreation activities like hunting.

Trail System

Currently a lack of diversity of opportunities and connectivity between National Forest System trails exists in proximity to existing recreation infrastructure along Rabbit Ears Pass near Steamboat Springs. Overall, this condition would be abated by the proposed development of 19 new trails totaling approximately 49 miles of new, sustainable, designated trail routes as shown in figure 3 proposed action map and described in appendix B: Proposed Trail Construction. Combined with the 145 miles of existing system trail, this will result in a total of 194 miles of National Forest System trails in the project area. This would result in an increase of trail opportunities primarily in the Rabbit Ears Pass and Ferndale areas including 136 miles of long distance non-motorized trails, 19.4 miles of long-distance motorized trails, 139 miles of non-motorized looped trail opportunities, and 19.4 miles of motorized looped trail opportunities.

Proposed trails would provide trail class 2, 3, and 4 non-motorized trail-based recreation opportunities. New constructed trail segments would include approximately 41 miles of non-motorized trails (segments 7, 11, 14, 18, 19–23, 25-27, 30, 31, and 34) and approximately 4 miles of motorized trails (segments 15–17). Approximately four miles of administrative roads would gain a dual designation as administrative road and non-motorized trail (segments 32, 33). Trails are located near existing recreation infrastructure (campgrounds, trailheads) to lower the need to develop new trailheads and to locate them in areas of existing recreational use where there is a desire for trail opportunities.

Most proposed segments include loops, which would provide diverse user choices to maximize flexibility for the user to achieve a multitude of experiences (based on public scoping and research of desired opportunities). Factors such as physical and technical challenge, length of trail, amount of time spent on a trail, type of user, user experience, connection with the natural world, reducing use conflicts, and others were used to maximize the benefits from each of the proposed action trails to meet a diversity of user interests. Scenic overlooks and other natural attractions were incorporated where possible to improve the desired visitor experience. Two trails (segments 11 and 32) would provide only "out and back" opportunities to destination sites while the majority would connect to other trails or roads to provide loop choices to the user.

Non-System Trails

The proposed action alternative would eliminate, improve, or incorporate 44 miles of non-system trails. Rehabilitating non-system trails would direct users to system trails that meet Forest Service trail class standards. No changes would be made to winter trail locations, use, or management in this proposed action. The measure for the resource indictors for this purpose and need is miles of trail rehabilitated: 36 miles, and 8 miles converted to system trail. Trail resource damage by non-system routes would be reduced with the implementation of design elements 5 and 6 (appendix A) and rehabilitation of non-system trails, and also through trail standard techniques to decommission trails that includes installing drainage features, restoring ground cover, and installing signs and using education to inform the public.

The proposed action would implement a special order to prohibit mountain bikes and other wheeled vehicle use off designated National Forest System roads and trails in the project area as identified in the proposed action map. This would address further unauthorized user-created trail development and protect resources.

Forest System Road 128, Forest System Road 320

The proposed action alternative would dually designate these roads as non-motorized trail class 3 in addition to their administrative level 1 road designation, creating trails 32 and 33. Traditional Forest Service appropriated funds can then be used to maintain these routes to trail class standards because the routes would be designated on the Routt National Forest official system of trails. Measures for the resource indictors for this purpose and need would be non-motorized trail class 3: 4.3 miles. The district would like to manage these routes as trails to accommodate the primary use they receive, while maintaining administrative vehicle access when needed. Adjacent trails 1100.1 and/or 1140.1A trail alignments may be re-routed in the area of the Mad Creek barn and route 33 and 34 to cut down on non-system trail development and address trail redundancy in the area.

Accessible Trail Opportunities

The Forest Service has identified opportunities in the project area to increase the number of accessible trails to broaden the diversity of adaptive trail class opportunities available to the public

and local partners. Local adaptive partner organizations identified a need for these types of opportunities to better facilitate outfitter and guide and general public adaptive experiences.

Trail Class 3 semi-primitive adaptive backcountry trails. Routes 22 and 25 will be wide enough to accommodate off-road handcycles for a more challenging trail class 3 adaptive experience. This will provide a unique opportunity for adaptive trail users to experience the semi-primitive backcountry trail experience offered within the Long Park Colorado Roadless area. Measures for the resource indicators for this purpose and need would be adaptive non-motorized trail class 3: 6.3 miles.

E-assisted Handcycle Motorized Trails. Routes 15, 16 and 17 will allow e-assisted handcycles that are 50 inches or less in width. These routes allow adaptive users to travel further with similar efforts when compared to non-motorized handcycle opportunities. Measures for the resource indicators for this purpose and need would be motorized trail class 3 miles: 4 miles.

Dumont Lake Day Use Area. The design of trail 11 is to provide a non-motorized trail class 4 to meet Forest Service Trail Accessibility Guidelines (the guidelines maximize the accessibility of trails for users of all physical abilities) that connects two parking lots and provides access to the lakeshore at the existing Dumont day use area. This trail would provide a trail class 4 opportunity not currently provided in the project area. Measures for the resource indicators for this purpose and need would be non-motorized trail class 4 / Forest Service Trail Accessibility Guidelines: 0.4 miles.

Meadows Campground. The design of trail 18 is to provide a non-motorized trail class 4 opportunity to meet Forest Service Trail Accessibility Guidelines that connects the visitor to a series of interpretive signs. This trail would provide a family friendly trail class 4 opportunity (which is not currently provided in the area) along Rabbit Ears Pass near Meadows campground. Measures for the resource indicators for this purpose and need would be non-motorized trail class 4 / Forest Service Trail Accessibility Guidelines: 1.3 miles.

Continental Divide National Scenic Trail

The proposed action alternative would add trail segments 7 and 31 in the vicinity of the Continental Divide National Scenic Trail. The purpose of trail 7 is to provide a semi-primitive, non-motorized trail class 2 long-distance experience that parallels the scenic trail. This alternate route would allow for trail use to occur off the Continental Divide National Scenic Trail along this popular connector from the Dumont trailhead to the ski resort or Buffalo Pass, allowing the Forest Service to continue to manage for scenic trail management guidelines while also adapting to increasing trail visitation. Long distance trail events could use this alternate route to connect trail systems as trail events are not recommended on the Continental Divide National Scenic Trail per management direction.

These trails could also be used as an alternate loop trail to out and back day users on the Continental Divide National Scenic Trail, cutting down on visitor encounters compared to the existing out and back trail opportunity. Trail 31 would provide two shorter loop opportunities at trail class 2 standard that start at Rabbit Ears Trailhead to trail 7 to Forest System Road 311, and a loop beginning at Base Camp Trailhead to trail 7 to Forest System Road 311. Both trails 7 and 31 would help reduce the encounters on the Continental Divide National Scenic Trail to manage for a recreation opportunity spectrum in the summer that is semi-primitive, non-motorized class and would provide loop opportunities. Measures for the resource indicators for this purpose and need would be non-motorized trail class 2: 7.9 miles, 2 trails, 2 long-distance opportunities, 2 loops created meeting project purpose 1. No management changes (re-routes, change in use types or trail class, proposal to increase bicycle traffic, etc.) are proposed for the Continental Divide National

Scenic Trail. Implementation of the proposed action would not affect the purpose for which the Continental Divide National Scenic Trail was designated, would not result in disruption of the continuous nature of the trail, would not affect opportunities for maximum recreation, nor affect any special characteristics.

Motorized Trail Loops

The proposed action alternative would add trail segments 15, 16, and 17 that are restricted to vehicles with a 50-inches width or less to provide motorized experiences open to all-terrain vehicles, utility terrain vehicles, dirtbikes, e bikes, adaptive e-assist off-road handcycles and other motorized vehicles which are 50 inches or less in width. The proposed season of use for wheeled motor vehicles would mimic adjacent existing off-highway vehicle routes where wheeled motor vehicles are allowed from July 1 to December 1. The purpose of these trails is to provide motorized Forest Service trail class 3 routes that provide connector loops to existing National Forest System roads 100, 302 and 251 motorized trails, which is consistent with areas zoned for summer motorized recreation in the Routt Forest Plan. Table 3 identifies which indicators are met through these proposed activities. The Forest has considered the effects of motorized trails on resources in accordance with 36 CFR 212.55(b) and has designed the project to minimize the effects to natural resources (wildlife, soils, watersheds, and other forest resources) and minimize conflicts among uses. The consideration of minimization criteria is included in the project record. Use conflicts between motorized users and non-motorized users, different types of motorized users and other uses would be reduced through a combination of trail location, education, engineering, and enforcement and consistency with the Routt Forest Plan.

The proposed action would have an overall positive effect to trail based recreation in the project area, in particular the Rabbit Ears Pass and Ferndale areas. Not all trails identified during public scoping were incorporated into the proposed action due to resource concerns. The changes that were made are described in the sections titled “Changes Made to the Proposed Action” and “Alternatives Considered but Dismissed from Analysis.” The proposed action represents an expanded trail system that broadens the diversity of trail opportunities identified during public scoping and analysis of existing and desired trail experiences in the project area that also minimizes impacts to other resources and complies with the forest plan.

Trailheads and Access

The proposed action addresses the development or modification of seven trailheads to provide safe access and reduce resource impacts identified in the existing condition to accommodate summer trail activities and projected trail use for an increasing population. At several locations, existing winter trailheads would be used as summer access points to alleviate any need for developing additional recreation infrastructure (see figure 4 for proposed trailhead locations). Trailheads could include toilets, hardened parking surfaces, kiosks, signage, and other infrastructure to provide a quality recreation experience, facilitate use and cut down on associated impacts. Recreation design elements are included in the proposed action to encourage the public to use “pack it in pack it out” guidelines through signage at trailheads. The proposed action includes a special order that may prohibit dispersed camping and campfires at or within one-quarter mile of trailheads to deter or reduce resource damage associated with these activities. The special order could apply to some or all of seven trailhead facilities proposed to be constructed for winter and summer use, winter trailheads altered to accommodate summer use, or summer trailheads altered to accommodate additional summer use.

Measures for the resource indicators for this purpose and need would be number of trailheads developed. The proposed action would have a positive effect to trailheads and access by improving amenities available to visitors at trailheads and managing associated negative impacts.

Outfitter and Guide Services

The proposed trails would enhance the Forest Service's ability to meet the interests of existing and new outfitter, guide and recreational event use for recreational trail opportunities close to Steamboat Springs. Some of these opportunities could include adaptive fishing and trail excursions, interpretive hikes, off-highway vehicle tours, shuttled services, hunting or fishing, short and long-distance recreational trail events, and other opportunities. There would be minor impacts to providing guided hunting services near Highway 40 along Rabbit Ears Pass due to increased trail use on proposed trails, but the larger undeveloped areas would remain intact for hunting in the Rabbit Ears Pass area. The proposed action would have an overall positive effect on outfitting and guide services as there would be a broader diversity of trail opportunities for trail-based outfitter and guide services. The guest experience would be improved through reduced encounters on looped trails verse out and back trails to manage for a desired semi-primitive recreation experience.

Table 3. Comparison table of the no-action alternative and the proposed action alternative

Purpose and need	Project objective	Resource indicator	Measure	No-action	Proposed action
Existing Forest Service trails and trailheads in certain areas of the proposed project area do not meet current and anticipated needs to accommodate a wide range of use classes	Develop a sustainable trail network that provides for a diversity of trail classes that fall within Routt Forest Plan management area guidance, Colorado Roadless rule guidance and other resource guidance	Trail Class non-motorized trails (foot, bicycle, equestrian, downhill only non-motorized bicycle) Trail Class motorized trails Forest Service Trail Accessibility Guidelines trails	Miles of Trail Class non-motorized trails (foot, bicycle, equestrian, downhill only non-motorized bicycle) Miles of Trail Class motorized trails Miles of Forest Service Trail Accessibility Guidelines trails	Non-motorized Trail Class 2 trails: 30.3 miles Non-motorized Trail Class 3 trails: 66 miles Non-motorized Trail Class 4 trails: 1 mile Non-motorized Trail Class 5 / Forest Service Trail Accessibility Guidelines: 0.5 miles Motorized Trail Class 2 singletrack trails: 6 miles Motorized Trail Class 3 50” trails: 9.4 miles Downhill-only non-motorized bicycle trails: 32 miles	Non-motorized Trail Class 2 trails: 38.2 miles Non-motorized Trail Class 3 trails: 98.3 miles Non-motorized Trail Class 4 trails: 2.7 miles Non-motorized Trail Class 4 / Forest Service Trail Accessibility Guidelines: 1.7 miles Non-motorized Trail Class 5 / Forest Service Trail Accessibility Guidelines: 0.5 miles Motorized Trail Class 2 Singletrack trails: 6 miles Motorized Trail Class 3 50” trails: 13.4 miles Downhill-only non-motorized bicycle trails: 34.7 miles
Existing Forest Service trails in certain parts of the proposed project area offer limited connecting long-distance trail opportunities (4 miles or longer as either an out and back or looped opportunity	Develop a sustainable trail network that provides connecting long-distance trail opportunities that are 4 miles or longer as either an out and back or looped opportunity	Connecting long-distance trail opportunities (non-motorized, motorized)	Miles of connecting long-distance opportunities that when combined with existing routes allow for a trip that is 4 miles or longer	Mad Creek and Rocky Peak Areas: Non-motorized Long-Distance Trails: 15.7 miles Buffalo Pass and Fish Creek Areas: Non-motorized Long-Distance Trails: 52.7 miles Motorized Long Distance Trails: 15.4 miles Steamboat Ski Resort (excluding bike park trails): Non-motorized Long-Distance Trails: 22.4 miles Rabbit Ears Pass and Ferndale Areas: Non-motorized Long-Distance Trails: 6.5 miles	Mad Creek and Rocky Peak Areas: Non-motorized Long-Distance Trails: 18.7 miles Buffalo Pass and Fish Creek Areas: Non-motorized Long-Distance Trails: 52.7 miles Motorized Long Distance Trails: 15.4 miles Steamboat Ski Resort (excluding bike park trails): Non-motorized Long-Distance Trails: 22.4 miles Rabbit Ears Pass and Ferndale Areas: Non-motorized Long-Distance Trails: 42.2 miles Motorized Long Distance Trails: 4 miles

Purpose and need	Project objective	Resource indicator	Measure	No-action	Proposed action
Existing Forest Service trails in certain areas of the proposed project area offer few loop trail opportunities (looped trail defined as any trail that can be combined with another trail or road to form a loop based on the primary designated use and starting and ending from the same point)	Develop a sustainable trail network that provides a diversity of loop trails in line with forest plan guidance (non-motorized, motorized)	Miles of looped opportunities (non-motorized, motorized) that may connect with existing routes to form a loop	Miles of looped opportunities	Mad Creek and Rocky Peak Areas: Non-motorized Looped Trails: 13.7 miles Buffalo Pass and Fish Creek Areas: Non-motorized Looped Trails: 53.7 miles Motorized Looped Trails: 15.4 miles Steamboat Ski Resort (excluding bike park trails): Non-motorized Looped Trails: 22.4 miles Rabbit Ears Pass and Ferndale Areas: Non-motorized Looped Trails: 6.5 miles	Mad Creek and Rocky Peak Areas: Non-motorized Looped Trails: 16.7 miles Buffalo Pass and Fish Creek Areas: Non-motorized Looped Trails: 53.7 miles Motorized Looped Trails: 15.4 miles Steamboat Ski Resort (excluding bike park trails): Non-motorized Looped Trails: 22.4 miles Rabbit Ears Pass and Ferndale Areas: Non-motorized Looped Trails: 46.2 miles Motorized Looped Trails: 4 miles
Current Forest Service trails developed for certain recreation opportunity spectrum are becoming increasingly popular, which may lead to increased use conflicts and exceeding recreation opportunity spectrum class	Manage trails within the trail class assigned recreation opportunity spectrum class	Trail Class 2,3,4,5 non-motorized and Trail Class 2,3 motorized designated recreation opportunity spectrum classes	Meets the semi-primitive motorized and non-motorized social setting	Increasing trail use could exceed the recreation opportunity spectrum classes on existing trails in the Rabbit Ears area in the future	Qualitative analysis suggests that providing additional trails, looped opportunities and trails that meet a diversity of Forest Service trail class guidelines would reduce use conflicts and visitor encounters which results in better conformance with designated recreation opportunity spectrum guidelines in the Rabbit Ears area
Existing Forest Service trails and trailheads in the proposed project area do not meet adequate parking and facility needs at recreation access points	Provide adequate parking and facilities at recreation access points	Trailheads designed for safe and adequate public access	Number of trailheads developed or modified	Inadequate parking and amenities, no new trailheads or enhancement of existing trailheads	7 trailheads developed or reconfigured to provide increased parking capacity and visitor services such as toilets or informational kiosks

Purpose and need	Project objective	Resource indicator	Measure	No-action	Proposed action
Dispersed camping and campfire use at trailheads is causing resource damage and potential safety issues.	Reduce impacts of dispersed camping and campfires at trailheads	Special order to prevent dispersed camping at trailheads	Occurrences of resource damage and or safety issues	Limited number of trailheads have prohibition	Dispersed camping and campfires can be prohibited as needed at all trailheads in the project area
Non-system trails exist, some sections of which are causing resource damage and do not meet Forest Service trail standards	Rehabilitate non-system trails that are causing natural resource damage and do not meet Forest Service trail standards.	Non-system trails	Miles of non-system trail	44 miles	0 miles (36 miles would be rehabilitated and 8 miles maintained to Forest Service system trail standards)
There is no mechanism to prevent summer off trail bicycle travel across the entire project area.	Prevent creation of summer non-system trails in project area from off trail bicycle use	Special order to prevent summer off-trail mountain bike travel.	Occurrences of summer off-trail bicycle use	No off designated trail prohibitions for bicycles outside of Buffalo Pass and the Steamboat ski resort area	Summer off trail designated bicycle travel closure in place across project area

Cumulative Effects

Past and ongoing project actions, as described in appendix C: Cumulative Effects, show that over the course of the last decade the Steamboat Springs trails community and Routt National Forest working together have moved the trails system toward more sustainable goals and standards that adapt to changing interests and use patterns. This complies with direction in the Forest Service 2017 National Strategy for a Sustainable Trail System, the Region 2 Rocky Mountain Region Trails Strategy, FSM 2300 and 2309.18 Trail Management, the Routt Forest Plan goals, standards, and guidelines (1998), Colorado Roadless rule and other applicable law and policy.

The current condition of the project area serves as a proxy for the impacts of past actions in understanding the contribution of past actions to the cumulative effects analysis for this project. As past actions are considered in the existing conditions used as a baseline for comparison of the alternative, only ongoing and proposed actions are considered in analysis of cumulative effects.

The Mad Rabbit trails project serves to further meet the needs of an increasing population and recreating public to provide a broad diversity of recreational trail opportunities (technical, physical, use type, length, desired experience, connection to nature, inclusion) and to cut down on use conflicts associated with an increasing population and associated increases in trail use. The actions of ongoing projects, along with the Mad Rabbit trails proposed action, have positive cumulative effects to recreation and would move the Routt National Forest toward a sustainable trails system over the next 10 years that manages for an increasing population, desire for a broad diversity of trail opportunities and managing the increased potential for use conflicts.

See appendix E for a summary of project compliance with the Routt Forest Plan.

Issue 2 - Terrestrial Wildlife

This section analyzes the effects of the alternatives on wildlife resources in terms of direct, indirect, and cumulative effects. Literature reviews on recreation impacts on wildlife was also reviewed in Gaines et al. (2003), Larson et al. (2016), Hennings (2017), and Miller et al. (2020).

Summary of Effects

Region 2 Sensitive, Threatened or Endangered, and Tier 1 or Tier 2 Species

Sensitive species are "those plant and animal species identified by a regional forester for which population viability is a concern," as evidenced by, a) significant current or predicted downward trends in population numbers or density, or b) significant current or predicted downward trends in habitat capability that would reduce a species' existing distribution," (FSM 2670.5). Colorado Parks and Wildlife identify Tier 1 and Tier 2 species in Colorado's State Wildlife Action Plan. These are prioritized as Species of Greatest Conservation Need (Colorado Parks and Wildlife 2015). The U.S. Fish and Wildlife Service identifies Threatened or Endangered species that are protected under the Endangered Species Act.

On May 26, 2022, the North American wolverine was again listed as a "proposed species" under the Endangered Species Act. The wolverine was not carried forward for further analysis because summer recreation is not considered a threat to the wolverine. As stated in the Federal Register (USDI Fish and Wildlife Service 2014), the determination in the proposed rule was stated such that, "the best available information does not indicate that winter (or summer) recreation is a threat to the DPS [Distinct Population Segment]." Further, the Federal Register (USDI Fish and Wildlife Service 2020) only discussed winter recreation and presented that winter recreation is not considered a threat. Summer recreation was not discussed due to the lack of support in the

literature. The Mad Rabbit trails project is determined to have no effect on the North American wolverine and has not been carried forward in the analysis.

Table 4 is a determination summary for Region 2 sensitive species, threatened or endangered species, and Tier 1 or Tier 2 species. Pika are a Colorado Parks and Wildlife Tier 1 species and effects to pika have been considered as part of this analysis. Pika have been omitted from table 4 because they are not on the regional forester's sensitive species list and language for sensitive species does not apply. Similarly, elk are not a Region 2 sensitive species but effects to elk have been considered due to the importance of elk identified as a local species of concern during the public scoping period. Habitat effectiveness for big game (elk and deer) is a forest plan requirement and results of the analysis have been included.

Table 4. Determination summary of impacts of the alternatives on wildlife resources

Common name	Status	No-action alternative	Proposed action alternative
Canada lynx	Threatened, Tier 1	No Effect	May Affect, But Not Likely to Adversely Affect
Hoary bat	Region 2 Sensitive, Tier 2	May Adversely Impact Individuals	May Adversely Impact Individuals
Elk habitat effectiveness	Forest plan requirement	No change	No change
Pacific marten	Region 2 Sensitive, Tier 2	May Adversely Impact Individuals	May Adversely Impact Individuals
Pygmy shrew	Region 2 Sensitive, Tier 2	May Adversely Impact Individuals	May Adversely Impact Individuals
Brewer's sparrow	Region 2 Sensitive, Tier 2	May Adversely Impact Individuals	Beneficial Impact
Northern goshawk	Region 2 Sensitive, Tier 2	May Adversely Impact Individuals	May Adversely Impact Individuals

Analysis Methodology

Trails Planning and Wildlife Conservation

The Mad Rabbit trails project was designed in collaboration with the public's input and partners with the objective to balance recreation opportunities while managing for wildlife conservation. In collaboration with representatives from the Colorado Department of Natural Resources and Colorado Parks and Wildlife, the project was designed to conserve large tracts of wildlife habitat including Colorado Roadless Areas and concentrate trails in existing disturbed areas or adjacent to open road networks. Colorado Parks and Wildlife (2020) mapping for elk habitat is a key reference for trails planning (refer to elk section, figure 5). The project was designed to provide for recreation opportunities on public lands while reducing the proliferation of user-created trails. The Mad Rabbit trails project also includes decommissioning user-created routes to concentrate trail development near highways and open roads.

The planning took into consideration the best management practices described in the Planning Trails with Wildlife in Mind (Colorado Trails Taskforce 2021). It is recognized some impacts cannot be avoided so strategies identified by the Colorado Trails Taskforce (2021) were followed:

1. Consolidate high density trail networks and recreation facilities in less sensitive or already disturbed habitats.
2. Limit route densities within high priority habitats to an average of 1 linear mile of road or trail per total square mile.
3. Restrictions may also be needed, such as seasonal trail closures or dog limitations.

Recommendations from Wisdom et al. (2018) were also followed to keep trail development within one mile of open roads to maintain habitat effectiveness within large, undisturbed blocks including habitats within the Long Park Colorado Roadless Area. About 93 percent of the proposed trails (41 miles) are within one mile of an open road with half of the trails (50 percent) within a one-quarter mile of an open road (table 5). Wisdom and Johnson (2019) found this type of trail planning reduces habitat compression by maximizing large undisturbed areas with high habitat value. Wisdom et al. (2018) documented that the distance response by elk to trail-based recreation mirrored the avoidance distances (0.3 to 1 mile) by elk to open roads. It is recognized that the trail and road networks exceed 1 mile per total square mile within recently mapped elk production areas, however the majority of proposed trails are within one mile of an open road and within existing avoidance distance buffer zones. The trails within the Ferndale area and Trail #14 area are proposed for a mandatory elk production area closure from May 15 through June 30 (figure 3) (refer to appendix A, design element 44, for details).

Table 5. Miles of proposed trail within disturbance buffer distances from an open road

Buffer distance from open road (miles)	Miles of proposed trail	Percentage
0.0 to 0.25	22.08	49.8
0.25 to 0.50	13.05	29.5
0.50 to 1.0	6.01	13.6
1.0 to 1.5	1.06	2.4
1.5+	2.10	4.7
TOTAL	**44.3**	**100%**

Habitat Effectiveness

Habitat effectiveness is a forest plan standard required to be met at 50 percent (or exceeded) at the geographic area scale for deer and elk (USDA Forest Service 1997). Habitat effectiveness guideline for management areas 5.11 and 5.41 is recommended at 60 percent and 70 percent, respectively. The project area occurs primarily in the Middle Yampa Geographic Area which encompasses 95,040 acres (see figure 7 for management areas in the project area). Previous calculations for habitat effectiveness were completed in 1999 and recently updated in 2021 (table 6). In 1999, the hiding cover index was estimated at 0.8 and open road density index estimated at 0.8. In 2021, habitat effectiveness was calculated at 80 percent for the Middle Yampa Geographic Area with a hiding cover index of 1 and open road density index of 0.8. This exceeds the forest plan standard at 50 percent or greater for deer and elk habitat effectiveness. The alternatives for no-action and proposed action have no change on the habitat effectiveness. Trails are not included in the indexes for hiding cover or open roads.

Table 6. Habitat effectiveness in 1999 and 2021 for the Middle Yampa geographic area

Geographic area	1999 hiding cover; index	1999 open road (mi/sect.); index	1999 habitat effectiveness	2021 hiding cover; index	2021 open road (mile, sect.); index	2021 habitat effectiveness	Standard or guideline
Middle Yampa overall	76 percent; 0.8	0.4; 0.8	64 percent	54 percent; 1.0	0.4; 0.8	80 percent	50 percent standard
Management areas 5.11	72 percent; 0.9	1.1; 0.6	49 percent	59 percent; 1.0	1.1; 0.6	58 percent	60 percent guideline
Management areas 5.41	89 percent; 0.6	0.05; 0.9	62 percent	66 percent; 0.9	0.04; 0.9	90 percent	70 percent guideline

Hiding cover percent is based on habitat structural stage and is optimal (equal to one) when hiding cover is between 50 to 60 percent where it strikes a balance between open (or limited) hiding cover and dense hiding cover within conifer cover types (Christensen et al. 1993). The mountain pine beetle epidemic created the current conditions by providing a moderate canopy cover. Ivan et al. (2018) found elk (and deer) exhibited a positive association between use of forested stands and beetle activity. Beetle impacted stands created favorable conditions for elk with an abundance of grasses, forbs, shrubs, and saplings that provide abundant food and cover. For both management area 5.11 and management area 5.41 habitat effectiveness improved due to the changes in canopy cover with no changes in road densities. Management area 5.11 is just below the desired 60 percent habitat effectiveness guideline. There is no change in habitat effectiveness from the no action related to the Mad Rabbit proposal. Trails are not part of the calculation for habitat effectiveness. The Mad Rabbit trails project does not propose changes to open roads or vegetation management, and so road densities and hiding cover calculations cannot be adjusted at this time to bring the habitat effectiveness level to 60 percent or greater to meet this guideline. The habitat effectiveness for management area 5.41 meets the guideline of 70 percent or greater.

Travelway Density Analysis in Deer and Elk Winter Range

The forest plan recommends management area 5.41 Deer and Elk Winter Range (guideline) have a limit on the density of unrestricted travelways (roads and trails) to 1.0 mile per square mile (or less) in non-forested areas. Within the project area, travelways on National Forest System lands, except for Highway 129 and 40, are restricted during winter within the management area 5.41 under a Closure Order from December 1 through April 15. The winter range closure order was analyzed under the Steamboat Front Hazardous Fuels Reduction Environmental Assessment (USDA Forest Service 2015). For unrestricted travelways in non-forested areas, there is 1.11 miles or 0.17 miles per square mile. This is the existing condition (no action) and does not change under the proposed action. The unrestricted travelways in management area 5.41 include Highway 129 and 40 that do not fall under the area closure order restricting use of trails and roads within the deer and elk winter range management area 5.41.

Analysis of Trail Construction on Wildlife Habitat

The vegetation clearing that will occur during trail construction and trail clearing of vegetation and trees over time has a direct impact on wildlife habitat. Based on professional experience, trail width does not necessarily account for the maximum extent of direct habitat disturbance so 15 feet[2] was selected for each trail class. Using this factor, each trail segment was buffered in the Forest Service Vegetation (FS Veg spatial) database, and the acres of trail impact on the following wildlife species was calculated for each habitat type (table 7) within the project area. The cumulative change is acres of habitat impacted after the proposed trails are built (-) and non-system trails are decommissioned (+).

Table 7. Acres of habitat across the Mad Rabbit trails project area, habitat impacted by proposed trail construction, habitat restored by trail decommissioning, and cumulative change

Forest cover type (acres)	Baseline acreage*	Habitat impacted by proposed trail construction	Habitat restored by proposed trail decommissioning~	Cumulative change^
Forb	26627.11	7.82	1.66	-6.16
Grass	20122.29	9.84	6.47	-3.37
Grass- Wet	1572.72	0	1.05	+1.05
No Veg- Bare ground	10.39	0.1	0.453213	+0.35
No Veg- Rock	1980.43	0.34	0	-0.34
Shrub- Gambel Oak	2191.92	2.68	10.97	+8.29
Shrub- Shrublands	6120.42	42.152	36.88	-5.27
Shrub- Willow	1821.6	3.22	13.08	+9.86
Tree- Aspen	25073.61	20.52	30.34	+9.82
Tree- Blue Spruce	4.3	0	0	0
Tree- Cotton Wood	10.2	0	0	0
Tree- Douglas Fir	511.43	0.06	0.88	+0.82
Tree- Lodgepole Pine	14014.81	41.40	22.21	-19.19
Tree- Spruce-fir	39262.52	45.65	7.05	-38.608
Water	512.72	0.53	0	-0.53
Total	139,836.5	174.30	129.99	-44.31

* Polygons are not broken at Forest boundary, so estimates may be much larger than project area acres.

~ Acres are interpreted as acres of habitat impacted by non-system trails (no-action alternative).

^ Cumulative change does not include 13.64 acres of winter trails but closed to summer use.

[2] The area of disturbance is vegetation clearing (habitat) and ground disturbance that will occur during trail construction, and trail clearing over time. When reviewing building and maintenance of trail classes 2 through 4, trail tread did not have an influence on width of clearing. Trails are built considering the backslope needed. Backslope can go further up a slope depending on grade, percent slope, switchbacks needed, etc. Trails are cleared of dead trees and vegetation to provide for user safety. It was determined that trail width of 15 feet would be an appropriate way to calculate the area of impact (buffer) on wildlife habitat.

Analysis of Effects to Terrestrial Wildlife Species

American pika (*Ochotona princeps*)

Current Condition Relative to Analysis Area

Pika are a member of the rabbit and hare family. NatureServe (2021) ranks pika populations as G5 (Globally: Secure) and in Colorado the ranking is S5 (State: Secure). Pika are restricted to mountainous parts of Colorado and other western states, where their primary habitat is alpine and subalpine talus and rock piles. Pika do not hibernate and are active year-round; they harvest vegetation from alpine meadows during the short growing season and store it for winter food beneath talus and boulders. Pika are sensitive to temperature extremes and coupled with high habitat specificity suggests that climate change could contribute to declines or extirpation of pika populations. Distributional shifts and population extirpations in the Great Basin and Sierra Nevada have been linked to recent climatic trends (Beever et al. 2003, 2010). Pikas in the Southern Rocky Mountains have not experienced the severe declines in site occupancy seen in the Great Basin (Erb et al. 2011).

The Routt National Forest has some of the lowest elevation pika sites in Colorado and annual monitoring of pika occupancy and subsurface temperatures across various elevation ranges has occurred since 2009. This long-term monitoring has determined that occupancy increase as elevation increases. Overall, pika are present 83 percent of the time, however in low elevation sites (7700–8100 feet) pika are present approximately 50 percent of the time (Dressen 2021). The low elevation sites of rock or boulder habitats are often isolated from higher elevation talus fields. It is surmised that these sites may often be occupied by dispersing juvenile pika. While media stories have circulated in the past few years that pika are disappearing from the landscape, Colorado Parks and Wildlife researchers have found populations are well distributed throughout Colorado's mountains. “In their primary habitat, mainly at and above timberline where there is lots of talus, we find pikas almost everywhere we look,” stated Amy Seglund, Colorado Parks and Wildlife Species Conservation Coordinator (Seglund 2014). The Routt National Forest commonly detects pika during surveys in talus habitats. In a 12-month status review, the USDI Fish and Wildlife Service (2010) found that the American pika is not likely to become a threatened or endangered species within the foreseeable future in all or a significant portion of its range.

No-Action Alternative

Direct and Indirect Effects

Unauthorized trail building has occurred in some areas of pika habitat where non-system mountain bike trails have been built through rock gardens or boulder drops, a direct effect in terms of habitat loss. Direct and indirect effects of unauthorized trail building, and use of these trails may increase with no restricted use area designation. Because pika habitat is not easily predicted outside of alpine environments and is often interspersed with other cover types, an estimate of pika habitat altered by non-system trails cannot be ascertained. Direct and indirect effects would continue under the scenario of unmanaged recreation.

Cumulative Effects

Unmanaged recreation could add to existing cumulative effects being worsened by climate change. The snow depths on the Routt National Forest have historically provided low elevation occupancy longer than national forests on the Front Range. As winters become shorter, pika occupancy at low elevation sites may decrease below a 50 percent occupancy rate thus habitat for pika will decrease over time. American pika is a Tier 1 species and not a Region 2 sensitive species, so no determination is provided.

Proposed Action Alternative

Direct and Indirect Effects

Short-term direct effects of trail building may occur from the noise and commotion of heavy machinery, personnel, or chainsaws. The direct effect is the loss of pika habitat. Of the 1,980.4 acres of potential pika habitat within the analysis area, approximately 0.3 acres of pika habitat may be impacted by trail construction (table 7). All proposed trail segments were surveyed for pika and no pika were found. However, pika have a high likelihood of occupying trail segment 7 (Continental Divide alternate route) or dispersing to rocky areas along this trail segment. The use of trails may indirectly impact pika related to recreationists interrupting pika foraging and building haystacks[3] or dogs chasing pika among rocks and boulders. A non-system trail that crosses the Soda Creek Conservation Planning Area is proposed for decommissioning that is near several low-elevation pika locations. Decommissioning of this site is a positive direct and indirect effect reducing impacts to low elevation pika habitats and dispersing juvenile pika. There is sufficient distribution of pika across the analysis area with an estimated 1,980 acres of potential rock or talus habitat (USDA Forest Service 2022). There may be some positive, direct, and indirect effects from the restricted use area designation with a potential to decrease unauthorized trail building and use of non-system trails.

Cumulative Effects

Recreation will likely add to existing cumulative effects being worsened by climate change. The snow depths in the project area have historically provided low elevation occupancy longer than national forests on the Front Range. As winters become shorter, pika occupancy at low elevation sites may decrease below a 50 percent occupancy rate thus habitat for pika will decrease over time. In addition, the Steamboat Ski Resort has recently been approved to start projects near a known pika location. Some indirect effects are anticipated to the pika location just off Sundial ski run. The Mad Rabbit Project when combined with Steamboat Ski Resort projects may cause some negative, cumulative effects to pika in the larger geographic area. However, the protection of low elevation pika sites such as non-system trail decommissioning through the Soda Creek conservation area is paramount to managing a species that is already impacted by climate change. To the extent possible, trail building in rock gardens and boulders will be avoided. However, pika may re-occupy previously surveyed areas after trail building has occurred. Recreationists and or dogs may disrupt foraging activities during an already short growing season reducing a pika's ability to build haystack for winter. As recreation pressure increases in Colorado, pika will be impacted by the disruptions of recreationists creating long-term, cumulative effects. American pika is a Tier 1 species and not a Region 2 sensitive species, so no determination is provided.

Canada lynx (*Lynx canadensis*)

The Canada lynx is listed as a threatened species by U.S. Fish and Wildlife Service. The best available science and most up-to-date information on Canada lynx life history can be found in the Lynx Conservation Assessment and Strategy (Interagency Lynx Biology Team 2013) and the Southern Rockies Lynx Amendment (USDA Forest Service 2008). A separate biological assessment was prepared for the Canada lynx and submitted to U.S. Fish and Wildlife Service for Section 7 consultation and concurrence. The following is an excerpt of that biological assessment so that an evaluation can be conducted for the no-action alternative and cumulative effects for NEPA. Only the proposed action along with direct and indirect effects are considered and submitted to U.S. Fish and Wildlife Service. For the Endangered Species Act and Section 7

[3] Because pikas do not hibernate, they gather and store up piles of edible vegetation outside the den to eat during the winter. The piles resemble a small haystack.

consultation, the cumulative effects in the biological assessment only consider non-federal actions (such as state or private).

Current Condition Relative to Analysis Area

Lynx habitat is mapped across the Medicine Bow-Routt National Forests (Dressen 2017) and managed by individual lynx analysis units, approximated as a female lynx home range (approximately 50,000 acres). To derive lynx analysis unit baseline information for the project, a recent update to FS Veg Spatial and Medicine Bow-Routt National Forest's lynx habitat mapping was referenced (Dressen 2017). In addition, the baseline has been updated to include past projects within the Horsethief lynx analysis unit, Mount Werner lynx analysis unit, and Walton Peak lynx analysis unit. The high level of stand mortality from the mountain pine beetle epidemic equating to stand initiation (currently unsuitable habitat) is consistent with definitions in the Southern Rockies Lynx Amendment implementation guide (USDA Forest Service 2008). All previous projects have been incorporated into the baseline, including the Steamboat Ski Area Improvements Environmental Assessment 2021.

Trail construction is proposed in the Mount Werner and Walton Peak lynx analysis units (table 8), with trail decommissioning and rehabilitation occurring in all three lynx analysis units: Horsethief, Mount Werner, and Walton Peak (table 9). The Forest Service deems decommissioning of user-created trails as an important tool to improve wildlife habitat effectiveness. However, in the context of lynx habitat, it would be challenging to calculate and add lynx habitat back into the environmental baseline. For example, Horsethief lynx analysis unit has user-created trails that are in various states of trail maintenance while Walton Peak lynx analysis unit has winter trails that are maintained but will no longer be used as summer trails, so the habitat acres remain unchanged. The trail buffer (15 feet) was used to calculate acres of potential lynx habitat impacted as well as improved by trail decommissioning. Table 9 displays the potential lynx habitat that could be improved by the proposed action, but at this time will not be added to the environmental baseline. Therefore, table 8 only includes the Mount Werner and Walton Peak lynx analysis unit lynx habitat calculations for proposed trail development and does not include Horsethief lynx analysis unit.

Table 8. Trail miles and acres of trail construction in lynx habitat and lynx analysis units

Measure	Mount Werner Lynx analysis unit	Walton Peak lynx analysis unit	Project area
Total Trail Miles	5.55	38.25	44.3
Trail Miles in Lynx Habitat	3.93	23.16	27.09
Trail Miles in Unsuitable Habitat	0.24	5.35	5.59
Trail Miles in Non-Lynx Habitat	1.38	9.74	11.12
Total Acres within Trail Buffer	20.15	137.97	158.12
Acres of Trail Buffer in Lynx Habitat	14.59	83.28	97.87
Acres of Trail Buffer in Unsuitable Habitat	0.91	19.31	20.22
Acres of Trail Buffer in Non-Lynx Habitat	4.65	35.38	40.03

Table 9. Trail miles and potential acres of lynx habitat improved by decommissioning of known non-system trails

Measure	Horse Thief lynx analysis unit	Mount Werner lynx analysis unit	Walton Peak lynx analysis unit	Project area
Trail Miles	10.83	0.64	4.97	16.55
Trail Miles in Lynx Habitat	6.07	0.60	2.70	9.37
Trail Miles in Unsuitable Habitat	0.25	0.00	0.90	1.15
Trail Miles in Non-Lynx Habitat	4.51	0.04	1.37	5.92
Acres of Trail Buffer	39.47	2.34	18.07	59.88
Acres of Trail Buffer in Lynx Habitat	22.97	2.32	10.11	35.40
Acres of Trail Buffer in Unsuitable Habitat	0.95	0.00	3.31	4.26
Acres of Trail Buffer in Non-Lynx Habitat	15.55	0.02	4.65	20.22

Table 10 displays the total acres of lynx habitat impacted by the Mad Rabbit trails project for Mount Werner and Walton Peak lynx analysis units. For the Mount Werner lynx analysis unit, 15 acres of lynx habitat would be converted to currently unsuitable lynx habitat. One acre of currently unsuitable lynx habitat would remain unchanged, and five acres occurs in non-lynx habitat. For the Walton Peak lynx analysis unit, 83 acres of lynx habitat would be converted to currently unsuitable lynx habitat. Additionally, 20 acres are proposed in currently unsuitable lynx habitat and 35 acres in non-lynx habitat. The project would not have a cumulative change on the percent of lynx habitat changed for Mount Werner (10 percent) or Walton Peak (11 percent).

Table 10. Lynx habitat environmental baseline and Mad Rabbit trails project proposed trail creation

Lynx habitat (acres)	Environmental baseline	Mad Rabbit trails project[1]	Cumulative changes[2]
Mt. Werner lynx analysis unit: 54,759			
Lynx Habitat	32,091	-15	32,076
Currently Unsuitable	3,679	(1)	+3,684
Non-Habitat	18,989	(5)	18,989
Percentage Unsuitable	10%		10%
Walton Peak lynx analysis unit: 54,026			
Lynx Habitat	34,947	-83	34,864
Currently Unsuitable	4,417	(20)	+4,500
Non-Habitat	14,661	(35)	14,661
Percentage Unsuitable	11%		11%

1– Lynx habitat that is currently unsuitable or considered non-lynx habitat cannot be reduced further by the construction of the proposed trails in the Mad Rabbit trails project. Only suitable lynx habitat can be reduced by construction and is designated by a minus (-) notation.

2 – Lynx habitat reduced by the construction of proposed Mad Rabbit trails and converted to currently unsuitable lynx habitat is shown with a plus (+) notation.

No-Action Alternative

Direct and Indirect Effects

The unauthorized, non-system trail use will continue. The direct effect of trails being built unsustainably is the chance that a trail is built through a lynx denning area or bisecting high quality foraging habitat without surveys completed prior to development. Direct and indirect effects of unauthorized trail building, and use of these trails may increase with no restricted use area designation. Approximately 35 acres of currently suitable lynx habitat and four acres of unsuitable lynx habitat have been altered by non-system trails (table 9). Down logs have been used for jumps and ramps on these non-system trails. Use of down logs for this purpose may reduce the habitat effectiveness for lynx denning. Direct and indirect effects would continue under the scenario of unmanaged recreation.

Cumulative Effects

Unmanaged recreation could add to existing cumulative effects related to the bark beetle epidemic and recent wildfires with a loss of overstory and reduction of prey across lynx analysis units on the Forest. Timber emphasis areas and fuels reduction projects are important to reduce the effects of fire but have a short-term negative cumulative effect on Canada lynx and prey (snowshoe hare and red squirrels) until the stands regenerate. Due to the predominance of spruce-fir in both the Mount Werner and Walton lynx analysis units, the lynx analysis units are well below the 30 percent threshold at 10 percent and 11 percent unsuitable, respectively. The lynx analysis unit calculations will remain unchanged even though habitat has been altered in all three lynx analysis units. In addition, cumulative effects to lynx are occurring across the three lynx analysis units including unmanaged recreation in Hot Springs to Red Dirt, recently approved trail developments on Buffalo Pass, planned expansion of the Dry Lake campground, and improving the Buffalo Pass Road. For the Steamboat Ski Resort, two projects have been recently approved (Steamboat Ski Area Environmental Impact Statement and Steamboat Ski Area Environmental Assessment) that alters lynx habitat. Lastly, the powerline that bisects the Mount Werner and Horsethief lynx analysis units is regularly maintained to keep the powerline free of hazardous fuels which is important for supplying electricity and reducing wildfire risk, but the area under the powerline is devoid of trees and no longer provides for lynx habitat.

Determination

The non-system trails have been built in mapped lynx habitat. Lynx may be temporarily displaced by unauthorized trail construction and continued use. Some lynx habitat has been lowered in quality by unmanaged recreation, and lynx may avoid these areas. However, there is no information to suggest that trails have negative impacts on lynx at low levels of use. Therefore, the determination is “no effect.”

Proposed Action Alternative

Direct and Indirect Effects

The proposed action would impact lynx diurnal security or foraging habitat. The known non-system trails that will be decommissioned (shown in table 9) occur in a variety of different habitats and restoring them to their original condition will aid in improving lynx connectivity. Approximately 112 acres of suitable lynx habitat within the 15-foot trail buffer will be converted to currently unsuitable lynx habitat after completion of proposed trail development (table 10). About 21 acres of currently unsuitable lynx habitat within the trail buffer will remain as currently unsuitable lynx habitat (currently unsuitable habitat is often dead lodgepole pine habitat and so acres cannot be double counted). It is anticipated that a small degree of habitat degradation may

occur, and thus lynx may avoid these areas with high human use. However, with non-system trails being decommissioned some areas of lynx diurnal security or foraging habitat will be improved, while Forest Service winter trails are maintained. In addition, the proposed action is not in a lynx linkage area, and the Interagency Lynx Biology Team (2013) states that "there is no information to suggest that trails have negative impacts on lynx."

The proposed action may have an indirect effect to lynx due to a loss of habitat. The construction of new trails is proposed within two lynx analysis units with some trails proposed in suitable habitat. Design elements to protect horizontal cover will protect snowshoe hare habitat. Much of the acres proposed for trail development are already under the influence of recreation. The loss of habitat due to trail construction is low in comparison to size of the lynx analysis units (table 10). Trails could reduce habitat quality; however, as already stated design elements are in place to avoid spruce-fir habitats with dense horizontal cover. These effects could be considered insignificant for a carnivore with a large home range.

Indirect effects could also occur from human presence in the area. Lynx are not afraid of humans, but they will avoid areas with high concentrations of human use. This level of use typically occurs within ski area boundaries. Recreationists already utilize this area via non-system trails and this project will better manage recreation as mountain biking and recreation in general increases in popularity. Lynx are mostly active at night when foraging occurs, which does not coincide with the time of normal human use on the trails. Therefore, the indirect effects from human presence in the area could be considered insignificant.

Cumulative Effects

Lynx habitat has undergone a major transition related to the bark beetle epidemic and recent wildfires, which has rendered much of the lynx habitat currently unsuitable across many of the lynx analysis units on the Forest. The on-going salvage of beetle kill stands has occurred in stands that are mapped as currently unsuitable lynx habitat. Since the bark beetle epidemic began, little vegetation management has occurred in spruce-fir cover types across the Forest. Due to the predominance of spruce-fir in both the Mount Werner and Walton lynx analysis units, the lynx analysis units are below the 30 percent threshold at 10 percent and 11 percent unsuitable, respectively. Though the trails proposal did not increase the threshold, lynx habitat is being impacted across two lynx analysis units. The trails will allow for additional recreation already in a high recreation area, but trail use does not appear to pose a negative effect to lynx.

Determination

The project area occurs in mapped lynx habitat but would be considered lower quality lynx habitat and not prime lynx diurnal security or foraging areas. Lynx may be temporarily displaced by trail construction due to excessive noise and commotion. Because lynx primarily hunt for prey at night, trail use would likely cause little direct effect to lynx and foraging. It is anticipated that a small amount of habitat will be lowered in quality, and lynx may avoid these areas with high human use. The proposed action primarily occurs across 112 acres of suitable habitat, 21 acres of unsuitable and 39 acres of non-lynx habitat. The proposed action would result in a loss of some suitable lynx habitat in the Mount Werner and Walton Peak lynx analysis unit but will better manage recreation across the two lynx analysis units and provide better lynx connectivity. The proposed action will decommission and restore 23 acres of suitable lynx habitat in the Horse Thief lynx analysis unit, 2 acres in the Mount Werner lynx analysis unit, and 10 acres in the Walton Peak lynx analysis unit, providing better habitat connectivity. Therefore, the determination is "may affect, but not likely to adversely affect."

Hoary bat (*Lasiurus cinereus*)

Current Condition Relative to Analysis Area

Hoary bats are solitary bats except when reproducing and females can be found with young. NatureServe Conservation Status (2021) ranks hoary bat populations as G3 (Globally: Vulnerable) and in Colorado the ranking is S3S4 (State: Vulnerable to Apparently Secure). Hoary bats occur in areas of suitable habitat across Region 2 during the summer season, including on the Routt National Forest (Snider 2011). Approximately 14,015 acres of hoary bat habitat occurs within the analysis area (table 7, USDA Forest Service 2022). Data on hoary bat population trends are scarce, however, even in the absence of these data, there is strong evidence that this species is experiencing a downward population trend related to deforestation in the eastern states and wind energy in the western states (Snider 2011). Though deforestation is occurring, much habitat remains with managed forests being determined as suitable habitat. Because of this species' dependence on trees with foliage for summer roosts, insect, disease, and large-scale disturbances pose a substantial, imminent threat to hoary bat populations. The only known roost locations of hoary bats in Colorado were in live lodgepole pine trees, and individuals located preferred trees that were larger and had greater canopy cover than random. In the Rocky Mountain Region, it is estimated that the bark beetle epidemic has killed more than 3 million acres of pine forests, decreasing the quality and quantity of roosting habitat. Though the bark beetle epidemic has stretched across 3 million acres, not every pine tree was killed by pine beetles. The Middle Yampa Geographic Area did not have high tree mortality due to the diversity of tree species across the geographic area. If suitable habitat is present, then potential effects were evaluated.

No-Action Alternative

Direct and Indirect Effects

Under the no-action alternative, the unauthorized, non-system trail use will continue. The associated resource damage would continue and possibly increase. Unauthorized trail building has occurred in important hoary bat habitat, a direct effect in terms of habitat loss for hoary bats. Direct and indirect effects of unauthorized trail building, and use of these trails may increase with no restricted use area designation. In using the trail buffer of 15 feet, approximately 22 acres of lodgepole pine habitats has been altered by non-system trail building (table 7). Direct and indirect effects would continue under the scenario of unmanaged recreation.

Cumulative Effects

The unmanaged recreation could add to existing cumulative effects related to the bark beetle epidemic and recent wildfires with a loss of overstory and reduction of insect prey across the Forest. Timber emphasis areas and fuels reduction projects, which are important to reduce the effects of fire but have a short-term negative cumulative effect on hoary bats until the stands regenerate, will continue. In addition, cumulative effects to hoary bats are occurring across the Middle Yampa Geographic Area including recent trail developments on Buffalo Pass, planned expansion of the Dry Lake campground, and improving the Buffalo Pass Road. For the Steamboat Ski Resort, two projects have recently been approved (USDA Forest Service 2018, 2021c) that alter hoary bat habitat. Lastly, the powerline that bisects the Middle Yampa Geographic Area is regularly maintained to keep the powerline free of hazardous fuels which is important for supplying electric and reducing wildfire risk, but under the area under the powerline is devoid of trees and no longer provides for hoary bat habitat.

Determination

Unmanaged recreation related to trail building and use of those trails has some direct and indirect effects when combined with past, present, and reasonably foreseeable future actions with some negative, cumulative effects. Hoary bat populations in Colorado are ranked as S3S4, Vulnerable to Apparently Secure (NatureServe 2021). The distribution of hoary bats is unclear but where suitable live trees are found across the analysis area it is assumed there is up to 14,015 acres of lodgepole pine habitats (USDA Forest Service 2022). It is estimated that up to 22 acres of hoary bat habitat in lodgepole pine has been impacted by unregulated mountain bike trail building, however viability is not a concern. Unmanaged recreation is having direct, indirect, and cumulative effects. Therefore, the determination for the hoary bat is "may adversely impact individuals, but not likely to result in a loss of viability in the planning area, nor cause a trend to federal listing."

Proposed Action Alternative

Direct and Indirect Effects

Short-term direct effects of trail building may occur from the noise and commotion of heavy machinery, personnel, or chainsaws in lodgepole pine habitats. Hoary bats may fly out of roosts while trail building occurs and move to more secure roosting habitats. Of the 14,015 acres of lodgepole pine habitats, approximately 41 acres of hoary bat habitat will be impacted posing a long-term negative, direct effect. Although 4 miles of trail will be decommissioned, it may take an extended period (more than 100 years) before the lodgepole pine trees grow back and become roosts for hoary bats. Therefore, there is some cumulative change in habitat or trade-off with trail decommissioning (table 7), but not necessarily positive for hoary bat roosting. Trail building also has indirect effects that may simplify the surrounding forest by introducing recreation to an area. As dispersed recreation increases, visitors may collect firewood off the new trails. There may be some positive, direct and indirect effects from the restricted use area designation with a potential to decrease unauthorized trail building and use of non-system trails.

Cumulative Effects

The Mad Rabbit trails project is proposing 44.3 miles of new trail development and use of four miles on existing level 1 administrative roads. It is estimated that 41 acres of hoary bat habitat will be impacted where live trees remain for roosting habitat. Trail building could add to existing cumulative effects related to the bark beetle epidemic and recent wildfires with a loss of overstory and reduction of insect prey across the analysis area. Timber emphasis areas and fuels reduction projects have been a focus to remove dead lodgepole pine which simplifies the forest. These projects are important to reduce the effects of fire but have short-term, negative cumulative effect on hoary bats until the stands regenerate and insect prey base return. In addition, cumulative effects to hoary bats are occurring across the Middle Yampa Geographic Area including recent trail developments on Buffalo Pass, planned expansion of the Dry Lake campground, and recently approved the Buffalo Pass Road Improvement Project. For the Steamboat ski area, two projects have been recently approved (Steamboat Ski Area Environmental Impact Statement and Steamboat Ski Area Environmental Assessment) that alter lodgepole pine habitats. Lastly, the powerline that bisects the Middle Yampa Geographic Area is regularly maintained to keep the powerline free of hazardous fuels which is important for supplying electricity and reducing wildfire risk, but under the powerline is devoid of trees and no longer provides bat habitat. The proposed trails for Mad Rabbit trails project would further increase some long-term, negative cumulative effects on hoary bats by permanently reducing roosting and foraging habitat across 48 acres of the 14,015 acres available in lodgepole pine habitats.

Determination

The Mad Rabbit trails project would pose direct, indirect, and cumulative effects on hoary bat related to impacts to foraging and roosting bat habitat. Hoary bat populations in Colorado are ranked as S3S4, Vulnerable to Apparently Secure (NatureServe 2021). The distribution of hoary bats is unclear but where suitable live trees are found across the analysis area it is assumed there is up to 14,015 acres of lodgepole pine habitats (USDA Forest Service 2022). It is estimated that up to 41 acres of hoary bat habitat in lodgepole pine may be impacted, however viability is not a concern. The project may have some impacts to individuals but does not lead to the level where viability is a concern. Therefore, the determination for the hoary bat is a "may adversely impact individuals, but not likely to result in a loss of viability in the planning area, nor cause a trend to federal listing."

Pacific marten (*Martes caurina*)

Current Condition Relative to Analysis Area

Pacific marten (previously referred to as American marten) are a member of the weasel family. NatureServe (2021) ranks marten populations as G4/G5 (Globally: Apparently Secure/Secure) and in Colorado the ranking is S4 (State: Apparently Secure). Marten live primarily in trees and snags in late successional stands of mesic, conifer-dominated forest, preferably spruce-fir, but they will also occupy lodgepole pine, Douglas fir, and occasionally, cottonwood riparian areas (Armstrong 2011). Approximately 53,789 acres of marten habitat occurs within the analysis area and marten are commonly seen throughout forested cover types on the Routt National Forest including the analysis area (USDA Forest Service 2022). Marten prefer relatively high canopy cover (more than 30 percent) with an optimum of 40 to 60 percent for resting and foraging. Kozlowski (2009) predicted that marten populations will begin to decline 6 to 20 years post-bark beetle epidemic related to loss of overstory cover and red squirrel prey that rely on annual pinecone crops. Marten are vulnerable to population decline due to low population density, low reproductive rate, sensitivity to loss of habitat and habitat connectivity, and trapping. State of Colorado considers the marten as a furbearer for trapping with an unlimited bag limit with a season from November 1 to end of February annually (CPW 2021). Indirect threats to marten populations historically included effects from habitat loss and fragmentation from extensive logging, which includes clear-cutting and vegetation management to reduce fuels (Zielinski 2014).

No-Action Alternative

Direct and Indirect Effects

Under the no-action alternative, the unauthorized, non-system trail use will continue. The associated resource damage would continue and possibly increase. Unauthorized trail building has occurred in prime marten habitat, a direct effect in terms of habitat loss for marten and their prey: red-backed voles and pine squirrels. Direct and indirect effects of unauthorized trail building, and use of these trails may increase with no restricted use area designation. Approximately 10 acres of Douglas fir, lodgepole pine, and spruce-fir habitats has been altered by non-system trails. In addition, down logs have been used for jumps and ramps on non-system trails altering habitat components for marten and prey. Direct and indirect effects would continue under the scenario of unmanaged recreation.

Cumulative Effects

The unmanaged recreation and unregulated trail building already estimated at 30 acres could add to existing cumulative effects related to the bark beetle epidemic and recent wildfires with a loss of overstory and reduction of prey across the forest. Across the Routt National Forest, timber

emphasis areas and fuels reduction projects have been a focus to remove dead lodgepole pine which simplifies the forest. These projects are important to reduce the effects of fire but have short-term, negative cumulative effect on marten until the stands regenerate and prey base of squirrels return. In addition, cumulative effects to marten are occurring across the Middle Yampa Geographic Area including recent trail developments on Buffalo Pass, planned expansion of the Dry Lake campground, and improving the Buffalo Pass Road. For the Steamboat ski area, two projects have been recently approved (Steamboat Ski Area Environmental Impact Statement and Steamboat Ski Area Environmental Assessment) that alter marten habitat. Lastly, the powerline that bisects the Middle Yampa Geographic Area is regularly maintained to keep the powerline free of hazardous fuels which is important for supplying electricity and reducing wildfire risk, but under the powerline is devoid of trees and no longer provides for marten habitat.

Determination

Unmanaged recreation related to trail building and use of those trails has some direct and indirect effects when combined with past, present, and reasonably foreseeable future actions with some negative, cumulative effects. Marten populations in Colorado are ranked as S4, Apparently Secure (NatureServe 2021) and Colorado Parks and Wildlife manages marten as a furbearer with an unlimited bag limit during trapping season. There is sufficient distribution of Pacific marten across the analysis area with 53,789 acres of lodgepole pine and spruce-fir habitats (USDA Forest Service 2022). It is estimated that up to 30 acres of marten habitat has been impacted by unregulated mountain bike trail building, however viability is not a concern. Therefore, the determination for the Pacific marten is a "may adversely impact individuals, but not likely to result in a loss of viability in the planning area, nor cause a trend to federal listing."

Proposed Action Alternative

Direct and Indirect Effects

Short-term direct effects of trail building may occur from the noise and commotion of heavy machinery, personnel, or chainsaws. Marten may avoid the area while trail building occurs, but this effect is expected to be minimal because marten seem fairly docile in the presence of humans. The long-term direct effect is the loss of approximately 87 acres of marten habitat in lodgepole pine and spruce-fir habitats because of trail construction. Although 36 miles of trail would be decommissioned, most of the new trail development (44.3 miles) would occur in prime marten habitat of spruce-fir and lodgepole pine with four miles already occurring on existing routes. There could be some cumulative change in habitat or trade-off with trail decommissioning, but not necessarily as positive as other cover types because spruce-fir and lodgepole pine habitats have the largest impact (table 7). There may be some positive, direct, and indirect effects from the restricted use area designation with a potential to decrease unauthorized trail building and use of non-system trails.

It is anticipated that there may be some negative, indirect effects over the long-term due to the loss of habitat connectivity with 44.3 miles of proposed trail crossing prime marten habitat. Marten may begin to avoid the areas where high recreation pressure occurs. In providing recreational access, the project area would be managed to a different maintenance level by removing downed trees and snags along the trails to provide for user safety. This will simplify forest structure for marten and reduce habitat quality for denning and hunting for prey (red-backed vole and red squirrels). Because marten have large home ranges (1 to 2 marten per square kilometer), the area of disturbance is likely larger than 87 acres. Also, there is anecdotal evidence that squirrels (and other small mammals) are hit by fast moving mountain bikers (Mountain Biker Forum 2010). Due to the high speed of a race, speed of a downhill mountain bike, or use of motorcycle, it is unlikely a small

mammal can avoid collision and may begin avoiding these areas. The loss of habitat connectivity, reduction in forest structure, and potential for declines in prey abundances are considered negative, indirect effects.

Cumulative Effects

The Mad Rabbit trails project is proposing 44.3 miles of new trail development and the use of four miles on existing level 1 administrative roads. It is estimated that 87 acres of prime marten habitat will be impacted with additional impacts to habitat connectivity and habitat structure, important for marten denning and prey base. Trail building could add to existing cumulative effects related to the bark beetle epidemic and recent wildfires with a loss of overstory and reduction of prey across the forest. Timber emphasis areas and fuels reduction projects have been a focus to remove dead lodgepole pine which simplifies the forest. These projects are important to reduce the effects of fire but have short-term, negative cumulative effect on marten until the stands regenerate and prey base of squirrel's return. In addition, cumulative effects to marten are occurring across the Middle Yampa Geographic Area including recent trail developments on Buffalo Pass, planned expansion of the Dry Lake campground, and recently approved the Buffalo Pass Road Improvement Project. For the Steamboat ski area, two projects have been recently approved (Steamboat Ski Area Environmental Impact Statement and Steamboat Ski Area Environmental Assessment) that alter prime marten habitat of spruce-fir and lodgepole pine. Lastly, the powerline that bisects the Middle Yampa Geographic Area is regularly maintained to keep the powerline free of hazardous fuels which is important for supplying electricity and reducing wildfire risk, but under the powerline is devoid of trees and no longer provides marten habitat. The proposed trails for Mad Rabbit trails project would further increase some long-term cumulative effects on marten by permanently reducing habitat, altering forest structure, and reducing overall habitat connectivity across 87 acres of the 53,789 acres available spruce-fir and lodgepole pine habitats.

Determination

The Mad Rabbit trails project would pose direct, indirect, and cumulative effects on Pacific marten related to habitat impacts, reduced prey abundances, and loss of habitat connectivity. Marten populations in Colorado are ranked as S4, Apparently Secure (NatureServe 2021) and Colorado Parks and Wildlife manages marten as a furbearer with an unlimited bag limit during trapping season. There is sufficient distribution of Pacific marten across the analysis area with 53,789 acres of lodgepole pine and spruce-fir habitats (USDA Forest Service 2022). It is estimated that up to 87acres of marten habitat will be impacted related to trail building and reduction to habitat connectivity. The project may have some impacts to individuals but does not lead to the level where viability is a concern. Therefore, the determination for the Pacific marten is a "may adversely impact individuals, but not likely to result in a loss of viability in the planning area, nor cause a trend to federal listing."

Pygmy shrew (*Sorex hoyi montanus*)

Current Condition Relative to Analysis Area

The remnant population as described as *Sorex hoyi montanus* in the southern Rocky Mountains represents the total occurrence and is only found in northern Colorado, south-central Wyoming and eastern South Dakota (Beauvais and McCumber 2006). NatureServe (2021) provides no conservation ranking for *S. h. montanus*, likely due to the rarity of this species. As stated by Beauvais and McCumber (2006), "a lack of reliable information impedes management and conservation of the species. Subspecies *montanus* has been documented at only 17 localities across all Region 2 national forest management units." This subspecies of pygmy shrew appears to be strictly boreal and has limited dispersal abilities probably increase the insularity of local population

segments. Pygmy shrews appear to be habitat and prey specialists, which elevates the degree of conservation concern for the species. Habitat is moist or wet conifer forest, including forested swamps and bogs and late-seral stands of spruce-fir are high quality habitat.

Approximately 54,851 acres of potential pygmy shrew habitat of lodgepole pine, spruce-fir, and wet-grass habitats could be within the analysis area (table 7, USDA Forest Service 2022). Data on pygmy shrew population trends are scarce. This subspecies is assumed to have declined in both distribution and abundance in areas that have undergone extensive timber harvesting (especially clearcutting), stand-replacing fires, drought, and insect outbreaks, as these processes generally convert mesic forest to rather dry and open cover types (Beauvais and McCumber 2006). It is assumed that roads also degrade pygmy shrew habitat by replacing native vegetation and soils with packed roadbeds, which may serve as movement barriers. Due to habitat specialization and limited travel capacity, pygmy shrew populations are fragmented rather easily. In 2011, the Medicine Bow-Routt National Forests hired the Colorado Natural Heritage Program to sample for pygmy shrews (Siemers 2012). Siemers (2012) sampled across 10 new sites in addition to the known historic site on Rabbit Ears Pass. Only eight pygmy shrews were captured across the 260 traps deployed. The greatest number found were at the Beaver Creek and the historical Rabbit Ears Pass site. The historical Rabbit Ears Pass site is in the project area just south of Highway 40 along the National Forest System roads 251 and 251.1a. Additional sampling is unlikely due to the impacts from trapping and identification. To properly identify a pygmy shrew, it is lethally dispatched, and the carcass is taken to a laboratory for dentition identification.

No-Action Alternative

Direct and Indirect Effects

Under the no-action alternative, the unauthorized, non-system trail use will continue. The associated resource damage would continue and possibly increase with winter routes being used as summer routes. The non-system routes (winter routes being used during the summer) bisect many wet bogs that are prime habitat for the pygmy shrew. The only known site for pygmy shrews on the Medicine Bow-Routt National Forests was historically found on Rabbit Ears Pass. In recent sampling, pygmy shrews were confirmed to still occupy the known Rabbit Ears Pass site, however in very low numbers (Siemers 2011: n=2). Unauthorized trail building has also occurred in other prime pygmy shrew habitat in wet spruce-fir habitats, a direct effect in terms of habitat loss for pygmy shrew and their prey (insects). Due to the species' habitat specialization and limited travel capacity, pygmy shrew populations are likely fragmented easily by roads and trails. In addition, due to their low mobility pygmy shrews are likely trampled by trail users (Mountain Biker Forum 2010). It is also assumed that roads and trails also degrade pygmy shrew habitat by replacing native vegetation and soils with packed roadbeds or trail tread. Direct and indirect effects of unauthorized trail building, and use of these trails may increase with no restricted use area designation. Of the 54,851 acres of potential pygmy shrew habitat, approximately 30 acres of grass-wet, lodgepole pine, and spruce-fir habitats has been altered by non-system trails (USDA Forest Service 2022, table 7). Direct and indirect effects would continue under the scenario of unmanaged recreation from trail building and trail use.

Cumulative Effects

The unmanaged recreation could add to existing cumulative effects related to drought and the bark beetle epidemic that has created a loss of overstory cover and drying of the forest floor. Due to the pygmy shrew's low mobility, it is unclear how a pygmy shrew may survive wildfires that are occurring more readily, but their habitat will be altered for up to 100 years or until the stands regenerate to the previous moist lodgepole pine or spruce-fir habitats. Across the forest, timber

emphasis areas and fuels reduction projects have focused on removing dead lodgepole pine which simplifies the forest and dries out the forest floor. These projects are important to reduce the effects of fire but may have long-term negative cumulative effects on pygmy shrew populations due to the dry forest conditions. In addition, cumulative effects to pygmy shrew are occurring across the Middle Yampa Geographic Area including recent trail developments on Buffalo Pass, planned expansion of the Dry Lake campground, and improving the Buffalo Pass Road. For Steamboat Ski Resort, two projects have recently been approved (USDA Forest Service 2018, 2021c) that alter pygmy shrew habitat. The Steamboat ski area has not been sampled for pygmy shrews but has some of the wettest spruce-fir forests within the analysis area. Lastly, the powerline that bisects the Middle Yampa Geographic Area is regularly maintained to keep the powerline free of hazardous fuels which is important for supplying electricity and reducing wildfire risk, but under the powerline is devoid of trees and no longer provides for pygmy shrew habitat.

Determination

Unmanaged recreation related to trail building and use of those trails has some direct and indirect effects when combined with past, present, and reasonably foreseeable future actions with some negative, cumulative effects. The pygmy shrew is a very rare species with limited dispersal abilities. The distribution of pygmy shrews has been documented across the Medicine Bow-Routt National Forests in appropriate habitats when sampled for, however at very low numbers (Siemers 2012). Of the 54,851 acres of potential pygmy shrew habitat, approximately 30 acres of grass-wet, lodgepole pine, and spruce-fir habitats has been altered by non-system trails (table 7; USDA Forest Service 2022). At this time further population sampling will not be completed due to the impacts from trapping and identification, however viability is not a concern because pygmy shrew have been documented when sampled (Siemers 2012). Therefore, the determination for the pygmy shrew is a “may adversely impact individuals, but not likely to result in a loss of viability in the planning area, nor cause a trend to federal listing.”

Proposed Action Alternative

Direct and Indirect Effects

Short-term direct effects of trail building may occur from trampling pygmy shrews. Due to low mobility pygmy shrews, may not be able to avoid these areas during construction. A motorized trail segment (15) that is proposed to stem from National Forest System road 251.1A and connect to National Forest System road 302 (figure 3) poses a direct impact to pygmy shrews. Segment 15 goes through a moist spruce-fir stand that has known pygmy shrew occurrences dating back to 1969 with captures as recently as 2011. Although a new trail may pose a direct impact, this pygmy shrew population appears to persist (more than 40 years) in a popular area for four-wheel drive vehicles and dispersed camping.

The long-term, negative direct effect is the loss of approximately 87 acres of the 54,851 acres of potential pygmy shrew habitat in lodgepole pine and spruce-fir habitats. Not all the 87 acres may be pygmy shrew habitat due to the secondary need for the conifer cover types to be moist or wet. This also does not include the aspen-spruce mix that is hard to identify in FS Veg Spatial but was recently identified as a habitat for pygmy shrews (Siemers 2012). Although 36 miles of trail will be decommissioned, most of the new trail development (44.3 miles) will be occurring in potential pygmy shrew habitat (wet, spruce-fir and lodgepole pine). There was some cumulative change in habitat or trade-off with trail decommissioning, notably approximately 1.05 acres of wet grass will be restored. There may be some positive, direct, and indirect effects from the restricted use area designation with a potential to decrease unauthorized trail building and use of non-system trails.

In terms of indirect effects, most of the effects may be long-term due to the loss of habitat connectivity with 44.3 miles of proposed trail that has been identified as notable pygmy shrew habitat on Rabbit Ears Pass. Like roads, trails can bisect pygmy shrew habitat and for a small mammal this can create population isolation. In providing recreational access, the project area will be managed to a different maintenance level by removing dead and dying trees along the trails to provide for user safety. This will simplify forest structure and dry out cover types important for pygmy shrews. Along the trails there is less cover for a small mammal such as a pygmy shrew so they may avoid the trails or in some circumstances make them more vulnerable to predators. Prey abundances of preferred insects may also shift over time as these areas are managed for recreation.

Cumulative Effects

Increasing recreation trails up to 44.3 miles or altering 87 acres of potential pygmy shrew habitat, particularly in the Rabbit Ears Pass area, could add to existing cumulative effects related to drought, bark beetle epidemic, and wildfires that has created a loss of overstory cover and drying of the forest floor. Due to the pygmy shrew's low mobility, it is unclear how a pygmy shrew may survive wildfires that are occurring more readily, but their habitat will be altered for up to 100 years or until the stands regenerate to the previous moist lodgepole pine or spruce-fir habitats. Across the forest, timber emphasis areas and fuels reduction projects have focused on removing dead lodgepole pine which simplifies the forest and dries out the forest floor. These projects are important to reduce the effects of fire but may have a long-term, negative cumulative effects on pygmy shrew populations due to the dry forest conditions.

In addition, cumulative effects to pygmy shrew are occurring across the Middle Yampa Geographic Area including recent trail developments on Buffalo Pass, planned expansion of the Dry Lake campground, and improving the Buffalo Pass Road. For Steamboat Ski Resort, two projects have recently been approved (USDA Forest Service 2018 & 2021c) that alter pygmy shrew habitat. The Steamboat ski area has not been sampled for pygmy shrews but has some of the wettest spruce-fir forests within the analysis area. Lastly, the powerline that bisects the Middle Yampa Geographic Area is regularly maintained to keep the powerline free of hazardous fuels which is important for supplying electricity and reducing wildfire risk, but under the powerline is devoid of trees and no longer provides for pygmy shrew habitat. In combining the direct and indirect effects, the proposed trails for Mad Rabbit trails project will further increase negative, long-term cumulative effects on pygmy shrews by permanently reducing habitat, altering forest structure, and drying forest floor, and reducing overall habitat connectivity for small mammal that has low mobility.

Determination

The Mad Rabbit trails project will have direct, indirect, and cumulative effects, including habitat impacts, on pygmy shrews by altering forest structure, drying conditions on the forest floor, and loss of habitat connectivity. Segment 15 poses a direct impact, but a population of pygmy shrews has persisted at this site for over 40 years with on-going recreation. The pygmy shrew is a very rare species with limited dispersal abilities. The distribution of pygmy shrews has been documented across the Medicine Bow-Routt National Forests in appropriate habitats when sampled for, however at very low numbers (Siemers 2012). Of the 54,851 acres of potential pygmy shrew habitat, approximately 87 acres of grass-wet, lodgepole pine, and spruce-fir habitats may be impacted during trail construction (table 7) (USDA Forest Service 2022). At this time further population sampling will not be completed due to the impacts from trapping and identification, however viability is not a concern because pygmy shrew have been documented when sampled for in other locations on the unit (Siemers 2012). The Therefore, the determination for the pygmy shrews is a "may adversely impact individuals, but not likely to result in a loss of viability in the planning area, nor cause a trend to federal listing."

Rocky Mountain elk (*Cervus canadensis*)[4]

Current Condition Relative to Analysis Area

The Bears Ears elk herd, or more specifically, the Bears Ears data analysis unit E-2. resides in northwest Colorado (Finley and Grigg 2008). The project area overlaps with game management unit 14 that is found within data analysis unit E-2. Elk use all habitats found on the Routt National Forest with much of the project area mapped as elk winter range, production area, migration corridor, or summer concentration (139,837 acres of potential habitat in table 7, figure 5). Finley and Grigg (2008) recommended management for data analysis unit E-2 at an objective range of 11,000 to 15,000. In 2017, the post-hunt population was estimated to be 20,000-24,000 elk. As of 2020, the current estimated population (post-hunt 2020) is 18,301 with post hunt calf:cow ratio estimated at 65 calves per 100 cows (65:100) with a 3-year average (2018-2020) of 54:100 (Colorado Parks and Wildlife 2021). Overall, data analysis unit E-2 is near the upper population objective and elk recruitment is positive. However, the Steamboat sub-herd for game management units 14 and 214 have been displaying what would be considered a decreasing trend in both number of elk classified and calf:cow ratios, while bull:cow ratios appear to be increasing slightly. Game management units 14 and 214 had a three-year average calf:cow estimate at 50:100 with 890 animals classified from 2006–2008. As of 2020, the three-year average (2018–2020) of calf:cow ratio and number of animals classified has decreased, 41:100 and 728, respectively (Colorado Parks and Wildlife 2021). The calf:cow ratios are 24 percent lower than the data analysis unit average and are exhibiting a negative linear relationship from 2006–2020, which has caused concern by Colorado Parks and Wildlife biologists and managers.

The Mad Rabbit trails project had the objective to maximize habitat connectivity by concentrating trails within one mile of open roads, Highway 40, and existing recreation developments (i.e., day use areas or campgrounds) while leaving large, undisturbed areas in the Long Park Colorado Roadless Area. As recommended by Wisdom and Johnson (2019) this type of trail planning reduces habitat compression for elk by maximizing large undisturbed areas with high habitat value. Recreation areas around Highway 40 receive high recreation year-round while much of the area to the north in the Long Park Colorado Roadless Area is important elk production and summer concentration with lower recreation in the summer (figure 5). Wisdom et al. (2018) found elk avoided trails during recreation treatments and shifted distribution furthest from trails. An administrative study on Buffalo Pass also found elk favored areas with no trails (Dressen et al. 2016). Wisdom et al. (2018) documented that the distance response by elk to trail-based recreation mirrored the avoidance distances (0.5–1.5 kilometers or 0.3–1 mile) by elk to open roads. The response of elk to roads is found in greater than 30 studies conducted in western North America over the past five decades (Wisdom et al. 2018). Wisdom et al. (2018) was a guiding document for the Mad Rabbit trails project to keep the majority of the trail development within one mile of open roads. To reduce the impacts of trail use on elk calving, the trails within the Ferndale area and trail 14 area are proposed for a mandatory elk production area closure from May 15 through June 30 (figure 3).

[4] Though elk are the focus of this analysis, the impacts would be similar for mule deer. CPW mapping display Mule Deer summer range and migration corridors occur within the Mad Rabbit trails project area (CPW 2020). The noise and commotion of construction activities and use of the recreation trails would likely cause deer to avoid the zone of disturbance. Though elk are far more influenced than mule deer in terms of movement rate and flight response to off-road recreation on primitive roads (Wisdom et al. 2005).

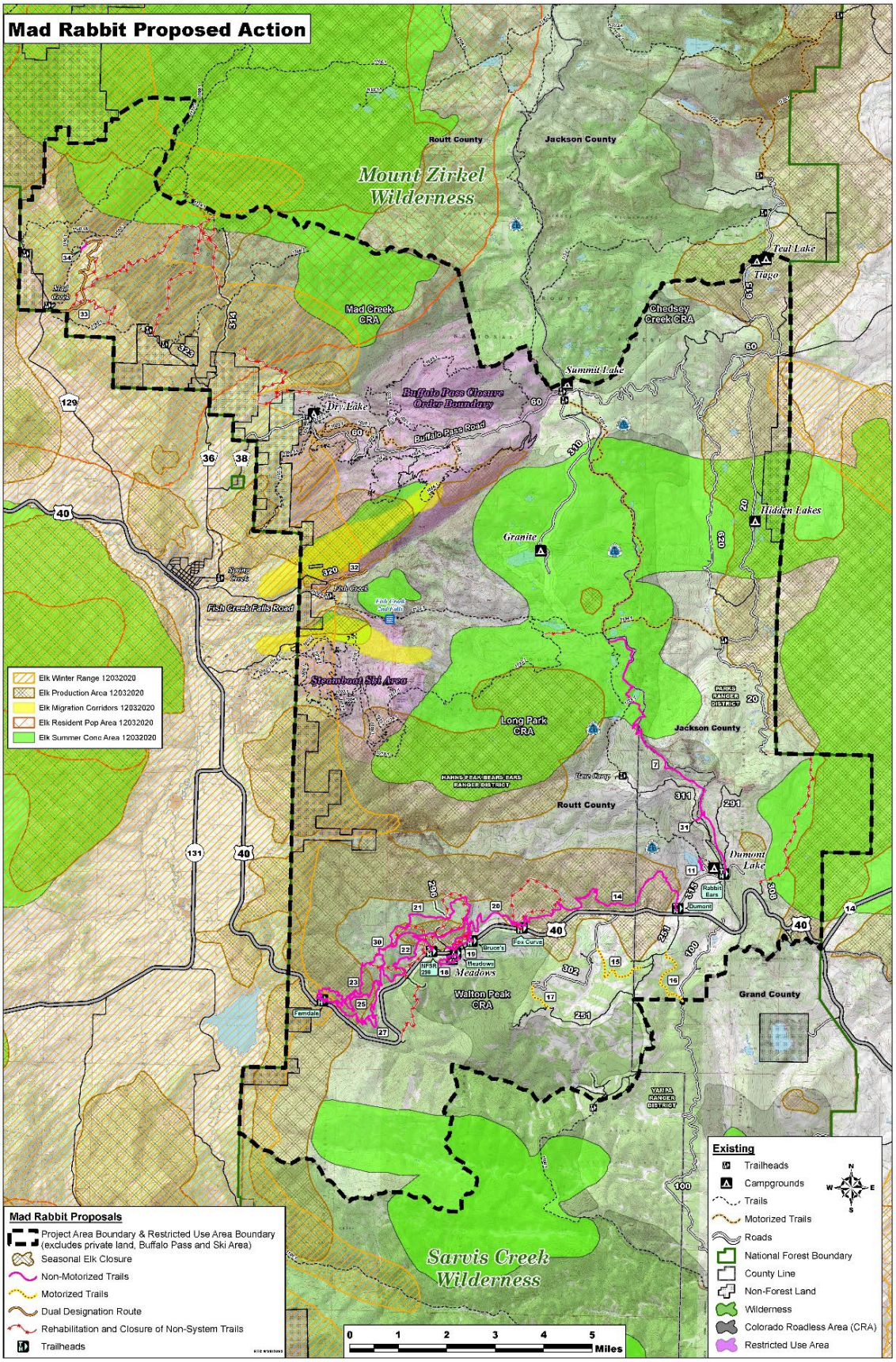

Figure 5. Elk habitat within the Mad Rabbit trails project area

No-Action Alternative

Direct and Indirect Effects

Under the no-action alternative, the unauthorized, non-system trail use will continue. Unauthorized trail building has occurred in important deer and elk winter range (management area 5.41) near Mad Creek, Hot Springs, and Rocky Peak. This area is closed during the winter from December 1 through April 15 under a mandatory closure, however the use of these trails in the spring and summer impacts elk movement from the winter range to summer concentration range in the Mount Zirkel Wilderness (figure 5). On Rabbit Ears Pass winter recreation routes are becoming popular as summer trails due to the public's familiarity and use of these areas during winter. The area north of U.S. Highway 40 was recently mapped by Colorado Parks and Wildlife as an important elk production area (figure 5) (CPW 2020). The use of non-system routes in elk calving areas has direct and indirect effects on elk calving, particularly in recent years where calf:cow ratios are lower than the data analysis unit average, and Colorado Parks and Wildlife raised concerns. The Buffalo Pass Trails administrative study found that elk avoided trails, including the system and non-system trails (Dressen et al. 2016). Wisdom et al. (2018) documented that the distance response by elk to trail-based recreation mirrored the avoidance distances (0.3 to 1 mile) by elk to open roads. The use of non-system trails by the public may increase with no restricted use area designation. Of the 139,837 acres of potential elk habitat in the project area, approximately 104 acres of elk habitat has been altered by non-system trails (table 7). Direct and indirect effects would continue under the scenario of unmanaged recreation with use of non-system routes in Management Area 5.41 Deer and Elk Winter Range and on Rabbit Ears Pass in elk production areas will continue.

Cumulative Effects

Habitat effectiveness for elk (and deer) is measured at the geographic scale and was discussed earlier in this environmental assessment. Recent cumulative impacts for past and present include existing recreation levels at the geographic area scale (both public and permitted activities), Buffalo Pass Trails Environmental Assessment, Dry Lake Campground Environmental Assessment, Steamboat Ski Area Environmental Impact Statement (USDA Forest Service 2018), Steamboat Resort Improvement Project Environmental Assessment (USDA Forest Service 2021c), and the Buffalo Pass Road Reconstruction Project. With each of these projects, recreation has been anticipated to increase and wildlife have been evaluated under each environmental document. Dry Lake Campground will expand from 8 campsites up to approximately 30. Under the Buffalo Pass Trails Environmental Assessment, 48.6 miles of trails were approved. The Buffalo Pass Trails wildlife analysis acknowledged not all wildlife effects could be resolved and important winter range and breeding areas identified by Colorado Parks and Wildlife were brought forward as key areas to close to recreation at times elk are most sensitive to human disturbance. The Steamboat Ski Area Environmental Impact Statement (USDA Forest Service 2018) and Steamboat Resort Improvement Project Environmental Assessment (USDA Forest Service 2021c) are expected to increase skier recreational opportunities and are consistent with the management area direction in the forest plan. Both ski area projects have focused on winter improvements with less emphasis on summer recreation, however it is recognized that recreation in the summer on the Steamboat Resort is popular for hiking, mountain biking, paragliding, sightseeing (via the gondola), and to a lesser extent hunting and horseback riding. The unmanaged recreation could add to existing cumulative effects mentioned above for elk (and deer). Although elk are an important big game species, they are not a Region 2 sensitive species and so no determination will be provided.

Proposed Action Alternative

Direct and Indirect Effects

The short-term, negative direct effect of trail construction activities on elk can include impacts to calving, rearing young, and the disruption of elk migrating from winter range to summer range. Elk are susceptible to human activities and will likely avoid the area due to the direct effects of the noise, trail crews and equipment on the landscape, additional vehicles on the roads, and commotion created by the construction activity. Many of the proposed trails are entirely located within an elk production area or bisect a portion of an elk production area (segments 14, 19, 20–23, 25, 27, 30; figure 5). The Ferndale area and segment 14 is proposed for a mandatory closure during elk calving from May 15 through June 30 which includes trails 14, 23, 25, and 27 (figure 3). A mandatory closure prohibits public access into this area during the stated period. Trail construction will be recommended to occur after the closure period. In the remaining elk production areas and not under a mandatory closure, construction projects can be implemented during this period. Field surveys documented presence of annual elk calving west of National Forest System road 296 (vicinity of segment 21, Figure 5). Construction during this period may pose additional impacts on elk but will be short-term. Similarly, trail projects implemented during the summer months have the potential to disturb elk using the summer concentration areas (northern trail segment 7: figure 5). Although these projects may have impacts to elk during calving or use of summer concentration areas, it is anticipated to impact a small number of elk and elk calving until the construction is complete.

The long-term, negative direct and indirect effect is the use of the trails in elk production during calving season. Proposed trails are located within a mapped elk production area but will not have a closure (segments 19, 20–22 and 30; figure 5). From a recreation management standpoint, a closure at Ferndale and route 14 is manageable with discreet closure points with gates in treed areas. Whereas a closure on most of Rabbit Ears Pass is more challenging due to the wide-open meadows and wetlands. game management unit 14 is experiencing declines in elk recruitment with a lower three-year average calf:cow ratio (CPW 2021). Trail use during calving season, a sensitive and critical period for elk, may lower calf:cow trends further at a localized level. It is unclear how many elk calve in this area; however, cow elk will begin to avoid this area up to one mile from the recreation disturbance (Wisdom et al. 2018). Elk will stabilize their movements and avoid this disturbance over the long-term. In managing for multiple use, it is important to provide for secure elk calving areas so elk are available for hunting. Elk hunters may be pushed to hunt areas other than Rabbit Ears Pass. Colorado Parks and Wildlife carefully sets herd objectives to maintain herds and may need to adjust licenses. Currently, the calf:cow ratios are 24 percent lower than the data analysis unit average in game management units 14 and 214 (CPW 2021). Game management unit 14 overlaps most of the project area. The additional recreation disturbance, particularly in elk production, may cause localized impacts to elk recruitment in game management unit 14. The remaining portion of data analysis unit E-2 is experiencing positive recruitment and nearing upper population objective (Finley and Grigg 2008).

Additional direct and indirect effects is direct habitat loss from trail building and habitat compression for a wide-ranging species such as elk. Most of the new trail development (44.3 miles) will be occurring in portions of elk production areas or summer concentration areas. Elk use all habitats on the Routt National Forest, so trail construction, and until trails are decommissioned, there will be negative direct effects on elk habitat (table 7). Of the 139,837 acres of potential elk habitat in the project area, approximately 44 acres of elk habitat will be directly impacted.

In some areas, habitat conditions, and habitat connectivity, for elk will be improved. Approximately 36 miles of trail will be decommissioned in the Rocky Peak, Mad Creek, Gunn Creek areas with 104 acres of habitat improved and allowing for elk to move more readily from the elk winter range into the summer concentration areas of the Mount Zirkel Wilderness (figure 5). This area was identified as an important conservation area for elk during planning because elk migrate from the critical elk winter range in Maybell and Craig crossing private lands north of west Steamboat Springs to reach game management unit 214 and 14. Both of these game management units have experienced lowered calf:cow ratios so providing secure habitats for elk to move from game management unit 214 to 14, and eventually up into the summer concentration areas of Mount Zirkel Wilderness is a priority.

Recreation is anticipated to increase in the summer across the Rabbit Ears Pass area after the trails are constructed and use of the parking areas will increase. The high density of trails (greater than 1 mile per square mile) proposed on Rabbit Ears Pass will create a high avoidance area for elk. In turn this will create habitat compression by pushing elk further into the backcountry. Recreation activities can have direct impacts on elk by causing disturbance to the animals from increased traffic on the road, trails, and dispersed campsites, and can degrade habitat. These types of recreational activities can elicit short-term behavioral responses from elk depending on the intensity of disturbance with varying flight distances. Eventually, elk will avoid areas of high recreation. The Buffalo Pass Trails camera study found that elk avoided trails, including the system and non-system trails (Dressen et al. 2016). Wisdom et al. (2018) documented that the distance response by elk to trail-based recreation mirrored the avoidance distances (0.3-1 mile) by elk to open roads. Due to avoidance of human activities associated with roads and trail-based recreation (off-highway vehicles, mountain biking, hiking), elk increase their daily activity levels and movements, which reduces the time spent feeding or resting, and there can be elevated levels of stress hormones in elk in response to recreation (Naylor et al. 2008). This is anticipated to be a negative, long-term direct and indirect effect to elk on Rabbit Ears Pass.

There will be indirect effects to elk related to habitat compression from high route densities and increasing recreation pressure along the U.S. Highway 40 corridor and associated recreational trails, roads, dispersed campsites, and campgrounds. Though there will be localized impacts, the goal of this project was to keep the impacts close to existing areas of disturbance (within one mile of roads and highways) to protect larger tracts of habitats north of U.S. Highway 40 and in the Long Park Colorado Roadless Area. With the addition of proposed trails, the elk will be pushed further (up to one mile from trail disturbance buffer) into the Long Park Colorado Roadless Area due to the distance response by elk to trail-based recreation being similar to responses to open roads (Wisdom et al. 2018). The additional recreation disturbance, particularly in elk production, may cause some localized impacts to elk recruitment in game management unit 14. However, the remaining portion of data analysis unit E-2 is experiencing positive recruitment and nearing upper population objective (Finley and Grigg 2008).

Cumulative Effects

Cumulative impacts for past and present include existing recreation levels at the geographic area (both public and permitted activities), Buffalo Pass Trails Environmental Assessment, Dry Lake Campground Environmental Assessment, Steamboat Ski Area Environmental Impact Statement (USDA Forest Service, 2018), Steamboat Resort Improvement Project Environmental Assessment (USDA Forest Service, 2021c), Buffalo Pass Road Reconstruction Project, and this project, the Mad Rabbit trails project. With each of these projects, recreation has been anticipated to increase and wildlife have been evaluated under each environmental document.

The forest plan requirement of maintaining habitat effectiveness at 50 percent or greater is focused on habitat cover and open roads at the Middle Yampa geographic scale. Currently, this forest plan standard is being met at 80 percent effective (table 7). Since the forest plan was revised (1998), the body of science and understanding of recreational impacts on elk and deer, and wildlife in general, has grown. Within the Middle Yampa Geographic Area, human disturbance to elk has been increasing as recreation pressure increases. In terms of off-road recreation on primitive roads, elk are far more influenced than mule deer in terms of movement rate and flight response (Wisdom et al. 2005). The areas of recreation that have seen the largest growth is non-motorized, particularly mountain biking on Buffalo Pass and Steamboat ski area. Certain types of recreation can also be more pervasive in causing impacts. As stated by Larson et al. (2016), "Counter to public perception, non-motorized activities had more evidence for a negative effect of recreation than motorized activities, with effects observed 1.2 times more frequently."

Recreation pressure increased elk travel time with less time resting and feeding with all-terrain vehicles causing highest stress, followed closely by mountain bikers, and last, stress from hikers, while horseback riders were not much different than control (Naylor et al. 2008). More recently, Wisdom et al. (2018) evaluated recreational trail use for all-terrain vehicle riding, hiking, biking, and horseback riding and found that elk avoided areas with trails when recreationists of any type were present. In terms of hunting, research demonstrated that the presence of hunters shifted elk off public lands and onto neighboring private lands (Conner et al. 2001, Vieira et al. 2003). Thus, regardless of recreational activity, behavioral displacement of elk by humans is well documented and is increasing incrementally with negative, cumulative effects particularly in high recreation areas identified in the forest plan for the Middle Yampa Geographic Area such as Buffalo Pass, Steamboat Ski Resort, and as proposed on Rabbit Ears Pass (U.S. Highway 40 corridor).

The Mount Zirkel Wilderness does provide a large conservation area for summer range for elk and has provided a summertime refuge for the Bears Ears elk herd. As recreation increases following the Mad Rabbit trail project, it is anticipated that elk will have additional negative cumulative effects related to direct and indirect effects as described above. In the forest plan this was a stated outcome for Rabbit Ears Pass (and Buffalo Pass), "recreation will be the emphasis for Management Area Scenery 4.2 and Management Area Dispersed Recreation 4.3 with a desired condition on wildlife species that are common and/or accustomed to the presence of people" (USDA Forest Service 1998). In collaboration with Colorado Department of Natural Resources and Colorado Parks and Wildlife, much of the focus was on managing for elk and reducing impacts by condensing trails near open roads and disturbed areas while still providing for recreation access. Providing a trail system, decommissioning non-system trails, and enforcing the restricted use area designation may result in some positive cumulative effects for elk by condensing recreation and leaving large areas undisturbed. Although elk are an important big game species, they are not a Region 2 sensitive species so no determination will be provided.

Brewer's sparrow (*Spizella breweri*)

Current Condition Relative to Analysis Area

The Brewer's sparrow was often the most abundant songbird in sagebrush shrub steppe habitats (Holmes and Johnson 2005). However, Brewer's sparrow population declines on the breeding areas are occurring, likely linked to extensive alteration of sagebrush (*Artemisia* spp.) shrub steppe habitat. NatureServe (2021) ranks Brewer's sparrow populations as G5 (Globally: Secure) and in Colorado the ranking is S4 (State: Apparently Secure). According to the Breeding Bird Survey, Brewer's sparrow populations have declined by over 50 percent during the past 25 years. Though sagebrush habitats are widespread, this habitat is declining due to extensive influences such as

livestock grazing, followed by alteration of natural fire regimes and invasion by exotic plant species, especially cheatgrass (*Bromus tectorum*). Loss of and fragmentation of habitat due to agricultural, urban, suburban, energy, and road development also threaten the species (Holmes and Johnson 2005). Brewer's sparrows have been documented in the project area and in proximity to the trails proposed for decommissioning in the Mad Creek, Red Dirt, and Hot Spring areas. Approximately 8,312 acres of potential Brewer's sparrow habitat of sagebrush and mountain shrub habitats could be within the analysis area (table 7; USDA Forest Service 2022).

The Brewer's sparrow appears to be especially sensitive to the effects of habitat fragmentation (Colorado Parks and Wildlife 2005, Holmes and Johnson 2005). Holmes and Johnson (2005) recommend that all recreation should be kept on established roads and trails or confined within areas established specifically for off-road recreation to reduce the influence on sensitive sagebrush habitats and species.

No-Action Alternative

Direct and Indirect Effects

Under the no-action alternative, the unauthorized, non-system trail use will continue. The associated resource damage would continue and possibly increase. Nearly all unauthorized trail building within the project area has occurred in important Brewer's sparrow habitat a direct effect in terms of habitat fragmentation and loss for Brewer's sparrow. Direct and indirect effects of unauthorized trail building and use of these trails may increase with no restricted use area designation. Of 8,312 acres of Brewer's sparrow habitat, approximately 48 acres of shrubland habitats has been altered by non-system trails. Direct and indirect effects would continue under the scenario of unmanaged recreation with habitat fragmentation playing a larger role.

Cumulative Effects

The unmanaged recreation could add to existing cumulative effects related to sagebrush conversion from agriculture or wildfire, including activities that fragment sagebrush habitats (such as roads, exurban development, powerlines). Across the project area, shrub habitats are often juxtaposed to private lands and fuels treatments have occurred in these habitat types. These projects are important to reduce the effects of fire but have a short-term negative cumulative effect on Brewer's sparrows until the stands regenerate.

Determination

Unmanaged recreation is having direct, indirect, and cumulative effects in terms of habitat fragmentation and loss for Brewer's sparrows. Brewer's sparrow populations in Colorado are ranked as S4, Apparently Secure (NatureServe 2021). There is sufficient distribution of Brewer's sparrow across the analysis area with 8,312 acres of shrubland habitats (USDA Forest Service 2022). It is estimated that up to 48 acres of Brewer's sparrow habitat has been impacted related to non-system trails and use that reduces habitat connectivity. It is recommended that all recreation should be kept on established roads and trails or confined within areas established specifically for off-road recreation to reduce the influence on sensitive sagebrush habitats and species. Under the no-action alternative, there will be no enforcement of the restricted use area designation and use of non-system trails may continue or increase. The use of non-system trails has some impacts to individuals but does not lead to the level where viability is a concern. Therefore, the determination for the Brewer's sparrow is a "may adversely impact individuals, but not likely to result in a loss of viability in the planning area, nor cause a trend to federal listing."

Proposed Action Alternative

Direct and Indirect Effects

Short-term direct effects of trail building may occur from the noise and commotion of heavy machinery, personnel, or chainsaws. Of the 8,312 acres of shrubland habitats, the long-term direct effect is the loss of approximately eight acres of Brewer's sparrow habitat in shrub habitats, although this will be offset by a positive, cumulative change of approximately 3 acres restored to natural habitats for Brewer's sparrow (table 7). Use of trails may cause lowered reproductive success related to disturbance of recreation during breeding and nesting season. The proposed action has the potential to increase secure habitats for Brewer's sparrow related to the restricted use area designation requiring users to stay on system trails; unauthorized trail use and creation is expected to decrease (Holmes and Johnson 2005). The trail decommissioning will have greater impacts because most of non-system trails occur in shrub habitats (approximately 16 acres). Over the long-term the proposed action is expected to have an overall beneficial impact for Brewer's sparrow in the project area as these shrub habitats are restored. As recommended by Holmes and Johnson (2005), recreation should be kept on established roads and trails to reduce the influence on sensitive sagebrush habitats and species.

Cumulative Effects

For the Brewer's sparrow the proposed action will improve shrub habitats and reduce or eliminate direct or indirect effects by managing recreation over the long-term. The proposed action will not add to the cumulative effects.

Determination

There will be short-term, direct effects as trails are decommissioned, but over the long-term Brewer's habitat will be improved by maintaining recreation on established routes. There is sufficient distribution of Brewer's sparrow across the analysis area with 8,312 acres of shrubland habitats with 3 acres improved (USDA Forest Service 2022). Therefore, the determination for the Brewer's sparrow is a "beneficial impact."

Northern goshawk (*Accipiter gentilis*)

Current Condition Relative to Analysis Area

On the Routt National Forest, goshawks often construct their nests in either lodgepole pines or aspens in almost equal proportions (USDA Forest Service 2022). In their home range, goshawk partition use of forest stands into three key areas during the breeding season: nesting area, post-fledging area, and foraging area (Reynolds et al. 1992). Tree size, canopy closure, understory openness, and other habitat components vary between the three use areas. Lodgepole pine, aspen, and spruce-fir forests were at a nearly ideal, mature stage for goshawk nesting on the Routt National Forest until the bark beetle epidemic in the early 2000s (Skorkowsky 2009). Little information exists on how goshawk populations respond to the loss of mature trees because of a bark beetle epidemic, but one study has showed that goshawks will continue to nest successfully in beetle-killed lodgepole pine forests until trees begin to collapse several years following an epidemic (Graham et al. 1999). Goshawks could remain in nest stands 10-20 years following the epidemic. A fair amount of literature suggests the affinity goshawks have for late seral forests and some suggest that there may be declines related to tree cutting (Boyce et al. 2006). Though no studies have been conducted on recreation influence on goshawks, it is recommended that minimal human presence occurs in the nest area during nesting season (Reynolds et al. 1992, Squires and Reynolds 1997). The presence of humans in a raptor nest area can be a significant disturbance even if the human is far from an active nest and further, a clear line of sight is an important factor in a

raptor's response (Richardson and Miller 1997). Spatial and temporal buffers are recommended depending on physical characteristics (topography, vegetation) are important variables when establishing buffer zones based on raptors' visual-and auditory-detection distances (Richardson and Miller 1997).

Approximately 78,351 acres of lodgepole pine, aspen, and spruce-fir habitats are available for goshawks in the project area (table 7). Much of the lodgepole pine habitats have declined in habitat quality for goshawks because of the mountain pine beetle epidemic. Wildlife personnel on the Routt National Forest have conducted annual goshawk detection surveys since 1992. Known nests have been monitored since 1990. Before the bark beetle epidemic, more than 50 goshawk territories have been located across the forest. Goshawk nest occupancy has declined drastically since prey abundances declined following the bark beetle epidemic (USDA Forest Service 2022). In the last few years, the nest site occupancy has been one to two active nests a year (out of 50 territories) with fledging one or two nestlings. No goshawks or nests were detected during surveys of the project area (proposed trail decommissioning or trails projects). If nests are located, design elements will protect nesting goshawks and trail building will avoid nest areas.

No-Action Alternative

Direct and Indirect Effects

Under the no-action alternative there would be no Forest Service mandated protections for goshawk nesting or general habitat protections if goshawks went undetected in proximity to unauthorized, non-system trail routes. Unmanaged recreation may cause disturbance to nesting goshawks with potential of nest failure (Reynolds et al. 1992, Squires and Reynolds 1997, Richardson and Miller 1997). The associated resource damage would continue and possibly increase. Unauthorized trail building has occurred in prime goshawk habitat, a direct effect in terms of habitat loss for goshawk, and their prey base: snowshoe hare, pine squirrels, woodpeckers, dusky grouse, and other small mammals. Direct and indirect effects of unauthorized trail building, and use of these trails may increase with no restricted use area designation. Of the 78,351 acres of potential goshawk habitat, approximately 59 acres of goshawk habitat, which includes all forested habitats (lodgepole pine, aspen, and spruce-fir) have been altered by non-system trail development. Direct and indirect effects would continue under the scenario of unmanaged recreation.

Cumulative Effects

The unmanaged recreation could add to existing cumulative effects related to the bark beetle epidemic and recent wildfires with a loss of overstory and reduction of prey across the forest. Recent wildfires have impacted goshawk nest areas. In 2021, three territories were lost to wildfires. Across the forest, timber emphasis and fuels reduction projects have been a focus to remove dead lodgepole pine, which simplifies the forest. These projects are important to reduce the effects of fire but have a short-term, negative cumulative effect on goshawk until the stands regenerate. In addition, cumulative effects to goshawk are occurring across the Middle Yampa Geographic Area including recent trail developments on Buffalo Pass, planned expansion of the Dry Lake campground, and improving the Buffalo Pass Road. For the Steamboat Ski Resort, two projects have been recently approved (Steamboat Ski Area Environmental Impact Statement and Steamboat Ski Area Environmental Assessment) that alter goshawk foraging habitat. Lastly, the powerline that bisects the Middle Yampa Geographic Area is regularly maintained to keep the powerline free of hazardous fuels which is important for supplying electricity and reducing wildfire risk, but the area under the powerline is devoid of trees and no longer provides for goshawk habitat.

Determination

Unmanaged recreation is having direct, indirect, and cumulative effects. Appropriate protections (nest buffers and timing restrictions) cannot be applied if the Forest Service does not know the locations of unauthorized trail building and use of the trails. Concerns for goshawk viability at the unit level has been raised in recent projects (Steamboat Ski Area Environmental Impact Statement and Steamboat Ski Area Improvement Environmental Assessment). Of the 78,351 acres of potential goshawk habitat, approximately 59 acres of goshawk foraging habitat has been altered by non-system trail development. The known non-system trails have been surveyed for goshawks and no goshawks were detected. At this time, additional concerns for viability within known non-system trails has not been identified in the project area. Therefore, the determination for the Northern goshawk is a "may adversely impact individuals, but not likely to result in a loss of viability in the planning area, nor cause a trend to federal listing."

Proposed Action Alternative

Direct and Indirect Effects

Short-term direct effects of trail building may occur from the noise and commotion of heavy machinery, personnel, or chainsaws. However, the potential direct effects from trail building and use will be reduced with nest buffers and timing restrictions in nesting areas (design feature 47). Any newly discovered nest or territory will be protected with the design elements to reduce human disturbance. The use of the area by recreationists in post-fledging areas or foraging areas that may occur outside of a nest buffer area may cause impacts to individual birds by interrupting goshawks foraging and reduce habitat connectivity. Moderate to heavy use of 44.3 miles of trail and 4 miles of existing road and trail may also reduce prey availability due to lowered bird and small mammal numbers because native birds seem to avoid nesting near trails (Miller et al. 1998) and anecdotally, small mammals often seem to be a casualty of mountain bikers and likely motorized trail use. Goshawks are susceptible to human disturbance during nesting (Squires and Reynolds 1997) and recreation pressure during nesting may reduce goshawk's ability to catch prey and successfully rear young.

The long-term direct effect is the loss of approximately 107 acres of goshawk habitat (of the 78,351 acres) in forested habitats within the project area (table 7). Although 36 miles of trail will be decommissioned, the new trail development (44.3 miles) will be occurring in important goshawk foraging habitat. No goshawk nests were detected during surveys. There was some cumulative change in habitat or trade-off with trail decommissioning offsetting habitat (approximately 84 acres). There may be some positive, direct, and indirect effects from the restricted use area designation with a potential to decrease unauthorized trail building and use of non-system trails.

In terms of indirect effects, most of the effects may be long-term due to the loss of habitat connectivity with 44.3 miles of proposed trail crossing important habitat for goshawks and their prey. Goshawks maintain large home ranges and may begin to avoid the areas where high recreation pressure occurs. In providing recreational access, the project area will be managed to a different maintenance level by removing downed trees and snags along the trails to provide for user safety. This will simplify forest structure for prey and foraging habitat. Along the trails there is less cover for small mammals, so they may avoid the trails. Also, there is also anecdotal evidence that squirrels (and other small mammals) are hit by fast moving mountain bikers (Mountain Biker Forum 2010). Prey abundances may shift over time and alter the ability for goshawk to hunt for prey.

Cumulative Effects

Cumulative effects are occurring across the Routt National Forest and Middle Yampa Geographic Area related to the bark beetle epidemic, recent wildfire, timber removal, and fuels reduction, along with increases in recreation on Steamboat Ski Resort and Buffalo Pass. The literature does not document goshawk population response twenty years post-beetle epidemic, but ecological inference suggests that some decline in the goshawk population may occur for decades due to the lack of mature forest conditions, suitable nest locations, and lowered reproduction (Skorkowsky 2009). The changes to forest conditions from bark beetle epidemic, wildfire, and salvage harvest combined with increases in recreational pressure in the low elevations of the wildland-urban interface where goshawk nest, forage, and raise young is a concern (Graham et al. 2015). In combining the direct and indirect effects, the proposed trails for Mad Rabbit trails project will further increase some long-term cumulative effects on goshawk by permanently reducing foraging habitat, altering forest structure, and reducing overall habitat connectivity. Adding 44.3 miles of trails to potential goshawk foraging habitat may cause negative, indirect effects. With decommissioning non-system trails and enforcing the restricted use area designation, there may be some positive cumulative effects for goshawk by condensing recreation and leaving large areas undisturbed.

Determination

The project specific design elements will reduce direct effects to goshawks during the nesting period. Some indirect effects in the post-fledgling area may reduce prey availability and ability to forage. Cumulative effects from the bark beetle epidemic and salvage of trees are occurring across the forest. Recreation pressure from adding 44.3 miles of trail in potential goshawk foraging habitat may increase cumulative effects. Concerns for goshawk viability at the unit level has been raised in recent projects (Steamboat Ski Area Environmental Impact Statement and Steamboat Ski Area Improvement Environmental Assessment). Of the 78,351 acres of potential goshawk habitat, approximately 48 acres of goshawk foraging habitat may be impacted. The proposed trails have been surveyed for goshawks and no goshawks were detected. At this time, additional concerns for viability within the Mad Rabbit trails project has not been identified. Therefore, the determination for the Northern Goshawk under the proposed action is a “may adversely impact individuals, but not likely to result in a loss of viability in the planning area, nor cause a trend to federal listing.”

Compliance with Forest Plan and Other Relevant Laws, Regulations, Policies, and Plans

The proposed action is designed to comply with the following laws, regulations, and policy: National Environmental Policy Act (NEPA), National Forest Management Act (NFMA), the Migratory Bird Treaty Act, Forest Service Manual (FSM) 2670: Threatened, Endangered, and Sensitive Plants and Animals, the Routt National Forest Land and Resource Management Plan (forest plan), the Northwest Colorado Greater Sage-Grouse Land Use Plan Amendment, and the Southern Rockies Lynx Amendment.

Forest Plan and Consistency Review

This project complies with the Routt National Forest Land and Resource Management Plan (forest plan), which provides direction on terrestrial wildlife management and includes standards and guidelines for management of wildlife species and habitats, in addition to management area direction (also see appendix E: Forest Plan Compliance).

Forest-Wide Standards

The project is consistent with all forest-wide standards specific to wildlife resources listed in the Routt National Forest Land and Resource Management Plan. A comprehensive list of these standards can be found in the Wildlife Resources Wildlife Specialist Report and Biological Evaluation located in the project record.

Northwest Colorado Greater Sage-Grouse Land Use Plan Amendment

No mapped priority or general sage-grouse habitat is in the project area, so no further analysis for this amendment will be conducted.

Southern Rockies Lynx Amendment

The Southern Rockies Lynx Amendment (USDA Forest Service 2008) provides management activity guidance to ensure consistent and effective lynx conservation on federal lands. Southern Rockies Lynx Amendment consistency review for the amendment goals, guidelines, objectives, and standards can be found in the biological assessment.

Issue 3 - Colorado Roadless Areas

Affected Environment

In 2012 the State of Colorado and the Forest Service finalized the Colorado Roadless Rule (replacing the 2001 Roadless Rule within Colorado), which provides a high level of conservation of roadless area characteristics on approximately 4.2 million acres of National Forest System lands within the state. This analysis considers the Mad Rabbit trails project in the context of the 2012 Colorado Roadless Rule. The study area for this roadless analysis includes the Mad Creek, Long Park and Walton Creek Colorado Roadless Areas. This analysis also considers the effects of the alternatives on the existing roadless characteristics in these roadless areas, as required in the 2012 Roadless Rule.

The Colorado Roadless Rule

Colorado has approximately 14,520,000 acres of National Forest System lands distributed among eight national forests and two national grasslands. Therefore, the Department of Agriculture, the Forest Service, and the State of Colorado agreed that there was a need to provide management direction for roadless areas in the State. On July 3, 2012, the Colorado Roadless Rule went into effect with the publication of the Final Rule in the Federal Register. To date, Colorado and Idaho are the only states to have adopted their own roadless rules.

The 2012 Colorado Roadless Rule establishes prohibitions for tree cutting, road construction and reconstruction, and use of linear construction zones (defined as a temporary linear area of surface disturbance over 50-inches wide that is used for construction equipment to install or maintain a linear facility). Linear facilities include pipelines, electrical power lines, telecommunications lines, ditches, canals, and dams [36 CFR section 294.41]) with limited exceptions and establishes “upper tier” acres on approximately 1.2 million acres. The 2012 Colorado Roadless Rule offers a higher level of conservation for the designated Colorado Roadless Areas than management direction under either individual forest plans or the 2001 Roadless Rule. In addition, the 2001 Roadless Rule allows management activities to occur on more acres of roadless areas than the 2012 Colorado Roadless Rule due to the upper tier designation.

The Routt National Forest has 29 Colorado Roadless Areas for a total of 433,600 total acres. figure 6 depicts the Colorado Roadless Areas in or adjacent to the Mad Rabbit trails project area.

Effects of the No-Action Alternative

Direct and Indirect Effects

Under the no-action alternative no Forest Service authorized trails would be constructed within the Mad Creek, Long Park and Walton Creek Colorado Roadless Areas. Selection of the no-action alternative would have no direct effects to the nine roadless area characteristics to the point of altering the characteristics of the Mad Creek, Long Park and Walton Creek Colorado Roadless Areas.

Indirect and cumulative effects through the continued use and potential proliferation of non-system trails would continue. The no-action alternative would continue to have environmental impacts to the soil resource. Non-system trails were not designed to Forest Service standards, and they will remain in place without proper reconstruction, maintenance, or obliteration. Appropriate slopes, soils, and locations are not considered when non-system trails are constructed, and they do not receive any type of upkeep to mitigate soil degradation. The damaging effects associated with poor trail design and lack of maintenance may lead to users establishing alternate routes to circumvent severely damaged sections of trail. There is the likely potential for non-system trails to proliferate in the absence of a designated and maintained trail system and additional tools are needed to address non-system trails. The additional footprint from these trails may lead to dispersed resource damage, including erosion and sediment delivery to streams. Without rehabilitation of disturbed sites where unauthorized trails have been developed, continual compaction and degradation would increase soil loss. Cumulatively, these impacts could degrade roadless character over time.

Under the no-action alternative impacts to wetlands and water resources from existing and any newly developed non-system trails would continue to affect water quality, stream sedimentation, wetlands, and the hydrologic regime. These impacts are greater than those of newly constructed trails because 1) non-system trails were not located to avoid wetlands and water resource impacts, 2) design elements and best management practices were not implemented to minimize adverse effects, and 3) trail-stream crossings do not have bridges. The development of non-system trails in poor locations, while lacking the application of best management practices, would likely continue, and the network could expand as the Restricted Use Area designation would not be implemented. While adverse impacts would likely increase, the total extent is uncertain and difficult to predict.

Disturbances to botanical resources from use of non-system trails would be continuous, leaving no opportunity for plants or their habitat to recover. Effects are likely to increase in severity and extent as trail use increases. Evidence of impacts to plants and their habitat may continue for some time after the initial impacts occur. Many of the trails cross through occupied rare plant habitat such as occurrences of the Region 2 sensitive species, Rabbit Ears gilia. Habitat modifications may cause shifts in vegetation, hydrologic, solar, and soil characteristics of rare plant habitat. Introduction of non-native species or promotion of conditions that favor these species pose a threat to native plant species, particularly those that are rare.

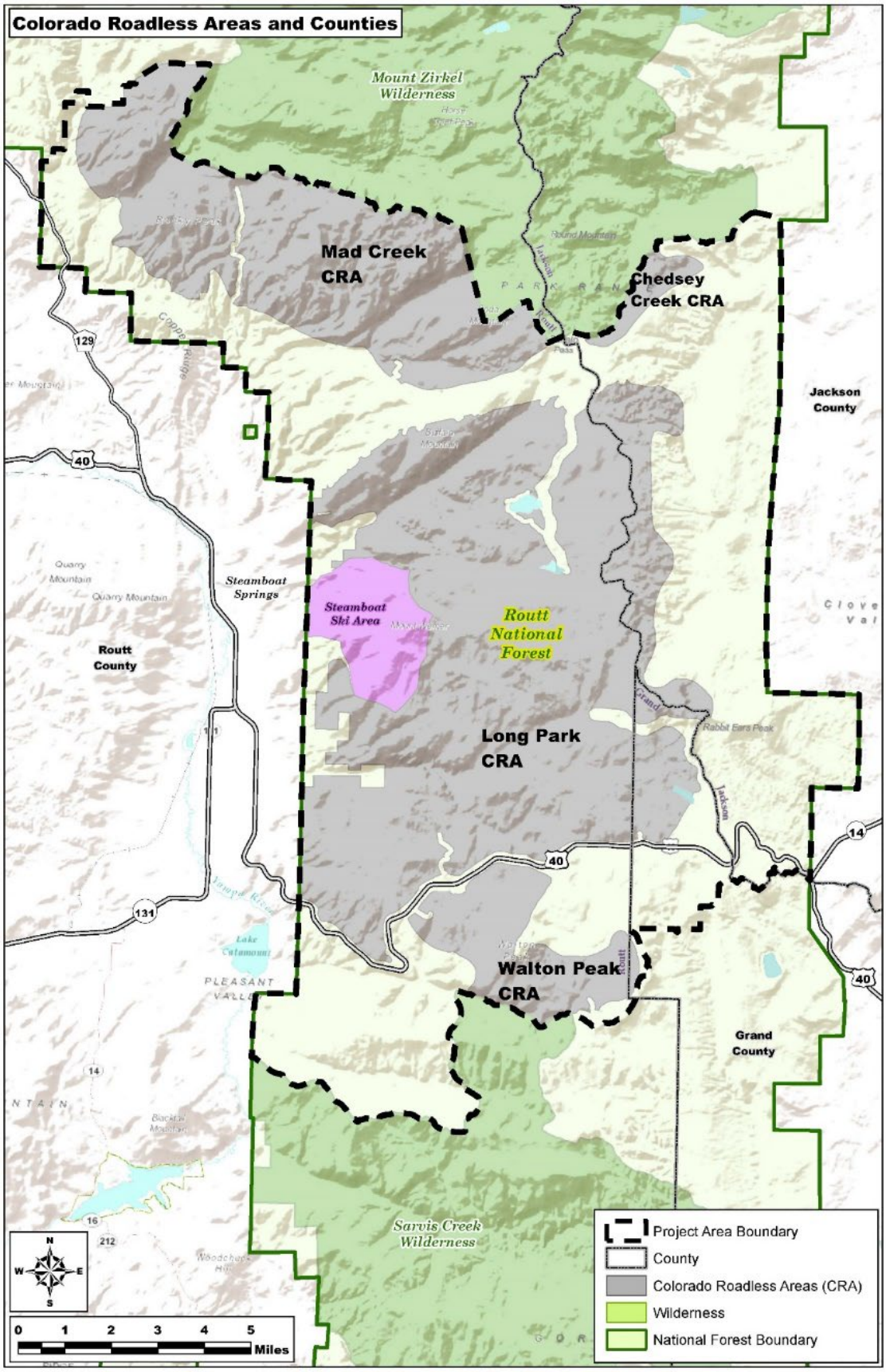

Figure 6. Colorado Roadless Areas in or near the project area

Effects of the Proposed Action

Direct and Indirect Effects

This section includes the direct, indirect, and cumulative effects of the proposed action to roadless area characteristics within the Long Park, Mad Creek and Walton Creek Colorado Roadless Areas. Roadless area characteristics are defined in the Colorado Roadless Rule and serve as the foundation to describe impacts to Colorado Roadless Areas, as described below.

Characteristic 1: High quality or undisturbed soil, water, or air resources

There would be minor soil disturbance and possible sediment delivery to streams during project implementation. Trails would be designed to Forest Service standards to protect long-term soil and water resources. It is not anticipated that the project would have long term impacts to these resources in the Colorado Roadless Areas. The potential short-term impacts of sedimentation and erosion would be reduced by project design elements developed by the zone hydrologist and soil scientist. For example, design elements would include direction from the Forest Service Handbook 2509.25- Watershed Conservation Practices Handbook. It is not anticipated at this time that new trails would impact air quality, including class 1 airsheds, in the short- or long-term. There will be benefits to soil (reduced erosion) and water resources (lower sediment deposits) from decommissioning non-system routes which have not been designed using Forest Service trail standards. See the Soils and Hydrology sections of this environmental assessment for additional analysis.

Characteristic 2: Sources of public drinking water

No significant adverse changes to the quality of public drinking water are anticipated. The proposed action does include portions of two trails (total length: approximately 0.7 miles) planned within Management Area 3.23 Municipal Watersheds. One trail is an existing level 1 road / non-system trail leaving from the Fish Creek Falls trailhead to the uranium mine interpretive site. The other trail is the northern end of route 7. Any disturbance or sediment delivery that would occur as a result of the project that would affect the quality of public drinking water would be minor and avoided to the extent practicable through project design, including direction from the Forest Service Handbook 2509.25- Watershed Conservation Practices Handbook and Forest Service Handbook 2309.18 trail standards. There will be benefits to drinking water resources (lower sediment deposits) from decommissioning non-system routes not designed using Forest Service trail standards in watersheds.

Characteristic 3: Diversity of plant and animal communities

Effects were identified to plant and animal communities from trail construction, tree removal and corresponding recreation use. Many adjustments were made to proposed trail locations and design elements were established to minimize impacts to sensitive areas (wetlands, critical habitat, large undeveloped areas) and to maintain stable populations of plant and animal communities to maintain greater ecosystem health. There were some positive effects identified from restoring non-system routes which are causing resource impacts. Potential project effects to plant and animal species are also analyzed in the Botany, Aquatics, and Wildlife sections of this environmental analysis.

Characteristic 4: Habitat for threatened, endangered, and sensitive species, and species dependent on large undisturbed areas of land

Effects were identified to threatened, endangered, and sensitive species dependent on large undisturbed areas from trail construction, tree removal and corresponding recreation use. Adjustments were made to proposed trail locations and design elements established to minimize

impacts to sensitive areas (critical habitat, large undeveloped areas) and to maintain stable populations to maintain Colorado Roadless Areas as biological strongholds. There were some positive effects identified from restoring non-system routes which are causing resource impacts. Notable adjustments to proposed trails include avoiding placing proposed trails in the middle of the Long Park Colorado Roadless Area, which is currently undeveloped, and removing non-system routes from a mostly undeveloped area of the Mad Creek Colorado Roadless Area rather than adopting them. More information is available in the Biological Assessment and Biological Evaluation for this project, both of which are available in the project record.

Characteristic 5: Primitive and semi-primitive classes of recreation

There is a strong desire for additional semi-primitive non-motorized trail experiences that provide a diversity of experiences near the community of Steamboat Springs, Colorado. This project either maintains or improves semi-primitive non-motorized opportunities in each of the three Colorado Roadless Areas, with notable improvements in the Long Park Colorado Roadless Area where there is a lack of semi-primitive trail experiences. Although additional trails were desired by the public in the Mad Creek Colorado Roadless Area, a decision was made to remove non-system trails and focus proposed trails in the Long Park Colorado Roadless Area due to their proximity to existing recreation infrastructure and U.S. Highway 40 and to benefit other Colorado Roadless Area characteristics. See the Recreation section of this environmental assessment for additional information.

There may be a benefit of taking pressure off the three popular Wilderness area trails (Mount Zirkel, Flattops, and Sarvis Creek) in proximity to the project area on the Routt National Forest from visitors seeking areas with high scenic value and semi-primitive recreation experiences.

Characteristic 6: Reference landscapes for research study or interpretation

Impacts were minimized from trail construction and associated tree clearing. Due to trails occupying only a small percentage of impact of overall Colorado Roadless Area acreage, placement near existing disturbance, and use of design elements to minimize resource impacts, all three Colorado Roadless Areas will be maintained as reference landscapes. There are minor improvements to each Colorado Roadless Area from restoring non-system routes which are causing resource impacts.

Characteristic 7: Landscape character and integrity

Impacts were minimized from trail construction and associated tree clearing. Due to trails occupying only a small percentage of impact of overall Colorado Roadless Area acreage, and placement near existing disturbance and use of design elements to minimize resource impacts, all three Colorado Roadless Areas will be maintained as areas of high quality, natural appearing landscapes. There are minor improvements to each Colorado Roadless Area from restoring non-system routes which are causing resource impacts. The Visual Management System and the prescribed Visual Quality Objectives were used to maintain or improve scenic values.

Characteristic 8: Traditional cultural properties and sacred sites

Tribes were contacted during scoping. There are no known traditional cultural properties or sacred sites in the project area. Any unknown sights discovered during trail development would be managed according to the National Historic Preservation Act, forest plan, and other applicable polices and regulations.

Characteristic 9: Other locally unique characteristics

All three Colorado Roadless Areas are identified as having areas where there are signs of development (U.S. Highway 40, trailheads, campgrounds) and high recreational use in addition to other areas of less or no development. These Colorado Roadless Areas were also identified as areas of biological importance. Proposed trails were focused towards areas of existing disturbance to maintain the character of some areas with high recreational use and development while maintaining other areas with no development.

Summary of Direct and Indirect Effects

Minor effects have been identified in the analysis from trail construction, corresponding tree removal and ground disturbing activities related to restoration of non-system trails. Effects will be minimized through project design elements resulting in maintaining or improving roadless characteristics.

Cumulative Effects

The Colorado Roadless Rule became effective on July 3, 2012, when it was published in the Federal Register. Effects prior to 2012 are considered part of the baseline existing condition identified in each Colorado Roadless Area's description when they were established. Effects of projects in the past, including the baseline condition (2012 to present), present, and reasonably foreseeable future, are considered for cumulative effects to the nine roadless characteristics of each of the three Colorado Roadless Areas in the project area. Examples of cumulative effects from past projects in these Colorado Roadless Areas from 2012 to present include the 2015 Steamboat Front Hazardous Fuels Reduction Project Environmental Assessment that treated areas with beetle kill trees, managed fuel conditions in the wildland-urban interface and improved wildlife habitat in winter range; and the 2016 Buffalo Pass Trails Environmental Assessment that added trails and decommissioned non-system routes in the Buffalo Pass area.

After analyzing cumulative effects of all applicable projects in the Long Park, Mad Creek and Walton Peak Colorado Roadless Areas to the nine Colorado Roadless Area Roadless characteristics, there is a result in either stable or improving trends over the long term.

Aquatics

Affected Environment

The Mad Rabbit trails project area includes nine watersheds. Seven watersheds are within the Yampa River basin and one each within the North Platte and Colorado River basins.

Existing Condition: Fish Populations and Habitat

Native fish species thought to historically occupy streams within the Yampa River basin include Colorado River cutthroat trout (Oncorhynchus *clarkii pleuriticus Hirsch et al. 2006*), mottled sculpin (*Cottus bairdi*), and mountain whitefish (*Prosopium williamsoni*). Currently, mottled sculpin are found within downstream segments of many streams and mountain whitefish spawn within the lower reaches of Fish and Mad Creeks. That said, many streams within the Yampa River basin are thought to have been historically fishless due to natural waterfalls including portions of Mad, Fish, and Walton Creeks. Muddy Creek within the Colorado River basin was also fishless due to a waterfall. Streams on National Forest System lands within the North Platte drainage are considered to have been historically fishless. Brook trout (*Salvelinus fontinalis*), a non-native species, have been stocked and are now present in most streams within the project area.

There are no threatened, endangered, or sensitive fish species within the project area. However, there are four threatened and endangered fish species found further downstream in the lower Yampa and Colorado Rivers and a fifth threatened and endangered species further downstream in the lower North Platte River.

Existing Condition: Amphibian Populations and Habitat

Boreal chorus frog (*Pseudacris maculata*) and tiger salamander (*Ambystoma mavortium*) are common throughout the project area. The project area contains suitable habitat for the northern leopard frog (*Lithobates pipeans*), wood frog (*Litobates sylvaticus*), and western boreal toad (*Anaxyrus boreas boreas*). All three are Region 2 sensitive species. Leopard and wood frogs are present in low elevation wetlands on the eastern boundary of the project area. There are no other known populations of these three species within the project area.

Existing Condition: Threatened, Endangered, and Proposed Species Considered in the Analysis

There are five aquatic threatened, endangered, and proposed species or their habitats located on the Hahns Peak/Bears Ears Ranger District, which are located adjacent to or downstream of the project and could potentially be affected. They are Bonytail Chub (*Gila Eegans*), Razorback Sucker (*Xyrauchen texanus*), Colorado Pikeminnow (*Ptychocheilus lucius*), Humpback Chub (*Gila cypha*) and Pallid Sturgeon (*Scaphirhynchus albis*). A pre-field review was conducted of available information to assemble occurrence records, describe habitat needs and ecological requirements, and determine whether field reconnaissance is needed to complete the analysis. Sources of information included literature accounts, Forest Service records, Colorado Parks and Wildlife database, and U.S. Fish and Wildlife Service recovery plans (USFWS 1993, 2002a, 2002b, 2002c, 2002d) for the four endangered Colorado River fishes.

No further analysis is needed for species that are not known or suspected to occur in the project area, and for which no suitable habitat is present.

There are no threatened or endangered aquatic or riparian-dependent species, or habitats documented within the project area. However, stream flows from the project area ultimately contribute to conditions in the Colorado, North Platte, and Yampa Rivers. The above species are native to mainstem ecosystems, where their life cycle depends on natural flow regimes that include flood flows and substantial sediment transport. Their biology is fully described in U.S. Fish and Wildlife Service publications (USFWS 1993,1999).

Sensitive Species Considered in the Analysis

Table 11 includes Region 2 aquatic sensitive species, or their habitats that are located on the Hahns Peak/Bears Ears Ranger District, Medicine Bow-Routt National Forests and Thunder Basin National Grassland or that are located adjacent to or downstream of the project and could potentially be affected. A pre-field review was conducted of available information to assemble occurrence records, describe habitat needs and ecological requirements, and determine whether field reconnaissance is needed to complete the analysis. Field visits occurred in 2019 and 2020. Sources of information included evaluating the location and scope of the project, using literature accounts, Forest Service records, and Colorado Parks and Wildlife database.

No further analysis is needed for species that are not known or suspected to occur in the project area, and for which no suitable habitat is present. Table 11 documents the rationale for excluding a species. If suitable but unoccupied habitat is present, then potential effects are evaluated.

Table 11. Region 2 sensitive aquatic species that may be affected or are present in the project area

Common name	Scientific name	Status	Known or suspected to be present?	Suitable habitat present?	Rationale if not carried forward for analysis
Boreal Toad	*Anaxyrus boreas boreas*	Sensitive, Candidate	No	Yes	This species was analyzed.
Northern Leopard Frog	*Lithobates pipiens*	Sensitive	Yes	Yes	This species was analyzed.
Wood Frog	*Lithobates sylvatica*	Sensitive	No	Yes	This species was analyzed.
Colorado River Cutthroat Trout	*Oncorhynchus clarki pleuriticus*	Sensitive	No	Yes	This species was analyzed.
Hudsonian Emerald	*Somatochlora hudsonica*	Sensitive	No	No	The hudsonian emerald dragonfly is not being further considered in this biological evaluation because the closest known population is in south central Wyoming. Therefore, the proposed action would have no impact on populations, nor would it affect the viability of hudsonian emerald in the planning area.
Rocky Mountain Capshell Snail	*Acroloxus coloradensis*	Sensitive	No	No	The Rocky Mountain capshell snail is not being further considered in this biological evaluation because its known habitat on the Routt National Forest is in two lakes on the Parks Ranger District, east of the Continental Divide. The snail utilizes boulder and cobble substrates in shallow water of high elevation lakes in the Rocky Mountains and requires a certain set of water quality characteristics to live and reproduce, particularly high concentrations of bound carbonates, dissolved oxygen, and alkaline pH. The proposed trails do not occur near lakes. Therefore, the proposed action would have no impact on populations of the capshell snail nor would it affect the viability of capshell snail in the planning area.

Existing Condition: Boreal Toad, Northern Leopard Frog, and Wood Frog

The project area contains suitable habitat for the northern leopard frog (*Lithobates pipeans*), wood frog (*Litobates sylvaticus*), and western boreal toad (*Anaxyrus boreas boreas*). All three are Region 2 sensitive species. Leopard and wood frogs are present in low elevation wetlands on the eastern boundary of the project area. There are no other known populations of these three species within the project area. In addition, known populations do not occur near any of the proposed new or rehabilitated trails.

Existing Condition: Colorado River Cutthroat Trout (*Oncorhynchus clarkii pleuriticus*)

The Colorado River cutthroat trout historically occupied portions of the Colorado River drainage in Wyoming, Colorado, Utah, Arizona, and New Mexico (Behnke 1992). Now remaining populations occur mostly in headwater streams and lakes. Young (1995) determined most lotic populations were in isolated, headwater streams with average daily flows less than 30 cubic feet per second (0.85 m^3/s). Stream gradients usually exceeded 4 percent and all fish were found above 7,500 feet (2,290 m). Considerable research has been focused on inland cutthroat trout in general and Colorado River cutthroat trout in particular. Without doubt, the distribution and abundance of Colorado River cutthroat trout have declined (Young 2008, Martinez 1988, Behnke and Zarn 1976). Competition from nonnative trout, especially brook trout has been recognized as a major threat to Colorado River cutthroat trout (Young 2008). Studies have shown Colorado River cutthroat trout are displaced when brook trout occur in the same habitat. A recent study conducted by Colorado State University found survival of young Colorado River cutthroat trout was greatly impacted by the presence of brook trout, while adult Colorado River cutthroat trout survival was not impacted (Peterson and Fausch 2002).

Colorado River cutthroat trout are thought to have historically inhabited some streams within the project area. Colorado River cutthroat trout are no longer found within the project area primarily due to competition with introduced brook trout.

Effects of the No-Action and Action Alternatives

Effects of No-Action Alternative: Boreal Toad and Northern Leopard Frog

The no-action alternative would not change the existing condition. Impacts from existing non-system bike trails would continue. Eroding trail segments and stream and wetland crossings would continue to input sediment into aquatic resources impacting habitat quality. Any new non-system trails could further impact resources without the proposed restricted use area designation. Riparian character and aquatic habitat would remain stable with slightly degraded habitats in a few locations under this alternative.

No ground disturbing activities related to new authorized bike trail construction would occur under this alternative. Thus, potential increases in sedimentation from trail construction and crossings would not occur. Overall, aquatic habitat conditions amphibians would remain stable under this alternative.

Effects of Proposed Action Alternative: Boreal Toad and Northern Leopard Frog

The Mad Rabbit trails project proposed action would construct about 44.3 miles of new trail, designate trail use on 4 miles of existing level 1 administrative roads and rehabilitate about 36

miles of existing non-system trails, construct about 14 new trail-stream crossings, and implement a Restricted Use Area designation.

New trail construction should not result in substantial impacts to aquatic resources due to best management practices, forest plan standards and guidelines, and design elements. Efforts were made during initial trail layout to avoid wetlands and stream crossings when possible. In addition, design elements state that raised boardwalk be used in wetlands and that stream crossings either have bridges or hardened crossings. That said, trail construction would result in minor erosion immediately after construction and subsequent run-off events. Some of this sediment would reach wetlands and streams but would not be above natural levels Conversely, the rehabilitation and closure of non-system trails would improve aquatic conditions and the Restricted Use Area Designation would prohibit future non-system trail development.

No known populations occur near proposed trail construction or rehabilitation areas. If a new trail does occur near a population, impacts should be minimal and unmeasurable with trail location and construction best management practices.

A cumulative effects analysis was not warranted given the lack of impact to wetland resources.

This alternative is consistent with forest plan direction for the aquatic species and water, riparian, wetland, and floodplain resources while recognizing that some impacts from system and non-system trails exist. There would be no irreversible or irretrievable effects.

Effects of No-Action and Proposed Action Alternatives: Colorado River Cutthroat Trout

Colorado River cutthroat trout are not found within the project area nor are reintroductions currently planned. Therefore, neither alternative would impact the species.

Summary of Determination of Effect and Rationale

Effects Determination for Threatened and Endangered Species

The Fish and Wildlife Service believes that one of the major causes for the decline of these species is the effect of impoundments and water depletions. There are no water depletions associated with this project and the project would not have any net effect on downstream habitats. Therefore, there would be no direct, indirect, or cumulative effects associated with the proposed action to the endangered downstream fish populations or habitat.

There would be **no effect to the Colorado pikeminnow, bonytail chub, humpback chub, razorback sucker, or pallid sturgeon** from the proposed action. The rationale for this determination is that the endangered fishes or their habitats are not present on the Medicine Bow-Routt National Forests or Thunder Basin National Grassland and no water depletions are associated with this project. Consultation with the Fish and Wildlife Service is not required for these species.

Effects Determination Colorado River Cutthroat Trout

The alternatives would occur near a known Colorado River cutthroat trout population. Based on the effects described earlier, the implementation of the proposed action would not affect potential habitat for Colorado River cutthroat trout. Therefore, the alternatives would have **No Impact for the Colorado River cutthroat trout**.

Effects Determination for Sensitive Aquatic Species

Four Region 2 sensitive aquatic species are known or thought to occur within the Mad Rabbit trails project area. Trail construction and rehabilitation activities would not occur near known and potential future habitat these species. Therefore, the alternatives would have **No Impact for boreal toad, Colorado River cutthroat trout, northern leopard frog, and wood frog**.

Botany

Affected Environment

Elevations in the project area range from 6,700 to 10,960 feet. Gambel oak and open slopes occur at the lowest elevations. Aspen stands and lodgepole pine stands dominate at middle elevations. At higher elevations, ribbon forests (alternating bands of spruce-fir forests and open meadows) dominate the landscape. There are numerous wetlands in the project area. At higher elevations, many of the wetlands are fens, which are peat-forming wetlands that rely on groundwater input. Fens require thousands of years to develop and are difficult to restore once they are disturbed. Some fens have very high diversity of rare or uncommon plant species.

The Colorado Natural Heritage Program identified eleven potential conservation areas within the project area. Although potential conservation areas do not confer any special protection, they designate ecologically sensitive areas that may be necessary to the continued existence of a species, suite of species, or natural community and therefore may be worthy of particular attention in land planning. Of the eleven potential conservation areas that overlap the project area, only three include any proposed activities. Trail removal is proposed in the Buffalo Mountain-Steamboat Springs, Dumont Lake, and Soda Creek potential conservation areas. All three are considered to have high biodiversity significance. Trail construction is proposed in the Buffalo Mountain-Steamboat Springs and Dumont Lake potential conservation areas.

It is generally recognized that climate change is occurring and affecting conditions in the project area. Although we do not know exactly how these changes will affect current vegetation communities and ecological relationships, research suggests earlier snowmelt has resulted in decreased floral abundance of some species and declines in number of flowering plants in others. These declines may in turn lead to declines in recruitment and species persistence at local sites (Inouye 2008, Miller-Rushing and Inouye 2009) and cause cascading effects through the ecosystem.

This analysis considered federally listed threatened or endangered plant species, Region 2 sensitive species, and species of local concern. This analysis refers to sensitive plant species and species of local concerns generally as rare plant or rare plant habitat.

No federally listed threatened or endangered plant species are known or expected in the analysis area. No further analysis is needed for species that are not known or suspected to occur in the project area, and for which no suitable habitat is present (see Botany Report for a full list of species).

Region 2 sensitive species are “those plant and animal species identified by a regional forester for which population viability is a concern, as evidenced by, a) significant current or predicted downward trends in population numbers or density, or b) significant current or predicted downward trends in habitat capability that would reduce a species’ existing distribution” (FSM 2670.5). Field review found two sensitive species occurring near proposed activities: Rabbit Ears gilia (*Ipomopsis aggregata* ssp. *weberi*) and sphagnum moss (*Sphagnum angustifolium*). The Region 2 sensitive species analysis concentrated on these two taxa.

Rabbit Ears gilia is an endemic species that is known only on the Hahns Peak/Bears Ears Ranger District. It occurs in forest openings, meadows, and along road cuts, and it typically grows in areas with sparse vegetation cover (less than 50 percent cover). This type of habitat is susceptible to colonization by invasive species. Rabbit Ears gilia is of particular interest because the project area covers such a large portion of its range.

Based on the number of occurrences and their distribution over the landscape, the current population of Rabbit Ears gilia appears to have sufficient distribution. There are multiple occurrences on the unit, and there are several unoccupied areas that appear to have suitable habitat. However, Rabbit Ears gilia has low reproductive success. Demographic studies (Ladyman 2004) show that less than 10 percent of the seedlings reach reproductive maturity. Many of the seedlings died due to early season droughts, and early season droughts are forecast to be more common soon (Halofsky et al. 2017). Seeds are thought to be short-lived, and it has been estimated that the seed bank could become depleted in a five-year period. The low regeneration success, short-lived seed, and short dispersal distances suggest the species has low resiliency and may have difficulty recolonizing disturbed occurrence sites or colonizing new sites. Although more research is needed to understand this species and its habitat, existing information shows that it does not appear to survive in competitive environments.

The other Region 2 sensitive species analyzed, sphagnum (*Sphagnum angustifolium*), is a moss that occurs throughout northern latitudes, but is infrequent here. It is a wetland obligate that typically occurs on fens. Often these same fens have high diversity of other rare or uncommon taxa.

Species of local concern are species that occur infrequently on the planning unit, although they may have greater distribution off the planning unit. Occurrences are tracked, but analysis is not required for taxa in this category. Details of species of local concern taxa in the project area can be found in the botany report.

Effects of the No-Action Alternative

Direct and Indirect Effects

Under the no-action alternative, 44 miles of non-system trails would remain in use, and this network would likely continue to expand. These trails are a resource concern because design elements and best management practices cannot be implemented to minimize adverse effects. Disturbances from use of the non-system trails would be continuous, leaving no opportunity for plants or their habitat to recover. Effects are likely to increase in severity and extent as non-system trail use increases, and if non-system trails continue to develop. Evidence of impacts to plants and their habitat may continue for some time after the initial impacts occur. Many of the non-system trails cross rare plant occurrences, such as Rabbit Ears gilia.

Direct effects include trampling of individuals resulting in breaking, crushing uprooting and/or mortality of individuals. These impacts can physically damage individuals, populations, and/or the habitat where they grow. This may reduce growth, development and/or seed set. These impacts to individual plants can reduce population size. Upland forb species, such as Rabbit Ears gilia, analyzed in this report are generally at highest risk. Plants in areas where trails cross wetlands are also at high risk for trampling, as these areas often experience trail widening and braiding due to recreational user patterns.

Indirect effects generally occur later in time and result from changes made to the habitat. Habitat modifications may cause shifts in vegetation, hydrologic, solar, and soil characteristics of rare plant habitat. Introduction of non-native species or promotion of conditions that favor these species pose a threat to native plant species, particularly those that are rare.

Soil degradation associated with trails (includes compaction and loss, reduction in soil moisture, and increased bare soil) and loss of organic material is likely to occur. These effects can reduce seedling germination and survival and cause shifts in species composition along the trails and can adversely affect soil mycorrhizae necessary for some plant species to survive. In areas with high organic materials, such as fens, soil degradation can lead to a feedback loop of indirect effects that ultimately degrades the habitat.

Non-system trails are currently impacting wetlands in the project area, including one fen. Wetlands and the transition zones between wetlands and uplands support both high species diversity and a large proportion of rare plants. Trails can indirectly change soil hydrology and site hydrologic conditions, particularly where they cross wetlands, potentially drying out soils, degrading the habitat, and leading to changes in species composition. Within the foreseeable future these could result in the degradation or loss of wetlands that support regionally and locally sensitive plant species.

Non-system trails currently cross through multiple occurrences of Rabbit Ears gilia, particularly those in the Mad Creek-Rocky Peak area. These non-system trails are fragmenting the habitat and creating corridors for invasive species dispersal that, over time, could adversely affect the Rocky Peak occurrences. There are known populations of cheatgrass, bulbous bluegrass, Canada thistle, whitetop, spotted knapweed, curly dock, hound's tongue, and mullen in the Mad Creek area that have potential to spread undetected along these non-system trails. Current non-system trails could facilitate spread of these weeds to approximately 4 percent of the known Rabbit Ears gilia occurrences on the national forest. If the spread of these non-native invasive species goes undetected, it would be more likely that these gilia occurrences could disappear.

Effects of the Proposed Action Alternative

Direct and Indirect Effects

Under the proposed action, alignment and construction of new trails would follow best management practices, thus reducing potential impacts to botanical resources. Although the direct and indirect effects are similar to those of the no-action alternative, adherence to best management practices and design elements would substantially reduce the magnitude of these effects.

Closing and rehabilitating non-system trails that go through wetlands and rare plant habitat would benefit plant species by removing the chronic disturbance of trail users. Where implemented, prohibiting camping and campfires at trailheads could both benefit plant resources by potentially reducing spread of invasive species and reducing the risk of wildfires (see appendix A, design element 36).

The proposed action has been designed to protect wetlands as much as possible. A restricted use area designation would reduce the potential for future wetland degradation, by prohibiting the use of non-system trails by bicycles. Closing and rehabilitating non-system trails would eventually reverse degradation currently occurring in wetlands north of Fox Curve. In most cases, proposed segments were either realigned or dropped entirely to avoid wetlands. The proposed alignment of segment 7 passes over a low, narrow, natural "causeway" between two wetlands. One of these (possibly both) is a fen, which warrants additional protection (FSM 2600-2011-2, section 2631.3). This wetland supports an unusually high number of high conservation value species. Both the

hydrologist and the botanist would approve final alignment along with design element 13, 14, and 42 to minimize the effects to hydrology and habitat properties that could affect sensitive plants.

The types of effects of trail construction on sensitive species, particularly Rabbit Ears gilia, are like those described for the no-action alternative but are expected to be lower in the magnitude of effects to gilia, because poorly placed non-system trails would be decommissioned, and the corridors would be rehabilitated. This is expected to reduce disturbance, habitat fragmentation and potential habitat degradation from invasive weeds, particularly in the Rocky Peak area. New system trails have been aligned around existing rare plant occurrences to reduce potential impacts to Rabbit Ears gilia, owing to the use of design elements and best management practices in trail construction. Under the proposed action trails would not cross through occurrences of Rabbit Ears gilia, although some trail alignments would go within 50 feet of some occurrences.

Cumulative Effects

This section considers events from a decade in the past through a decade in the future. Because no threatened or endangered species are analyzed in the document, Endangered Species Act cumulative effects are not evaluated. Cumulative effects are only evaluated for species with direct or indirect impacts from the proposed and no-action alternatives. Although the effects could apply to any plant species in the project area, this discussion focuses on Rabbit Ears gilia.

Rabbit Ears gilia is of particular interest because the project covers such a large portion of the taxon's range. The main threat to this species is the introduction of invasive plant species. There are two major vectors that increase the risk of that threat – livestock grazing and trail or road use. Most known occurrences are potentially impacted by livestock grazing and/or recreation. Both increase the threat of invasive plant species introductions, a major threat to Rabbit Ears gilia.

Most of the occurrences are in allotments actively grazed by cattle or sheep. Sheep are often trailed through occupied habitat, resulting in trampling of entire occurrences. When the sheep graze, flowering individuals are more likely to be eaten than the shorter rosettes. Depending on the movements of the herd, large numbers of flowering individuals may be destroyed, thus substantially decreasing the seed production for affected occurrences. Livestock also have potential to introduce non-native and invasive species.

Recreation has been identified as another of the primary threats to Rabbit Ears gilia. The Forest recently completed a new network of trails in the Buffalo Pass area. There are plans to reconstruct Buffalo Pass Road for improved access to this portion of the project area, which will enable more visitors to reach the area. Demands for summer recreation opportunities are likely to increase as climate change increases temperatures and the season for warm weather activities lengthens. This could potentially increase both the magnitude and severity of the direct and indirect effects to the population of Rabbit Ears gilia as a whole.

The ski area continues to improve and expand its facilities within its permit boundaries with tourism creating an increased emphasis on summer sport facilities, including developments that involve ground disturbance for permanent structures (trails, disk golf courses, etc.) and convey season-long disturbances. These expansions have impacted several occurrences of Rabbit Ears gilia. Winter slope maintenance, such as grooming, may also affect the habitat through snow compaction. Snow compaction due to recreational activities (such as snowmobiling) that can reduce soil temperatures, which decreases soil microbial activity and seed germination, is also a concern, especially for Rabbit Ears gilia.

Occurrences that are in active allotments and proximity to roads or trails are at the highest risk for weed invasion. Table 12 shows a matrix that displays the risk to gilia from the effects of cumulative activities under each alternative. The percentages shown in table 12 indicate the proportion of known Rabbit Ears gilia occurrences by grazing and proximity to roads or trails. The ratings reflect the relative risk of invasive and/or non-native species establishment using a qualitative value of high, moderate, or low assigned to display the overall risk to the species and the percentage of occurrences in each risk category was calculated.

Compared to the no-action alternative, the proposed action slightly increases (by 1 percent) the number of occurrences at low risk for invasive species. The percentage of occurrences at moderate risk decreases from 72 percent (no action) to 61 percent (proposed action). The proposed action increases the percentage of occurrences at high risk from 18 percent (no action) to 28 percent. This is important because introductions and subsequent control of invasive species could make it harder to manage for Rabbit Ears gilia, particularly if climate change does not favor the taxon. Early detection and rapid response measures identified in the design elements would reduce these risks.

Table 12. Relative risk of weed invasion under cumulative effects

Proximity to road or trail	No action active allotment	No action closed or vacant allotment	Proposed action active allotment	Proposed action closed or vacant allotment
Within 50 feet of a road or trail	High 18 percent	Moderate 30 percent	High 28 percent	Moderate 29 percent
Beyond 50 feet from a road or trail	Moderate 42 percent	Low 10 percent	Moderate 32 percent	Low 11 percent

Determinations

No-Action Alternative

Rabbit Ears gilia is most vulnerable where users have created trails through the occurrences. Considering the challenges climate change poses to the viability of Rabbit Ears gilia, the additional pressures created by non-system trail construction and use, and the subsequent unmanaged invasive species, would likely result in the loss of Rabbit Ears gilia in the Rocky Park area. Collectively these losses could result in reduction in Rabbit Ears gilia occurrences, but losses would not result in a loss of viability on the unit. Therefore, a determination of “May adversely impact individuals, but not likely to result in a loss of viability in the planning area, nor cause a trend toward federal listing” is made for Rabbit Ears gilia.

Although non-system trails may affect individual sphagnum moss plants, the existing condition is affecting sphagnum moss viability on the unit. If the non-system trails continue to expand, particularly in the area between Rabbit Ears Pass and Buffalo Pass, it would likely result in the loss of some occurrences through habitat degradation but still not affect the viability of the species. Based on this a determination of “May adversely impact individuals, but not likely to result in a loss of viability in the planning area, nor cause a trend toward federal listing” is made for sphagnum moss.

Proposed Action Alternative

Under the proposed action, non-system trails would be closed and rehabilitated. This would benefit Rabbit Ears gilia occurrences that were near or intersected by these trails. Proposed new trails have been aligned to reduce or eliminate direct impacts to Rabbit Ears gilia occurrences. Losses of Rabbit Ears gilia could still occur in the vicinity of trails that pass within 50 feet of occurrences. However, these trails would be regularly monitored for invasive species and those species would be treated. Additionally, trails would be regularly surveyed for new invasive species so they could be detected and treated. Treated areas would be assessed for revegetation and restoration needs. Based on the analysis and information available, the determination for Rabbit Ears gilia is "May adversely impact individuals, but not likely to result in a loss of viability in the planning area, nor cause a trend toward federal listing."

Proposed activities would not affect sphagnum moss viability on the unit. New system-trails would follow best management practices and would not be located in fens. Based on this a determination of "no impact" is made for sphagnum moss.

Soils

Soil is a fundamental component of the environment. It is the growing medium for most plants. Soil absorbs, filters, and stores water, releasing it slowly over time. It supplies nutrients and structural support for vegetation, which in turn supplies habitat for wildlife and other resources.

Recreation activities can impact soil resources. Specifically, trails increase the potential for erosion, compaction, and ground cover loss during construction and use. Surface hydrology is typically altered by trails. Water can be captured and concentrated on the trail prism, which leads to soil displacement. Vegetation can act as a buffer, filtering the impact of rain, slowing surface flows, and increasing infiltration rates, but compacted and exposed trails lack groundcover. Where trails descend or ascend unstable and/or steep slopes, the potential for soil displacement increases. Off-highway motorized recreation has the potential to remove the topsoil layer. However, most soil resource impacts can be avoided or mitigated by incorporating sustainable trail design and construction, rehabilitating or rerouting trails that create resource damage, educating trail users about sustainable trail use, and restricting off-trail travel.

This section describes potential impacts the Mad Rabbit trails project could have on soils in the project area. Potential impacts are analyzed for numerous categories: soil classifications, soil compaction, erosion potentials, and mass movement potentials. It is assumed that all Forest Service policies outlined in the Routt National Forest Land and Resource Management Plan (forest plan), the Watershed Conservation Practices Handbook, and Soil Quality Handbook standards would be incorporated in the proposed action and would be effective in protecting the soil resource. The end of this report will provide a summary of the impact of the proposed action on soil resources. This information will be used to assist the responsible official in deciding which alternative to implement for the project.

As outlined in the forest plan and the Soils Management Handbook (FSH 2509.18), a project should not result in detrimental soil impacts that exceed 15 percent of an activity area. An activity area is defined in the Soil Management Handbook as an area of land impacted by a management activity. For this analysis the activity area is the project area.

The soil analysis area is the boundary of the project area. The analysis area was selected because this is where the impacts from implementing the proposed action would occur.

Soil impacts from each alternative are evaluated for the following categories: soil compaction, nutrient removal, mass movement potential, and erosion potential.

Affected Environment

Existing Condition

Soil resources within the project area vary from one location to another. This variability in terms of physical and chemical characteristics is due to the contrast in elevation, topography, microclimate, parent material and vegetation cover.

Soils within the project area range from underdeveloped soils in uplands to highly organic soils in wet areas with shallow water tables, and wetlands. Forested areas are typically characterized by both weakly developed soils and fertile soils.

Soil Compaction

The term soil compaction refers to the compression of a soil (reduced spaces between soil particles) resulting in reduced pore space, decreased movement of water and air into and within the soil, decreased water storage, and increased surface runoff and erosion.

Soil compaction can significantly reduce long-term soil productivity; it is important to prevent unnecessary compaction. Compaction often occurs because of management activities, so it is important to stay within acceptable standards to minimize the overall effect. The Soil Management Handbook defines detrimental compaction as a greater than 15 percent increase in the average undisturbed soil bulk density, or bulk density values that exceed regionally set thresholds (FSH 2509.18-92-1).

Some soils are more easily compacted than others. Most soils are more easily compacted when moist rather than dry. Soil compaction impacts are usually cumulative, with each compaction activity increasing the total compaction. Within the activity area, soils most prone to compaction have been selected out and omitted from consideration for new trail building. These soils typically included more organic sites associated with being seasonally submerged due to precipitation.

Nutrient Removal

Nutrient depletion is the loss of the capacity of a soil to supply mineral nutrients to plants. Loss of organic matter typically occurs because of increased oxidation rates (decomposition) or removal of these materials (for example, crops, erosion) in excess of subsequent accumulation. It is commonly assessed by visual observations or laboratory measurements.

Within the activity area, soils most prone to nutrient removal have been selected out and omitted from consideration for new trail building. These soils typically included more organic sites associated with seasonal inundation and wetlands.

Erosion Potential

Soil erosion has been defined as the detachment or breaking away of soil particles from land surface by some erosive agent (such as water and wind) and the subsequent transportation of the detached particles to another location (Flanagan, 2002). Soil erosion, a major cause of the degradation of water quality throughout the United States, is the result of several factors, including rainfall intensity, steepness of slope, length of slope, vegetative cover, and management practices. The inherent properties of a soil also play a major role in erosion. Four major soil properties govern erodibility: texture (particle-size distribution), structure, organic matter content, and permeability.

The potential for erosion by water is called soil erodibility. Soil erosion is both a human-induced and natural process. Human induced erosion is caused by removal or reduction of plant and residue cover. Erosion has a range of impacts, both onsite and offsite. It removes fertile topsoil, organic matter, and nutrients, thereby decreasing the tilth, water-holding capacity, and general productivity of a soil (Flanagan, 2002).

Unsustainable trail construction can create conduits for runoff, thereby intensifying erosional processes. When the amount of soil erosion reaches a level where loss does not equal natural soil formation, productivity is harmed. Over time, if erosion continues, soil productivity is lost.

Effects of the No-Action Alternative

Direct, Indirect, and Cumulative Effects

Under the no-action alternative, the Mad Rabbit trails project would not be implemented. None of the unauthorized, non-system trails would be closed and rehabilitated.

The no-action alternative would continue to cause environmental impacts to the soil resource. Non-system trails were not designed to Forest standards, and they will remain in place without proper reconstruction, maintenance, or obliteration. Appropriate slopes, soils, and locations are not considered and do not receive any type of upkeep to mitigate soil degradation. The damaging effects associated with poor trail design and lack of maintenance may lead users to establish alternate routes to circumvent severely damaged sections of trail. There is the likely potential for non-system trails to proliferate in the absence of a designated and maintained trail system. The additional footprint from these trails may lead to dispersed resource damage, including erosion and sediment delivery to streams. Without rehabilitation of disturbed sites where unauthorized trails have been developed, continual compaction and degradation would increase soil loss. About 44 miles of non-system trails would remain under the no-action alternative.

Effects of the Proposed Action Alternative

Direct and Indirect Effects

The proposed action could result in direct, indirect, and cumulative impacts on soil resources within the project area. These impacts may include alterations to physical, chemical, and/or biological properties. Physical properties of concern include change in structure, density, porosity, infiltration, permeability, water holding capacity, depth to water table, surface horizon thickness, and organic matter quantity and distribution. Trail construction fully commits the soil resource and therefore removes those areas from a productive state. However, impacts can generally be avoided with the incorporation of the Forest Service guidance and design elements.

Soil compaction resulting from the construction and maintenance of the proposed trail system is expected. New trails will experience greater levels of compaction relative to their background bulk densities (Goeft and Alder 2001). Compacted soils will be denser and less permeable to water, which may in turn increase runoff. However, compacted soils also help to resist erosion and soil displacement and provide durable treads that support traffic. From this perspective, soil compaction is considered beneficial for trail development and maintenance, and it is an unavoidable form of trail impact. Sections of unauthorized trail not incorporated into the permanent trail system may remain devoid of vegetation until efforts to rehabilitate the soil (scarifying, ripping) are undertaken.

Trail rehabilitation would remove the trail prism altogether and return the slope back to its natural state by re-contouring and re-vegetating non-system trails. Construction of drainage features,

embedded debris on steep pitches, and seeding with native species will further aid in the rehabilitation of these trails. Restoration of these surfaces will slow surface runoff, thereby increasing the infiltration capacity for the project area. Improvements in soil structure would directly affect vegetative growth and soil productivity (Brady 1974). Furthermore, a designated trail system and closure order would limit soil erosion and compaction by discouraging the proliferation of non-system trails. In turn, this will promote the long-term ecological restoration of the area.

Some factors contributing to high erosion potentials in the project area include seasonally saturated soils and soils containing high amounts of organic materials in the upper horizons. Some of the areas designated as “highly erosive” fall into this category as a result of being delineated as “exposed rock.” Because of the impervious nature of bedrock, surface runoff is nearly 100 percent.

Organic matter can be easily displaced by the erosive forces of flowing water. Implementation of erosion control features may be required on numerous sections of the trail. In areas where proper trail design does not eliminate the potential for degradation, structures like boardwalks or turnpikes may be necessary. Proper trail design with appropriate grade control and out sloping will aid in minimizing erosion. Other techniques like leaving root systems in place or incorporating geotextiles may be necessary.

Some factors contributing to high mass movement potentials in the project area include saturated soil due to spring snowmelts or disturbance near hillside seeps and springs. Some areas of the project area are rated as having a high mass movement potential. The relatively fine surface texture of the soils, combined with the possibly unstable glacial deposits in the area, have caused these areas to be rated as a potential hazard for mass movement. However, given the small overall footprint of the proposed trail system, mass movement on a large scale is not anticipated.

For this analysis, soil loss is the determining factor to gauge soil impacts from the proposed action. Soil loss will inevitably occur because of trail construction. The relative area of soil loss in relation to the larger project area will be minimal and well within forest plan standards.

Cumulative Effects

The proposed action would occur within the project area, however, there is potential for sediment transport to adjacent areas. Soil erosion will occur during the construction phase and throughout the re-vegetation process, which will likely persist for the short-term (one to five years). After construction is completed, erosion is expected continue, however, standard trail maintenance should mitigate this impact. The soil disturbance that is likely to occur under the proposed action, in combination with impacts from past, present, and future activities such as dispersed and designated camping, grazing, infrastructure maintenance, road construction and maintenance would not have a significant adverse cumulative impact on the soil resource in the project area.

Conclusion

Trail construction removes vegetation, exposes soil and/or bedrock, and compacts the soil. This, in turn, has the potential to contribute to accelerated erosion and sediment delivery to streams. Erosion degrades soil and renders it less productive. Rills and gullies may form from the channeling of water on the soil surface and could cause slope failure. Sediment production resulting from trail construction is inevitable. However, if appropriate trail construction measures are followed, soil impacts can be minimized, and a sustainable trail can result.

Eliminating non-system trails, which typically do not consider the effects of erosion during their construction and establishment, will serve to lessen the overall erosion potential of the trail system within the Mad Rabbit trails project activity area. Design elements to be incorporated on new trail construction, including adequate grade reversals, drainage features and more appropriate locations, will serve to further lessen the anticipated amount of soil erosion over time.

Non-system trails are not generally sustainably constructed, and therefore, are a source of concern. Decommissioning of the non-sustainable non-system trails and/or improving non-system trails to not create resource damage, would result in higher infiltration rates on the landscape, increased vegetative cover, and long-term reestablishment of soil productivity.

Implementation of the proposed action would result in a long-term reduction in erosion through non-system trail rehabilitation, construction of trails that meet Forest sustainable design standards, and avoidance of areas that are vulnerable to erosion.

The proposed action would maintain consistency with forest plan direction for the soil resource and there would be no significant irreversible or irretrievable impacts to the soil resource.

Hydrology

This section focuses on effects pertaining to water resources that have been identified for detailed analysis.

Effect 1: Water quality/sediment delivery/stream health
Effect 2: Hydrologic regime/stream health
Effect 3: Wetland function and quantity

This analysis addresses direct, indirect, and cumulative effects in sixth level watersheds that would be affected by construction of new trails, or rehabilitation of existing non-system trails; other watersheds in the vicinity were not included as there would be no effects. This analysis used field and office methods, literature review, and geospatial analyses. Field reconnaissance validated and refined locations of streams, riparian areas, wetlands, and other hydrologic features. Trails were located to avoid wetlands and fens, and to minimize stream crossings. Where stream crossings could not be avoided, stream-crossing locations were identified that would have minimal effects to water resources from the approaches. Where bridges would be needed, abutment locations were identified to minimize effects to water resources including wetlands, and road densities were analyzed to determine if new trail construction would have the potential to substantially alter the hillslope hydrology and hydrologic regime.

Indicators and Measures used for assessing effects are:

- Change in number of trail-stream crossings and miles of trail within 300 feet of perennial and intermittent streams
- Miles of roads and trails in third order or larger watersheds
- Acres of wetland with direct or indirect effects to long-term ground cover, soil structure, water budgets, and flow patterns that affects ecological function

Affected Environment

The Mad Rabbit trails project would affect nine sixth level planning watersheds. Elevations range from 7,000 feet to over 10,600 feet and is one of the wettest areas in Colorado. Watershed hydrology is characterized by low flows throughout the fall and winter with snowmelt runoff peak flows in May and June. In addition to surface water resources there are abundant unmapped groundwater resources that support wetlands including fens, and groundwater dependent ecosystems.

Past management actions affecting water resources include road and trail construction including U.S. Highway 40, developed and dispersed recreation, livestock grazing, water developments, and the Steamboat Ski Resort. All these activities can affect the hydrologic regime, water quality, and wetland and riparian area function and were considered in the cumulative effects analysis for each indicator.

Effects of the No-Action Alternative

Direct and Indirect Effects

Under the no-action alternative impacts to wetlands and water resources from existing and any newly developed non-system trails would continue to affect water quality and stream sedimentation, wetlands, and the hydrologic regime. These impacts are greater than those of newly constructed trails because 1) non-system trails were not located to avoid wetlands and water resource impacts, 2) design elements and best management practices were not implemented to minimize adverse effects, and 3) the trail-stream crossings do not have bridges. The development of non-system trails with poor locations and lack of best management practices would likely continue and the network would expand as the Restricted Use Area designation would not be implemented. While the adverse impacts would likely increase, the total extent is uncertain and difficult to predict.

Effects of the Proposed Action Alternative

Direct, Indirect, and Cumulative Effects

The environmental impacts including direct, indirect, and cumulative effects of the proposed action are evaluated against their potential to affect watershed condition, stream health, water quality, and effects to wetland and riparian areas. Watershed condition is the state of a watershed based on physical and biological characteristics and processes affecting hydrologic and soil functions. FSH 2509.25 defines stream health classes and design criteria to maintain and improve stream health, wetland and riparian condition, and water quality, and to meet forest plan water and aquatic standards. Design criteria from FSH 2509.25, and metrics from the National Watershed Condition Technical Guide (USDA, Forest Service 2011), are incorporated into the indicator metrics.

Effects to Hydrologic Function

The density and distribution of roads, trails, and other linear features within the watershed can affect the hydrologic regime through an extended channel network and connected disturbed areas. Metrics for road and trail condition in the National Watershed Condition Classification Technical Guide specify that road and trail densities greater than 2.4 miles per square mile within a watershed have a high probability that the hydrologic regime (timing, magnitude, duration, and spatial distribution of runoff flows) is substantially altered. Supporting rationale states that roads and trails adversely alter natural sediment and hydrologic regimes by changing streamflow patterns and amounts, sediment loading, transport, and deposition, channel morphology and stability, and

riparian conditions. The Mad Rabbit trails project trails system proposed action would both construct new trail and rehabilitate existing non-system trails that were developed without implementation of best management practices to minimize resource impacts. Changes from the proposed action to road and trail density by watershed are summarized in table 13.

In five of the nine watersheds the proposed action would result in a net decrease in road and trail density due to restoration of existing non-system trails. New trail construction would increase road and trail density in four of the nine watersheds but would remain below 1.8 miles per mile^2 and is not expected to have a substantial effect on the hydrologic regime. New trails would incorporate project design features and best management practices to minimize impacts to water resources and ensure legal compliance.

Cumulative Effects to Hydrologic Function

The cumulative effects of existing and proposed road and trail densities are not expected to significantly alter the hydrologic regime, and in some watersheds the cumulative effects would be less than the existing condition.

Effects to Water Quality and Sediment Delivery

The density, location, distribution and maintenance of the road and trail network can affect water quality through sediment delivery. Of the new trail miles constructed, less than 25 percent would be within 300 feet of perennial and intermittent streams for all watersheds. With rehabilitation of existing non-system trails, the miles of trail within 300 feet of streams would decrease in four out of nine watersheds while increasing in the other five. A total of approximately 14 new trail-stream crossings are anticipated with the highest density in the Harrison Creek watershed in the Ferndale area. Crossing locations have been carefully selected to minimize stream sedimentation potential, and most crossings would have bridge structures to limit sedimentation. Development of trailheads with toilets as needed and camping restrictions at trailheads would help to protect water quality.

With implementation of project design elements and best management practices effects to water quality will be negligible and would not affect treatment requirements or the quality of water for municipal use. The proposed action would not increase arsenic or zinc levels in streams currently on the Colorado Monitoring and Evaluation or 303d list.

Cumulative Effects to Water Quality and Sediment Delivery

As only negligible effects to water quality and sediment delivery are anticipated to result from implementation of the proposed action, cumulative adverse effects to water quality are not anticipated.

Table 13. Changes from the proposed action to road and trail density by watershed

Watershed name	Watershed drainage area National Forest System lands (square miles)	Miles of new trail construction	Miles of user-created trail rehabilitated	Existing density of roads and trails (miles per square mile)	Proposed density roads and trails (miles per square mile)	Existing miles within 300 feet of stream	Proposed miles within 300 feet of stream
Grizzly Creek Headwaters North Platte River Basin	20.7	3.3	3.4	1.7	1.5	0.02	0
Muddy/Milk Creek Colorado River Basin	32.9	4.0	0	1.4	1.5	0.3	0.4
South Fork Mad Creek Yampa River Basin	20.8	0	6.6	1.0	0.5	3.7	2.9
Hot Springs Creek Yampa River Basin	10	0	6.1	1.8	0.6	3.8	0.7
Harrison Creek Yampa River Basin	17.7	11.4	1.6	0.8	1.2	0	3.6
Lake Catamount Yampa River Basin	4.2	0.5	0	0.3	0.4	0	0
Walton Creek Yampa River Basin	48.9	24.6	0	1.7	1.8	6.9	7.8
Fish Creek Yampa River Basin	26.8	0	0.6	1.3	1.3	4.5	4.8
Soda Creek Yampa River Basin	30.2	0	3.7	1.6	1.4	5.4	4.3

Effects to Wetlands and Riparian Areas

Trails constructed in or adjacent to wetlands including fens have the potential to alter wetland ground cover, soil structure, water budgets, and flow patterns and would be both short- and long-term effects. The U.S. Army Corps of Engineers evaluates permit applications for essentially all construction activities that occur in the Nation's waters, including wetlands. Actions that would result in impacts to waters or wetlands subject to the jurisdiction of U.S. Army Corps of Engineers (streams and wetlands) must comply with nationwide permit requirements, and loss of wetlands of 0.10 acres or more requires pre-construction notification. Regional conditions prohibit use of nationwide permits for any fill in peatlands including fens and bogs.

Trail location and implementation of project design elements would minimize potential effects to wetlands and would not require fill in waters subject to U.S. Army Corps jurisdiction. Project design elements would prevent alteration of ground cover, soil structure, water budgets and flow patterns to ensure compliance with Executive Order 11990 and Routt Forest Plan water and aquatic standard 7. A monitoring element has been incorporated where trails are adjacent to fens to ensure effectiveness of project design elements.

Cumulative Effects to Wetlands and Riparian Areas

With careful location and implementation of project design elements no additional cumulative effects to wetlands/riparian areas would occur.

Special Area Designations

A portion of the project area includes management area 3.23: Municipal Watersheds (see figure 7), which overlaps with Colorado State designated source water areas. In a 2019 Memorandum of Understanding between the Forest Service and Colorado Department of Health and Environment, the Forest Service agrees to recognize Colorado Department of Health and Environment delineated source water areas as municipal water supplies. Project-specific design elements would ensure compliance with protection of municipal water supplies. Rehabilitation of non-system trails would improve water quality in source water designated areas and be consistent with the memorandum of understanding. Table 13 displays existing and proposed road and trail densities and miles of trail within 300 feet of perennial and intermittent streams. Existing miles represent the current condition; proposed miles represent the effects of implementing the proposed action and the cumulative effects of all roads and trails in the watershed.

Heritage

A heritage archaeological field survey was conducted for all new and existing proposed trails associated with the Mad Rabbit trails project. The project design has been altered to avoid all identified heritage resources. As required by the National Historic Preservation Act, an archaeological survey was conducted for all proposed new trail construction, proposed trail closures and any proposed Continental Divide National Scenic Trail modifications. Consultation with Colorado State Historic Preservation Office was concluded on February 2, 2023, with a finding of no adverse effect. The Northern Cheyenne Tribe, Cheyenne and Arapaho Tribes, Eastern Shoshone Tribe, Northern Arapaho Tribe, Northern Ute Tribe, Southern Ute Tribe, and Ute Mountain Ute Tribe were contacted and informed of this project. All tribal comments and requests for additional information have been addressed. Interpretation is planned near historic Highway 40 and the Wyoming Trail to inform the public about the traditions and culture of Routt County and the Steamboat area, specifically tourism and ranching. Refer to appendix A for heritage design elements.

Agencies and Persons Consulted

Public involvement and notification information including mailing lists are available in the project record. Also see Public Involvement and Coordination section for more information. The Forest Service contacted or consulted the following Federal, State, and local agencies during the development of this environmental assessment:

- United States Fish and Wildlife Service
- Colorado State Historic Preservation Office
- Colorado Parks and Wildlife
- Routt County, Colorado
- Colorado Department of Natural Resources
- Colorado Department of Transportation

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Appendix A: Design Elements

Design elements are used to keep any short-term effects of the proposed action and activities within acceptable and predictable bounds. Some design elements would be applied to distinct areas or proposed activities; others are designed to be applied to all activities and all areas. Design elements are used in addition to best management practices, which are not described here as they are part of the everyday approaches to work and resource management. The list below describes the design elements that would be applied to the proposed action and activities.

All Resources

1. All project design elements will be included in project related contracts or plans.
2. Wheeled, non-motorized mechanized use off Forest Service roads and trails will be prohibited per a closure order across the entire project area. This will be displayed on maps and communicated to the public. Exemptions to the restricted use closure include persons with a permit authorizing the prohibited activity, bicycle use (example fat-tired bikes) where snow depths average 12 inches or greater, any Federal, State, or local officer or member of a rescue or fire organization in performance of an official duty, any Forest Service personnel or persons designated by the Forest Service performing an official duty, and non-motorized game carts used for game retrieval during hunting seasons. This order will not change over the snow vehicle use in the project area.
3. All trail locations will be laid out by Forest Service recreation staff or contractors and then reviewed by resource specialists before ground disturbance occurs. Concerns will be discussed and resolved to best meet project objectives and forest plan components and other laws, regulations, and policies. The Visual Management System prescribed Visual Quality Objectives and direction in FSM 2380 Landscape Management will be used to maintain or improve scenic qualities.
4. Hazard trees which threaten public, Forest Service employee, or contractor safety may be felled.

Rehabilitation of Non-System Trails

5. Non-system trails in the project area may be closed and rehabilitated. Before rehabilitation activities occur, 1) heritage surveys and any necessary National Historic Preservation Act Section 106 consultation will be completed; and 2) the Forest Service hydrologist and soils scientist will be consulted for any site-specific rehabilitation recommendations. If a sustainable alignment is found along the Long Lake non-system route based on Forest Service field surveys, the agency may reroute the existing Mountain View trail (west of Long Lake) onto this alignment rather than decommissioning it. Rehabilitation of user-created trails will consist of some or all the following:
    a. Scarifying the trail surface.
    b. Re-contouring, installing drainage features (for example, water bars), or other appropriate measures to reduce effects to connected disturbed areas (FSH 2509.25 Management Measure 1; forest plan management area 3.23; forest plan water and aquatic standard 2; forest plan soils standard 4).

c. Restoring ground cover to prevent accelerated on-site soil loss and sediment delivery to streams, and to reduce the risk of invasive species by reseeding per Forest Service revegetation guidelines, or as specified by the botanist; spreading mulch (tree slash or straw) on the surface until the area is 65 percent covered; and/or planting certified native plants; and installing drainage structures, where appropriate.

d. Restoration in rare plant habitat will have different requirements, including subsequent monitoring and other site-specific measures to be determined at the time of implementation.

6. Re-use of rehabilitated or development of new non-system trails may be prevented with signage, public education, a physical barrier, increased enforcement or any combination of the four. If these methods aren't successful in curbing the impacts from non-system trails in the vicinity of proposed trails the Forest Service could consider temporary or permanent closure of the adjacent proposed trails.

Heritage

7. To offset potential adverse effects to various segments of historic U.S. Highway 40 and the Wyoming Trail, interpretive signs will be placed along these segments.

8. Cross-cutting historic U.S. Highway 40 and the Wyoming Trail will be minimized to the extent possible. Areas that may require cross-cutting or other soil disturbance in the vicinity of Highway 40 or the Wyoming Trail will be consulted on with a Forest Service archaeologist before implementation.

9. An engineer will review the existing features along historic U.S. Highway 40 to ensure the proposed trail building and future trail use will not adversely affect the historic features.

10. All cultural resources determined to "need data" or to be eligible to the National Register of Historic Places, excluding historic U.S. Highway 40 and the Wyoming Trail segments, will be avoided with a 30-meter buffer from all potential ground disturbing activities.

11. Any additional re-routes or infrastructures outside the proposed action will need heritage clearance and completion of Colorado State Historic Preservation Officer consultation prior to any on the ground implementation.

12. The National Historic Preservation Act requires that if newly discovered prehistoric or historic materials are identified during project implementation, work in that area must stop and the responsible agency's authorized officer be notified immediately (36 CFR 800.13). The Native American Graves Protection and Repatriation Act (NAGPRA), requires that if inadvertent discovery of Native American remains or objects occurs, activity must cease in the area of discovery, a reasonable effort made to protect the item(s) discovered, and immediate notice made to the authorized officer, as well as the appropriate Native American group(s) (IV.C.2). Notice may be followed by a 30-day delay (NAGPRA Section 3(d)). Further actions also require compliance under the provisions of the National Historic Preservation Act and the Archaeological Resource Protection Act.

Hydrology and Soils

Wetlands

13. Trails will not be constructed in fens (forest plan water and aquatic standard 7). Final alignment of trails in the vicinity of fens will have approval from hydrology and botany. Trails adjacent to fens would be monitored cooperatively by these program areas. Monitoring would occur following implementation. If monitoring shows increased impacts associated with trail use to either fen hydrology or vegetation, adaptive actions would be taken to reduce impacts. Actions could include signing, trail re-alignment, elevated trail surfaces, fencing or other control measures, or any combination of these actions.
14. Trails will be located to avoid wetlands to the extent feasible. If a trail cannot be located outside of wetlands, the trail will first be approved by the Forest Service hydrologist, and will have an elevated structure, such as a boardwalk, to minimize wetland disturbance and alteration of wetland hydrology (Executive Order 11990).
15. No mechanical equipment will be used for trail construction in wetlands, unless approved by the Forest Service hydrologist (Executive Order 11990).
16. No turnpikes or other practices that would dewater or reduce water budgets; or require that fill will be used in wetlands (forest plan water and aquatic standard 7).

Permitting

17. All necessary Section 404 permits will be obtained if any fill or structures must be in wetlands or waters of the United States (Clean Water Act Section 404).

Streams

18. Minimize the number of trail-stream crossings to those necessary to meet project objectives (forest plan water and aquatic standard 4).
19. Use bridges at all trail-stream crossings. If a bridge is not feasible, use low water crossings with armored approaches.
20. Consult with a hydrologist on stream crossings and bridge abutment locations (forest plan water and aquatic standard 4).
    a. Ensure bridge spans are wide enough to pass flood flows and debris (forest plan water and aquatic standard 5).
    b. Stream crossings and bridge abutments will not encroach on waters of the United States and will meet U.S Army Corps of Engineers and State permits (Clean Water Act Section 404).
    c. Install stream crossings on straight and resilient stream reaches, as perpendicular to flow as practicable, and to provide passage of fish and other aquatic life.
    d. Install stream crossings to sustain bankfull dimensions of width, depth, and slope to keep streambeds and banks resilient and maintain the cross-sectional area (forest plan water and aquatic standard 5).

Trails

21. Ensure drainage features (for example, grade reversals and waterbars) are installed to minimize connected disturbed areas from new trail construction. This will help to ensure that the trail network will not be extended by more than 10 percent (forest plan water and aquatic standard 2).
22. Locate trails to minimize trail length in riparian area (forest plan water and aquatic standard 4).
23. Trail density in the Ferndale area will consider recommendations in the Forest Service Watershed Condition Classification Technical Guide (USDA 2011), in consultation with the Forest Service hydrologist and soils scientist (forest plan water and aquatic standard 2; forest plan soil standards 1 and 2).

Water Quality

24. In management area 3.23, water quality will be the priority factor to consider if there are conflicts regarding the allocation of resources during trail layout (management area 3.23 standard 1).

Other

25. Do not excavate earth material from, or store excavated earth material in, any stream, swale, lake, wetland, or the water influence zone[5] (forest plan water and aquatic standard 2).
26. Avoid soil disturbing actions during periods of heavy rain or wet soils (forest plan soils standards 1 and 5). Do not operate equipment when conditions will result in rutting of soils. Soils are wet when soil can be molded into a ball that holds together under repeated tosses, or if the soil can be rolled into a three-millimeter thread without breaking or crumbling (forest plan soils standards 1 and 5).
27. Locate vehicle service and fuel areas, chemical storage and use areas, and waste dumps on gentle upland sites. Mix, load and clean on gentle upland sites. Dispose of chemicals and containers in State-certified disposal areas (forest plan water and aquatic standard 10).
28. Project activities will not affect the Josfan pipeline on trail 25. Measures will be taken to protect other existing water developments and their functionality, in collaboration with the Forest Service hydrologist and lands specialist.

Plants and Noxious Weeds

29. Machinery used in project implementation will be cleaned of invasive and noxious weeds and inspected by the Forest Service prior to working on the Routt National Forest (forest plan undesirable species standard 1). Cleaning will include removal of seeds, soil, vegetative matter, and other debris that could contain or hold seeds.
30. Treat Routt National Forest priority invasive and non-native species along trails and other project activity areas prior to project implementation, and throughout the life of the trails. Conduct regular monitoring for introductions of new invasive species and evaluate treatment

[5] The water influence zone includes the geomorphic floodplain (valley bottom), riparian ecosystem, and inner gorge. Its minimum horizontal width (from top of each bank) is the greater of 100 feet or the mean height of mature dominant late-seral vegetation (Forest Service Handbook 2509.25).

prioritization. Survey for new invasive species along trails on at least a 3-year rotation. Restore treated areas as needed to improve habitat for rare and sensitive plant species.

31. Develop and implement short- and long-term strategies for public outreach and awareness using signage and education (for example, information on kiosks) on weeds and preventing spread. Strategies and implementation plans should be in place prior to trail construction.

Range

32. There will be public outreach and awareness through signage and education (for example, information on kiosks) on safe recreation practices where livestock grazing occurs.
33. The Forest Service will collaborate with the range permittees on developing strategies for working in an increased recreation use area.

Recreation

34. New trails and trail structures will follow Forest Service Handbook 2309.18 – Chapter 10 – Trail Planning. Specifically, outslope trails and create grade reversals wherever possible to prevent concentration of water on the trail tread (forest plan soils standards 1 and 5). Trail structures will be coordinated with Forest Service engineering staff.
35. Trail structures (for example, bridges and boardwalks) will be minimized to the extent feasible to limit trail construction and maintenance costs.
36. Camping and campfires may be prohibited at all project-related trailheads in order maintain the functionality of the trailhead and to reduce associated resource damage.
37. Trail and trailhead management (consistent with Forest Service Handbook 2309.18 Trails Management Handbook) will be used to reduce impacts to resources (wildlife, plants, watersheds), lower user conflicts (ROS, CDNST) and manage trails and trailheads sustainably (maintain proper drainage, clear trees, maintain signage and infrastructure, etcetera).
    a. Education: hiking / equestrian / bicycle yield etiquette, Leave No Trace, Tread Lightly, Pack it in Pack it out, Stay the Trail, responsible fire use, Continental Divide National Scenic Trail guidance, wildlife disturbance, and other best practices to lower impacts of recreation will be used to educate visitors. Increased education may occur if consistent issues are occurring.
    b. Engineering: Installation of signs, seasonal closure gates and barriers as needed to manage a sustainable designated trail system. Increased signage, gates or barriers may be installed if consistent issues are occurring.
    c. Enforcement: Forest Service patrol of trailheads and trails as needed based on enforcement priorities across the Routt National Forest. Increased patrols and enforcement may be used if consistent issues are occurring. The Forest Service could consider temporary or permanent closure of proposed trails if trail management in coordination with partners isn't successful in managing sustainable trails, resource impacts and associated use over the long-term
    d. Partnerships: The Forest Service will continue to work with partners such as Continental Divide Trail Coalition, Routt Recreation and Conservation Roundtable, Routt County Riders, Friends of Wilderness, Colorado Parks and Wildlife, Big Agnes, Steamboat Springs Chamber, City of Steamboat Springs,

Routt County, Yampatika, Yampa Valley Community Foundation, Colorado Department of Transportation and others to assist with trail and trailhead management (volunteer maintenance, trail ambassadors, monitoring, funding, and so forth).

e. Trail use adjustments: The Forest Service could consider adjusting trail use (such as directional trails, user specific trails, user specific fluctuating times of week) on proposed trails to manage for changing use patterns (such as user conflicts, ROS, CDNST)

38. At trailhead locations, signage will be installed to inform the public that trash will be "pack it in, pack it out" to avoid habituation and human-bear conflicts. The Forest Service will work with Colorado Parks and Wildlife on educational signage to be placed at trailhead locations to inform the public on how to minimize conflicts.

39. Total miles of completed trail (primary routes and alternate lines) should not be 20 percent greater than the total miles of trail included in the project's decision unless extenuating circumstances require longer than anticipated trails. Supplemental information reports may be prepared by resource specialists to ensure compliance will all laws, regulations, and policies if the percentage may be exceeded.

40. Resource specialists will be consulted before implementation of proposed alternate lines on trails.

41. Trailheads will follow Forest Service Handbook 2309.13 – Chapter 10 – Planning and Design of Developed Recreation Sites and Facilities. The Forest Service will coordinate with Forest Service engineers and Colorado Department of Transportation on vehicle access points associated with Forest Service trailheads along US Highway 40 regarding traffic patterns and safety concerns.

Threatened, Endangered, Sensitive, or Proposed Species Discovery Clause

42. All proposed trails will be surveyed by botany, fish, and wildlife prior to implementation.

43. If, during implementation, impacts to newly discovered, threatened, endangered, and Region 2 sensitive species (threatened and endangered species) and/or their habitats are identified, management will work with the biologists or botanists to reduce those impacts. Timing restrictions may also need to be applied. The threatened and endangered species of interest include birds, reptiles, fish, amphibians, and rare plants.

Wildlife

44. There may be seasonal restrictions on proposed trails and/or segments of proposed trails to protect elk production (calving) habitat. There will be a mandatory closure from May 15 through June 30 on the route 14 area and in the Ferndale area on segments 23, 25, and 27 based on current information. If winter conditions exist (12" or more average snowpack depth) in the closure area the closure may not start until winter conditions no longer exist to maintain existing winter recreation access in higher snow years. If adjustments to seasonal restrictions are needed, it will be determined on a case-by-case basis in coordination with Colorado Parks and Wildlife.

45. Management actions related to seasonal restrictions will include a suite of educational tools (for example, signage, media, volunteers, ranger patrols), engineering actions (for example, restoration activities, barriers), and administrative actions (for example, restricted use area designation, closures, regulations). Management actions would be phased in from least restrictive to more restrictive to preserve visitor freedom, to the extent feasible, in balance with resource needs and in coordination with partners (for example volunteer trail ambassadors). If increased education, engineering, and enforcement efforts are not successful in curbing violations of seasonal closures, the Forest Service could consider temporary or permanent closures of proposed trails in high priority habitat areas.
46. Up to a quarter mile closure (including trail construction and rehabilitation activities) around active and inactive goshawk or raptor nests will be implemented from March 1 through September 15 (forest plan threatened, endangered, and sensitive wildlife species standard 6). Exceptions may occur when the raptors are adapted to human activity.

Appendix B: Proposed Trail Construction

Table 14 displays the trails proposed to be added to the national forest trail system. Some of these trails will have new construction of tread, some trails will include portions of non-system routes, and some trails will convert a National Forest System road to a trail. All trail lengths are approximate and have been rounded to the nearest tenth of a mile. Trails identified as non-motorized are designed and managed for hiking, equestrian and bicycle use unless otherwise designated in the trail description.

Table 14. Proposed trail construction and designation

Trail	Length (miles)	Motorized status	Trail class*	Management area	Roadless area	Description
7	7.7	Non-motorized	2	1.32 3.23 4.2 4.3 5.11	Long Park Colorado Roadless Area	Location: From Rabbit Ears Trailhead the trail runs north, paralleling and east of the existing Continental Divide National Scenic Recreation Trail then meets the Continental Divide National Scenic Trail at Round Lake. Users: non-motorized uses; long-distance backcountry multi use Purpose: Semi-primitive non-motorized recreation experience with ridgetop views. An alternate route to the Continental Divide National Scenic Trail. Provides an epic loop opportunity between the Dumont area to the ski area or Buffalo pass. Could be used for recreation events requested but not recommended on Continental Divide National Scenic Trail.
11	0.4	Non-motorized	4	4.3	None	Location: The trail connects 2 parking areas at Dumont Lake day use area providing adaptive access to fishing and swim beach. Users: semi-primitive, non-motorized; Forest Service Trail Accessibility Guidelines Purpose: Provide Forest Service Trail Accessibility Guidelines to a trail to meet user needs and reduce resource damage from user-created trails
14	6.2	Non-motorized	3	1.32 4.2	Long Park Colorado Roadless Area	Location: The trail parallels Highway 40 to the north and connects Dumont Trailhead and Fox Curve Trailhead. Users: semi-primitive non-motorized, multi-use levels Purpose: Provides an epic loop with 8 proposed trails to the west. Provides an intermediate out and back trail opportunity from either trailhead.

Trail	Length (miles)	Motorized status	Trail class*	Management area	Roadless area	Description
15	1.7	Motorized	3	5.11	None	Location: This trail located south of State route 40 connects Forest System Road 302 and Forest System Road 251. Users: semi-primitive motorized, open to vehicles 50 inches or less 07/01-12/01 Purpose: Provides a motorized trail connection between National Forest Roads 302 and 251. Provides motorized loop opportunities when combined with segments 16 and 17 and existing roads. Electric-powered bikes (e-bikes) and e-assisted adaptive hand cycles will be allowed in addition to other motorized vehicles (all-terrain vehicle, utility terrain vehicle, dirt bike, etc.) that are 50 inches or less in width.
16	1.7	Motorized	3	5.11 5.13	None	Location: This trail located south of State route 40 connects Forest System Road 251 and Forest System Road 100. Users: semi-primitive motorized, open to vehicles 50 inches or less 07/01-12/01 Purpose: Provides a motorized trail connection between National Forest Roads 251 and 100. Provides motorized loop opportunities when combined with segments 15 and 17 and existing roads. E-bikes and e-assisted adaptive hand cycles will be allowed in addition to other motorized vehicles (all-terrain vehicle, utility terrain vehicle, dirt bike, etc.) that are 50 inches or less in width.
17	0.6	Motorized	3	5.11	None	Location: This trail is located south of State route 40 connects Forest System Road 302 and Forest System Road 251. Users: semi-primitive motorized, open to vehicles 50 inches or less 07/01-12-01 Purpose: Provides a motorized trail connection between National Forest Roads 251 and 302. Provides motorized loop opportunities when combined with segments 15 and 16 and existing roads. E-bikes and e-assisted adaptive hand cycles will be allowed in addition to other motorized vehicles (all-terrain vehicle, utility terrain vehicle, dirt bike, etc.) that are 50 inches or less in width.
18	1.3	Non-motorized	4	4.3	Walton Peak Colorado Roadless Area	Location: The trail is located south of State route 40 adjacent to Meadow Campground at Meadow trailhead; portion of trail on old State route 40 route. Uses/Ability Level: semi-primitive, non-motorized, Forest Service Trail Accessibility Guidelines Purpose: Provides a trail that meets Forest Service Trail Accessibility Guidelines around Meadows campground. Provides educational nature hikes with interpretive signage. Family friendly.

Trail	Length (miles)	Motorized status	Trail class*	Management area	Roadless area	Description
19	2.3	Non-motorized	3	1.32 4.2 4.3	Long Park Colorado Roadless Area	Location: The trail is located north of State route 40 and loops to the west from Bruce's trailhead. A portion of trail on winter trail. Users: semi-primitive, non-motorized, multi-use Purpose: Provides a shorter moderate single track loop opportunity and a longer trail connection with trails 20 to the east and 21-25, 27, and 30 to the west.
20	2.3	Non-motorized	3	1.32 4.2	Long Park Colorado Roadless Area	Location: This trail begins at Fox Curve Trailhead on the north side of State route 40 and runs west to Bruce's Trailhead. Users: semi-primitive, non-motorized, multi-use Purposes: Provides connection for trail 14 to the east to create an epic loop and longer trail opportunity to trails 19, 21-25, 27, 30 to west. Provides an out and back intermediate trail experience from Fox Curve Trailhead and Bruce's Trailhead.
21	6.0	Non-motorized	3	1.32 4.2 4.3	Long Park Colorado Roadless Area	Location: This trail begins at Forest System Road 296 trailhead on the north side of State route 40 and runs north then loops to the east and west. Users: semi-primitive, non-motorized, multi-use Purpose: Provides intermediate single-track loop with scenic ridgetop views. Provides connection to trails 20 to the east, and 22 and 30 for a connection for an epic loop to the west.
22	3.1	Non-motorized	3	1.32 4.2	Long Park Colorado Roadless Area	Location: This trail begins at Forest System Road 296 Trailhead on the north side of State route 40 and runs north then heads west paralleling the highway. Portion of trail on old State route 40. Users: semi-primitive, non-motorized, multi-use Purpose: Continue old highway 40 trail (25) to National Forest System road 296 trailhead. Similar trail width and design to segment 25 to facilitate adaptive off-road handcycles. Provide a connection between trail 21 to east and trails 23,25, 27, 30 to the west. Provides shorter loops in the area or part of the greater epic loop to east or west.
23	2.7	Non-motorized	2	1.32 4.2	Long Park Colorado Roadless Area	Location: This trail begins at the Ferndale Trailhead on the north side of State route 40 and heads east and north. Users/Ability Level: semi-primitive non-motorized, multi-use Purpose: Provide a connection between National Forest Road 296 and trails 21, 22, 30 to east and trails 25, 27 loops to south. May be designated as a one directional bicycle trail to lower use conflicts within trail system and provide desired bike specific natural technical trail features.

Trail	Length (miles)	Motorized status	Trail class*	Management area	Roadless area	Description
25	3.2	Non-motorized	3	1.32 4.2 4.3	Long Park Colorado Roadless Area	Location: This trail begins at the Ferndale Trailhead on the north side of State route 40 and heads east then north with trail 23 until heading south then northeast. Portion of trail on old State route 40. Users: semi-primitive, non-motorized, multi-use Purpose: Provide a loop connection with trails 23, 27 and 30 to the south and east. Provide historic interpretation of Old Highway 40. Adequate trail width and design to facilitate adaptive off-road handcycles.
27	4.0	Non-motorized	3	4.2	Long Park Colorado Roadless Area	Location: This trail begins at the Ferndale Trailhead on the north side of State route 40 and heads south then northeast. Users: semi-primitive, non-motorized, multi-use Purpose: Provide a moderate single track loop connection with trails 22 to the east and 25 to the west.
30	0.7	Non-motorized	3	1.32 4.2	Long Park Colorado Roadless Area	Location: This trail is accessed from National Forest System Road 296 Trailhead on the north side of State route 40 from trails 21/22 at the far western point of the trail 21 loop then heads southwest Users: semi-primitive, non-motorized, multi-use Purpose: Provide a connection between trail 21, 22 with trails 23, 25 to the west. Provides shorter loops in the area or part of the greater epic loop to east or west.
31	0.2	Non-motorized	2	4.3	Long Park Colorado Roadless Area	Location: This trail is accessed off trail 7 or Forest System 311 north of Rabbit Ears Trailhead. Users: semi-primitive, non-motorized, multi-use. Purpose: Provides 2 shorter loop opportunities; Rabbit Ears Trailhead/trail 7/ Forest System Road 311 loop and Base Camp Trailhead/trail 7/Forest System Road311 loop.
32	1.5	Dual Designation Level 1 Road and Trail	3	3.23 4.3 7.1	None	Location: The Forest System Road 320 road proposed dual trail is located off Fish Creek Falls Road east of Steamboat Springs and accessed at Fish Creek Trailhead. Uses/Ability Levels: semi-primitive non-motorized trail with admin use only level 1 road dual designation Purpose: Provides a trail designation to manage for historical non-motorized trail use. Provides access to historic uranium mine interpretive site and North Fork of Fish creek. Provides continuation of guided interpretive hikes by partners. May be designated for hiking only if use conflicts become prevalent.

Trail	Length (miles)	Motorized status	Trail class*	Management area	Roadless area	Description
33	2.8	Dual Designation Level 1 Forest System Road and trail	3	5.41	None	Location: The Forest System Road 128 road proposed dual trail is located off county 129 and accessed at the Mad Creek Trailhead. Users: semi-primitive, non-motorized, multi-use Purpose: Provides a trail designation to manage for historical non-motorized trail use. Provides a shorter looped opportunity. Adjacent 1100.1 or 1140.1, or both may be adjusted onto this route around the Mad Creek barn to cut down on non-system trail development and redundant trails.
34	0.2	Non-motorized	3	5.41	None	Location: This trail is accessed off the north point of trail 34 which begins at the Mad Creek Trailhead. Users: semi-primitive, non-motorized, multi-use Purpose: Provides the historically used looped opportunity connecting the existing Mad Creek trail with trail 33. Adjacent 1100.1 or 1140.1, or both may be adjusted onto this route to cut down on non-system trail development and redundant trails.

NOTE: Trail Class* Design parameters for trails include technical guidelines for the survey, design, construction, maintenance, and assessment of a trail based on its designed use and trail class (FSH2309.18. Ch. 10). Trail classes range in development scale from 1 to 5, with “1” being primitive and “5” being a fully accessible paved trail. Generally, trails near developed recreation areas would be designed for hiker/pedestrian use and meet Forest Service Trails Accessibility Guidelines (FSTAG) by being wider and smoother (for example, Trail Class 4). Trails in more remote areas would be more advanced and rugged (for example, Trail Class 1) and designed for bicycle, hiker and equestrian.

Appendix C: Cumulative Effects

Table 15 identifies some of the projects that were considered for their potential to have cumulative effects to resources when combined with the potential direct and indirect of the proposed action. The effects of these projects may be considered as part of the affected environment or existing condition, they might also be identified as having a cumulative effect to a resource. The table below is not intended to be encyclopedic of all projects that have occurred in the project area but does help to provide information about the types of projects that have occurred in the past, are ongoing in the present, or are reasonably foreseeable because action has been proposed.

Table 15. Past, present, and reasonably foreseeable activities that were considered in this analysis

Project	Project Location within the Middle Yampa geographic area or otherwise stated in proximity.	Project description	Year of project approval or implementation	Project area (acres or length)
Fuels Steamboat Front Hazardous Fuels Reduction Project Environmental Assessment	Mad Creek to Rabbit Ears Pass/Middle Yampa Geographic Area and adjacent private lands	In 2015 an environmental assessment evaluated fuels treatments and habitat improvements within the Hahns Peak/Bears Ears Ranger District. The fuels treatments analyzed include mastication, prescribed burning of shrubs and aspen, and treatment/removal of beetle-killed pine. The project is close to the Steamboat Springs wildland-urban interface. Also analyzed was the implementation of seasonal closures for big game winter range. A decision notice and Finding of No Significant Impact authorizing these actions was released.	Approved 2015	Approximately 24,749 acres, of which 5,908 would be treated
Dry Lake Campground	Buffalo Pass/Middle Yampa Geographic Area	The proposed action is to improve and expand the Dry Lake Campground and the Dry Lake Parking Area. Increasing the campsites from 8 to approximately 30.	Approved 2018	10 acres
Buffalo Pass Trails Environmental Assessment	Buffalo Pass/Middle Yampa Geographic Area	Starting in 2015 the Medicine Bow-Routt National Forest's began analyzing the development of approximately 40 miles of trails near Steamboat Springs in the Buffalo Pass area as an environmental assessment. A decision notice and Finding of No Significant Impact was released in August of 2016 approving a total of approximately 43 miles of trail to be incorporated into the Forest Service trail system. Included in the 43 miles of trail and 8 miles of existing user-created trail that meet, or can be improved to meet, Forest Service standards, and approximately 30 miles of new trail and the incorporation of approximately 4.5 miles of existing Forest Service Level 1 Road into the designated trail network.	Approved 2016	43 miles

Project	**Project Location within the Middle Yampa geographic area or otherwise stated in proximity.**	**Project description**	**Year of project approval or implementation**	**Project area (acres or length)**
Winter Recreation Management and Routt National Forest Plan Amendment	Rabbit Ears Pass, Buffalo Pass	Winter-recreation management decision and amends the 1997 Routt revised forest plan. This decision provides a balance of recreation opportunities including a variety of terrain with a system of easily identified trails with; 1) reliable quiet areas for non-motorized use and, 2) maintained motorized loop trails and snow play areas, and 3) designated motorized routes to access non-motorized areas. Specific focus areas: area East of Steamboat Springs Ski Area, Hogan Park Ski Trail, Dry Lake Parking Lot, Buffalo Pass, Mt. Zirkel Wilderness, Rabbit Ears Pass, North Walton Peak, Shawn's trail- Grizzly Creek. Avoid winter recreation in elk winter range.	May 2005	111,000-acre analysis area is located east of Steamboat Springs, Colorado in Routt, Jackson, and Grand Counties.
Fish Creek Falls Shuttle project	Fish Creek Falls	This project authorized commercial shuttle services to the Fish Creek Falls trailhead for access to the day use area and trails in the area and reducing congestion in the parking lot.	2017	Fish Creek Falls parking lot and trailhead.
Rabbit Ears Winter Parking	Rabbit Ears Pass	This project approved winter trailhead development for Forest System Road 296 and Meadow trailheads, increased capacity at Dumont Lake and expanded the footprint of Fox's curve.	2014	The project affected approximately 28 acres and approved changes to 7 winter parking areas along Highway 40.
Storm Peak Hang-Gliding Association Permit Reissuance Categorical Exclusion	Steamboat Ski Area/Middle Yampa Geographic Area	The Storm Peak Hang-Gliding Association has launched from the Steamboat Ski Area for several decades. The permit allowing this use of Steamboat Ski Area expired in 2016. The reissuance of a new permit was reviewed and approved in 2016 through a Decision Memo that granted the Storm Peak Hang-Gliding Association a new permit for another 10 years.	Approved 2016	The Storm Peak area of Steamboats' special use permit

Project	**Project Location within the Middle Yampa geographic area or otherwise stated in proximity.**	**Project description**	**Year of project approval or implementation**	**Project area (acres or length)**
Steamboat Powdercats Trail Improvements Categorical Exclusion	Buffalo Pass/Middle Yampa Geographic Area	Currently under analysis as a categorical exclusion is trail work for modifications to less than 0.01 mile of snow trail. The modifications are proposed to increase sight distances through tree removal or slight realignment of snow trails at Steamboat Powdercats' currently permitted location of operation.	Under Analysis	0.01 mile
Steamboat Springs Running Series Permit Issuance	Middle Yampa Geographic Area	In 2014, a categorical exclusion and subsequent Decision Memo analyzed and approved the issuance of a 5-year recreation event permit to the Steamboat Springs Running series for various recreation events.	Approved 2014	Areas where use is permitted within the 500,000 acres of the Hahns Peak/Bears Ears Ranger District
Burgess Creek Culvert Replacements Project	Steamboat Ski Area/Middle Yampa Geographic Area	1n 2016, a categorical exclusion and subsequent Decision Memo analyzed and approved replacement of 2 culverts to bottomless arch pipe to foster movement of cutthroat trout in Burgess Creek.	Approved 2016 and partially implemented	1 acre
Steamboat Ski Area Steamboat Improvement Projects 2021	Within the Steamboat Special Use Permit and on adjacent private lands within the ski area operational boundary as well as increase of operational boundary on National Forest System lands.	Adjustment of Steamboat's ski area operational boundary to encompass additional Fish Creek terrain that is present within Steamboat's Special Use Permit area. Establishment of a skier egress snow trail within the Fish Creek terrain beginning at Fish Creek and paralleling previously approved Trail F (2018 Final Environmental Impact Statement and Record of Decision) and connecting with BC Skiway. Trail modifications on Sundial, including widening at the intersection with Tomahawk and blasting of large boulders, would be completed concurrent with snowmaking installation. Grading and removal of large boulders on and adjacent to the Four Points Road from above the Four Points Lodge up to the top terminal of the Storm Peak Express chairlift. Why Not upgrade at its bottom terminus from BC Skiway to lower Vagabond.	Approved August 2021	Operational boundary increase by 260 acres. Approximately 113 acres of ground disturbance with all the improvements.

Project	**Project Location within the Middle Yampa geographic area or otherwise stated in proximity.**	**Project description**	**Year of project approval or implementation**	**Project area (acres or length)**
Steamboat Ski Resort 2018 Environmental Impact Statement	Within the Steamboat Special Use Permit and on adjacent private lands within the ski area operational boundary	Expansion of Steamboat's operational boundary; construction of the Rough Rider Learning Center including Bashor Gondola, Bashor Children's Facility and Restaurant, several moving carpets, and replacement of the Rough Rider platter lift; improvements within the Bashor Bowl area, such as realignment and replacement of the Bashor chairlift, relocation of Mavericks Superpipe, and expansion of Rabbit Ears Terrain Park; improvements within the Pony Express area, including substantial trail improvements, construction of a patrol hut and restroom, and the addition of chairs to Pony Express chairlift; and development of the new Pioneer Ridge area, including glading and hazard tree removal, skidtrail construction, and construction of the Pioneer Ridge chairlift.	Approved 2018, partially implemented	Increase of 355-acres of operational Boundary. Approximately 228 acres of ground disturbance.
Steamboat Ski Area 2011 Master Development Plan Amendment (MDPA)	Within the Steamboat Special Use Permit and on adjacent private lands within the ski area operational boundary	Steamboat prepared a MDPA, which was accepted by the Forest Service in January 2013. This is the most recent Master Plan and revises the previous MDPA submitted by Steamboat in 2004. It proposed: replacing and upgrading the Sunshine lift and the Thunderhead lift; adding snowmaking; adding a couple of new trails; regrading several existing trails; adding and improving several mountain restaurants; reconfiguring the skiing in Bashor Bowl; and, adding several summer trails and expanding the disc golf course. Approximately half of these items were implemented; the items not implemented from the 2004 proposal were reconsidered for inclusion in 2011 MDPA. The projects in the 2011 MDPA that are not part of the proposed action would require site specific NEPA analysis prior to implementation but are considered reasonably foreseeable future actions.	Accepted 2013	Areas within the 3,738-acre special use permit area and on the 245 acres of private land owned or used under easement by Steamboat

Project	**Project Location within the Middle Yampa geographic area or otherwise stated in proximity.**	**Project description**	**Year of project approval or implementation**	**Project area (acres or length)**
Steamboat Ski Area Expansion 1996 Environmental Impact Statement	Within the Steamboat Special Use Permit and on adjacent private lands within the ski area operational boundary	In 1996 an environmental impact statement was prepared to analyze a proposed expansion of the existing Steamboat Ski Area. This includes expansion of the Steamboat Ski Area into two separate areas, Morningside Park and Pioneer Ridge. Additional infrastructure and construction of skiable terrain were proposed in the expansion areas. On March 7, 1996, the forest supervisor issued a record of decision, deciding to amend the special use permit boundary of Steamboat to include Morningside Park and Pioneer Ridge within the special use permit area. Following that decision, the Morningside lift (1996) and Pony Express lift (1998) were installed. Several projects approved in this environmental impact statement have not been implemented.	Approved 1996 and partially implemented	788 acres of National Forest System lands within the permit boundary in the Pioneer Ridge expansion area, and 170 acres of National Forest System lands within the permit boundary in the Morningside Park expansion area.
Steamboat Summer Trails Environmental Assessment 2011	Within the Steamboat Special Use Permit and on adjacent private lands within the ski area operational boundary	In response to growing demand for summer recreation Steamboat proposed the construction of additional summer trails. Mountain biking is an important part of the summer recreation base in Steamboat Springs. The trails within the ski area's summer operational boundary are part of a larger network of trails in the Steamboat area. The 2011 environmental assessment analyzed and subsequently approved up to 36 miles of new trail construction,15 miles machine-built, and 21 miles hand-built. The decision notice was issued in June 2011.	Partially Implemented 2012	36 miles
Steamboat Proposed Improvements 2006 Environmental Assessment	Within the Steamboat Special Use Permit and on adjacent private lands within the ski area operational boundary	The 2006 environmental assessment analyzed lift removal, realignment, and construction; ski trail construction, realignment and widening; new snowmaking installation and improvements to existing snowmaking infrastructure; building construction, expansion, and renovation; and summer trail construction. The proposed action all project elements were located within the existing ski area boundary or adjacent private lands. On May 12, 2006, a decision notice and Finding of No Significant Impact was released selecting the proposed action alternative.	Approved 2007 and partially implemented	Areas within the existing 2,768 ski area boundary and adjacent 245 acres of private lands.

Project	Project Location within the Middle Yampa geographic area or otherwise stated in proximity.	Project description	Year of project approval or implementation	Project area (acres or length)
Steamboat Ski Area Projects 2015 Categorical Exclusion	Within the Steamboat Special Use Permit and on adjacent private lands within the ski area operational boundary	The fiscal year 15 Ski Area Projects included infrastructure improvements. These improvements were analyzed as a categorical exclusion and a decision memo approving the proposed actions was issued in October 2016.	Implemented 2016	Fewer than 5 acres
Steamboat Ski Area Thunderhead Disk Golf Course Categorical Exclusion	Within the Steamboat Special Use Permit and on adjacent private lands within the ski area operational boundary	In 2014, a categorical exclusion analyzed the reestablishment of a disc golf course on the ski area. Several disc golf courses have been hosted on the ski area in the past, but due to logging and trail reconfiguration there has not been a course in place for some time. This course closely resembles a previous iteration, with modifications made to reduce possible use conflicts. This action was approved in a Decision Memo issued June 2014.	Implemented 2015	Fewer than 5 acres
Steamboat Ski Area Four Points Springs Categorical Exclusion	Within the Steamboat Special Use Permit and on adjacent private lands within the ski area operational boundary	Two existing springs needed to be upgraded to increase flow within existing water rights. The springs provide sanitation and drinking water and supply fire protection equipment at ski area facilities. The subsequent decision memo, released in September 2014, authorized the maintenance and efficiency measures needed for optimization of these two spring developments.	Implemented 2015	Fewer than 5 acres
Steamboat Ski Area Maintenance Projects Fiscal Year 13 Categorical Exclusion	Within the Steamboat Special Use Permit and on adjacent private lands within the ski area operational boundary	Minor projects on the Steamboat Ski Area to maintain and improve infrastructure such as snowmaking lines, minimal regrading, technology improvements and other marginal activities not previously analyzed were completed following a Decision Memo issued in July 2013.	Implemented 2014	Fewer than 5 acres

Project	Project Location within the Middle Yampa geographic area or otherwise stated in proximity.	Project description	Year of project approval or implementation	Project area (acres or length)
Steamboat Ski Area Four Points Lodge SIR and Categorical Exclusion	Within the Steamboat Special Use Permit and on adjacent private lands within the ski area operational boundary	The Four Points Lodge expansion and an expanded septic system were initially approved through the 2006 Proposed Improvements at Steamboat Ski Area environmental assessment. In 2012, a revised proposal for the building increased the size of this facility, which was documented in a Supplemental Information Report tiered to the 2006 environmental assessment. However, with the revised proposal an expanded septic system was deemed undesirable; instead, a sewer line would be better suited to handle the waste products from this revised building proposal. Because the sewer proposal was not analyzed in the environmental assessment, additional analysis was necessary, and a categorical exclusion was prepared. A subsequent decision memo in July 2013 approved the installation of the sewer line.	Implemented 2014	Fewer than 5 acres
Steamboat Ski Area 2010 Summer Maintenance Projects Categorical Exclusion	Within the Steamboat Special Use Permit and on adjacent private lands within the ski area operational boundary	Summer maintenance and improvement projects on the Steamboat Ski Area were approved in a 2010 Decision Memo. All projects were designed to repair or enhance existing systems previously authorized under the Steamboat Ski Area Term Special Use Permit.	Implemented 2010	Fewer than 5 acres
Steamboat Ski Area 2009 Maintenance Projects Categorical Exclusion	Within the Steamboat Special Use Permit and on adjacent private lands within the ski area operational boundary	In 2009 decision memo approved a proposal to resolve a confined space issue at the Rainbow water system facility and to repair or replace existing snowmaking and water lines. All projects were previously authorized under the special use permit. Maintenance projects included infrastructure replacements at the Rainbow Saddle Water Treatment Facility Building, the Four Points Spring, and Snowmaking line replacements.	Implemented 2009	Fewer than 5 acres
Steamboat Construction Projects for 2005 Categorical Exclusion	Within the Steamboat Special Use Permit and on adjacent private lands within the ski area operational boundary	In 2005 a decision memo approved the construction of snowmaking pipeline on Lower High Noon ski area, Mountain Watch Kiosks; creekside bridges, lift maze dozing, and a re-route of the sunshine bike path.	Implemented 2005	Fewer than 5 acres

Project	Project Location within the Middle Yampa geographic area or otherwise stated in proximity.	Project description	Year of project approval or implementation	Project area (acres or length)
Steamboat Construction Projects for 2003/2004 Categorical Exclusion	Within the Steamboat Special Use Permit and on adjacent private lands within the ski area operational boundary	In 2004 a decision memo approved an upgrade of the Burgess Creek double chairlift, and the burial of a pipeline to transport water from the Rainbow water tank to the Rendezvous water supply facility.	Implemented 2004	Fewer than 5 acres
Steamboat Construction Projects for 2002 Categorical Exclusion	Within the Steamboat Special Use Permit and on adjacent private lands within the ski area operational boundary	In 2002 a decision memo approved a proposal to consolidate ski area construction materials in one location already used for that purpose and allowed the ski area to move and clearly identify a section of the Operational Boundary located near the South Peak Lift to the same location as the Permit Boundary.	Implemented 2002	Fewer than 5 acres
Steamboat Fiber Optic Line Categorical Exclusion	Within the Steamboat Special Use Permit and on adjacent private lands within the ski area operational boundary	In 2002 a decision memo approved the installation of a fiber optic cable from the Thunderhead building to the Rendezvous Building via Spur Run Road and Broadway ski trail.	Implemented 2002	Fewer than 5 acres
Steamboat Mountain Bike Trail Reroute Categorical Exclusion	Within the Steamboat Special Use Permit and on adjacent private lands within the ski area operational boundary	In 2000 a decision memo approved a proposal to reroute a steep section of the Creekside mountain bike trail to reduce erosion and decrease the difficulty of the trail.	Implemented 2000	Fewer than 5 acres
Steamboat Communication Cable Replacement Categorical Exclusion	Within the Steamboat Special Use Permit and on adjacent private lands within the ski area operational boundary	In 1999 a decision memo approved the replacement and upgrade of an existing overhead communication cable within Steamboat’s special use permit area.	Implemented 1999	Fewer than 5 acres
Steamboat Snowmaking Line Construction Categorical Exclusion	Within the Steamboat Special Use Permit and on adjacent private lands within the ski area operational boundary	In 1998 a decision memo approved the construction of a snowmaking line, expanding the mountain system to include upper Buddy's Run, Storm Peak, and Rainbow ski trails.	Implemented 1998	Fewer than 5 acres
Steamboat Mountain Bike Trail Construction Categorical Exclusion	Within the Steamboat Special Use Permit and on adjacent private lands within the ski area operational boundary	In 1998 a decision memo approved the construction of a mountain bike trail to connect two existing trails: Pete's Wicked Trail and Sunshine Trail.	Implemented 1998	Fewer than 5 acres
Steamboat Mountain Bike Reroute Categorical Exclusion (1997)	Within the Steamboat Special Use Permit and on adjacent private lands within the ski area operational boundary	In 1997 a decision memo approved the reroute of the Zig-Zag mountain bike Trail between Vagabond Saddle and Burgess Creek Skiway.	Implemented 1997	Fewer than 5 acres

Project	**Project Location within the Middle Yampa geographic area or otherwise stated in proximity.**	**Project description**	**Year of project approval or implementation**	**Project area (acres or length)**
Steamboat Ski Area Beetle Mitigation Fuels Reduction Project 2007& 2010 Categorical Exclusion s	Within the Steamboat Special Use Permit and on adjacent private lands within the ski area operational boundary	In 2007 a decision memo authorized Steamboat Ski Area to salvage dead and/or dying trees not to exceed 250 acres, requiring no more than 1/2 mile of temporary road construction. In 2010 Steamboat updated their Vegetation Management Plan to address mountain pine beetle caused mortality of lodgepole pine trees and the hazard to the recreating public. Prescriptions were developed to actively manage the forest stands within the ski area boundary where lodgepole pine is a significant component. The proposed treatment area was 190 acres. The recommended treatment for stands in the project area is individual tree selection (sanitation/salvage). The emphasis was the removal of all dead and dying lodgepole pine trees and any other potential hazard trees such as dead aspen, spruce, and fir.	Implemented 2008 and ongoing	Fewer than250 acres
Transportation/Infrastructure Buffalo Pass Road Reconstruction	Buffalo Pass Road (National Forest System Road 60)	The proposed action includes three aspects of the proposal: 1) Road reconstruction, 2) Dispersed campsite management, and 3) primary design elements. This project would improve the roadway surface on 7.6 total miles of Buffalo Pass Road and increase traveler safety and user comfort.	Under current environmental review	7.6 miles
East Steamboat Springs U.S. Highway 40 Access Study 2016	Highway 40/Middle Yampa Geographic Area	In 2016 a transportation plan was prepared to provide effective and efficient travel for traffic on U.S. Highway 40; provide safe, effective, and efficient access to and from U.S. Highway 40, while supporting previous planning efforts, including the development of alternative transportation modes. The plan includes access improvements and implementation guidelines to meet its desired goals and objectives.	Accepted 2016	19 miles of U.S. Highway 40 on the east side of Steamboat Springs, Colorado

Project	**Project Location within the Middle Yampa geographic area or otherwise stated in proximity.**	**Project description**	**Year of project approval or implementation**	**Project area (acres or length)**
Western Area Power Administration Environmental Impact Statement	Middle Yampa and Grizzly Creek Geographic Area (Parks District)	Western Area Power Administration proposes to improve the way it manages vegetation along its rights of way on National Forest System lands in the states of Colorado, Utah and Nebraska. Implementing the proposal would include modifying existing U.S. Forest Service authorizations or issuing new authorizations to accommodate Western Area Power Administration's proposal and other routine maintenance.	Decision signed August 2020. Implementation on-going	About 273 total miles of transmission line right-of-way on 8 forests in 3 states are addressed in the Final Environmental Impact Statement.

Appendix D: Trail Class Matrix

Trail classes are general categories reflecting trail development scale, arranged along a continuum. The trail class (table 16) identified for a National Forest System trail prescribes its development scale, representing its intended design and management standards.[6] Local deviations from any trail class descriptor may be established based on trail-specific conditions, topography, or other factors, provided that the deviations do not undermine the general intent of the applicable trail class.

Table 16. Trail class matrix (FSH 2353, Section 14.2, Exhibit 01)

Trail attributes	Trail class 1 minimally developed	Trail class 2 moderately developed	Trail class 3 developed	Trail class 4 highly developed	Trail class 5 fully developed
Tread and traffic flow	• Tread intermittent and often indistinct • May require route finding • Single lane with no allowances constructed for passing • Predominantly native materials	• Tread continuous and discernible, but narrow and rough • Single lane with minor allowances constructed for passing • Typically native materials	• Tread continuous and obvious • Single lane, with allowances constructed for passing where required by traffic volumes in areas with no reasonable passing opportunities available • Native or imported materials	• Tread wide and relatively smooth with few irregularities • Single lane, with allowances constructed for passing where required by traffic volumes in areas with no reasonable passing opportunities available • Double lane where traffic volumes are high and passing is frequent • Native or imported materials • May be hardened	• Tread wide, firm, stable, and generally uniform • Single lane, with frequent turnouts where traffic volumes are low to moderate • Double lane where traffic volumes are moderate to high • Commonly hardened with asphalt or other imported material
Obstacles	• Obstacles common, naturally occurring, often substantial and intended to provide increased challenge • Narrow passages; brush, steep grades, rocks and logs present	• Obstacles may be common, substantial, and intended to provide increased challenge • Blockages cleared to define route and protect resources • Vegetation may encroach into trailway	• Obstacles may be common, but not substantial or intended to provide challenge • Vegetation cleared outside of trailway	• Obstacles infrequent and insubstantial • Vegetation cleared outside of trailway	• Obstacles not present • Grades typically less than 8 percent

[6] For National Quality Standards for Trails, Potential Appropriateness of Trail Classes for Managed Uses, Design Parameters, and other related guidance, refer to FSM 2353, FSH 2309.18, and other applicable agency references.

Trail attributes	Trail class 1 minimally developed	Trail class 2 moderately developed	Trail class 3 developed	Trail class 4 highly developed	Trail class 5 fully developed
Constructed Features and Trail Elements	• Structures minimal to non-existent • Drainage typically accomplished without structures • Natural fords • Typically no bridges	• Structures of limited size, scale, and quantity; typically constructed of native materials • Structures adequate to protect trail infrastructure and resources • Natural fords • Bridges as needed for resource protection and appropriate access	• Structures may be common and substantial; constructed of imported or native materials • Natural or constructed fords • Bridges as needed for resource protection and appropriate access	• Structures frequent and substantial; typically constructed of imported materials • Constructed or natural fords • Bridges as needed for resource protection and user convenience • Trailside amenities may be present	• Structures frequent or continuous; typically constructed of imported materials • May include bridges, boardwalks, curbs, handrails, trailside amenities, and similar features
Typical Recreation Environs and Experience[1]	• Natural, unmodified • Recreation Opportunity Spectrum: Typically Primitive to Roaded Natural • Wilderness Recreation Opportunity Spectrum: Typically Primitive to Semi-Primitive	• Natural, essentially unmodified • Recreation Opportunity Spectrum: Typically Primitive to Roaded Natural • Wilderness Recreation Opportunity Spectrum: Typically Primitive to Semi-	• Natural, primarily unmodified • Recreation Opportunity Spectrum: Typically Primitive to Roaded Natural • Wilderness Recreation Opportunity Spectrum: Typically Semi-Primitive to Transition	• May be modified • Recreation Opportunity Spectrum: Typically Semi-Primitive to Rural • Wilderness Recreation Opportunity Spectrum: Typically Portal or Transition	• May be highly modified • Commonly associated with visitor centers or high-use recreation sites • Recreation Opportunity Spectrum: Typically Roaded Natural to Urban • Generally not present in wilderness

Trail attributes	Trail class 1 minimally developed	Trail class 2 moderately developed	Trail class 3 developed	Trail class 4 highly developed	Trail class 5 fully developed
Signs[2]	• Route identification signing limited to junctions • Route markers present when trail location is not evident • Regulatory and resource protection signing infrequent • Destination signing, unless required, generally not present • Information and interpretive signing generally not present	• Route identification signing limited to junctions • Route markers present when trail location is not evident • Regulatory and resource protection signing infrequent • Destination signing typically infrequent outside of wilderness; generally not present in wilderness • Information and interpretive signing not common	• Route identification signing at junctions and as needed for user reassurance • Route markers as needed for user reassurance • Regulatory and resource protection signing may be common • Destination signing likely outside of wilderness; generally not present in wilderness • Information and interpretive signs may be present outside of wilderness	• Route identification signing at junctions and as needed for user reassurance • Route markers as needed for user reassurance • Regulatory and resource protection signing common • Destination signing common outside of wilderness; generally not present in wilderness • Information and interpretive signs may be common outside of wilderness • Accessibility information likely displayed at trailhead	• Route identification signing at junctions and for user reassurance • Route markers as needed for user reassurance • Regulatory and resource protection signing common • Destination signing common • Information and interpretive signs common • Accessibility information likely displayed at trailhead

1 – The Trail Class Matrix shows the combinations of Trail Class and Recreation Opportunity Spectrum (ROS) or Wilderness Recreation Opportunity Spectrum (WROS) settings that commonly occur, although trails in all Trail Classes may and do occur in all settings. For guidance on the application of the ROS and WROS, refer to FSM 2310 and 2353 and FSH 2309.18.

2 – For standards and guidelines for the use of signs and posters along trails, refer to the Sign and Poster Guidelines for the Forest Service (EM-7100-15).

Appendix E: Forest Plan Compliance

The Routt National Forest Land and Resource Management Plan (forest plan) provides guidance for all resource management activities on National Forest System lands within the administrative boundary of the Routt National Forest. More specifically it establishes standards and guidelines to proposed activities and management area prescriptions to designated lands https://www.fs.usda.gov/detail/mbr/landmanagement/planning/?cid=fsbdev3_025110

Table 17 identifies some of the forest plan standards most pertinent to the issues identified in public comments received on the Mad Rabbit trails project.

Table 17. Project compliance with Routt National Forest Land and Resource Management Plan (forest plan) standards

Forest plan direction	No-action alternative	Proposed action alternative
Threatened, Endangered, Sensitive Species and Wildlife Standard 1: Apply seasonal restrictions on use of travel ways under Forest Service jurisdiction to reduce disturbance in sensitive big game areas, such as birthing areas and winter ranges. This does not imply that all birthing areas and winter range are considered equally important, and not all will be considered 'sensitive'.	No. Alternative has not met this standard.	Yes. Seasonal closure of elk calving grounds per Colorado Parks and Wildlife request meets this standard.
Threatened, Endangered, Sensitive Species and Wildlife Standard 6: Protect known active and inactive raptor nest areas. Extent of the protection will be based on proposed management activities, human activities existing before nest establishment, species, topography, vegetative cover, and other factors. A no-disturbance buffer around active nest sites will be required from nest-site selection to fledging (generally March through July). Exceptions may occur when animals are adapted to human activity.	No. Alternative has not met this standard.	Yes. Seasonal closures around active or inactive goshawk nests meets this standard.
Threatened, Endangered, Sensitive Species and Wildlife Standard 7: Where newly discovered threatened, endangered, proposed, or sensitive species habitat is identified, conduct an analysis to determine if any adjustments in the forest plan are needed.	No. Alternative has not met this standard.	Yes. Threatened Endangered, and Sensitive species design elements 1 and 2 address this standard.
Threatened, Endangered, Sensitive Species and Wildlife Standard 8: Manage activities to avoid disturbance to sensitive species which would result in a trend toward Federal listing or loss of population viability. The protection will vary depending on the species, potential for disturbance, topography, location of important habitat components, and other pertinent factors. Give special attention during breeding, young rearing, and other times which are critical to survival of both flora and fauna.	No. Alternative has not met this standard.	Yes. Threatened, Endangered, and Sensitive species design elements 1 and 2, and Wildlife design element 4, address this standard.
Threatened, Endangered, Sensitive Species and Wildlife Standard 9: Avoid disturbing threatened, endangered, and proposed species (both flora and fauna) during breeding, young rearing, or at other times critical to survival by closing areas to activities. Exceptions may occur when individuals are adapted to human activity, or the activities are not considered a threat.	No. Alternative has not met this standard.	Yes. Threatened Endangered, and Sensitive species design elements 1 and 2, and Wildlife design elements 3 and 4, address this standard.

Forest plan direction	No-action alternative	Proposed action alternative
Threatened, Endangered, Sensitive Species and Wildlife Standard 10: In forested ecosystems, maintain habitat effectiveness for deer and elk at 50 percent or greater, as measured at the Geographic Area scale.	Yes. Existing habitat effectiveness for deer and elk exceeds 50 percent.	Yes. Project would not affect habitat effectiveness for deer and elk.
Recreation Standard 1: Close existing recreation facilities within the winter range during the winter and or spring periods.	Yes. All MA 5.41 deer and elk winter range within the Middle Yampa Geographic Area is under an existing mandatory area closure from December 1 to April 15 authorized under the Steamboat Front Fuels Reduction Environmental Assessment.	Yes. Proposed action would not alter existing condition.
Water and Aquatic Standard 2: Manage land treatments to conserve site moisture and to protect long-term stream health from damage by increased runoff	No. User-created trails may alter site hydrology and result in loss of soil moisture and sedimentation of streams.	Yes. Project specific design elements will ensure use of drainage features to protect streams from disturbed areas, both in trail development and decommissioning of closed trials.
Water and Aquatic Standard 4: In the water influence zone next to perennial and intermittent streams, lakes, and wetlands, allow only those actions that maintain or improve long-term stream health and riparian ecosystem condition.	No. User-created trails cross streams and wetlands.	Yes. Project specific design elements include location of trails to minimize trail length in riparian areas, minimize number of stream crossings, and avoid any placement of excavated material in any stream, swale, lake, wetland of the water influence zone.
Water and Aquatic Standard 5: Design and construct all stream crossings and other instream structures to provide for passage of flow and sediment, withstand expected flood flows, and allow free movement of resident aquatic life.	No. User-created trails have no construction standards.	Yes. Stream crossings will use suitably designed and sited bridges or crossings with hardened approaches.
Water and Aquatic Standard 7: Design and construct all stream crossings and other instream structures to provide for passage of flow and sediment, withstand expected flood flows, and allow free movement of resident aquatic life.	No. User-created trails have no construction standards.	Yes. Project specific design elements include avoidance of stream crossings. Where crossings are unavoidable, design crossings to avoid any dewatering or entrainment of sediments.
Soils Standard 1: Limit roads and other disturbed sites to the minimum feasible number, width, and total length consistent with the purpose of specific operations, local topography, and climate.	No. User-created trails have no construction standards.	Yes. Project establishes minimum disturbance limits.
Soils Standard 5: Manage land treatments to limit the sum of severely burned and detrimentally compacted, eroded, and displaced land to no more than 15 percent of any land unit.	No. User-created trails have no construction standards.	Yes. Project specific design elements specify minimum disturbance in land units.

Forest plan direction	No-action alternative	Proposed action alternative
Undesirable Species Standard 1: Control nonnative plants throughout the forest with priority given to designated wilderness	No. User-created trails have no construction standards.	Yes. Project specific design elements include inspection and cleaning of construction equipment to identify and remove seeds, soil, vegetative matter, and other debris that could contain or hold seeds.
Forest Goal 2 : Provide a wide variety of outdoor recreational opportunities and experiences to meet the full range of visitor experiences	No	Yes
Recreation – Dispersed Recreation 1 and 2 : Manage recreation use to stay within the capacity for the recreation opportunity spectrum objective	Yes however this alternative may make managing for ROS along Rabbit Ears pass in the summer more challenging in the future	Yes
Recreation – Dispersed Recreation 3 : Manage trail development at a broad scale to coordinate with trail systems developed by municipalities, counties, states, other federal agencies and partners	No	Yes
Recreation – Dispersed Recreation 4 : Plan different accessibility challenge levels, depending on the nature of the improvement and the principal form of recreation being provided	No	Yes
Recreation – Dispersed Recreation 5 : Consider universal design for all new construction or rehabilitation proposals in trail system analyses and decision	No	Yes
Recreation – Dispersed Recreation 6 : Consider proximity to population centers, feasibility of loops, feature attractions, campgrounds, interpretive opportunities, types of trail users, partnership opportunities, protection of habitats and wilderness, accessibility or universal design opportunities	No	Yes
Recreation Opportunity Spectrum 1 : Conduct management activities to comply with the requirements of the adopted ROS class and the visual quality objective in the management area prescription	Yes however this alternative may make managing for ROS and visual quality along Rabbit Ears pass in the summer more challenging in the future	Yes

Management Areas and Geographic Areas

Each management area identified in the Routt National Forest Land and Resource Management Plan (forest plan) has a certain emphasis which directs management activities on that piece of land. They include prescriptions or standards and guidelines that apply to a particular area. More information about management areas and the associated prescriptions can be found in the forest plan.

The national forest is also divided up into geographic areas, which link the forest plan to management at a landscape or watershed scale. The Mad Rabbit trails project area includes four geographic areas: Lower Elk River, Grizzly Creek, Red Dirt, and Middle Yampa (where most of the project activities are located).

Management areas and geographic areas in the Mad Rabbit trails project area include the following and are displayed in figure 7 below.

- 1.12 Wilderness, Primitive
- 1.32 Backcountry Recreation-Nonmotorized with Winter Limited Motorized
- 2.1 Special Interest Areas
- 3.23 Municipal Watersheds
- 3.31 Backcountry Recreation-Motorized
- 4.2 Scenery
- 4.3 Dispersed Recreation
- 5.11 General Forest and Rangelands Forest Vegetation Emphasis
- 5.12 General Forest and Rangelands Range Vegetation Emphasis
- 5.13 Forest Products
- 5.41 Deer and Elk Winter Range
- 7.1 Residential and Forest Interface
- 8.22 Ski Based Resorts: Existing and Potential

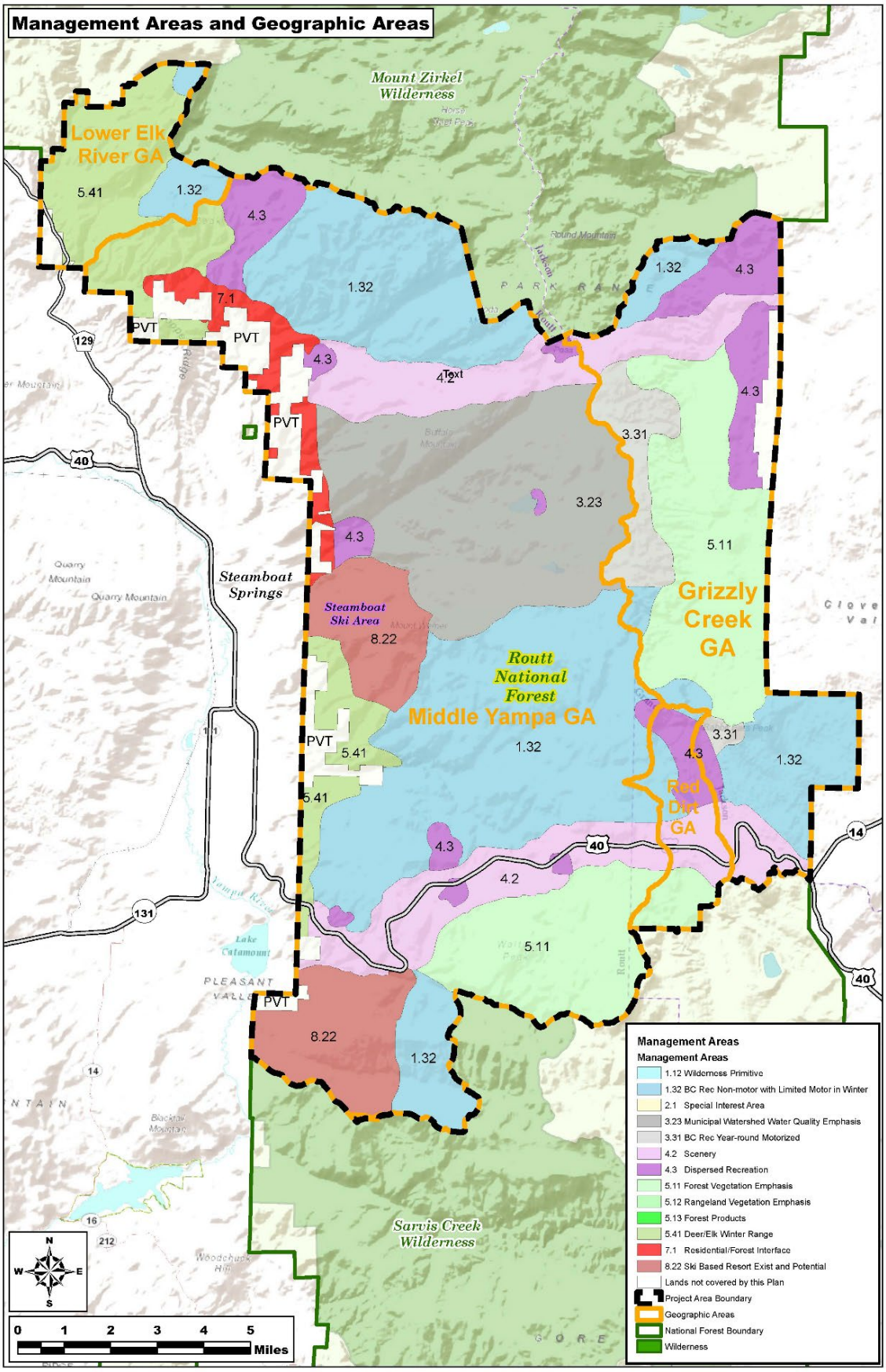

Figure 7. Management areas and geographic areas located in the Mad Rabbit trails project area