United States Department of Agriculture

Final Record of Decision
for the
Inyo National Forest Land Management Plan

Forest Service Pacific Southwest Region R5-MB-323b October 2019

Cover Photo: Ancient Bristlecone pines. Photo by Leeann Murphy.

Final Record of Decision for the Inyo National Forest Land Management Plan

Fresno, Inyo, Madera, Mono, and Tulare Counties, California and Esmeralda and Mineral Counties, Nevada

Lead Agency: USDA Forest Service

Responsible Official: Tammy Randall-Parker, Forest Supervisor

For information, contact: Erin Noesser
Forest Planner, Inyo National Forest

Contents

Introduction 1
Forest Setting 1
Need for Change 3
Engagement with State and Local Governments, Indian Tribes, other Federal Agencies, and the Public 4
State and Local Governments and other Federal Agencies 4
Indian Tribes 5
Public Participation 6
Decision and Rationale for the Decision 7
Decision 7
Nature of this Decision 8
Rationale for the Decision 9
Requirements of the Planning Rule 18
Transition to the Revised Land Management Plan 23
Preliminary Administrative Recommendations 23
Monitoring Program 26
Alternative Development 27
Alternatives Considered in Detail 28
Alternatives Considered but Eliminated from Detailed Study 30
Changes between Draft and Final EIS 31
Administrative Review and Objections 32
Modifications Made in Response to Objections and Instructions 32
Environmentally Preferable Alternative 38
Best Available Scientific Information 38
Assessment Phase 39
Planning Phase 40
Findings Required by Other Laws and Relevant Directives 46
Accessibility Laws 46
Civil Rights Laws 46
Clean Air Act 46
Clean Water Act 46
Endangered Species Act 47
Executive Orders 11988 (Floodplain Management) and 11990 (Protection of Wetlands) 47
Executive Order 12898 (Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations) 47
Executive Order 13084 (Consultation and Coordination with Indian Tribal Governments) 48
Multiple-Use Sustained-Yield Act 48
National Environmental Policy Act of 1969 48
National Forest Management Act 49
National Historic Preservation Act 50
The Wild and Scenic Rivers Act 50
The Wilderness Act 50
The Effective Date of the Plan Revision 50
Contact Person 51
Signature and Date 51
Appendix A: Recommended Wilderness Areas and Eligible Wild and Scenic Rivers 53
Recommended Wilderness Areas 53
Eligible Wild and Scenic Rivers 61
Appendix B: Changes Made in Response to Objection Instructions and Suggestions, and Errata 66
References 83

Tables

Table 1. List of eligible wild and scenic rivers..... 61

Figures

Figure 1. Inyo National Forest and vicinity..... 2
Figure 2. Huntoon Creek recommended wilderness area..... 55
Figure 3. South Huntoon Creek recommended wilderness area 56
Figure 4. Adobe Hills recommended wilderness area..... 57
Figure 5. White Mountain Wilderness Additions recommended wilderness areas..... 58
Figure 6. Piper Mountains Wilderness Additions (1) recommended wilderness area..... 59
Figure 7. South Sierra Wilderness Additions – East (1) recommended wilderness area 60

Introduction

This record of decision (ROD) documents my decision and rationale for approving the 2019 Inyo National Forest Land Management Plan. The decision is consistent with the Forest Service's 2012 National Forest System Land Management Planning Rule[1] (referred to as the 2012 Planning Rule) and advances goals of the Department of Agriculture, including facilitating rural prosperity and economic development and fostering productive and sustainable use of our National Forest System lands.

The Inyo National Forest (also referred to as "the Inyo" or "the Forest") plays a unique role supporting local economies in the eastern Sierra region, and provides clean drinking water and recreational opportunities for much of California. We estimate the Inyo supports approximately 3,400 jobs that provide $119 million of annual labor income to local communities (estimates as of June 2014). A majority of this economic activity was derived from visitor spending for recreational visitation on the Inyo, with forest-based recreation supporting 2,600 jobs and $85 million in income. Early European immigrants in the region earned livelihoods from activities such as ranching and mineral prospecting. These activities continue on the landscape today, and provide economic contributions by supporting an estimated 400 jobs and $16 million in annual labor income, as well as a window into the rich history and culture of the area.

The Forest has outstanding developed and dispersed recreation opportunities that provide for a broad and diverse range of year-round activities that range from developed ski resorts to large blocks of contiguous wilderness. The Inyo National Forest receives over 8 million visitors yearly,[2] with the majority of visitors coming from southern California. Travel and tourism-related industries comprised almost 50 percent of the jobs in the counties bordering the Inyo National forest, and recreation is a large part of the economy, providing significant revenue to the local and gateway communities surrounding the national forest. Long standing recreation (such as pack stock use, off-highway vehicle use, camping, fishing, hunting, backpacking, and mountaineering) continue to be important in the area today. Year-round trail use provides the means to high-quality recreation from hiking, mountain biking and equestrian use, to skiing, snowmobiling, and other motorized uses.

Forest Setting

The Inyo is located in eastern California, with a small portion in Nevada (figure 1). The Inyo includes the crest and eastern escarpment of the Sierra Nevada from the Mono Basin to the Kern Plateau, plus the Glass, White, and Inyo Mountain Ranges. The Inyo encompasses approximately 2 million acres, intermixed with 56,481 acres of State and private lands; 26,711 acres of the Sierra National Forest and Humboldt-Toiyabe National Forests are administered by the Inyo National Forest.

The Inyo is characterized by large magnificent mountains that invite and inspire visitors locally, regionally, nationally, and internationally. This stunning landscape is home to well-known attractions such as Mt. Whitney, Mono Lake, the Ancient Bristlecone Pine Forest and Mammoth Mountain. The Inyo has many diverse ecosystems including portions of the Great Basin, Mojave Desert and Sierra Nevada. The high scenic integrity of the area is an important draw for many visitors. Forty-six percent of the Inyo (964,360 acres) consists of nine designated wilderness areas, either wholly or partially within the

[1] 36 CFR part 219
[2] USDA Forest Service Pacific Southwest Region. Business Plan for the Inyo National Forest: A Window of Opportunity. R5-MB-124. May 2007.

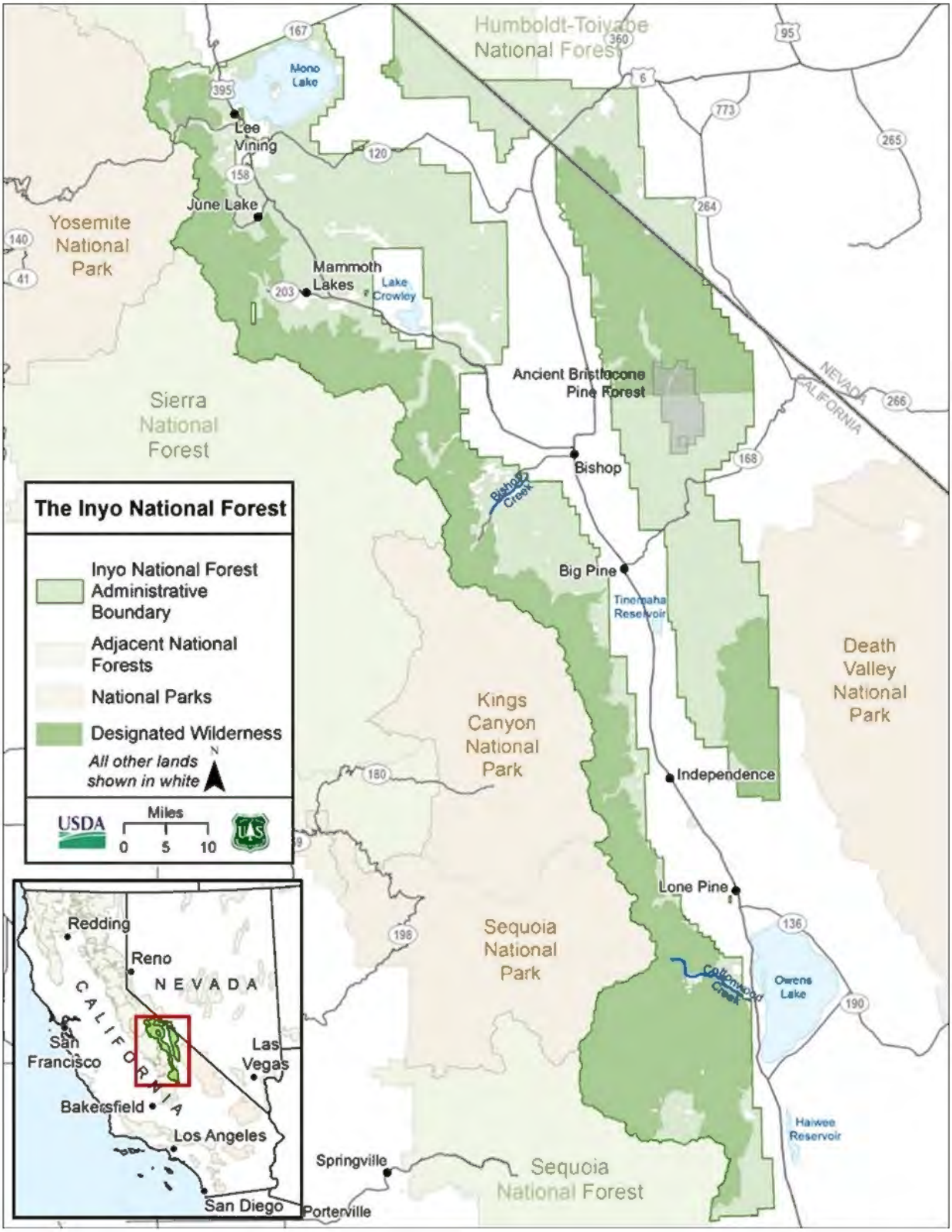

Figure 1. Inyo National Forest and vicinity

administrative boundary of the national forest. Another roughly 542,000 acres of inventoried roadless areas (about 26 percent of the Forest) provides a predominantly non-motorized recreation experience.

The Inyo was established in 1907 for the purposes of setting aside lands as part of the Los Angeles aqueduct project, and providing clean drinking water to the city of Los Angeles. These critical functions continue to this day. The headwaters and tributaries originating on the Inyo supply water and electricity to millions of people in local communities, such as Mammoth Lakes, and to communities as far ranging as Los Angeles and Fresno. Keeping these watersheds healthy, or restoring them where needed, is critical to support local and regional water security and provide upwards of 300 jobs to the local Inyo County economy.

For thousands of years, the area has been home to many Native American tribes and tribal communities, with traditional territories and deep cultural ties to the Forest and surrounding lands. Areas of cultural and tribal value are found throughout the Inyo. In the past, the presence of different animals, including desert bighorn sheep and pronghorn antelope, shaped Native American use of this land. Cultural opportunities are still an important contribution of national forest lands today. Tribal communities benefit socioeconomically through the use of forest resources for artisan and craft materials, medicines, fuel, traditional foods, and by supporting heritage tourism and recreation. Lands and resources of the Inyo enhance the sustainability of tribal communities where opportunities for traditional ceremonies and religious practices strengthen the communities' sense of place and self. Gathering activities on the Inyo contribute to tribal social, economic, familial, and religious well-being.

The Forest is also critically important for fish and wildlife species. As a few examples, the Inyo contains critical habitat for the federally endangered Sierra Nevada bighorn sheep. The sagebrush ecosystems in the northern portion of the forest provide suitable habitat for the at-risk bi-state sage-grouse. The Kern Plateau in the southern end of the Forest contains the only native range of the California State fish, the California golden trout.

Need for Change

This decision revises the 1988 Inyo National Forest Land and Resource Management Plan and its 14 current amendments. The existing Inyo Land and Resource Management Plan is almost 30 years old. Over the last 30 years, the social, economic, and ecological conditions on the Inyo have changed, resulting in a land management plan that is not as responsive to the needs of local communities and the relevant land management challenges for the area. For example, recreation has expanded becoming a dominant economic driver for the area: the risk of large, severe wildfires is growing, heightening safety concerns of local communities; and the demands on resources provided by the national forest, including water for millions of people, has been influenced by changing climates and associated ecosystem stressors, such as drought. There is also a need to develop plan direction for lands acquired by the Inyo through the Nevada Enhancement Act, which were not covered under the 1988 land management plan. These changes, combined with the age of the existing land management plan, create a clear need for plan revision.

Eight overarching issues drove the need for plan revision.[3] The issues were identified based on our assessments and input from State and local governments, other Federal agencies, Tribes, and members of the public. These eight issues were organized for purposes of our analysis into three revision topics: (1) fire management and smoke, (2) ecological integrity, and (3) sustainable recreation and designated areas.

[3] The eight overarching issues behind revision include: (1) Ecological resilience, wildlife habitats, and wildfire; (2) forest resilience and forest density; (3) fuels treatment and fire management; (4) watershed restoration; (5) protecting aquatic diversity; (6) recommended wilderness; (7) smoke; and (8) forest products.

The following summary identifies the broad goals of land management plan changes within the 3 topic areas:

- Fire management and smoke: Reduce the risk of large, high-intensity wildfires on communities, recreation sites and other forest infrastructure; and increase the ability to manage wildfires to meet resource objectives. At the same time, we need to reduce smoke impacts to communities, at least over the long-term. By moving toward a fire regime more in line with the natural range of variability, the Inyo will continue to provide social and economic benefits to people and communities, including Tribes.
- Ecological Integrity: Restore wildlife and plant habitat diversity and improve resilience of terrestrial and aquatic ecosystems to stressors, including climate change, wildfire, and invasive species; and apply more recent science to manage fire and fuels treatments, particularly on the east side of the Sierras, to achieve restoration goals. By addressing these needs, we will provide the ecological integrity needed for ecological sustainability.
- Sustainable Recreation and Designated Areas: Provide for sustainable recreation by addressing the high volumes of recreation use to provide a variety of visitor experiences, opportunities and settings while reducing impacts to resources and existing infrastructure. By providing for sustainable recreation, we will support social, economic, and ecological sustainability on and near the Inyo.

Engagement with State and Local Governments, Indian Tribes, other Federal Agencies, and the Public

Our public participation efforts ensured engagement and collaboration with a variety of stakeholders throughout the multi-year plan revision process (2012 through 2019). This provided transparency, understanding of the planning process, regular dialogue among different groups, and resulted in a land management plan that is responsive to State and local governments, other Federal agencies, Indian Tribes and the public. We will continue to work with these groups to reach our goals over the next 15 years.

State and Local Governments and other Federal Agencies

The Inyo signed memoranda of understanding with two cooperating agencies: Inyo County and the Environmental Protection Agency (EPA). A cooperating agency is a State, Federal, or local agency which has jurisdiction by law or special expertise with respect to any environmental issue (40 CFR §1501.6). Our memorandum of understanding with Inyo County led to better collaboration on developing the land management plan. As often as weekly, we met with County staff to discuss the plan revision with an emphasis on maintaining access and multiple uses on the Inyo. As a cooperating agency, the County provided essential information highlighting the contributions national forest activities provide to local economies. We worked with the County to determine key locations on the Inyo critical to providing these socioeconomic benefits. This information supported the development of a land management plan that works to sustain national forest benefits that contribute to local communities and local economies.

We also developed a memorandum of understanding with the EPA to share on-going revision progress and get feedback on the draft environmental impact statement (EIS) alternatives, Tribal Relations and Consultation, and how fire management was being addressed in the land management plan revision. The EPA was supportive of efforts to increase the pace and scale of restoration and concurred with the programmatic approach to the land management plan. The EPA also provided comments on the draft EIS, encouraging us to look at stewardship opportunities for watershed restoration to provide the greatest opportunity for riparian and watershed health.

We engaged the California Department of Fish and Wildlife, the Nevada Department of Wildlife, California Department of Forestry and Fire Protection, local air quality boards, Mono County, Esmeralda County, Mineral County, and the U.S. Fish and Wildlife Service. By working with these groups as we were developing the land management plan, we were able to address issues early in the revision process. Such issues included: species considered for the species of conservation concern list; smoke impacts to recreation users and the local economy; the importance of managing for multiple uses; and the economic contributions of the Inyo. We addressed these issues by identifying species such as desert bighorn sheep as a species of conservation concern; analyzing the effects of smoke based on the management proposed in each alternative; and including plan components that address local communities and the importance of the economic contributions of the national forest.

In developing the land management plan, we considered relevant county general plans from Fresno, Inyo, Madera, Mono, and Tulare Counties in California and Esmeralda and Mineral Counties in Nevada. Considerations for incorporation into the land management plan included: (1) the objectives of local governments, as expressed in their plans and policies; (2) opportunities for the land management plan to address the impacts identified or to contribute to joint objectives; and (3) opportunities to resolve or reduce conflicts, within the context of developing the land management plan's desired conditions or objectives. Appendix E: Consistency with Other Planning Efforts in volume 2 of the final EIS describes in detail how the county plans were addressed in the land management plan. In summary, the land management plan is consistent with the county plans and incorporates elements of the following topics: opportunities for economic development and growth; providing continued tourist and recreation opportunities; addressing the need to provide for public safety regarding wildland fires; provide for forest and wetland health and habitat for aquatic and terrestrial species; and maintaining multiple uses on the national forest.

Input from Inyo County and Mono County informed my decision on several sections of the plan, mostly regarding the local economy and recreational uses. Input from both counties informed my decision on which areas to recommend as wilderness, and helped me determine measures for economic effects. Input from Mono County also influenced my decision on wild and scenic river eligibility.

We consulted with the U.S. Fish and Wildlife Service on four endangered species, three threatened species, and one candidate species. We used state wildlife action plans to inform our species of conservation concern process. The regional forester's staff used the species of greatest conservation needs from the State Wildlife Action Plans (California and Nevada, along with other sources such as NatureServe) and evaluated if those species met the criteria to be identified as species of conservation concern.

Other forest management issues raised by State and local governments and other Federal agencies and incorporated into the land management plan include: increasing the pace and scale of forest restoration; broader partnerships and cooperation; greater use of fire on the landscape; concern over undesirable effects of more managed fire; suggestions for species of conservation concern; and the need for sustainable recreation planning. State and local government and Federal agency input became the basis for plan components and other plan content in the fire, vegetation management, recommended wilderness, wild and scenic river eligibility, terrestrial ecosystems and species-specific sections of the land management plan.

Indian Tribes

The Inyo engaged 14 Native American Tribal entities including 9 federally recognized Tribes (Utu Utu Gwaitu Paiute Tribe Benton Paiute Reservation; Walker River Paiute Tribe; Washoe; Big Pine Paiute

Tribe of Owens Valley; Timb-isha Shoshone Tribe – Bishop; Bishop Paiute Indian Tribe; Bridgeport Paiute Indian Colony; Lone Pine Paiute-Shoshone Reservation; and Ft. Independence Community of Paiute Indians). We communicated through letters, in-person meetings, e-mails, and phone calls. Letters included an open invitation to request formal government-to-government consultation (for recognized Tribes) or to meet (for non-recognized Tribes). Big Pine and Mono Lake Tribes requested formal consultation in 2014.

Throughout the plan revision, Tribal members shared input including: comments on wording and language; expressing desire for holistic management of ecosystems; fostering greater collaboration between Tribes and the Forest Service in resource management activities; providing more opportunities for Tribal youth engagement and Tribal employment; greater application of traditional ecological knowledge in forest management processes; supporting opportunities for non-timber forest product gathering and traditional activities; and reintroducing or utilizing the important role of fire for healthy ecosystems.

Tribal input became the basis for plan components in several sections of the land management plan, including: Tribal Relations and Uses, Invasive Species, Timber and Other Forest Products, and Fire. Comments about fire use helped shape the Strategic Fire Management Zones, which provide direction for returning fire to our eastside ecosystems. Engagement with the Tribes also resulted in additional field trips to discuss other important topics on the Inyo, including Jeffrey pine management, pinyon-juniper expansion into sage-grouse habitat, and priority watershed restoration. Tribal youth participated in Jeffrey pine forest restoration, using traditional tools to clean understory needle build-up in areas used to gather piaga, a traditional food source.

Public Participation

Public engagement is a key part of the 2012 Planning Rule. Modifications to the alternatives, the analysis and the land management plan were made throughout the planning process in response to public input. The public was encouraged to provide information and ideas, and we incorporated much of the publicly provided information into our plan and final EIS analysis. There were widely varying views on many topics, so there was not always consensus. However, I considered those varying views and modified my decision to try to be responsive to input received. The overall result of our public participation efforts was greater transparency, greater public understanding of the planning process, and the promotion of constructive dialogue among and between different groups, which we hope will continue into the implementation of this plan.

We engaged the public early in the plan revision process by sharing and soliciting information during in-person meetings held in local communities and virtually (via websites, social media and an open wiki). Webinars, newspaper articles, and feature articles reached other audiences. We also worked with the Eastern Sierra Recreation Collaborative, a nongovernment group focused on sustainable recreation for quality of life and a tourism-based economy. This engagement strengthened the plan's emphasis on recreation opportunities and management.

In addition to formal comment periods required by the 2012 Planning Rule, we asked for input and feedback on topics the public was most interested in throughout the planning process: wilderness recommendations, wild and scenic rivers evaluations, species of conservation concern, and monitoring.

Public scoping input was key to developing the original proposed action, and led to addition of two alternatives to the proposed action. Alternative C was developed in response to public concerns about effects of mechanical fuels treatments, requests for greater levels of ecosystem restoration, and the desire

for far greater areas of the Forest to be recommended for inclusion in the National wilderness preservation system. Alternative D was developed in response to public concerns that the proposed action did not include enough mechanical fuels treatment, and concern over the possible negative effects of recommended wilderness on multiple uses.

Public input was also key to developing the land management plan. The land management plan was modified throughout the planning process to address the public input received. The draft land management plan was based on alternative B, and was released for public review and comment along with the draft EIS in 2016[4]. Public comments on the draft EIS led to additional changes to the alternatives, including the development of a third alternative. Alternative B-modified was created in response to public concerns that the draft land management plan (alternative B), did not clearly articulate direction, and did not include sufficient protection for specific species and ecosystems. The modifications included minor editorial changes and clarifications, organizational changes, replacing critical aquatic refuges with conservation watersheds, replacing recreation "places" with three recreation management areas, updating the list of wild and scenic eligible rivers, adding species-specific plan components for the great gray owl and California spotted owl and updating sage-grouse desired conditions. Alternative B-modified became the preferred alternative in the final EIS and these modifications were incorporated into the land management plan that was released with the final EIS prior to the objection period (August, 2018).

With this decision, I am further modifying the land management plan to address the concerns raised by the objectors. This final version of the land management plan incorporates several items that were analyzed in other alternatives, so it is not reflected in any one alternative described in the final EIS. In particular, compared to alternative B-modified, additional recommended wilderness was added, recommended wilderness boundaries were adjusted, additional eligible wild and scenic river segments were added, California spotted owl plan components were modified to reflect current strategies in the existing plan, and at-risk plant plan components were added.

Decision and Rationale for the Decision

Decision

I have reviewed the analysis disclosed in the final EIS and the project record, as well as comments from our State and local government partners, Indian Tribes, other Federal agencies, and the public, and considered how the land management plan meets the identified needs to change and the requirements of the 2012 Planning Rule (36 CFR part 219). Based on this review, I have selected alternative B-modified for the Inyo National Forest land management plan, with some modifications. The modifications are described in the public participation section above.

The land management plan replaces all previous land management plan direction, including the 1988 land and resource management plan and all of its amendments, and consolidates previous plan and amendment direction in one location. It also applies the land management plan to the areas acquired by the Inyo under

[4] The Inyo National Forest began the plan revision process jointly with the Sierra and Sequoia National Forests. One draft environmental impact statement was prepared for the three national forests and released for public comment in May 2016. Due to public comment and the recent drought-induced tree mortality on the west slope of the Sierra Nevada range, and the corresponding need to address the changed conditions, the Sierra and Sequoia National Forests prepared a revised draft environmental impact statement. Because tree mortality was not as severe on the Inyo National Forest, the Forest Service decided to separate the processes and continue toward a final EIS for the Inyo.

the National Forest and Public Lands of Nevada Enhancement Act of 1988, which were not included in the 1988 land management plan.

With this decision, I approve the following:

1) Forestwide (chapter 2) and area-specific (chapter 3) plan components, including desired conditions, objectives, suitability, standards, guidelines and goals that meet the social, economic, and ecological sustainability requirements of the 2012 Planning Rule.
2) Identification of management areas including: Strategic Fire Management Zones, Sustainable Recreation Management Areas, Riparian Conservation Areas, Conservation Watersheds, Pacific Crest Trail Corridor, eligible Wild and Scenic Rivers, and Recommended Wilderness.
3) Seven areas (59,929 acres) recommended for inclusion in the National Wilderness Preservation System: (1) South Sierra Wilderness Addition; (2) Piper Mountain Wilderness Addition; (3) White Mountains Wilderness Addition (West); (4) White Mountains Wilderness Addition (East); (5) Adobe Hills; (6) Huntoon; and (7) South Huntoon.

   This recommendation is a preliminary administrative recommendation that will receive further review and possible modification by the Chief of the Forest Service, the Secretary of Agriculture, and the President of the United States. The Congress has reserved the authority to make final decisions on the wilderness designation. Land management plan implementation is not dependent upon final outcome of the areas' recommendations for wilderness designation. Plan direction for recommended wilderness identifies suitable uses and provides direction to allow for some activities needed for the administration of the area and for ecological restoration of at-risk species.
4) Identification of 88 segments on 32 rivers (265.4 miles) eligible for inclusion in the Wild and Scenic Rivers System and plan components associated with their management.
5) Plan components for designated areas, including: wilderness, Mono Basin National Forest Scenic Area, wild and scenic rivers, Ancient Bristlecone Pine Forest (National Protection Area), Pacific Crest National Scenic Trail, inventoried roadless areas, national recreation trails, research natural areas, scenic byways, and wild horse and burro territories.
6) The land management plan monitoring program (chapter 4) of the land management plan.
7) Identification of 74,814 acres as suitable for timber production. My decision also incorporates the guidance in appendix D of the land management plan regarding timber suitability and management.
8) Other land management plan content such as the description of the distinctive roles and contributions of the Forest, where scenic beauty includes the highest peak in the lower 48 states, Mount Whitney, and where travel and tourism-related industries support over 50 percent of the jobs in the counties bordering the Inyo, far exceeding the state average of 15.7 percent.

Nature of this Decision

The purpose of the land management plan is to guide future projects, activities, practices, uses, and protection measures to assure sustainable multiple-use management on the Inyo for the next 15 years. This decision applies to those areas of the Humboldt-Toiyabe and Sierra National Forest administered by the Inyo. The land management plan is strategic in nature. It does not authorize projects or activities, commit the Forest Service to take action, or dictate the day-to-day administrative activities needed to carry out the Forest Service's internal operations (such as personnel matters, law enforcement, or organizational changes). The land management plan programmatic management direction will be

implemented through the execution of site-specific projects and activities. The decisions for project-level activities must be consistent with the direction set forth in the land management plan.

The land management plan establishes plan components in the form of desired conditions, goals, objectives, standards, guidelines and suitability to provide for ecological integrity, contribute to social and economic sustainability, and multiple-uses of the Inyo. The plan provides a host of ecosystem services[5] and guides management to achieve the multiple use mission. Development of plan components and the land management plan monitoring program incorporated best available scientific information and created an adaptive management framework. The architecture and components of the land management plan are intended to enable adaptation to new social and economic opportunities that arise as well as new information that comes to us through science and monitoring.

Land uses such as utility corridors must comply with a host of State and Federal laws and regulations. This plan should not interfere with or supersede other laws and regulations special use permits must follow.

Rationale for the Decision

I chose alternative B modified, with some modifications that incorporate components from alternatives A and C, because it best balances input from local government, tribes, and diverse publics, while providing for active management for habitat restoration, fuel reduction, and forest products; a variety of recreation opportunities and settings; unique ecological conditions; recommended wilderness areas; and wild and scenic rivers. I also took into consideration the best available science when making my decision, as explained in the "Best Available Scientific Information" section below.

An explanation of my decision rationale is found below, organized by the three major topics areas identified as needing to change.

Topic 1: Fire Management and Smoke

Fire Management

My decision authorizes increased use of fire to manage the landscape. I decided to make this change in land management plan direction because, while fire is an essential ecological process in Sierra Nevada ecosystems, over a century of fire exclusion has resulted in increased frequency of uncharacteristically large and severe wildfires that produce large, high severity patches outside the natural range of variation, and a deficit of small, low and moderate severity fire within the natural range of variation. While fire management philosophies have evolved over the last few decades away from a suppression-focused approach toward a more balanced approach that focuses on re-establishing natural fire regimes, the 1988 land and resource management plan, with amendments, did not provide a framework that allowed for this more balanced approach. My decision provides direction to increase use of managed wildfire, brings about needed change to ecosystem management that incorporates fire as an essential ecological process, and provides for community safety.

[5] Ecosystem services are benefits people obtain from ecosystems. They include *provisioning services* such as clean air and fresh water, energy, food fuel, forage, wood products or fiber, and minerals; *regulating services* such as long-term storage of carbon, climate regulation, water filtration, purification and storage, soil stabilization, flood and drought control, and disease regulation; *supporting services* such as pollination, seed dispersal, soil formation and nutrient cycling, and; *cultural services* such as educational, aesthetic, spiritual, and cultural heritage values, recreational experiences and tourism opportunities.

The land management plan incorporates an approach to managing wildfire that is consistent with the National Cohesive Wildland Fire Management Strategy. The three primary goals of this strategy are addressed in the land management plan and they are: restoring and maintaining landscapes, creating fire-adapted communities, and responding to wildfires safely and effectively. My decision incorporates a two pronged approach to address these goals: increasing pace and scale of restoration and establishment of fire management zones based on fire risk to highly valued resources and assets, such as communities.

The land management plan authorizes an increase in the pace and scale of restoration in the form of active management that would include fuel reduction treatments (such as mechanical thinning and prescribed burning). This increase in pace and scale of restoration would also be accomplished by managing naturally ignited wildfires to meet resource objectives when it can be safely done. The long-term goal of this fire management approach is to move toward conditions more in line with the natural range of variation (NRV) for fire regimes, which would allow fire to play its essential role as an ecological process.

The four strategic fire management zones established by my decision address the need to return fire to its ecological role on the landscape, while providing for community safety and reducing risk to sensitive natural resources. The fire management zones are identified as management areas in the land management plan (with associated plan components), and incorporate a risk-based approach to managing fire. This approach overlays highly valued resources and assets, including homes and key habitat, with large fire simulations to quantify wildfire hazards across the landscape. The zones are based on areas with different levels of risk (low, moderate, and high) to assets and sensitive natural resources. By identifying these zones and assessing the level of risk in advance, my decision will allow managers to prioritize fuels treatments and identify wildfire response strategies, such as when and where wildfires can be managed to meet resource objectives and achieve desired conditions.

Conversely, alternative A does not use the risk-based management approach, and alternative C uses a combination risk based and distance based approach. These two alternatives use wildland-urban intermix defense zone with a quarter-mile buffer around structures. This method does not consider the vegetation type (which directly affects fire behavior) or consider the potential benefits or damages to other resources or assets. The four zones identified in alternative B-modified provide a better strategic and risk-based approach by assessing the effects of wildfire to highly valued resources and assets (final EIS, chapter 3). By choosing alternative B-modified with its strategic fire management zones, I have chosen the alternative that best provides for community safety and protects sensitive natural resources, while allowing fire to be restored to its essential ecological role.

Smoke

My decision responds to stakeholder concerns over the impacts of smoke on visitation and air quality. With current conditions, large catastrophic fires produce smoke that has an impact on air quality, recreation and visibility, and this situation is expected to continue in the short term. All of the action alternatives (B, B-modified, C and D) would increase the pace and scale of restoration treatments aimed at moving the forest vegetation and fuels toward desired conditions that would be more typical of the Sierra Nevada natural fire regime. The goal of moving conditions towards a more natural fire regime would be to reduce the intensity of fire and the associated smoke impacts. Alternatives B, B-modified and D use an approach that would mechanically treat fuels prior to prescribed burning, which is intended to mitigate unintended effects, including smoke effects, of prescribed fire, as well as later wildfires. These mechanical treatments are not incorporated into alternative C, so B, B-modified and D are preferable to alternative C. Alternative B and B-modified would likely have the same smoke effects, and alternative D would have the greatest reduction in long-term smoke emissions. I selected alternative B-modified over B

or D because it does have fewer short-term effects to other resources, and best protects sensitive resources such as communities or high quality habitat.

Topic 2: Ecological Integrity

Spanning three major biological provinces over an elevational range from 3,800 to 14,495 feet, the Inyo encompasses one of the most extensive environmental gradients in North America. This distinctive area is renowned for its dramatic landscapes, wide variety of terrestrial and aquatic ecosystems, and diverse array of plant and animal species. Key ecological processes, such as natural fire regimes, vegetation succession, and carbon cycling, are essential to maintaining the integrity of terrestrial and aquatic ecosystems on the Inyo, especially in the face of emerging and interacting stressors such as climate change.

Terrestrial Ecosystems

Climate change and associated ecosystem stressors, such as drought, catastrophic wildfire, and insect and disease outbreaks, as well as past management activities such as fire suppression, have pushed vegetation composition and structure and associated ecosystem function on the Inyo outside the natural range of variation. My decision addresses this condition by incorporating desired conditions and other plan components for the individual types of terrestrial ecosystems on the forest. These plan components strive to re-establish natural fire regimes and other key ecological processes (e.g., pollination, natural forest succession, carbon cycling and sequestration, landscape habitat connectivity, nutrient cycling) by restoring vegetation composition and structure to within the natural range of variation implementing an increased pace and scale of vegetation treatments and other restoration projects.

Specifically, my decision incorporates plan direction that restores vegetation composition and structure by emphasizing active vegetation management. My decision authorizes a land management plan that continues the practice on the Inyo whereby vegetation treatments are almost entirely for the purposes of increasing forest resiliency, improving ecosystem function, and reducing fire hazards, but this land management plan would increase the pace and scale of those treatments. The land management plan also provides management flexibility to use various methods, such as mechanical and prescribed burning treatments, along with post-disturbance salvage. While active vegetation management has some potential for environmental effects and social conflicts, it is necessary to restore vegetation composition and structure to within natural range of variation. Salvage may be necessary post-disturbance in order to allow for safety of communities, to remove dead fuels to prevent another large fire, or to allow reforestation. I am confident plan components that will guide management of these areas are sufficient to mitigate and minimize the potential adverse environmental effects of actively managing the forest.

As part of my decision, the Inyo will continue to produce small volumes of timber (saw logs) and larger volumes of locally important forest products such as fuelwood. The land management plan allows for the provision of these societal goods while ensuring that the management activities are maintaining and moving the forest toward desired conditions.

My decision incorporates into the land management plan specific management direction for unique vegetation and habitat types on the Inyo, such as sagebrush and pinyon-juniper. In the final land management plan, we made a stronger distinction regarding our restoration strategy for sagebrush, which would employ more mechanical means to control woody encroachment instead of prescribed burning, because frequent fire regimes in sagebrush ecosystems tends to promote the spread of cheatgrass, a nonnative invasive species that greatly reduces ecological integrity of sagebrush ecosystems.

Similar to alternative B-modified, alternatives C and D also focused on reducing the potential for large wildfires and moving ecosystems closer to their natural range of variability. I did not choose alternative C because it emphasized a passive management approach to restore fire as an ecosystem process, primarily by using prescribed fire and natural disturbance processes to achieve desired conditions. The analysis in the final EIS shows that without mechanical treatments, the risk of large high-intensity wildfires would be too great, and would lead to unacceptable consequences such as loss of large tracts of mature forests, increased danger to local communities and firefighters, and unacceptable consequences to sagebrush ecosystems and sagebrush dependent species, so would have greater adverse effects in the long-term. Also, the lack of sufficient mechanical treatment prior to prescribed burning would either prevent prescribed burning from occurring, or would increase the severity of prescribed burns to the point that ecosystem desired conditions would not be met.

Compared to alternative B-modified, alternative D would increase intensity of vegetation treatments and the amount of area treated using mechanical methods and larger prescribed burns. I did not choose alternative D because while this greater intensity and acreage of active vegetation management would lead to a more rapid attainment of vegetative desired conditions, it has a greater potential to cause unacceptable short-term effects to wildlife, riparian areas, and recreation.

I did not choose alternative A because it does not include enough restoration to meet desired conditions for terrestrial ecosystems or forest resiliency.

Of these 3 alternatives, I chose alternative B-modified because it strikes a better balance of increasing the pace and scale of active management, while protecting sensitive resources from negative impacts.

Aquatic and Riparian Resources

Climate change and other ecosystem stressors, such as drought, wildfire, and nitrogen deposition have negatively impacted aquatic and riparian resources on the Inyo. My decision addresses the condition of aquatic and riparian resources by incorporating desired conditions and other plan components with the goal of increasing resiliency of these resources to these stressors. My decision addresses aquatic and riparian resources through the inclusion of plan components for watersheds, riparian conservation areas (including rivers, creeks, lakes, ponds, seeps, springs, meadows, and fens), and conservation watersheds (subset of watersheds selected to provide for continued high-quality water sources and the long-term persistence of at-risk species).

My decision includes forestwide plan components for watersheds that protect the water and soil resources at the watershed scale. My decision also includes riparian conservation areas, which are management areas that are established as a buffer along streams and other aquatic features. My decision includes plan components for watersheds and riparian conservation areas that provide for the maintenance and restoration of the ecological integrity of aquatic systems primarily through protective measures intended to decrease negative impacts from management activities and increase resilience to natural events.

My decision also incorporates the conservation watershed approach into the land management plan. Four watersheds are identified as conservation watershed management areas (the South Fork Kern River headwaters, the Cottonwood-Crooked Creek headwaters, the Middle Fork San Joaquin River headwaters, and the Mono Lake headwaters). There are plan components for these management areas with a focus toward desired conditions and the broader landscape. I included functioning watersheds as Conservation Watersheds with the intention of prioritizing aquatic and riparian conservation in these watersheds to benefit at-risk species and ensure that high quality water for beneficial uses is available over the long term. The locations of wilderness and inventoried roadless areas were considered when establishing

conservation watersheds with the intended result of positive synergistic effects for species and habitats across a broader landscape. The intent with these areas is to better provide ecological conditions for at-risk species, and to strengthen the association with terrestrial species of conservation concern, which will benefit from the habitat connectivity by having larger scale refugia in case of stochastic events.

My decision also ensures that the management of aquatic and riparian resources will not have negative effects on local economies. Within conservation watersheds, recreation activities, like fishing, and rangeland livestock grazing would be permitted to continue. Plan components related to these activities within riparian conservation areas will still apply within conservation watersheds, as will other forestwide and designated area direction (wilderness and rangeland livestock grazing).

While alternatives A, B, C and D are not different from B-modified in terms of forest wide plan components for watersheds and plan components for riparian conservation areas, they are different from B-modified in that instead of conservation watersheds they include critical aquatic refuges. Critical aquatic refuges occur at a smaller spatial scale than conservation watersheds and plan components for these management areas are more prescriptive, oftentimes limiting the ability for restoration activities needed to provide for at-risk species habitat. I am choosing alternative B-modified and the use of conservation watersheds because I want to provide for management of at-risk species at a larger, landscape scale, and allow for active restoration, if needed, to benefit these species' habitats, all of which will support maintaining the functionality of these watersheds over the long term. For those at-risk species that were covered under critical aquatic refuge plan direction in alternatives A, B, C and D, there are species-specific plan direction (for example, for Lahontan and Paiute cutthroat trout) in the land management plan that address the needs of the species in the absence of the critical aquatic refuges. This plan direction will provide for vegetation cover along streambanks and limit sedimentation in occupied habitat. This direction complements conservation watershed and riparian conservation area direction, and is part of the overall strategy for aquatics management. Given that alternative B-modified takes this more balanced overall strategy for aquatics management, I believe it is the best alternative to include in the land management plan.

Rangeland Livestock Grazing

Rangeland livestock grazing was not identified as a need for change, but the public raised issues relative to potential impacts on aquatic and riparian resources. The public varied in their promotion of more or fewer restrictions; in general, there wasn't broad agreement. While I acknowledge that monitoring has shown that legacy impacts are still present in certain areas, I believe current grazing management is moving toward desired conditions. As a result, grazing direction will only change in the following ways: Plan components are updated to reflect the 2012 Planning Rule language and rangeland assessment procedures are updated based on recent scientific information. Utilization standards in the land management plan continue to be based on previous standards from the Forestwide Rangeland Standards Amendment (Amendment 6) to the 1988 Land and Resource Management Plan. Methods for data collection and protocols for vegetation and watershed monitoring can now be found in an Inyo National Forest supplement to the Pacific Southwest Region's Rangeland Analysis and Planning Guide. By using technical guides, we are able to update data collection and protocols more easily in response to best available scientific information, which is consistent with 2012 Planning Rule guidance. I believe this is the best approach in clarifying our rangeland livestock grazing management direction.

Providing for Plant and Animal Diversity, including At-risk Terrestrial and Aquatic Species

As a land management agency, the Forest Service provides for plant and animal diversity, including at-risk terrestrial and aquatic species, by managing habitat for the species. At-risk species include species

listed on the federal Endangered Species Act and species identified by the Regional Forester as species of conservation concern on the Inyo. The Regional Forester identified 21 terrestrial and aquatic wildlife species of conservation concern, and 105 plant species of conservation concern on the Inyo, and there are seven federally listed threatened or endangered species on the Forest.

My decision incorporates plan components that are intended to address ecosystem stressors that could negatively impact habitat quality for at-risk species. My decision also addresses deficient habitat conditions that are due to past fire suppression. There are several habitat types on the Inyo that are important to at-risk species, including sagebrush, pinyon-juniper, and aspen. I chose alternative B-modified because it best incorporates plan components that provide for the restoration of ecological conditions required for at-risk species in these and other habitat types on the Inyo. By providing for appropriate ecological conditions, my decision will contribute to maintaining viable populations of at-risk species within the plan area.

Specifically, my decision includes components that address maintaining or restoring ecological integrity of terrestrial and aquatic ecosystems and habitat (coarse-scale) and also includes species-specific (fine-scale) direction for at-risk species where necessary to provide for viable populations. For example, my decision includes forestwide direction for sagebrush ecosystems, and also additional plan direction to address bi-state sage-grouse habitat within the sagebrush ecosystem. In addition to sage grouse, the land management plan includes components addressing Sierra Nevada bighorn sheep, Lahontan cutthroat trout, Paiute cutthroat trout, Yosemite toad, mountain yellow-legged frog, and Sierra Nevada yellow-legged frog. These components, along with ecosystem components, aid in limiting threats to these species, such as from disease or invasive species. Recovery of these species is also addressed in the forestwide general at-risk species direction, which provides for the ecological conditions to support self-sustaining populations.

As required under the 2012 Planning Rule,[6] I find that the land management plan components will provide the ecological conditions necessary to maintain a viable population of each species of conservation concern in the plan area, and this finding is supported by and based on the persistence analysis for species of conservation concern (which can be found on the project website and at https://www.fs.usda.gov/goto/SCC). For species of conservation concern species, integrated forestwide plan components are included to address species habitat needs, and then if those were not found to be sufficient to maintain viability (within the capability of the Forest), species-specific plan components were added. Ecosystem habitat types and threats for each of the species, as well as the persistence of each species of conservation concern is analyzed individually in the persistence analysis, and the persistence determinations are summarized in the "Wildlife, Fish, and Plants" section in volume 1 of the final EIS. The persistence analysis concludes that the plan components address ecological conditions and threats and contribute to the persistence of each species.

There are some threats to species that are not entirely within the control of the Inyo's management actions. For example, disease risks to bighorn sheep populations from domestic sheep on adjacent private lands. In these cases, the plan components are focused on addressing the threats that are within our ability to control and that will maintain or restore ecological conditions within the plan area in order to contribute to maintaining a viable population of the species' within their range, as required in 36 CFR 219.9(b)(2).

The analysis in the biological assessment determined that adoption of the land management plan may affect, and is likely to adversely affect, the seven federally listed threatened or endangered species. While

[6] 36 CFR 219.9(b)(1)

the analysis found that the plan would likely adversely affect these species, that finding is an Endangered Species Act related finding, which requires recording impacts to individuals of the species. Disturbing or displacing one individual is considered an adverse effect under the Endangered Species Act. Land management planning occurs at a programmatic level, and therefore it cannot ensure that projects developed under it would have no effect or that all actions would be discountable, insignificant, or beneficial to federally listed species. Even restoration actions with long-term beneficial impacts to species populations could have short-term adverse impacts to individuals of the species. The U.S. Fish and Wildlife Service released a biological opinion in June 2018, agreeing with our findings and determining that adopting the land management plan would not jeopardize the continued existence of these species and would not adversely modify designated critical habitat.

As explained in the "public participation" section above, I have made the decision to select the plan components from alternative A for California spotted owl, with some slight modifications (I selected alternative B-modified for all other species). Alternative A is the no action alternative, which for California spotted owl direction, is the 2004 Sierra Nevada land management plan amendment. I decided to make a slight modification to the alternative A plan components to allow waiver of limited operating periods for prescribed burning in some instances near California spotted owl nests to improve California spotted owl habitat. This modification better aligns alternative A with management needs and the protection of the species over the long-term. The effects of this change will be no different than alternative A without this modification, because alternative A does allow prescribed fire in California spotted owl habitat, and the prescribed fire would be designed in California spotted owl habitat to have minimal impacts on the canopy layer. This slight modification may have very little if any impact on California spotted owl or on management on the Inyo, because it would only apply if nest sites are discovered, and none have been found in the past. However, if nest sites are found in the future, I believe that alternative A with the slight modification for more flexible use of prescribed fire, will protect those sites.

My rationale for deciding to select alternative A California spotted owl plan components over alternative B-modified California spotted owl plan components is described here. Alternative B-modified was developed with the intention to implement the best available scientific information regarding California spotted owl protection and management actions at the time the 2018 land management plan was developed. However, science on California spotted owl habitat needs and management has been evolving during this time, and new information exists even after the objection period for the land management plan. Some of the content in alternative B-modified may not be consistent with latest science, and the science regarding habitat suitability at the fringe of the California spotted owl range such as occurs on the Inyo, is uncertain. The no-action alternative has been in place on the Inyo since 2004, and has been largely irrelevant because of the low quantity and quality of California spotted owl habitat and limited records of the species' occurrence. Existing plan direction sufficiently protects California spotted owl on the Inyo because it provides ecosystem-level plan components to improve forest resilience and maintain habitat, and species-specific plan components that specifically provide ecological conditions like nesting and roosting habitat that support spotted owl habitat needs. The existing plan direction, with slight modifications, also allows sufficient management flexibility, due to the low likelihood of management actions encountering California spotted owls or their suitable habitat.

In May of 2018, the bi-state sage-grouse status changed to "candidate for listing", due to a court ruling, and is undergoing a new review for listing. Therefore, it no longer meets the criteria to be a species of conservation concern, and has been removed from that list. It may be added back as a species of conservation concern if it is found not to be warranted for listing, and therefore the persistence analysis still includes findings for the bi-state sage-grouse. My decision incorporates some changes and additions

to bi-state sage-grouse plan components compared to the plan components included in the 2018 version of the plan. I added new plan components to address sage-grouse winter habitat, removal of existing tall structures, and predator mitigations. The land management plan with these changes incorporated will protect and improve sage-grouse habitat conditions regardless of the changes in status of the bird. The persistence analysis, which is on the project website, came to the conclusion that the plan components related to sage-grouse habitat would be sufficient to meet the persistence needs of the sage-grouse in the planning area. The land management plan is also consistent with the discretionary conservation recommendations for bi-state sage-grouse in the USFWS programmatic biological opinion for this land management plan revision.

All action alternatives include increased restoration for habitat improvement forestwide, and for specific species. I did not choose alternatives C or D because they do not balance the short-term and long-term beneficial and adverse effects to species as well as alternative B-modified does. Alternative C would not allow sufficient mechanical treatment to move ecosystems toward desired conditions for at-risk species. Alternative D might treat too much area, with too large short-term effects to at-risk species habitat. Alternative B did not include conservation watersheds that will better manage aquatic species. It also did not include recreation management areas, which create “challenging backroad recreation areas” where recreational use and special use permits will be limited. These areas in alternative B-modified will help protect at-risk species habitat slightly more than the recreation plan in alternative B. In addition, I have incorporated plan components from alternative A to better address California spotted owl concerns, and I have modified sage-grouse plan components to strengthen my decision related to species of conservation concern.

Topic 3: Sustainable Recreation and Designated Areas

Sustainable Recreation

The planning process confirmed the importance of outdoor recreation and tourism to the Inyo and the surrounding communities. There are many ways visitors recreate on the Inyo, seeking experiences ranging from challenging to more tranquil. With increasing visitor use and expectations, this plan direction will provide a framework for managing visitor use now and into the future.

In response to extensive public comments on plan direction for sustainable recreation, alternative B-modified was developed to include a “zoned” approach for sustainable recreation management. Since the 1960’s the Forest Service has used the recreation opportunity spectrum as a tool to manage recreation. The contemporary needs of managers led to the development of other frameworks over the decades, such as Limits of Acceptable Change, and Visitor Experience and Resource Protection, which address visitor use beyond simply managing for settings. Alternatives B, C and D rely completely on the recreation opportunity spectrum to manage visitor use. The approach in alternative B-modified considers these other frameworks and adopts an approach that complements the recreation opportunity spectrum foundation. The land management plan includes components for three spatially distinct management areas ranging from highly developed and concentrated (Destination Recreation Areas), to general use (General Recreation Areas), to remote and challenging (Challenging-Backroad Recreation Areas).

This approach creates clear expectations to help the public understand where recreation opportunities can be found to meet the needs of a wide variety of activities that visitors have come to expect on the Inyo. I believe the approach in alternative B-modified best meets the needs for the greatest number of people without compromising ecological sustainability.

Partnerships are a key element to helping us accomplish management actions on the Inyo. Partnerships not only bring extra funding opportunities, but can also add capacity, especially in recreation. Throughout

the planning process, the need for us to increase and improve upon partnerships was raised as an important topic. All alternatives include direction related to volunteers, interpretation, partners, and stewardship, and we created plan components and content in appendix C to guide partnerships on the Forest. I believe having these components in the land management plan will be key to managing the Inyo, especially in terms of outdoor recreation-based tourism, managing impacts, and opportunities in the future.

Pacific Crest National Scenic Trail and Management Area

There was a wide range of public comments on the draft EIS regarding public use and management activities allowed within the Pacific Crest National Scenic Trail corridor. I chose plan components to protect the nature and purpose of the trail to "provide for high-quality scenic, primitive hiking and horseback riding opportunities and to conserve natural, historic, and cultural resources".

I chose to include plan components both for the designated trail itself, and for a Pacific Crest National Scenic Trail corridor management area. The management area is intended to protect the nature and purposes of the trail and to be responsive to the specific needs of the Inyo. I am sensitive to any precedent this may set for other forests undertaking revision in the future. Over 95 percent of the Pacific Crest National Scenic Trail on the Inyo is in designated wilderness. The three areas of the Pacific Crest National Scenic Trail that are outside wilderness are located next to high summer visitor use areas: Kennedy Meadows (1.6 miles), Reds Meadow and Agnew Meadows (0.9 trail miles and 0.5 miles, respectively). The Reds Meadow and Agnew Meadows areas are within a Destination Recreation Area, which allows for a heavy concentration of use and allows for infrastructure to support and mitigate the heavy visitation. I believe that the plan components we arrived at, specifically for areas outside designed wilderness, responds to the needs of the 3 discrete areas on the forest around Kennedy Meadows, Reds Meadow, and Agnew Meadows. In particular, I wish to ensure that if there is a need for future road or facility re-alignment, this management direction would allow for that. I believe the management direction is consistent with the Pacific Crest National Scenic Trail's Comprehensive Management Plan:

> *Each National Park, Bureau of Land Management District, and National Forest will integrate the direction and guidance provided by the Comprehensive Plan into their respective land management planning processes. It is intended that these processes will produce a second level of planning for the trail that is responsive to specific issues, concerns, opportunities, and problems unique to each administrative unit. (CMP pg. 18)*

Within designated wilderness, specific Pacific Crest Trail direction will not override the wilderness management direction but will be complementary.

The 11.5 miles of road and trails within the Pacific Crest Trail corridor that are currently authorized for motorized and mechanized use will remain. This use was determined by the 2009 Travel Management decision for the Inyo. Any future designations of motorized roads or trails would be accomplished at the project level and would require site-specific environmental analysis. Similarly, over-the-snow (winter) travel will be determined by Subpart C Travel Management Analysis, on which I am committing to initiating the public collaboration process within one year of this decision.

The no action alternative (A) does not provide direction for the Pacific Crest National Scenic Trail, and direction is provided by a 1982 Comprehensive Management Plan (USDA Forest Service 1982), focused on the trail tread and immediate surroundings. There is limited specific plan direction to guide activities that may impact the scenic and recreational values of the trail. Alternatives B and B-modified are the same. Alternative C applies land management plan direction to a corridor up to 4 miles wide, and

alternative D applies that direction to up to a ¼ mile wide corridor. A four mile-wide corridor would include too many activities and structures that would have little bearing on the experience of the Pacific Crest National Scenic Trail user, and ¼ mile corridor may not capture enough of those activities and structures. The ½ mile corridor in the land management plan encompasses the visual foreground for a hiker or stock user, and therefore I found it to best guide those management activities that could most affect the experience of the Pacific Crest National Scenic Trail users.

Requirements of the Planning Rule

The land management plan has been prepared in compliance with the Forest Service's 2012 National Forest System Land Management Planning Rule at 36 CFR Part 219. The land management plan meets the specific Rule requirements at 36 CFR 219.8 – 219.11 as follows.

219.8 Sustainability

The land management plan contributes to social and economic sustainability by:

1) Facilitating opportunities for local employment and economic development associated with recreation and restoration activities. It would increase economic benefits related to current conditions (land management plan, pp. 12-13, pp. 58-60, and pp. 71-72).
2) Providing drinking water to millions of people, as well as other beneficial uses of water that contribute to economic growth and ecosystem integrity (land management plan, pp. 12-13, and pp. 82-87).
3) Establishing plan components that support a wide variety of recreational opportunities for local, national and international visitors. Roughly 70 percent of the Forest would be within a non-motorized recreation opportunity class (including wilderness and recommended wilderness and other areas with primitive non-motorized recreation opportunity spectrum classification). Over 500,000 acres would be within the "challenging backroad" recreation areas, where development would be limited. The majority of the Forest would remain with low levels of recreation use. However, high levels of use and highly-developed recreation areas would be encouraged in and adjacent to more heavy used portions of the Forest (land management plan, pp. 54-57, and pp. 91-94).
4) Advancing collaboration to develop new and additional recreational activities that meet emerging interests of the public (See land management plan, Appendix C – A renewed partnership focus for the Inyo National Forest).
5) Providing for tribal use for artisan and craft materials, medicines, fuel, traditional foods, and heritage tourism and recreation (land management plan, pp. 70-71).
6) Providing tribal communities with opportunities for traditional ceremonies and religious practices that strengthen the communities' sense of place and self and providing gathering activities on the national forest that contribute to tribal social, economic, familial, and religious well-being (land management plan, pp. 70-71, and p. 148).
7) Providing for the continuation of traditional land use activities, including livestock grazing, which contribute to the sense of place and provide a window into the rich history of the eastern Sierra region (land management plan, pp. 60-61).
8) Improving safety of local communities and firefighters, by increasing the pace and scale of fuels treatment, to help reduce the size and severity of wildfire (land management plan, pp. 13-33, and pp. 49-52).

The land management plan provides for ecological sustainability by:

1) Providing for ecological integrity by having desired conditions, objectives, standards and guidelines to maintain and restore diverse terrestrial and aquatic ecosystems in the Inyo. Many desired conditions are based on the ecosystem natural range of variation to promote structural heterogeneity, habitat diversity, and ecological resilience to stressors (land management plan, pp. 12-13, pp. 13-33, pp. 34-47, pp. 47-49, and pp. 49-52).
2) Promoting key ecological processes, such as natural fire regimes, which maintain and restore the composition, structure, function, and connectivity of terrestrial and aquatic ecosystems in the Inyo (land management plan, pp. 12-13, pp. 13-33, pp. 34-47, pp. 47-49, and pp. 49-52).
3) Developing strategic approaches to address ecological resilience of Inyo ecosystems, including through ecosystem management and climate adaptation strategies, strategic fire management zones and a sustainable recreation framework, that provide for flexibility and adaptability while considering issues such as health, safety, and access (Land management plan, Ch. 2, Watersheds pp. 12-13, Terrestrial Ecosystems and Vegetation pp. 13-33, Animal and Plant Species pp. 34-47, Invasive Species pp. 47-49, and Fire pp. 49-52).
4) Incorporating a strong focus on maintaining and restoring ecological conditions across aquatic and terrestrial habitats over the long term through plan direction linked to an aquatic and riparian conservation strategy and to strategic fire management zones. Strategies are based on an increasing body of best available scientific literature, supported by current geospatial information (land management plan, pp. 12-13, pp. 13-33, pp. 34-47, pp. 47-49, pp. 49-52, pp. 77-81, pp. 81-82 and pp. 82-87).
5) Providing the range of ecological conditions needed for many at-risk species across the landscape, including through species-specific plan direction (see next section).
6) Including standards and guidelines to protect unique ecosystems, such as sagebrush, and their associated species (land management plan, pp. 22-33, and pp. 34-47).
7) Including standards and guidelines to protect air, soil and water quality over the long term (land management plan, pp. 9-10 and pp. 12-13).
8) Providing desired conditions, goals, and objectives that maintain and improve watersheds at a landscape scale to improve resilience in the face of unforeseen disturbance events like fires and flooding (land management plan, pp. 9-10, pp. 12-13, and pp. 81-82).

219.9 Diversity of Plant and Animal Communities

In addition to providing for ecological integrity per 36 CFR 219.8 (above), the plan meets the requirements in providing for diversity of plant and animal communities by:

1) Focusing on habitat and landscape level restoration and resilience, under the assumption that creating plan components to address key threats to species and habitats from large-scale catastrophic events, invasive species, and climate change, will improve resilience of diverse habitats. The species and communities that depend on those habitats will then provide for diversity of plan and animal communities (land management plan, pp. 13-33, pp. 34-47, pp. 81-82, and pp. 82-90).
2) Identifying management designed to maintain and restore key ecological characteristics of important habitats for plant and animal communities, such as sagebrush and special habitats like desert springs and fens (land management plan, pp. 22-33, pp. 34-47, pp. 47-49, and pp. 49-52).

3) Addressing key threats to species and habitats from large-scale catastrophic events, invasive species, and climate change (land management plan, pp. 22-33).
4) Identifying management needed for seven threatened, endangered, and candidate species (1 plant and 6 animal) and 126 species of conservation concern (21 animal and 105 plant species). The land management plan includes Forest and ecosystem-specific plan components that address overall habitat requirements (land management plan, pp 12-13, pp. 13-33) and also includes species-specific plan components, where needed to ensure continued persistence of these species (land management plan, pp. 34-47).

The Forest used a complementary ecosystem and species-specific approach (also called coarse filter/fine-filter approach) to consider at-risk terrestrial and aquatic species, species groups, ecological systems, and watersheds including in the development of land management plan alternatives, management strategies, as well as in the monitoring program. This approach is consistent with the requirements of 36 CFR 219.8 and 219.9, and the Forest Service Handbook 1909.12 chapters 10 and 20.

Effects to at-risk species, including threatened and endangered species and species of conservation concern, are disclosed in the "Revision Topic 2: Ecological Integrity: Wildlife Fish and Plants" portion of the final EIS (terrestrial species on pages 326-388, aquatic species on 389-443, and plant species on pages 444-475). These sections describe the ecological conditions, key ecosystem characteristics, and land management plan components that will maintain at-risk species, and they reference the persistence analysis for species of conservation concern species (included on the project website and at https://www.fs.usda.gov/goto/SCC). The persistence analysis provides the persistence determinations for each animal and plant, respectively, species of conservation concern and includes a table for each species that identifies the key ecosystem plan components and key species-specific plan components and how they alleviate or eliminate threats to persistence.

I have reviewed the ecosystem plan components and included species-specific plan components where needed to maintain viable populations within the plan area within the authority of the Forest Service and consistent within the inherent capability of the land. I have also reviewed the effects disclosed in the final EIS.

For the federally listed threatened and endangered species on the Inyo and their designated critical habitat, the land management plan includes components that are designed to contribute to their recovery. While future restoration projects and activities may affect individual members of a species, the long-term outcomes of restoration will provide conditions to improve recovery of these species. The land management plan includes standards and guidelines that will result in reduced effects to individual members of species from future projects and activities. For example, within Sierra Nevada bighorn sheep habitat, the land management plan addresses the risk of disease from domestic sheep and goats under a standard that would not allow this use where the developed risk assessment shows there is a high risk of contact, unless the risk can be mitigated.

To support this land management plan, the Pacific Southwest Regional Forester identified 105 plants and 21 animal species of conservation concern in the Inyo. Most species of conservation concern habitat needs are met by plan components for aquatic and terrestrial ecosystems. For those species or species groups with specific habitat needs or threats, including the bi-state sage grouse, California Spotted Owl, Great Gray Owl, Sierra Marten and Pacific Fisher, and Golden Trout, the land management plan has species-specific plan components to meet those needs (Chapter 2, Animal and Plant Species, pp. 34-45).

The analysis in the final EIS found that while there may be some short-term effects to threatened, endangered, candidate species and species of conservation concern, the plan provides for species

diversity. It is recognized that due to circumstances that are either not within the authority of the Forest Service or not consistent within the inherent capability of the land, the plan area may be unable to provide the ecological conditions necessary to maintain a viable population of a particular species. For many species of conservation concern on the Inyo there is uncertainty as to whether a viable population truly exists, in those cases we assess threats to persistence. The analysis also discloses the uncertainty of moving toward desired conditions given the wide departure of the current condition in some areas and the limited opportunity for restoration treatments on the Inyo. When this occurs, the analysis documents this and where possible, focuses on other efforts that are within the capability and authority of the Forest Service.

The Forest already contains almost one million acres in designated wilderness (46 percent) and under this land management plan, there will be another roughly 59,930 acres in recommended wilderness (3 percent), and about 500,000 acres (25 percent) in challenging backcountry areas. These management areas comprise about 74 percent of the Forest and emphasize natural processes with little human disturbance. In my selection of alternative B modified, with 3 additional recommended wilderness areas from alternative C, I recognize the importance of large undeveloped areas and their role in maintaining existing water quality, wildlife habitat connectivity and security, and the diversity of conditions that we currently enjoy on the Forest.

I find that the land management plan will provide for diversity of plant and animal communities, through combination of landscape-scale and species-specific plan components, along with management area plan components that will lead to a more diverse landscape and greater diversity of plant and animal communities than under the 1988 land management plan.

219.10 Multiple Uses

While meeting the 2012 Planning Rule requirements of 36 CFR 219.8 (sustainability) and 219.9 (diversity of plant and animal communities), the land management plan also provides for ecosystem services and multiple uses, including outdoor recreation, range, timber, watershed, wildlife, and fish, within Forest Service authority and the inherent capability of the plan area by:

1) Ensuring continued dialogue with State and local governments, Tribes, and the public to more fully realize the multiple goods and services provided by the Inyo (land management plan, Appendix C – A renewed partnership focus for the Inyo National Forest).
2) Providing fuelwood and other forest products to support local uses through the projected wood sale quantity. It is estimated that 7-11 million cubic feet (MMCF) of wood products will be provided per decade under the land management plan (Appendix D – Timber Suitability and Management).
3) Providing rangeland for livestock grazing to support livelihoods while also supporting ecological integrity of rangelands, riparian conservation areas and fens (Chapter 2, Rangeland livestock grazing and rangeland vegetation types, pp. 58-64).
4) Providing opportunities for the development of mineral resources, where appropriate (land management plan, p. 66).
5) Providing opportunities for hunting and fishing, with their associated cultural and socioeconomic benefits (land management plan, p. 35, and p. 70).
6) Providing desired conditions, objectives, goals, standards, guidelines and potential management approaches for multiple uses and ecosystem services in the plan area (land management plan, pp. 51-74).

7) Designing sustainable recreation strategies for a range of recreational opportunities, providing access to nature and maintaining scenic integrity, with their associated socioeconomic benefits that are responsive to the public (land management plan, pp. 51-54, and pp. 88-91).

8) Maintaining and restoring watershed conditions for provision of water for beneficial uses through an integrated aquatic and riparian resource conservation approach and creation of conservation watershed management areas (land management plan, pp. 10-12, and pp. 79-87).

9) Maintaining and restoring vegetation conditions, soils, and riparian areas to ensure multiple benefits, including biodiversity, wildlife habitat, and resilience to natural disasters through fire management zones and through desired conditions for different vegetation types (land management plan, Ch. 2; Ecological Sustainability and Diversity; Watersheds, Terrestrial Ecosystems and Vegetation, and Fire).

10) Recognizing and protecting historical, cultural and Tribal uses associated with the Inyo (land management plan, pp. 68-69).

11) Providing desired conditions, objectives, goals, standards, guidelines to maintain wilderness character of the designated wilderness areas and providing for those areas recommended for wilderness designation (land management plan, pp. 96-110).

12) Protecting designated wild and scenic rivers and managing rivers and streams found eligible for the National Wild and Scenic River System with desired conditions, goals, standards and potential management approaches included in the land management plan (chapter 2, pp. 112-113)

219.11 Timber Requirements based on the National Forest Management Act

While meeting the 2012 Planning Rule requirements of 36 CFR 219.8 through 219.11, the land management plan includes objectives, standards and guidelines, and other plan content regarding timber management within Forest Service authority and the inherent capability of the plan area by:

1) Identifying approximately 74,814 acres of land suitable for timber production, mostly in the northwest portion of the forest (land management plan, appendix D, pp. 159-160).

2) Identifying lands not suited for timber production (1,915,228 acres), which include non-forested lands, wilderness, recommended wilderness, eligible wild river segments, riparian conservation areas, and California spotted owl protected activity centers (of which there are none at this time) (land management plan, appendix D).

3) Specifying that while timber production is not a primary use for the Inyo, it complements desired conditions for maintaining and restoring ecological integrity and restoration (land management plan, pp. 58-60, and appendix D).

4) Recognizing that timber harvest may occur on lands not suitable for timber production to protect multiple-use values other than timber production, and for salvage, sanitation, or public health (land management plan, pp. 58-60, and appendix D).

5) Providing for different types of forest products, other than timber production. In particular, fuelwood is an important forest product for the local economy and a major source of heating for local communities (land management plan, pp. 58-60, and appendix D).

6) Identifying the Inyo's sustained yield limit[7] is 40 million cubic feet (MMCF) per decade and the projected wood sale quantity[8] is 7 to 11 million cubic feet per decade (land management plan, appendix D).

Transition to the Revised Land Management Plan

This section addresses project and activity consistency with the land management plan and includes direction for: (a) application to existing authorizations and approved projects or activities; (b) application to projects or activities authorized after the land management plan decision; (c) resolving inconsistency; (d) determining consistency; and (e) consistency of resource plans within the planning area with the land management plan.[9]

1) Authorizations of occupancy and use made before the revised land management plan will proceed unchanged.
2) Regarding previously approved and ongoing projects and activities, whose authorization date proceeded the revised land management plan, these projects and activities are not required to meet the direction of the revised land management plan and will remain consistent with the direction in the 1988 land management plan, as amended.
3) The final land management plan direction will apply to all projects and or activities that have a decision made on or after the effective date of the final record of decision. With the exception of those projects mentioned in the paragraph above, projects and activities authorized after approval of the revised land management plan will be consistent with applicable plan components in the revised land management plan. A project or activity approval document will describe how the project or activity is consistent with the applicable plan components.
4) Any resource plans developed by the Inyo that apply to the resources or land areas within the planning area must be consistent with the plan components. Resource plans developed prior to the land management plan decision will be evaluated for consistency and then made consistent with the revised land management plan.

Preliminary Administrative Recommendations

Recommended Wilderness

Based on our analyses and input from local governments, Tribes, and the public, I am recommending seven additional areas (about 59,930 acres) for inclusion in the National Wilderness Preservation System on the Inyo. Four of these were included in alternative B-modified; these recommended wilderness areas are called Piper Mountain Wilderness Addition (11,419 acres), South Sierra Wilderness Addition (15,815 acres), White Mountains Wilderness Addition (West) (5,062 acres), White Mountains Wilderness Addition

[7] The sustained yield limit is the amount of timber, meeting applicable utilization standards, "which can be removed from a forest annually in perpetuity on a sustained yield basis." It is the volume that could be produced in perpetuity on lands that *may be suitable* for timber production. The calculation of the sustained yield limit is not limited by the land management plan desired condition, other plan components, or the planning unit's fiscal capability and organizational capacity.

[8] The estimated quantity of timber and all other wood products expected to be sold from the plan area for the plan period is called the "projected wood sale quantity." The projected wood sale quantity consists of the projected timber sale quantity as well as other woody material such as fuelwood, firewood, or biomass also expected to be available for sale. The projected wood sale quantity includes volume from timber harvest for any purpose based on expected harvests that would be consistent with the plan components. The projected wood sale quantity is also based on the planning unit's fiscal capability and organizational capacity. The projected wood sale quantity is neither a target nor a limitation on harvest.

[9] 36 CFR 219.15

(East) (2,505 acres). Three others were in alternative C, and I chose to recommend them in response to objections; Adobe Hills (10,354 acres), Huntoon (8,876 acres), and South Huntoon (5,898 acres) (additional information is in appendix A of this ROD, including maps in figure 2 through figure 7; also see the final EIS, Appendix B – Wilderness Recommendation Process). Plan components provide for managing these areas to protect and maintain the ecological and social characteristics that provide the basis for each area's suitability for wilderness recommendation; these plan components can be found in chapter 3 of the land management plan.

This recommendation is a preliminary administrative recommendation that will receive further review and possible modification by the Chief of the Forest Service, the Secretary of Agriculture, and the President of the United States. The Congress has reserved the authority to make final decisions on wilderness designation. Land management plan implementation is not dependent upon subsequent action related recommendations for wilderness designation.

I want to point out that this decision is not solely a technical inventory process. I carefully considered tradeoffs between managing the areas as recommended wilderness and managing them as other land allocations. I am careful in this choice because some current uses, such as mountain biking and flying drones would be restricted in recommended wilderness areas. Further, a major concern of some of the public is that these areas would lose any potential for future motorized use expansion. I also understand the value and benefits of recommended wilderness areas for both human and ecological benefits. Within some areas analyzed in alternative C, there are current uses, such as snowmobile use and fuel wood gathering that would be affected if the areas are recommended as wilderness. I believe those uses provide valuable contributions to the multiple use mission of the Forest Service and should be allowed to continue. Therefore, I selected alternative B-modified and some polygons from alternative C for the land management plan.

As part of their objections, Mono County and Sierra Forest Legacy et al. asked me to reconsider recommending seven areas as wilderness that are within Mono County and were analyzed as part of alternative C. Their objections stated that the Forest used unwarranted rationale (including rationale related to fish, wildlife, wild horse, and wildfire management) for excluding some areas from recommending as wilderness. While I heard from members of the public that they want more recommended wilderness across the Forest, I also heard from other public groups and individuals that there is enough designated wilderness on the Forest (46 percent), to the detriment of other uses. The contrasting views on recommended wilderness and restricting uses raises emotions and public values are difficult to reconcile in a harmonious way.

The areas identified by Mono County for reconsideration and were analyzed as part of alternative C, have wilderness characteristics. In response to the concern that we may have mischaracterized some elements in the wilderness evaluation and analysis process, we have updated the evaluation and analysis. These updates do not substantially change most of our conclusions regarding recommended wilderness. However, I have taken into consideration Mono County's viewpoint and strong advocacy that recommended wilderness can support the local economy in the future as it is compatible with their county motto: "Wild by Nature".

I have decided to recommend three of the areas as wilderness that were analyzed as part of alternative C (Adobe Hills, Huntoon, and South Huntoon). Three of the other areas are within Challenging Backroad Recreation Areas (Glass Mountains, Dexter Canyon, and Pizona-Truman). Challenging Backroad Recreation Areas will retain their current conditions in terms of recreation, special uses, providing forest products, and protecting species and ecosystem diversity, while still allowing low levels of other uses. The seventh area (Ansel Adams Wilderness Addition – Northeast) is within General Recreation Areas

(approximately 95 percent) and Destination Recreation Areas (approximately 5 percent), because it currently receives relatively high, concentrated recreation use that is not consistent with Challenging Backroad Recreation Area definition.

For the 24 polygons (325,359 acres) recommended as wilderness in alternative C, three are completely and four are partially classified as recommended wilderness (59,930 acres, or 18 percent). Another 69 percent (224,128 acres) are classified as challenging background recreation areas. Eight percent (26,172 acres) are classified as general recreation areas, and less than 0.1 percent are destination recreation areas (all in Ansel Adams wilderness additions northeast polygon). The remaining 5 percent (about 15,129 acres) of the alternative C polygons already have other land classifications, including the Ancient Bristlecone Pine Forest, Research Natural Areas, or designated Wild and Scenic River corridors.

Areas that were included in the inventory for recommended wilderness have no special status under this plan.

Inyo County requested boundary modifications to two areas recommended as wilderness (Piper Mountains Wilderness Additions (1) and South Sierra Wilderness Addition – East (1)). I decided to modify the boundaries of these areas to address some of their concerns.

In these decisions, we endeavor to provide an appropriate balance of opportunities and uses in response to the broad range of public values. Future generations may see this differently, and in the eastern Sierra we are fortunate to have much of our landscape intact and free of many uses or management that could alter the character of the land. For example, in addition to about 964,360 acres of designated wilderness, the Inyo also has about 542,000 acres of inventoried roadless areas. I feel confident that the character of these areas will continue to be protected while allowing for some uses that would be restricted in recommended wilderness areas. These uses include winter motorized use, mountain biking, and fuelwood collection. These decisions balance many uses and values in a manner that provides benefits to as many people as possible, while maintaining the existing high quality natural character of the land.

I want to clarify how I understand active management in recommended wilderness. I recognize that the draft EIS and final EIS include some statements that indicate no active management is allowed in the recommended wilderness. While this was the case with the direction in the Draft Plan, we provided additional language in the final land management plan to allow for what might be considered inconsistent uses of a temporary nature for the purposes of ecological restoration. I recognize now, in reviewing the analysis, that there were some errors in the effects analysis related to active management in recommended wilderness. In the final EIS, staff corrected these errors.

To clarify, I believe there would be some constraints on active management in recommended wilderness due to the limitations on motorized equipment and mechanized transport. These constraints would be eased for projects designed specifically to restore at-risk species habitat. However, in general, there would be limitations on motorized equipment and mechanized transport for vegetation management projects not designed specifically to restore at-risk species habitat. I have further modified the language in the final land management plan to provide more clarity on this issue. In selecting the final areas to recommend as wilderness, I have carefully assessed the allowances and the constraints of this land management plan direction. In the end, the decision concerning areas to recommend as wilderness weighs many factors, and is a balance of trade offs. I am confident the balance we have reached comes with clear understanding of the constraints and allowances in our direction, and balances public values around these special designated areas.

Wild and Scenic River Eligibility

The number of segments and rivers identified as eligible for inclusion in the Wild and Scenic River System was corrected between the draft and final land management plan in response to public comments, and in response to objections. There are now 88 segments (265.4 miles) on 32 rivers that were found to be eligible for inclusion (see table 1 and final EIS, appendix C, table C-6). Public comments and objections drove additional segments and rivers to be identified as eligible based upon information provided on outstandingly remarkable values that the Forest did not previously identify, evaluation of segments on lands of other ownership, and corrections to information originally provided in the draft plan.

The wild and scenic river eligibility findings are the same for all action alternatives (B, B-modified, C, and D). Eligibility findings are based on whether a river is free flowing, and whether it has at least one outstandingly remarkable value. Because these findings are based on existing conditions, the process of determining eligibility did not vary by alternative.

The Forest released inventory, eligibility, and classification findings at multiple times throughout the plan revision process, both during formal comment periods and at other times. We used input from the public, stakeholder groups, and local agencies to add segments to the inventory, inform outstandingly remarkable value findings, and used information provided by those groups to help determine eligibility. We also addressed stakeholder concerns by better describing the inventory and eligibility process and the effects of an eligibility determination. The Forest shared revised findings regularly, to ensure the public could see changes made and have a chance to provide input on those changes.

I assigned each eligible wild and scenic river (or river segment) one or more preliminary classification: wild, scenic, or recreational. I preliminarily classified approximately 129.7 miles as wild, 12.5 miles as scenic, and 123.2 miles as recreational. These preliminary classifications are based on the condition of the river and the development level of adjacent lands at the time of the study, and dictate the level of interim protection measures to apply. The Forest must protect these identified eligible rivers to maintain free flow and outstandingly remarkable values unless a determination of ineligibility or non-suitability is made. The land management plan includes components for eligible wild and scenic rivers that provide for this requirement.

Plan direction regarding eligible wild and scenic rivers does not apply to lands off of the Inyo. My finding a river segment eligible for wild and scenic designation is not a recommendation or a decision about the river's status. It simply means that it meets the criteria of being free-flowing and possessing one or more outstandingly remarkable value. Recommendations do not occur until the suitability study is completed. I am not completing a suitability study at this time.

The Forest received an objection asking to complete Comprehensive River Management Plans for the Owens River Headwaters and Cottonwood Creek Wild and Scenic Rivers. They were designated in 2009 but the Forest has not yet completed a plan for either river. The Comprehensive River Management Plans process was not completed as part of this land management plan. As a result of a statewide settlement agreement with Center for Biological Diversity in 2018, the Forest has committed to completing Comprehensive River Management Plans for these designated rivers by December 31, 2024.

Monitoring Program

The land management plan's monitoring program (chapter 4 of the land management plan) includes a broad range of monitoring questions and associated indicators for specific plan components. A biennial monitoring evaluation report will be prepared to indicate whether a change to the land management plan, management activities, or monitoring program may be needed, or whether a new assessment may be

warranted based on new information. This report will be made available to inform the public, and to encourage feedback on the methods and how we are doing in meeting our land management plan goals.

We made several changes to the monitoring program in response to public input, including informal discussions with stakeholders and formal comments we received on the draft EIS. We released the preliminary draft monitoring program in 2015, before the draft EIS was released, and asked for public input. We also presented monitoring information at the Sierra Cascades Dialogues, and received questions and comments to help shape the monitoring program. In particular, we added monitoring questions on the subjects of water quality, riparian area function, wilderness character, partnerships with volunteers, bighorn sheep habitat, sage-grouse habitat, and large tree snags and downed logs.

The monitoring questions in the monitoring program address each of eight required monitoring categories[10] (see chapter 4 of the land management plan). Within these categories, key ecological characteristics in the plan area were identified to focus the available monitoring resources on the national forest. For the Inyo, this included the condition of sagebrush, pinyon-juniper, montane forest, high-elevation white pines, riparian areas, meadows, and the Inyo's waterways. In addition, key socio-economic metrics were identified in the land management plan monitoring program. These included visitor use and satisfaction, forest economic contributions, local community economies, access to the national forest, and partnerships. Furthermore, there are two monitoring questions to address the role of fire on the landscape as both a stressor and driver of ecological processes on the landscape. The associated indicators for each of the monitoring questions vary from standard scientific data collection variables, to management implementation data specific to the Inyo.

Details of the plan monitoring program—including monitoring and analysis protocols, data collection schedules, responsible parties, and data management—will be part of a separate monitoring guide. We currently work with other federal, state, and local agencies and stakeholder groups to complete monitoring, and expect those partnerships to continue and increase in the future. The specific roles of partners in monitoring will be developed in more detail through the monitoring guide. As explained in the land management plan Appendix B: Proposed and Possible Actions and Appendix C: A Renewed Partnership Focus of, we expect to work with other entities to complete our monitoring, and increase the use of partnerships in all aspects of Forest management, including monitoring.

Alternative Development

The final EIS fully analyzed five alternatives; alternatives A (no action), B, B-modified, C, and D. The action alternatives were driven by the need for change and public input. The project record contains documentation of use of scoping comments for developing alternatives, public meetings that were held to develop alternatives, and input from federal, state and local agencies about alternative development. Some resources were found to have sufficient direction in the 1988 plan or amendments, and therefore there was no need for change. Those resources are grazing, lands, infrastructure, minerals and energy. For those resources, I did not change the previous direction, but in some cases did change wording to meet the requirements of the 2012 Planning Rule, and made some changes to clarify direction in response to public comments on the draft EIS.

The Inyo, Sequoia, and Sierra National Forest land management planning teams identified the needs to change their land management plans in 2014 and developed a proposed action based on this need for change. This proposed action (alternative B) was used for the public scoping process and was altered and

[10] 36 CFR 219.12(a)(4)

made more detailed in response to the scoping comments. Issues were developed from scoping comments that drove the development of alternatives to the proposed action. Those scoping issues that drove the development of the alternatives described in the draft EIS were:

1. ecological resilience, wildlife habitats and wildfire;
2. forest resilience and diversity;
3. fuels treatment and fire management;
4. watershed restoration;
5. aquatic diversity;
6. recommended wilderness;
7. smoke; and
8. forest products.

The alternatives developed in response to scoping comments are alternatives C and D. Those alternatives, along with alternative A (no action) and alternative B (proposed action) were analyzed in detail in the draft EIS. Alternative C was developed in response to issues numbered 1, 2, 3, 4 and 5 above, and addressed concerns related to those issues by adding many more acres of recommended wilderness and using a passive management approach to restore fire as an ecosystem process, primarily through use of prescribed fire and natural disturbance processes. Alternative D was developed in response to issues numbered 1, 2, 3, 6, 7 and 8 above, and addressed concerns related to those issues by increasing the pace and scale of vegetation management treatments compared to the proposed action to actively improve ecological resilience to wildfire and reduce smoke from future wildfires, and would not add any recommended wilderness.

The Sierra, Sequoia, and Inyo joint draft EIS was released to the public and the public comment period was initiated in 2016. Public comments on the draft EIS drove the development of an additional alternative, alternative B-modified. Alternative B-modified is similar to alternative B, but modified to address public comments and clarify direction, especially concerning fire management zones, watershed/aquatic management, and sustainable recreation management. The public comments also identified a concern about changed conditions on the Sequoia and Sierra National Forests (widespread bark beetle and drought-induced tree mortality), and those Forests decided to develop a revised draft EIS to address those changed conditions, while the Inyo proceeded on to the final EIS development.

Alternatives Considered in Detail

The no action alternative (retaining the 1988 land management plan) and four land management plan revision alternatives are summarized below. A more detailed comparison of these alternatives can be found in chapter 2 of the final EIS in tables 1 through 3 beginning on page 56.

Alternative A: No Action (1988 Land and Resource Management Plan, as amended)

Under alternative A, the 1988 Land and Resource Management Plan and amendments (including the 2004 Sierra Nevada land management plan amendment) would continue to guide management of the plan area.

Alternative B: Original Proposed Action

Alternative B is the original proposed action that was developed based on the need for change with some changes and additional detail added in response to public scoping comments. This alternative proposed a planning approach based on ecological, social, and economic sustainability. Information gathered from local governments, Tribes, and the public during the collaborative process combined with a science synthesis and bioregional assessment informed the approaches we used.

The approach to fire and fuels management replaced the current two distance-based allocations in the wildland-urban intermix with four risk-based, strategic fire zones that respond better to fuels, fire and smoke management. Alternative B proposed a management framework that allowed an increase in the amount of restoration treatments using multiple techniques to achieve resource objectives and move toward desired conditions, recognizing unique habitats like sagebrush. It also incorporated relevant findings from draft conservation strategies for California spotted owls and developed specific plan components for sagebrush and sage grouse, building on existing conservation partnerships for the species. It replaced previous plan direction for Forest Service sensitive species with new direction for species of conservation concern. This alternative also added one additional critical aquatic refuge in a watershed with high aquatic biodiversity. This alternative also includes an approach to sustainable recreation using "places" and added plan components for four recommended wilderness areas and eligible wild and scenic river segments.

Alternative B-modified

This alternative is similar to alternative B with modifications made to respond to public comments on the draft EIS. Alternative B-modified is the selected alternative in the sense that the decision is most consistent with this alternative; however, this decision incorporates additional changes in response to objections that are not reflected in this alternative.

Alternative B-modified changed in the following ways relative to alternative B.

1. Modified fire management zones. The zones were remapped to better account for low elevation sagebrush and its natural fire regime and make corrective adjustments for habitation information used to develop the Community Wildfire Protection Zone.
2. Replaced critical aquatic refuges with conservation watersheds to better ensure persistence of at-risk species at a landscape scale and provide for long-term maintenance and restoration of functioning watersheds.
3. Used a three zone approach to recreation management, instead of the recreation "places" used in alternative B, and developed plan components for those three sustainable recreation management areas.
4. Retained existing livestock grazing management, similar to alternative B, but unlike alternative B, this alternative moved grazing monitoring technical guides outside of the land management plan into an appendix to Regional grazing direction.

As in alternative B, plan components for four recommended wilderness areas and eligible wild and scenic river segments were included.

Alternative C

Alternative C emphasized wilderness values and a passive management approach to restore fire as an ecosystem process across the forest, primarily by using prescribed fire and natural disturbance processes to achieve desired conditions. It was designed to manage the forest landscape to minimize short-term

impacts on habitats from management activities while accepting the risk of large high-intensity wildfires that could affect mature and old forests. It added the most critical aquatic refuges and retained previous direction on riparian conservation areas. It also included the most areas of recommended wilderness, with over 325,000 acres recommended.

Alternative D

Alternative D included an emphasis on increasing the pace and scale of restoration to improve forest resilience to fire, drought, climate change, insects, and diseases while enhancing economic and social sustainability. It increased the intensity of treatments and the amount of area treated using mechanical methods combined with larger landscape prescribed burns, allowing more removal of trees to address the impact of drought-related stress on the forests. This alternative did not recommend additional wilderness, and it established the same critical aquatic refuges as alternative B.

Alternatives Considered but Eliminated from Detailed Study

The National Environmental Policy Act (NEPA) requires Federal agencies to explore and objectively evaluate all reasonable alternatives and to briefly discuss the reasons for eliminating any alternatives that were not developed in detail.[11] Public comments we received in response to the proposed land management plan provided suggestions for alternative methods of achieving the purpose and need. Some of these alternatives were outside the scope of what could be included in the revised land management plan, duplicative of alternatives considered in detail, or determined to contain components that would cause unnecessary environmental harm. There were seven alternatives considered but eliminated from detailed study. For a full description of alternatives considered but eliminated from detailed study, see chapter 2 of the final EIS.

Alternative Eliminated 1–Restore over half the landscape within 10-15 years: This alternative was not feasible because it would require more workforce and budget than is feasible for the agency based on given capacity and hiring capability in recent years.

Alternative Eliminated 2–Include all areas evaluated or identified by the public as recommendations for additions to the National Wilderness Preservation System: This alternative would recommend roughly 640,000 acres for inclusion to the National Wilderness Preservation system. This alternative was eliminated because the Forest Supervisor determined that it would be impractical to manage such a vast wilderness area (it would encompass over 80 percent of the Forest), if designated by Congress, and the impacts to other uses of the land would be greater than the benefits provided by the additional wilderness areas.

Alternative Eliminated 3–Identify critical aquatic refuges around all areas of high aquatic species diversity: This proposal identified 15 areas for critical aquatic refuges on the Inyo. The staff evaluated these and eight were considered in detail in at least one alternative. The remainder were not included because they did not appear to substantially increase the habitat protection of existing critical aquatic refuges, were located in large part on lands outside of Forest Service jurisdiction, or were in watersheds already identified as priorities for restoration. This proposal was eliminated because it was not believed to substantially improve benefits over alternatives considered in detail.

Alternative Eliminated 4–Evaluate an alternative that has minimal active management and "lets nature take its course": This "hands off" approach was contrary to the best available scientific information, which recommends a combination of active and passive restoration for ecosystems that are

[11] 40 CFR 1502.14

outside their natural range of variation. It also would not have met the requirements of the 2012 Planning Rule, which calls for providing for ecological integrity and contributing to social and economic sustainability.

Alternative Eliminated 5–Apply the Aquatic Conservation Strategy from the 2001 Sierra Nevada Land Management Plan Amendment: The essential components of the original 2001 Aquatic Conservation Strategy are included in alternative A (the 1988 plan), and much of the intent of the strategy is included in the selected alternative (B-modified), updated to be consistent with requirements under the 2012 Planning Rule.

Alternative Eliminated 6–Consider the document "National Forests in the Sierra Nevada: A conservation strategy" as an alternative: Many concepts presented in the referenced document are already in place under the 1988 land management plan, while others are largely consistent with the final land management plan. However, this alternative does not meet the 2012 planning regulations that require land management plans to provide for social, economic and ecological sustainability and it does not adequately meet the Multiple Use Sustained Yield Act.

Alternative Eliminated 7–Allow existing motorized and mechanized uses to continue in recommended wilderness: The use of motorized and mechanized transportation in recommended wilderness affects the wilderness characteristics of undeveloped settings, and such uses could only be allowed if they did not prevent the protection and maintenance of the social and ecological characteristics that provide the basis for wilderness designation. In addition, there are no authorized routes within the polygons recommended as wilderness in any of the fully analyzed alternatives. Because of these potential impacts and the difficulty of monitoring, this alternative was eliminated.

Changes between Draft and Final EIS

As a result of public comment on the draft EIS, new information, and additional analyses, changes were made between the draft and final EIS, including adding alternative B-modified. There were significant organizational changes made to provide a reader with a more logical layout of plan components. Excluding minor editorial changes, clarifications, and typographical errors, modifications are summarized here:

1. Data used in the fire model was corrected, resulting in an updated spatial configuration of fire management zones. The corrected data includes more accurate information about on-the-ground conditions of vegetation, and infrastructure location.
2. Water, watershed, aquatic, and riparian resource issues were integrated into a more cohesive strategy, including replacing critical aquatic refuges with conservation watersheds (a management area).
3. The concept of recreation "places" was replaced by three recreation management areas, and updated recreation plan components. We also added a winter recreation opportunity spectrum map, but removed it again after objections (see below).
4. Updated the list of wild and scenic eligible rivers.
5. Clarified range livestock grazing management direction.
6. The regional forester updated the list of species of conservation concern, based on previously unknown occurrences, or other new information.
7. Added species-specific plan components for the great grey owl and California spotted owl and updated sage-grouse desired conditions.

Administrative Review and Objections

The land management plan for the Inyo was subject to the objection process identified in 36 CFR Part 219 Subpart B (219.50 to 219.62). People who were involved in the revision process had 60 days to object to the Forest Service's proposed decision. Known as a "predecisional objection," this administrative challenge to the draft decision provided one more opportunity for the public to work with the Forest Service to resolve any outstanding issues with the plan prior to a final decision. The 60-day objection filing period on the draft ROD, land management plan, and final EIS was initiated on August 4, 2018, concurrently with an objection filing period for the Regional Forester's species of conservation concern list for the Inyo. The reviewing officer, Barnie Gyant, received 22 timely objections. The Forest Service Pacific Southwest Regional Office convened a review team of resource managers and specialists to review the project record related to those issues raised by objectors.

After this internal review, interested parties and objectors attended a resolution meeting with the reviewing officer on February 19-21 2019, in Bishop. One result of this meeting was the establishment of seven working groups consisting of multiple objectors who convened on the following topics: roads and fire interactions, vegetation management, sage grouse perch deterrents, Pacific Crest Trail management, recommended wilderness boundaries, management activities within recommended wilderness (guzzlers and associated maintenance), and pack goat disease transmission mitigations. Several working groups were able to find common ground, while others did not. Some objectors involved in the working groups that could not find common ground sent separate personal input. I considered all of this input (internal reviews, resolution meeting conversations and working group feedback) and incorporated it where I felt it improved the land management plan, as described below.

The reviewing officer issued a written response to the objection issues on May 6, 2019. The written response contains the findings of the review and sets forth instructions to the responsible official. The written response is the final decision by the U.S. Department of Agriculture on the administrative review.

The reviewing officer found that the project record was adequate and complied with law, regulation and policy related to some issues, and found the record to be incomplete or unclear regarding other issues. The following is a summary of those findings and the associated instructions, organized by topic, for those topics with multiple associated objections. For further details on instructions and specific changes made in response to those instructions, see appendix B of this document. I completed all instructions prior to finalizing this record of decision.

The regional forester for Region 5 also received objections asking that three more species be added to the species of conservation concern list. Those objections were reviewed by the reviewing officer for the Chief of the Forest Service, who found that the project record supported the decision not to include these three additional species as species of conservation concern. The reviewing officer suggested minor clarification in the project record. Those changes were made in the species of conservation concern rationale document in the project record (US Forest Service, Pacific Southwest Region, June 2019).

Modifications Made in Response to Objections and Instructions

As instructed by the reviewing officer, modifications to the final EIS, land management plan, and to the project record have been completed. Some instructions required clarification or review of new information. Others required minor modifications in plan components or management area allocations. In

response to some instructions, I decided to incorporate parts of alternative A[12] (for California Spotted Owl Management), and alternative C (to recommend three more areas for recommended wilderness). All modifications fall within the effects considered across the range of alternatives and consider all sides of the issues identified in previous comment periods and during objections.

Here I discuss only the more substantial modifications to the plan, and some smaller modifications in response to objection issues of interest to multiple parties. For those instructions related only to clarifying language, fixing mistakes, or making minor changes to wording, responses can be found in appendix B of this document. Here, I discuss nine major topics on which we received objections, and changes made in response to those objections.

Best Available Scientific Information

In response to objectors who submitted references for the Forest's consideration, we reviewed the literature submitted and determined whether it was best available scientific information (most accurate, reliable, and relevant scientific information, see 36 CFR 219.6(a)(3) and 219.14(a)(4)), and whether it had already been included as a citation in the project record. The documentation showing best available scientific information and references that we did not consider to be best available scientific information, and the explanation of those determinations, have been updated and are now included in the project record and posted on the project website.

Forest Vegetation Management, Fire and Fuels Reduction

In response to objections, some plan components and analysis related to vegetation management were slightly modified. The change to the forest vegetation management, fire and fuels reduction plan components included better defining terms, improving rationale, or improving the analysis for clarity. I adjusted conflicting timber volume estimates in the final documents and ensured that language regarding timber production (such as sustained yield versus projected wood sale quantity) was used consistently and defined clearly. In the final EIS, I also had staff provide more clear explanations of the historic natural range of variation for fire and forest vegetation, how the planning area is currently departed from that natural range of variation, and how the land management plan will move the planning area toward desired conditions and closer to the natural range of variation.

Land management plan standard TERR-FW-STD 01 requires retention of conifer trees greater than 30 inches in diameter, but allowed exceptions for safety, restoration treatments, cultural or tribal importance, for equipment operability, and in overstocked stands. Some objectors thought the diameter limit should be lower (24 inches or smaller), and some thought there should be no diameter limit. I retained the diameter limit of 30 inches, because it is based on the best available science showing that there is a deficit of trees larger than 30-35 inches, and not 24 inches. However, I did add to standard TERR-FW-STD 01 that the exceptions only apply to trees less than 40 inches diameter, to clarify that trees exceeding 40 inches will always be retained, except when public or firefighter safety is threatened.

An objector working group was convened to work on Forest Products and vegetation treatment language, to attempt to come to agreement on diameter limits for tree removal, and plan component language about salvage logging. They did not come to agreement on diameter limits, but did agree to changed language for one forestwide timber desired condition (TIMB-FW-DC), to remove language suggesting that salvage

[12] Alternative A is the no action alternative, which would retain the 1988 land management plan direction and its amendments. In the case of California Spotted Owl Management, the 2004 Sierra Nevada Land Management Plan Amendment is the most current direction and what was adapted for inclusion in the 2019 land management plan.

logging had a net carbon benefit, and to add the following underlined text "salvage of dead and dying trees captures some of the economic value of the wood….".

Water, Riparian, Meadows, and Fens

In response to objections, some of the water-related plan components were slightly modified. The purpose of these modifications was to clarify how we are going to protect riparian resources, meadows, fens, and other aquatic features. These changes were for clarification, but did not change the substance of most of the plan components that address water-related resources. Specifically, the final land management plan components more clearly describe how proper functioning condition (PFC) ratings for meadows and other special aquatic features (MA-RCA-STD 13) will relate to grazing. Citations within the final EIS were updated to support these plan components.

There was no objector working group assigned to this topic, but the Forest Service staff had multiple discussions with interested parties to discuss their concerns about plan content, and used those discussions to help inform the changes made.

One plan component addressing fens was removed (MA-RCA-STD 08). The standard had limited disturbance to no more than 15-20 percent annually. The goal was to prevent a downward trend in fen condition, and protect the hydrologic processes to retain fen ecosystems. However, objectors questioned whether science supported the 15-20 percent limit, and upon review of the latest science, there is not consensus on a percent disturbance that would adequately protect fens. Removal of this standard does not lessen protection of fens, but was meant to avoid disturbance that may be too great. Direction for fens is included in MA-RCA-STD 09, which requires that disturbance that could adversely affect hydrological processes for fens be avoided.

Bi-State Sage-Grouse

I made some changes to sage grouse content in the final land management plan, and analysis in the final EIS, in response to objections. Most of the changes were for clarity, with some minor changes to plan component intent.

As requested by objectors, I explained in project documents that the status of the bi-state sage-grouse changed to proposed threatened, due to a 2018 court ruling, and is undergoing a new review for listing. Because of the changed status, the bi-state sage-grouse was removed from the Regional Forester's species of conservation concern list. This change in status does not affect plan components, because they are protective of sage-grouse regardless of status

I also modified desired conditions, standards and guidelines, in response to objections. Some objectors claimed that the Inyo's land management plan should include the same or similar direction as the Humboldt-Toiyabe National Forest land management plan amendment related to sage-grouse. Specifically, the objectors asked that I add desired conditions and objectives, and standards with specific numerical requirements. I considered the Humboldt-Toiyabe plan components that we did not incorporate, as documented in the project record, and reviewed the analyses in the final EIS, along with recent science, including that provided by the objectors. I came to the same conclusion as previously; specifically, we did not find that there was science to support using the same measures as the Humboldt-Toiyabe sage-grouse plan amendment. Many of the plan components that were not incorporated were not relevant to the Inyo, were unclear as written, or were too prescriptive to the point of being inconsistent with best available science for the plan area, including the findings of the 2012 Bi-State Collaborative Action Plan. However, I made several modifications to the sage-grouse plan components to make them more consistent with some of the Humboldt-Toiyabe plan components, and upon further consideration I decided to add into my

decision a plan component to guide removing tall structures (SPEC-SG-GDL 03) to be consistent with one of the Humboldt-Toiyabe plan components that I had not included in previous versions of the land management plan.

Desired conditions SPEC-SG-DC 01, 02, 03, and 05 have language modified only for clarity, to more specifically describe habitat needs, and to allow for variation based on local site conditions and ecological site potential. Desired condition SPEC-SG-DC 04 was entirely replaced with a new desired condition for adequate sage-grouse winter habitat, because the previous version of that desired condition had been redundant with DC 01, and I wanted to clarify the desired requirements for winter habitat. The desired conditions describe specific habitat requirements for breeding, nesting, brood-rearing and wintering habitats, which is sufficient to provide overhead and lateral concealment, and nutritional needs.

One of the objector working groups from the resolution meeting met to discuss standards and guidelines related to utility infrastructure, fences, and other tall structures within four miles of active leks within suitable sage-grouse habitat (SPEC-SG-STD 10 and 11, and SPEC-SG-GDL 01, 02 and 03). In response to their input, I better defined what was considered a tall structure; more clearly state that we will rarely, if ever, install any fences within 1.2 miles of an active lek, and more clearly state that any fences or other tall structures installed will only be for safety or habitat improvement. I also added one new guideline (SPEC-SG-GDL 03) to remove tall structures in sage grouse habitat within 4 miles of an active lek, subject to valid and existing rights. I clarified that direction is subject to valid and existing rights, to acknowledge that sometimes safety or other federal regulations guide utility infrastructure management, but that we would require minimization of impacts to sage-grouse in those cases.

Also, as agreed by the objector working group, I added language allowing mitigations instead of perch deterrents, to allow for methods that best protect sage-grouse and reduce predation threat (SPEC-SG-STD 10). I also added a potential management approach regarding sage-grouse mitigations. I plan to work with the sage-grouse executive oversight committee, technical advisory committee, and local area working group as we implement this plan to determine the feasibility of a voluntary mitigation strategy to benefit sage-grouse. Then, when infrastructure must be constructed, maintained, repaired, or re-permitted in important sage-grouse habitat, the utility companies could use other mitigation to reduce predation impacts on sage-grouse. Perch deterrents were prescribed in the previous version of the revised land management plan, but those have not been found to be universally successful in reducing sage-grouse predation. I would like to see all possible options to best reduce effects of predation, and that may include activities such as oiling raven eggs. Such a mitigation strategy can help us come up with ideas to best protect sage-grouse from predation.

These changes to the plan will not lead to different effects to sage-grouse. The changed plan components contain more clear and precise language, but the same essential requirements. These clarifications will help future forest service land managers and the public better understand standards and desired conditions, and have more options for protecting sage-grouse and their habitat.

The species of conservation concern persistence analysis for sage-grouse (https://www.fs.usda.gov/goto/SCC) also has more clear rationale, to better explain how the plan components will protect all seasonal habitat needs for this species.

California Spotted Owl

In response to objections, I changed my decision for California spotted owl relative to the previous version of the land management plan released for the objection process. The reviewing officer issued instructions to me to clarify rationale supporting the plan content under alternative B-modified. Upon

further discussion with objectors, I decided the best way to respond to their objection and the reviewing officer instructions was to choose the no action alternative for California spotted owl only. Sierra Forest Legacy representatives suggested this idea, and therefore it is directly responsive to my discussions with them.

Alternative A is the no action alternative, which includes the 2004 Sierra Nevada land management plan amendment direction for California spotted owl. There have been no sightings of California spotted owl on the Inyo in over two decades, and none of those older sightings meet the criteria for establishing a protected activity center (PAC) or associated home range core area. The few California spotted owl sightings on the Forest were in or near wilderness, where forest management activities are minimal.

Alternative B-modified was developed with the intention to implement the best available science regarding California spotted owl protection and management actions at the time. However, science on California spotted owl habitat needs and management has been evolving during this time, and new information exists even after the objection period for this land management plan. Some of the content in Alternative B-modified may not be consistent with latest science, and the science regarding habitat suitability at the fringe of the range of the California spotted owl such as occurs on the Inyo is uncertain. The no action alternative has been in place on the Inyo since 2004, and has been largely inconsequential because of the low quantity and quality of California spotted owl habitat, limited records of California spotted owl occurrence, and limited vegetation management in owl habitat. This plan direction sufficiently protects California spotted owl on the Inyo due to the low likelihood of management actions encountering California spotted owl or their suitable habitat.

The plan components in the land management plan do not read exactly like the previous iteration in the Sierra Nevada land management plan amendment. They have been written to contain the same restrictions, but conform with plan component direction in the 2012 Planning Rule, so the language is somewhat different. Because there are no known nest sites on the Forest, these plan components are included in case of future sightings.

The persistence analysis, posted on the project website and at https://www.fs.usda.gov/goto/SCC, was also modified to reflect my selection of alternative A for California spotted owl plan components. The finding for persistence is the same as under alternative B-modified. The finding is that, “it is not within the inherent capability of the plan area to maintain or restore the ecological conditions to maintain a viable population of the California spotted owl in the plan area”, because of the limited occurrence of California spotted owl, and limited amount of mixed conifer forest on the Inyo. However, the plan components should maintain or restore ecological conditions to contribute to maintaining a viable population of the species within its range.

Inventoried Roadless Areas

I added desired conditions, guidelines, and suitability plan components for inventoried roadless areas, in response to objections. Previously, the land management plan did not include any plan components specific to inventoried roadless areas, instead referring to the Roadless Area Conservation Rule and existing Forest Service Standards and Guidelines. Objectors pointed out that the 2012 planning rule requires that land management plans include plan components for appropriate management of designated areas. While my approach has not changed in substance, I added plan components to show the direction the roadless rule provides and in a format that explains roadless rule direction in the context of other land management plan direction. This direction applies as long as the roadless rule is in effect. I also added a map of inventoried roadless areas on the Forest, which was mistakenly omitted in the previous version of the land management plan that was released for the objection process.

Winter Recreation

Objectors pointed out that the winter recreation opportunity spectrum map was not consistent with the planning rule direction that required recreation opportunity spectrum maps to reflect desired future conditions. The winter recreation opportunity spectrum map and plan direction was added between draft and final EIS in response to comments on the draft EIS, but the description of the winter recreation opportunity spectrum as current condition did not adequately respond to those comments. A winter recreation opportunity spectrum map is not a requirement, and in agreement with objectors Winter Wildland Alliance and Sierra Forest Legacy, I have removed the winter recreation opportunity spectrum map and reference to that map from the final land management plan. As part of that agreement, I commit to beginning the collaborative process to determine appropriate over snow vehicle (OSV) use, as part of the Travel Management Rule (36 CFR Part 212, Subpart C), within one year of this decision.

Wild and Scenic River Eligibility

Mono County and the Mono Lake Committee's objections requested additional segments be identified as eligible for inclusion in the Wild and Scenic Rivers system, mostly within the Mono Basin, and suggested some additional outstandingly remarkable values, claiming that our eligibility process did not follow guidelines. In the draft ROD, I found 88 segments on 32 rivers eligible for inclusion in the Wild and Scenic Rivers system. The objection reviewing officer instructed me to reconsider eligibility for rivers in the Mono Lake basin. I was instructed to review the outstandingly remarkable values submitted by the objectors, evaluate the segments on non-Forest Service land, and re-evaluate the preliminary classifications on O'Harrel Creek.

I reviewed the outstandingly remarkable values submitted by the objectors, and found that 15 more segments (about 24 more miles) on Mill Creek, Parker Creek, Walker Creek, Rush Creek and Lee Vining Creek did meet the criteria for eligibility. The segments I added were mostly on non-Forest Service land, and I found there was little rationale for not calling them eligible, except that they were on private land. The land management planning handbook requires that the Forest includes in an eligibility study, "all potential wild, scenic and recreational rivers flowing wholly or partially on National Forest System lands…named on a standard USGS 7.5 minute quadrangle map," (FSH 1909.12, Section 82.2). Though these segments are not on National Forest System lands, they are segments of rivers that flow mostly on National Forest System lands. I therefore added these segments as eligible. I also found that the upper 2 miles of O'Harrel Creek do meet the criteria for "wild" classification; that segment had previously been included as part of a longer segment that is classified as recreational. Preliminary classifications for all segments are included in Table 5 of the appendix to this ROD.

Recommended Wilderness

Some objectors wanted additional recommended wilderness areas. These objectors believe additional areas contain wilderness characteristics and that the Forest did not properly consider those characteristic. In some cases, they believe areas were eliminated based on flawed factors. Inyo County asked for boundary adjustments to the recommended wilderness areas identified in the draft ROD in their County, which would make the areas smaller. Most of the objectors found that the Forest was inconsistent in the way they evaluated polygons, with the factors used for evaluation inconsistent among polygons. Further, the rationale for proposing recommendation of some areas, and not others, was unclear.

In response to these objections, I added three recommended wilderness areas in Mono County that were analyzed under alternative C, and therefore not included in the draft ROD. I added Adobe Hills (10,354 acres), Huntoon (8,876 acres), and South Huntoon (5,898 acres), in addition to the four polygons that were included in alternative B-modified. I added these polygons, which were part of alternative C, in

response to objections from multiple parties, including Mono County and Sierra Forest Legacy et al. Some objectors do not support additional recommended wilderness areas due to their impact on other uses. I chose these additional areas because they offered the least impact to other uses.

I also reduced the size of the Piper Mountains Wilderness Addition (1) by about 400 acres (to 11,419 acres) and the South Sierra Wilderness Additions (1) by about 2,000 acres (to 15,815 acres). Inyo County requested boundary modifications to these two areas in order to make their boundaries more obvious on the ground, and to reduce conflict with other uses, and I decided to modify the boundaries of these areas to address some of their concerns.

Lastly, in response to these objections, I clarified my rationale for choosing areas for wilderness recommendation. I also removed sage grouse restoration and wild horse management as major concerns for recommended wilderness management, and clarified management direction for recommended wilderness areas in the final land management plan.

My final decision is to recommend seven areas to Congress for consideration as wilderness, for a total of approximately 59,929 acres of recommended wilderness.

Environmentally Preferable Alternative

National Environmental Policy Act (NEPA) regulations require agencies to specify the alternative or alternatives which were considered to be environmentally preferable (40 CFR 1505.2(b)). Forest Service NEPA regulations define an environmentally preferable alternative as: “the alternative that best promotes the national environmental policy as expressed in NEPA’s section 101. Ordinarily, the environmentally preferable alternative is that which causes the least harm to the biological and physical environment; it also is the alternative which best protects and preserves historic, cultural, and natural resources” (36 CFR §220.3). Within alternative B-modified, all practicable means to avoid or minimize environmental harm from this alternative have been adopted. Through the selected alternative’s desired conditions, standards, guidelines, goals and management strategies, environmental harm is minimized. Through the monitoring plan within the Revised Forest Plan the effectiveness of minimizing impacts will be reviewed periodically as required by the 2012 Forest Planning Rule.

I find, based upon the laws and regulations guiding National Forest System management, that alternative B-modified is the environmentally preferred alternative. When compared to alternatives A, B, C and D, it best contributes and moves the Forest towards, ecological, social and economic sustainability which will benefit future generations (see “Rationale” and “Meeting Substantive Requirements of the Rule” sections). The project record for land management plan contains further documentation on how Section 101 of NEPA was considered and evaluated.

Best Available Scientific Information

The 2012 Planning Rule requires the responsible official to document how the best available scientific informed the assessment, the land management plan decision, and the monitoring program.[13] Such documentation must identify what information was determined to be the best available scientific information, explain the basis for that determination, and explain how the information was applied to the issues considered. During the planning process for the Inyo’s land management plan, we identified best

[13] 36 CFR 219.6(a)(3) and 219.14(a)(4)

available scientific information and incorporated it at numerous steps, from the assessment phase to the writing of this Record of Decision.

Assessment Phase

The assessment phase was the foundation of the planning process, and consisted of three critical components: a Science Synthesis, Bio-Regional and Inyo National Forest Assessments, and natural range of variation assessments. These foundational documents provided much of the essential best available scientific information for the Inyo land management planning process.

The Science Synthesis (Long et al. 2014), was prepared by a diverse team of scientists from the Pacific Southwest Research Station, along with scientific contributors from outside of the Forest Service. This document focused on presenting a detailed summary of best available scientific information obtained directly from published peer-reviewed scientific literature. The Science Synthesis integrated this accurate and reliable peer-reviewed scientific information across relevant disciplines for the Sierra Nevada and Southern Cascade Range on six focal topics: forest and fire ecology, soils, aquatic ecosystems, forest carnivores, air quality, and socioecological systems. The two-volume Science Synthesis served as a foundation of scientific information from which the Forest Service and stakeholders could evaluate land management options—including serving as a basis for evaluating NEPA alternatives—by focusing on the key ecological patterns and processes. The Science Synthesis did not include the Great Basin areas of the Inyo, hence it did not address important vegetation types like sagebrush and pinyon-juniper. However, these vegetation types were addressed in separate supplemental reports by Inyo staff and natural range of variation assessments (covered below) to address this critical information gap.

The Bio-Regional Assessment (USDA 2014) broadly summarized information from many sources to specifically address the 15 assessment topics identified in 36 CFR 219.6(b). While a Bio-Regional Assessment is not a requirement of the 2012 Planning Rule, it was written to inform and guide development of each national forest assessment within its boundaries. The Sierra-Nevada Bio-Regional Assessment includes the entire Sierra Nevada mountain range, as well as the parts of the Southern Cascades, Great Basin, White Mountains and Modoc Plateau located in California. The Bio-Regional Assessment described resource conditions and trends over this large continuous geographic area, including the Inyo. The Bio-Regional Assessment discussed the 15 assessment topics under five themes that describe the interconnectedness of social, economic and ecological systems: water quality and quantity, fire resilience, sustainable recreation, ecological integrity, and community resilience. Information in the draft version of the Science Synthesis (discussed above) was also integrated into the Bio-Regional Assessment. Additional information was gathered during the preparation of the Bio-Regional Assessment through two collaborative processes with external stakeholders: the Sierra Cascade Dialog and Living Assessment wiki site.

The Sierra Cascade Dialog began in the lead up to the release of the 2012 Planning Rule. It included a series of public meetings held between 2010 and 2015 across California. The goal of this Dialog was to create a shared understanding of forest management by bringing together engaged stakeholders with different perspectives. The Living Assessment was a collaborative and interactive website where users could contribute information and knowledge on the condition and trend of the 15 national forest assessment topics. The shared information on this website helped guide the development of the Inyo National Forest Assessment (USDA Forest Service 2013).

The USDA Forest Service Pacific Southwest Region Ecology Program prepared natural range of variation assessments for 11 terrestrial ecosystem types in the Sierra Nevada bioregion, with assistance from Inyo staff for unique vegetation types on the Inyo (sagebrush, pinyon-juniper). As described in the 2012

Planning Rule, natural range of variation assessments are analysis tools that use baseline (often historical) best available science and other information (such as archival data) on ecosystem composition, structure, and function to assess ecosystem integrity. Baseline or "reference" information is compared to current conditions to evaluate trends over time and identify ecosystems departed from their "natural" condition that are indicative of low ecological integrity. Natural range of variation assessments are based on information primarily from the pre-Euro-American settlement period (16th century to the mid-19th century) as well as information from modern-day reference ecosystems and other sources. Natural range of variation assessments for the Sierra Nevada bioregion also summarize anticipated future conditions for key ecosystem characteristics to document the effects of climate change and interacting stressors in the 21st century. All natural range of variation assessments for the Sierra Nevada bioregion were peer-reviewed and several assessments are currently in the published scientific literature (such as Safford and Stevens 2017, Meyer and North 2019).

Using information from the Science Synthesis, Bio-Regional Assessment, natural range of variation assessments and other sources, we then prepared the Inyo National Forest Assessment in accordance with the 2012 Planning Rule regulations.[14] Unlike the Bio-Regional Assessment, the Inyo Assessment was focused only on the plan area. Like the Bio-Regional Assessment, the Inyo Assessment used peer-reviewed scientific information as well as other sources of accurate, relevant, and reliable information such as U.S. Forest Service expert opinion and public feedback to best address conditions and trends of the 15 assessment topics required under 36 CFR 219.6(b).

Planning Phase

Products developed during the assessment phase, as well as the need-to-change document (prepared after the Inyo Assessment), contributed current and relevant information for preparation of the draft land management plan and draft EIS. In particular, the issues and topics identified in these documents formed the basis for plan components found in the land management plan. In May 2016, we prepared a summary table of the references used as best available scientific information that we considered accurate, reliable, and relevant to the EIS and land management plan. We shared this information with the public, and incorporated it into the project record. This summary table was updated in response to modifications to the draft land management plan, public comments, and Science Consistency Review (described below). Along with this best available scientific information determination, 18 additional supplemental reports were made public on the Inyo's website in May 2016. These supplemental reports covered all the relevant major resource areas and were used to support the analysis in the EIS and the land management plan.

Following publication of the draft EIS, a panel of U.S. Forest Service and external scientists prepared a Science Consistency Review Report (Ritchie et al. 2016). This report reviewed the scientific information presented in the draft EIS, on: (1) scientific relevance; (2) accurate and reasonable interpretation of scientific information; (3) acknowledgement and documentation of scientific uncertainty; and (4) identification of relevant management consequences. Within this report, each reviewer provided specific ratings on these topics, along with clarifying comments. Feedback in the report was incorporated into the land management plan documents between the draft and final stages.

Within the land management plan and EIS, additional determinations were made for each of the major resource areas to further refine and apply the best available scientific information as the documents were written. These determinations involved a process-specific set of decision steps to evaluate all of the scientific information within the context of the plan components and the three best available scientific

[14] 36 CFR 219.6

information criteria, which are "accurate, reliable, and relevant" to the issues being considered.[15] In particular, these evaluations were necessary for topics where the science may have contradictory information. Below is a synopsis of how these determinations contributed to plan direction.

Scientific Information related to Terrestrial Ecosystems and Vegetation Management

Scientific information for terrestrial ecosystems was based primarily on the Science Synthesis, Bio-Regional Assessment, Inyo National Forest Assessment, and Natural Range of Variation assessments for the Sierra Nevada bioregion. The composition, structure, and function of terrestrial ecosystems were especially informed by the natural range of variation assessments, which provided detailed information on the characteristics of ecosystems with high integrity and resilience. These information sources summarized several important themes in the management of terrestrial ecosystems, including: reestablishing natural fire regimes and other key ecological processes, restoring structural heterogeneity and vegetation diversity, retaining or promoting key habitat structures, and increasing ecosystem resilience to stressors through the application of strategically-planned restoration treatments.

An earlier publication, "An Ecosystem Management Strategy for Sierran Mixed-Conifer Forests" (North et al. 2009), served as the foundation for much of the planning direction on forest vegetation management. This summary of recent scientific literature presented a conceptual and strategic approach for forest management using silvicultural and fire prescriptions to restore stand structure and density. Then, in 2012, a companion publication "Managing Sierra Nevada Forests" (North 2012) was released to fill-in management gaps that were identified during implementation. Using observational information collected during field visits and more recent publications, it provided summaries of a range of forest management topics including fuels, climate change, and wildlife. This information was used to inform the land management plan direction related to habitat diversity including the need for a mosaic of resilient vegetation types at multiple scales across the plan area. Relatedly, fire has been identified as a key ecological process in fire-adapted ecosystems. These documents drew upon much existing literature and other references. Those references were not always cited directly in the final EIS, because they were incorporated into the findings of North et al. 2009 and North 2012.

Scientific Information related to Fire Management

Fire ecology, management, and risk assessment were major themes during the Inyo's planning phase. A broad consensus of many peer-reviewed scientific publications on fire ecology have identified that the reintroduction of fire to Sierra Nevada forests restores important ecological processes and patterns, builds ecosystem resilience, and maintains or increases biodiversity. This scientific information determined to be the best available scientific information was compiled in a fire ecology reference list and incorporated into the project record. Management approaches, as described in North et al. 2009 and North 2012, were also refined using this scientific information. In particular, better remote sensing technology and geospatial analytical tools (such as geographic information systems or GIS) provided a more robust risk assessment in the plan area than previously attempted (Thompson et al. 2016). Additionally, improvements in climate modeling science also allowed for detailed analysis of fire emissions (both treatments and wildfire) and wildfire patterns under various scenarios (Westerling et al. 2015, Hurteau et al. 2014). Consequently, this detailed geographic information and the pre-assessment of fire risks along with benefits were used to create specific Strategic Fire Management Zones. The plan direction included four strategic fire zones, each with management options tailored to the zone: Community Wildfire

[15] 36 CFR 219.3

Protection Zone, General Wildfire Protection Zone, Wildfire Restoration Zone, and Wildfire Maintenance Zone.

Scientific Information related to At-risk Species

The evaluation of at-risk plant and wildlife species involved an iterative process of using both readily available scientific information, partner data and studies and internal Forest Service databases. Initial information on at-risk species[16] was compiled using U.S. Fish and Wildlife Service publications such as recovery plans, Forest Service databases such as NRIS, California Department of Fish and Wildlife occurrence data from the California Natural Diversity Database, peer-reviewed publications, NatureServe Explorer Database, external expert opinion, and local knowledge of national forest staff. This information was evaluated and then used to develop supplemental specialist reports that later served as the basis for preparing the EIS and the final land management plan.

The species of conservation concern identification process used best available scientific information to determine if there is a substantial concern about the species' capability to persist over the long term in the plan area. Threat rankings were developed, based primarily on NatureServe data, and included species identified as being a high priority by local governments (such as State of California and federally recognized Tribes). During public feedback on the Regional Forester's recommended lists of species of conservation concern and the identification process that was used, and during the objection period, the public provided additional sources of information including additional published literature and observational data. These additional data were reviewed and incorporated when they were determined to be accurate, reliable, and relevant.

Two species of conservation concern determinations were the topic of objections: black-backed woodpecker and goshawk. The decision not to include them on the species of conservation concern list was made based on the most accurate, reliable, and relevant scientific information for the plan area, including no indication for substantial concern based on their existing range and habitat factors in the plan area. The objection reviewing officer from the Washington Office reviewed objections regarding these species, and found that the Regional Forester was correct in not included those two species on the species of conservation concern list, but asked for the project record to be clarified as to why they were not included on the list. That clarification was added to the species of conservation concern rationale documents in the project record.

Scientific Information related to Aquatic and Riparian Management

The development of an aquatic and riparian strategy occurred between the draft and final phases of the land management plan and EIS in response to public comment on the draft land management plan. The Aquatic and Riparian Strategy was adapted from the Aquatic Management Strategy of the Sierra Nevada land management plan amendments (USDA 2001 and 2004) and modified using recent scientific publications. In particular, the aquatic strategy used the principles outlined by Moyle (1996) for the Sierra Nevada Range, in addition to findings from Rieman et al. (2010), Rieman et al. (2010), Hessburg et al. (2015), and Reeves et al. (2016). The Strategy also incorporated methods used by the National Fish Habitat Partnership, a non-profit with local, state and federal agency partners, to establish a more landscape-scale approach characterized by an integration of plan components for riparian conservation areas, conservation watersheds, and overall watershed direction. In the final land management plan and

[16] Federally listed threatened and endangered species, including proposed and candidate species, as well as nonlisted species meeting criteria to be considered as potential species of conservation concern.

final EIS, conservation watersheds replaced critical aquatic refuges found in the Sierra Nevada land management plan amendment that were included in the draft land management plan and draft EIS.

While conservation watersheds and critical aquatic refuges are similar in concept (each are designed to provide additional protection to watersheds with high biodiversity), the scale is different. Unlike critical aquatic refuges, conservation watersheds are large watersheds adjacent to, or otherwise connected with, similarly managed watersheds that augment the overall resilience of the ecosystem. In particular, conservation watersheds include some of the highest quality waters on the national forest based on the Watershed Condition Framework (USDA Forest Service 2011) analysis. The conservation watershed approach is based on the Aquatic and Riparian Conservation Strategy of the Pacific Northwest Region of the Forest Service, and science showing that larger scale restoration is more successful in improving watershed condition (as discussed throughout the Science Synthesis). The decision to remove critical aquatic refuges was controversial because they have been a long-standing part of the plan area. However, the fragmented nature of critical aquatic refuges, in conjunction with their generally small size, was determined not to be the best approach to maintain and restore aquatic resources for the Inyo into the future, especially given the increasing frequency of large catastrophic events. In addition, the Aquatic and Riparian Strategy elements are enhanced by scientifically based plan components that focus on individual or groups of species.

Scientific Information related to Recreation Management

The sustainable recreation framework was revised between the draft and final EISs based on public comment and the expert opinion provided in the Science Consistency Review. In particular, the Science Consistency Review considered the use of the recreation opportunity spectrum (Clark and Stankey 1979) as a guiding principle to be inconsistent with current scientific information. The final land management plan utilizes guiding concepts from more contemporary frameworks including Limits of Acceptable Change and Visitor Experience and Resource Protection both of which rely upon a zoning approach that integrates recreation and natural resources (Visitor Use Management Framework, A Guide to Providing Sustainable Outdoor Recreation July 2016). The recreation opportunity spectrum continues to be used as a classification tool.

Scientific Information related to Range Management

Range direction did not change between the draft and final land management plan, but clarifications that made the direction consistent with the best available scientific information were incorporated. Appendix F: Forestwide Rangeland Standards, the protocol and method for determining range health in the different vegetation types on the Inyo, was removed from the draft land management plan and incorporated into a supplement to the Pacific Southwest Region Rangeland Analysis and Planning Guide (R5-EM-TP-004). This document is available for rangeland managers in the Southwest Region to use when determining appropriate management practices to meet land management plan objectives. It is an adaptable document that allows for the incorporation of best available scientific information to use in the determination of grazing practices. The final land management plan language for grazing more clearly separates plan direction from the project-level implementation of the program. A number of public comments indicated that the scientific information used in the grazing standards were old and no longer valid. In response, the supplement was updated with additional references, which did not indicate that our grazing approach was outdated, but rather that our protocols for measuring utilization, streambank disturbance, and/or proper functioning condition have and will change over time as best available scientific information indicates. Implementation of the grazing standards in permitted grazing allotments will need to comply with the standards and guidelines set forth in the plan direction, such as streambank trampling and fen disturbance standards. Project-level compliance monitoring and plan-level effectiveness monitoring will be used to

ensure progress towards the intent of the land management plan and validation of the identified best available scientific information.

Monitoring

The monitoring questions and associated indicators found in the land management plan monitoring program were developed using best available scientific information for each of the eight required categories identified in the 2012 Planning Rule.[17] Because the central focus of the land management plan monitoring program is on key ecosystem conditions, the monitoring questions are based on many of the same sources of scientific information used to develop the relevant plan components. Meanwhile, development of the associated indicators required additional sources of scientific information to identify the most accurate, reliable, and relevant indicators.

Water Resources

The water resources and watershed condition indicators are based on two Forest Service guiding documents: the Watershed Condition Framework (USDA Forest Service 2011) and National Best Management Practices for Water Quality Management on National Forest System Lands (USDA Forest Service 2012). Both resource documents involve a rigorous evaluation of defined conditions related to ecological condition and management actions to produce a qualitative rating and are based on scientific research. While these ratings are qualitative, they have been consistently implemented across large spatial and temporal scales, which provides a basis from which to track changes.

Terrestrial and Aquatic Ecosystems

The selected terrestrial and aquatic ecosystem conditions[18] described in the plan monitoring program were chosen because of their important role in the conservation and management of the Inyo. In particular, monitoring questions and associated indicators were written for the key ecosystems within the plan area that were not addressed adequately in other sections of the plan monitoring program, including: large trees, pinyon-juniper woodlands, sagebrush communities, waterbodies, and riparian areas, including meadows. These indicators are based on standard field sampling approaches to track changes, including: spatial extent, structure, composition, disturbance events, and health. For meadows, the indicators are part of the monitoring requirements following plan direction and the forest's supplement to the Rangeland Analysis and Planning Guide (R5-EM-TP-004) sampling. For riparian areas, the indicators included an established approach based on the Proper Functioning Condition (PFC) Assessment for Lotic Areas (Dickard et al. 2015), which was develop by the Bureau of Land Management in cooperation with the Forest Service and Natural Resources Conservation Service. While qualitative in nature, the proper functioning condition assessments have been carried out by Inyo staff for years and provide a consistent baseline. The indicators of water quality are well established metrics and have been coordinated with the California State Water Resources Control Board.

Focal Species

The requirement for focal species is new to the 2012 Planning Rule and is intended to provide inferences into the integrity of the larger ecological system. The Inyo selected two focal species; one aquatic and one terrestrial. Nonnative invasive grasses are an undesirable species, so their selection as a focal species seems counter-intuitive. However, by tracking the status and trends in spatial extent and percent cover of non-native grasses, we will be able to infer adverse impacts to sagebrush ecosystems (Chambers et al. 2007), sage-grouse habitat (Knick and Connelly 2011), and their relationship with fire dynamics. Benthic

[17] 36 CFR 219.12(a)(5)
[18] 36 CFR 219.12(a)(5)(ii)

macroinvertebrates were selected as a focal species for aquatic systems because of their long record as indicator species for water quality and collaboration with the State Water Resources Control Board (Mazor et al. 2016).

Recreation and Wilderness

Indicators for visitor use and satisfaction are based on the Forest Service's National Visitor Use Monitoring program (English et al. 2002). The program is the national standard for monitoring how, who, and why visitors use national forest lands. Because wilderness areas comprise a high proportion of the plan area, the monitoring of wilderness character was included in the land management plan monitoring program. The selection of wilderness performance measures and elements is based on the established national framework (Landres et al. 2005).

Climate Change

Monitoring changes to the climate are critical to the Inyo given the semi-arid environment and high-elevation mountain ranges. As a result, the selected monitoring questions and indicators focused on key drivers and stressors in the plan area. The selection of white pine extent, health, and regeneration was based on long-running research programs in the region that have tracked the status and trends of these important high-elevation species. The support of aquatic ecosystems and the delivery of large volumes of high quality water from the plan area to municipalities across southern California are critical services provided by waterways in the Inyo. Consequently, tracking changes to the flow regimes for select waterways was determined to be a relevant indicator. Fire is both a stressor and ecological driver of forests and rangelands. The selection of indicators for changes to fire regimes (such as fire return interval departure and fire severity) was based on the most recent information being collected by scientists in the region (Miller et al. 2009(a) (b), Meyer 2013(a) (b), Safford 2013, Safford and Van de Water 2014, Steel et al. 2015).

Economic Contributions

The economic monitoring questions and associated indicators are based on economic principles and publically available datasets (Headwaters Economics 2018). The complementary approach of tracking both the contributions from the national forest and the conditions of the communities that depend upon it is considered the most accurate approach. The economic health and diversity monitoring indicators include identifying the relevant sectors and models to track these data. In particular, the IMPLAN modeling system (IMPLAN Group 2016) has been reliably used since 1996 and generated hundreds of peer-reviewed citations.

Productivity of the Land

Per the National Forest Management Act, the productivity of the land monitoring question was included to assess the status and trend of soil conditions in relation to pre- and post-timber management activities. The associated indicators are based on the Forest Soil Disturbance Monitoring Protocol (Page-Dumroese et al. 2009). This protocol has been developed and refined for the Forest Service to deliver consistent, comprehensive, high-quality, monitoring data for timber management activities.

Findings Required by Other Laws and Relevant Directives

I have considered the statutes governing management of the Inyo, and find this decision meets our obligations to the current statutory duties of the Forest Service. Following are summaries of how the land management plan addresses the relevant laws and executive orders. They are in alphabetical order.

Accessibility Laws

The Forest Service and its cooperators are required to incorporate access standards into all of the agency's "Federally Conducted" or "Federally Assisted" facilities, programs, services, or activities. This direction is mandated in the following laws and regulations: Architectural Barriers Act of 1968; Section 504 and 508 of the Rehabilitation Act of 1973, as amended, 1978; Americans with Disabilities Act of 1990 (Title v, section 507) and 7 CFR 15(e). The Inyo has incorporated accessibility requirements into the land management plan components and associated documentation.

Civil Rights Laws

Civil Rights are defined as "the legal rights of United States citizens to guaranteed equal protection under the law" (Forest Service Manual 1730). Civil rights impact analysis for environmental or natural resource actions is part of the social impact analysis package necessary in an EIS and is not a separate report (USDA Forest Service Handbook 1709.11). The Forest Service is committed to equal treatment of all individuals and social groups in its management programs in providing services, opportunities, and jobs. Because no actual or projected violation of legal rights to equal protection under the law is foreseen under the r land management plan for any individual or category of people, no civil rights impacts are reported in the final EIS.

Clean Air Act

According to the Clean Air Act of 1990 and the Organic Administration Act of 1897, the Forest Service has the responsibility to protect the air, land, and water resources from the impacts of air pollutants produced within the Forest Service boundaries and to work with states to protect air resources from degradation associated with the impacts of air pollution emitted outside of National Forest System lands. The land management plan contains plan components to protect air quality by reducing risk of large emissions from catastrophic wildfires. Furthermore, analysis of the effects of plan implementation on air quality in the FEEIS indicates that all alternatives work towards the desired conditions for air quality over the long-term to varying degrees depending on the alternative selected. Conformity determinations and more detailed air quality impact analyses will be made at subsequent levels of planning and analysis where emissions can be more accurately quantified, reasonably forecasted, and local impacts assessed. Therefore, the land management plan is fully compliant with the Clean Air Act.

Clean Water Act

The land management plan contains plan components to provide for the maintenance or improvement of water quality in the streams and waterbodies of the Inyo. Overall, implementation of the land management plan is expected to contribute to protecting or restoring the physical, chemical, and biological integrity of water resources of the Inyo in accordance with the Clean Water Act, and satisfies all State water quality requirements. I base this finding on the extensive standards and guidelines contained in the land management plan, the application of State and nationally approved "best management practices" specifically designed to protect water quality, and the aquatic and riparian

strategy, discussed briefly in the land management plan, and in more detail in Appendix F of the final EIS. Additionally, project-level analysis for subsequent activities under the land management plan will be required to demonstrate compliance with the Clean Water Act and State water quality standards. Therefore, the land management plan is fully compliant with the Clean Water Act.

Endangered Species Act

The purpose of the Endangered Species Act is to provide a means whereby the ecosystems upon which endangered and threatened species depend may be conserved and to provide for the conservation of such endangered and threatened species. Section 7(a) (1) of the Act requires Federal agencies to carry out programs for the conservation of listed species. In addition, the Endangered Species Act requires Federal agencies to ensure that any agency action does not jeopardize the continued existence of the species (section 7(a) (2)). The Act also requires the U.S. Fish and Wildlife Service and Forest Service, respectively, to base the biological opinion and subsequent agency action on the use of best scientific and commercially available data.[19]

In accordance with section 7(c) of the Act, U.S. Fish and Wildlife Service identified the listed and proposed threatened, endangered, or candidate species that may be present on the Inyo. The Forest Service prepared a biological assessment for the final land management plan, and the U.S. Fish and Wildlife Service issued a biological opinion in June of 2018, regarding effects of implementing the land management plan on the threatened, endangered, and candidate species present on or near the national forest. The final biological opinion determined that adopting the land management plan would not jeopardize the continued existence of federally listed species and would not adversely modify designated critical habitat.

Since the publication of the Draft ROD, the Pacific fisher and the bi-state sage grouse have been reconsidered for listing, and are now proposed threatened species under the Endangered Species Act, but a final determination has not yet been made. The U.S. Fish and Wildlife Service's biological opinion stated that the Forest would not need to reinitiate consultation if a new species was listed within 15 years of plan adoption. Regardless of the status, the land management plan is protective of these species, and the new status does not change the finding of continued persistence.

Executive Orders 11988 (Floodplain Management) and 11990 (Protection of Wetlands)

These Executive Orders require Federal agencies to avoid, to the extent possible, short-term and long-term effects resulting from the occupancy and modification of flood plains and the modification or destruction of wetlands. Forestwide standards and guidelines for soil and water, wetlands, and riparian areas are designed to minimize effects to flood plains and wetlands, and require use of the National and Regional Best Management Practices.

Executive Order 12898 (Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations)

This decision is consistent with Executive Order 12898, which requires that all Federal actions consider potentially disproportionate effects on minority and low-income communities, especially if adverse

[19] 16 U.S.C. 1536(a)(2)

effects to environmental or human health conditions are identified. Adverse environmental or human health conditions created by any of the alternatives considered would not affect any minority or low income neighborhood disproportionately. In no case was the management direction in the land management plan based on the demographic makeup, occupancy, property value, income level, or any other criteria reflecting the status of adjacent nonfederal land. Federally owned lands covered by this land management plan are distributed throughout the Inyo and are intermixed with nonfederal lands. My decision would not affect any nonfederal land that would impact minority or low-income neighborhoods disproportionately. There is no evidence that any individual, group, or portion of the community would benefit unequally from this decision.

Executive Order 13084 (Consultation and Coordination with Indian Tribal Governments)

The Inyo engaged 14 Native American tribal entities including 9 federally recognized Tribes. We sent letters offering an open invitation to request formal government-to-government consultation (for recognized tribes) or to meet (for nonrecognized tribes). Big Pine and Mono Lake Tribes requested formal consultation in 2014. Tribal representatives of the following Tribes were involved throughout the revision process: Big Pine Paiute Tribe of Owens Valley; Bridgeport Paiute Indian Colony; Timbi-Sha Shoshone Tribe - Bishop; Fort Independence Community of Paiute Indians; Bishop Paiute Indian Tribe ; Lone Pine Paiute-Shoshone Reservation; Utu Gwaitu Paiute Tribe Benton Paiute Reservation; Walker River Paiute Tribe; Washoe, Antelope Valley Indian Community; Kawiiasu Tribe; Kern Valley Indian Community; Mono Lake Kutzadika'a Tribe; Tübatulabals of Kern Valley; and Yosemite-Mono Lake Paiute Indian Community. Prior to the release of the notice of intent to revise the land management plan, we held meetings with the 14 Tribes to understand their unique issues and concerns. Information from Tribal forums, personal meetings, phone calls, and correspondence with Tribal representatives was considered in the selection of the alternative B-modified.

Multiple-Use Sustained-Yield Act

The Multiple-Use Sustained-Yield Act requires National Forest lands to be administered to provide for multiple uses such as recreation, range, timber, watersheds, wildlife, and fisheries. The land management plan establishes a strong multiple use framework by providing plan components related to ecosystem structure, process, and function; wildlife and fisheries; recreation; traditional and cultural resources; livestock grazing; forest products; special uses; mining and minerals extraction; and energy transmission and development. Therefore, the land management plan is fully compliant with the Multiple-Use and Sustained-Yield Act.

National Environmental Policy Act of 1969

The National Environmental Policy Act requires public involvement and consideration of potential environmental and social effects of implementing Federal actions. I find that the environmental analysis and public involvement process complies with each of the major elements of the requirements set forth by the Council on Environmental Quality[20] for implementing the Act. These include (1) considering a range of reasonable alternatives, (2) disclosing cumulative effects, (3) insuring the integrated use of the natural and social sciences, (4) considering long-term and short-term effects, and (5) disclosing unavoidable adverse effects.

[20] 40 CFR 1500-1508

The final EIS considers a range of alternatives, including five alternatives considered in detail and seven additional alternatives considered but eliminated from detailed study (see chapter 2 of the final EIS). Alternatives were developed and revised based on robust public involvement, including public input and comment. The final EIS discloses cumulative effects of each alternative by evaluating past, present, and reasonably foreseeable future actions in the planning area. Moreover, although non-federal lands are outside the scope of this decision, effects from their use have been considered in the final EIS to a degree appropriate for a programmatic environmental analysis document at this scale. The final EIS also makes use of the best available scientific information. This use has been reviewed using a science consistency evaluation process that considered the quality of the information used, how the information was used, and whether risk and uncertainty were acknowledged. The available scientific literature was used to help estimate environmental consequences. Complex vegetation and wildlife habitat models were employed to better understand the relationships between management actions and potential impacts to forest vegetation and wildlife habitat.

The final land management plan adopts all practical means to avoid or minimize environmental harm, including plan components to provide the ecological conditions needed to support biological diversity and standards and guidelines to mitigate adverse environmental effects that may result from implementing various management practices. The final land management plan includes a monitoring program and an adaptive management approach to assure needed adjustments are made over time.

My decision does not directly authorize any ground-disturbing activities or projects; future ground-disturbing activities and projects will be consistent with the final land management plan and subject to additional site-specific public involvement, environmental analysis, and pre-decisional review processes. Therefore, the final land management plan is fully compliant with the National Environmental Policy Act and Council on Environmental Quality implementing regulations.

National Forest Management Act

The National Forest Management Act requires the development, maintenance, amendment, and revision of land management plans for each unit of the National Forest System. These plans help create a dynamic management system so an interdisciplinary approach to achieve integrated consideration of physical, biological, economic, and other sciences will be applied to all future actions on the unit.[21] Under the Act, the Forest Service is to ensure coordination of the multiple uses and sustained yield of products and services of the National Forest System.[22]

The National Forest Management Act requires the Secretary of Agriculture to promulgate regulations for developing and maintaining land management plans. On April 9, 2012 the Department of Agriculture issued a Final Planning Rule for National Forest System land management planning (36 CFR Part 219; refer to the Federal Register at 77 FR 68, pages 21162-21276).

My review of the planning process, the final EIS, and the information provided in the Record of Decision (see sections titled “Rationale” and “Substantive Requirements of the Rule”) indicate the land management plan and its preparation meet requirements for revising plans under the provisions of the 2012 Planning Rule and is fully compliant with the National Forest Management Act.

[21] 16 U.S.C. 1604(b), (f), (g), and (0)
[22] 16 U.S.C. 1604(e)(1)

National Historic Preservation Act

The California and Nevada State Historic Preservation Officers were consulted on the Inyo National Forest Land Management Plan complying with Stipulation 4.4(a) of the "Programmatic Agreement Among the U.S.D.A. Forest Service, Pacific Southwest Region (Region 5), California State Historic Preservation Officer, Nevada State Historic Preservation Officer, and the Advisory Council on Historic Preservation Regarding the Processes for Compliance with Section 106 of the National Historic Preservation Act for Management of Historic Properties by the National Forests of the Pacific Southwest Region." Neither of the State Historic Preservation Officers provided comments on the land management plan, reserving consultation under 36 CFR Part 800 (as amended) for such time as individual undertakings initiated under the land management plan may have the opportunity to affect historic properties.

The Wild and Scenic Rivers Act

The Wild and Scenic Rivers Act (Pub. L. 90-542, §1(b), Oct. 2, 1968, 82 Stat. 906, as amended); (16 U.S.C. §1271-1288), 16 U.S.C. §1276, describes consideration of potential additions during planning in Section 5. (d)(1) …"The Secretary of the Interior and the Secretary of Agriculture shall make specific studies and investigations to determine which additional wild, scenic and recreational river areas within the United States shall be evaluated in planning reports by all Federal agencies as potential alternative uses of the water and related land resources involved." The Forest complied with this Act by evaluating whether rivers on the Forest may be eligible for inclusion in the Wild and Scenic River system, as documented in appendix C of the final EIS.

The Wilderness Act

Implementation of the land management plan will comply with the provisions of the Wilderness Act (Public Law 88-577 [16 U.S. C. 1131-1136], 1964). Plan components for designated wilderness areas are consistent with the Act.

The Effective Date of the Plan Revision

This revised land management plan becomes effective 30 calendar days after publication of the notice of its approval in the Federal Register (36 CFR 219.17(a), 2012 Planning Rule). This approval will not occur until a final Record of Decision is issued.

Forest plans are permissive in that they allow, but do not mandate, the occurrence of certain activities. The revised land management plan will be implemented through a series of project-level decisions based on site-specific environmental analysis and public involvement. The revised land management plan seeks to guide management activities and projects by establishing a clear desired condition for the Inyo and for each ecosystem, rather than by establishing schedules for actions. This approach leaves more flexibility for managers to adapt program and project selection as changes take place in budgets, resource capabilities, and management priorities.

Contact Person

For additional information concerning the land management plan, please contact Erin Noesser, Assistant Forest Planner, Inyo National Forest, at 760-873-2449 or erin.noesser@usda.gov.

Signature and Date

Tammy Randall-Parker

TAMMY RANDALL-PARKER
Forest Supervisor
Inyo National Forest

October 21, 2019
DATE

Appendix A: Recommended Wilderness Areas and Eligible Wild and Scenic Rivers

Recommended Wilderness Areas

The following is a brief description of each of the recommended wilderness areas, summarizing the information used in the analysis. The description of the criteria used for analyzing wilderness characteristics of the areas are included in detail in the final EIS, appendix B. Maps of each area, showing the location and boundaries, follow the descriptions. The order is from north to south.

Huntoon Creek, South Huntoon Creek, and Adobe Hills recommended wilderness areas are adjacent to each other, but separated by native surface roads. Therefore, they create a contiguous block of recommended wilderness.

Huntoon Creek

This recommended wilderness area is 8,876 acres and was derived from wilderness evaluation polygon 1361 (Excelsior Mountains – Huntoon Creek). The boundary and location are shown in figure 2. We received requests to add this area as recommended wilderness, particularly from Mono County during the objection process.

In summary, it is a dry area of low, rolling hills mostly comprised of pinyon woodland and shrublands. The area has high ecological integrity with few alterations to natural conditions, is remote, and has good opportunities for solitude and opportunities for primitive and unconfined recreation. Almost the entire polygon (99 percent) is within an inventoried roadless area and receives low levels of use.

South Huntoon Creek

This recommended wilderness area is 5,898 acres and was derived from wilderness evaluation polygon 1357 (Excelsior Mountains). The boundary and location are shown in figure 3 below. We received requests to add this area as recommended wilderness, particularly from Mono County during the objection process.

In summary, it is a dry area of low, rolling hills mostly comprised of pinyon woodland and shrublands. The area has high ecological integrity with few alterations to natural conditions, is remote, and has good opportunities for solitude and opportunities for primitive and unconfined recreation. Most of the polygon (93 percent) is within an Inventoried Roadless Area and currently receives low levels of use.

Adobe Hills

This recommended wilderness area was derived from wilderness evaluation polygon 1355 (Excelsior Mountains – Adobe Hills). The final area encompasses 10,354 acres. The boundary is shown in figure 4 below. We received requests to add this area as recommended wilderness, particularly from Mono County during the objection process.

In summary, it is a dry area of low, rolling hills mostly comprised of pinyon woodland and shrublands. The area has high ecological integrity with few alterations to natural conditions, is remote, and has good opportunities for solitude and opportunities for primitive and unconfined recreation. Almost the entire polygon (96 percent) is within an inventoried roadless area and currently receives low levels of use.

White Mountain Wilderness Additions (West)

This recommended wilderness was derived from wilderness evaluation polygon 1281 (Ancient Bristlecone Pine Forest and Dead Horse Meadow). The final area encompasses 5,062 acres, and is contiguous with the designated White Mountain Wilderness. The boundary is shown in figure 5 below. We received requests to add this area as recommended wilderness.

In summary, it is a high elevation area in the southern White Mountains, and the majority of the area is within the Ancient Bristlecone Pine Forest management area and contains ecological features that are of scientific and educational value. The area has high ecological integrity with few alterations to natural conditions, is remote, and has good opportunities for solitude and opportunities for primitive and unconfined recreation. Almost the entire polygon (95 percent) is within an inventoried roadless area and currently receives low levels of use.

White Mountain Wilderness Additions (East)

This recommended wilderness was derived from wilderness evaluation polygon 1281 (Ancient Bristlecone Pine Forest and Dead Horse Meadow). The final area encompasses 2,505 acres, and is contiguous with the designated White Mountain Wilderness. The boundary is shown in figure 5 below. We received requests from the public to add this area as recommended wilderness.

In summary, it is a high elevation area in the southern White Mountains and contains mostly pinyon juniper forest vegetation type. The area has high ecological integrity with few alterations to natural conditions, is remote, and has good opportunities for solitude and opportunities for primitive and unconfined recreation. It contains a small segment of the Cottonwood Creek wild and scenic river. Most of the polygon (93 percent) is within an inventoried roadless area and currently receives low levels of use.

Piper Mountain Wilderness Additions (1)

This recommended wilderness was derived from wilderness evaluation polygon 1246 (north of Eureka Valley Road). The final area encompasses 11,419 acres, and is contiguous with the designated Piper Mountain Wilderness (Bureau of Land Management). The boundary is shown in figure 6 below. We received requests from the public to add this area as recommended wilderness. In summary, this is a mid-elevation area in the Northern Inyo Mountains. The ecosystem type is typical of the Great Basin, with pinyon juniper, sagebrush, xeric shrublands and blackbrush in a gently to steeply sloping area. The area has high ecological integrity with few alterations to natural conditions, and has good opportunities for solitude and opportunities for primitive and unconfined recreation. It contains areas of geological interest. Almost the entire polygon (97 percent) is within an inventoried roadless area and currently receives low to moderate levels of use.

South Sierra Wilderness Additions – East (1)

This recommended wilderness was derived from wilderness evaluation polygon 1391 (Monache, Blackrock and South Sierra East). The final area encompasses 15,815 acres, and is contiguous with the designated South Sierra Wilderness. The boundary is shown in figure 7 below. We received requests from the public to add this area as recommended wilderness. In summary, it is a low to high elevation area on the eastern scarp of the southern Sierra Nevada Mountains. The ecosystem type is typical of the Mojave Desert, containing Joshua trees, cholla cactus, creosote, and canyon live oak. The area has high ecological integrity with few alterations to natural conditions, mostly in the lower elevation portions of the polygon. It has good opportunities for solitude and opportunities for primitive and unconfined recreation. Almost the entire polygon (98 percent) is within an inventoried roadless area and currently receives low to moderate levels of use.

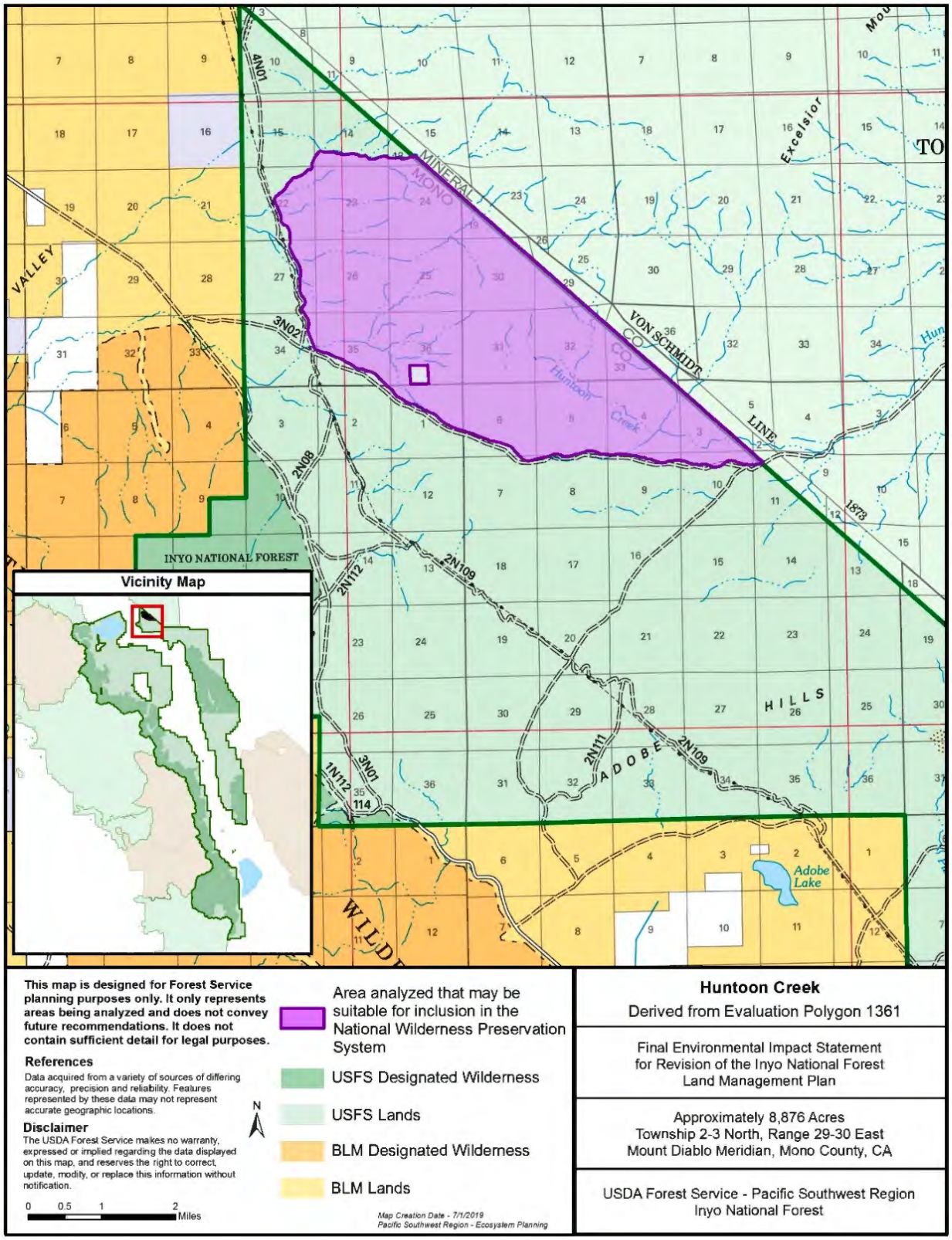

Figure 2. Huntoon Creek recommended wilderness area

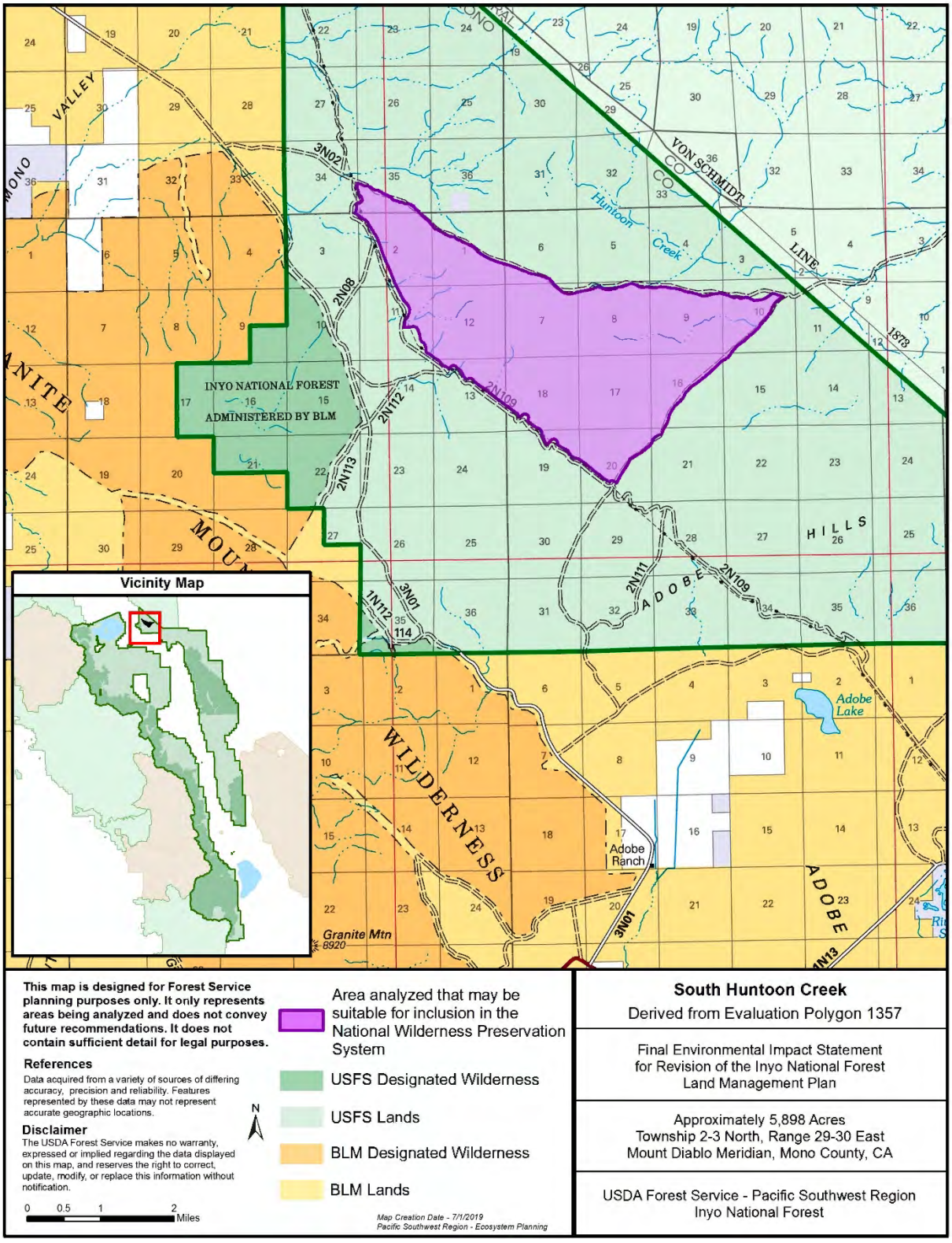

Figure 3. South Huntoon Creek recommended wilderness area

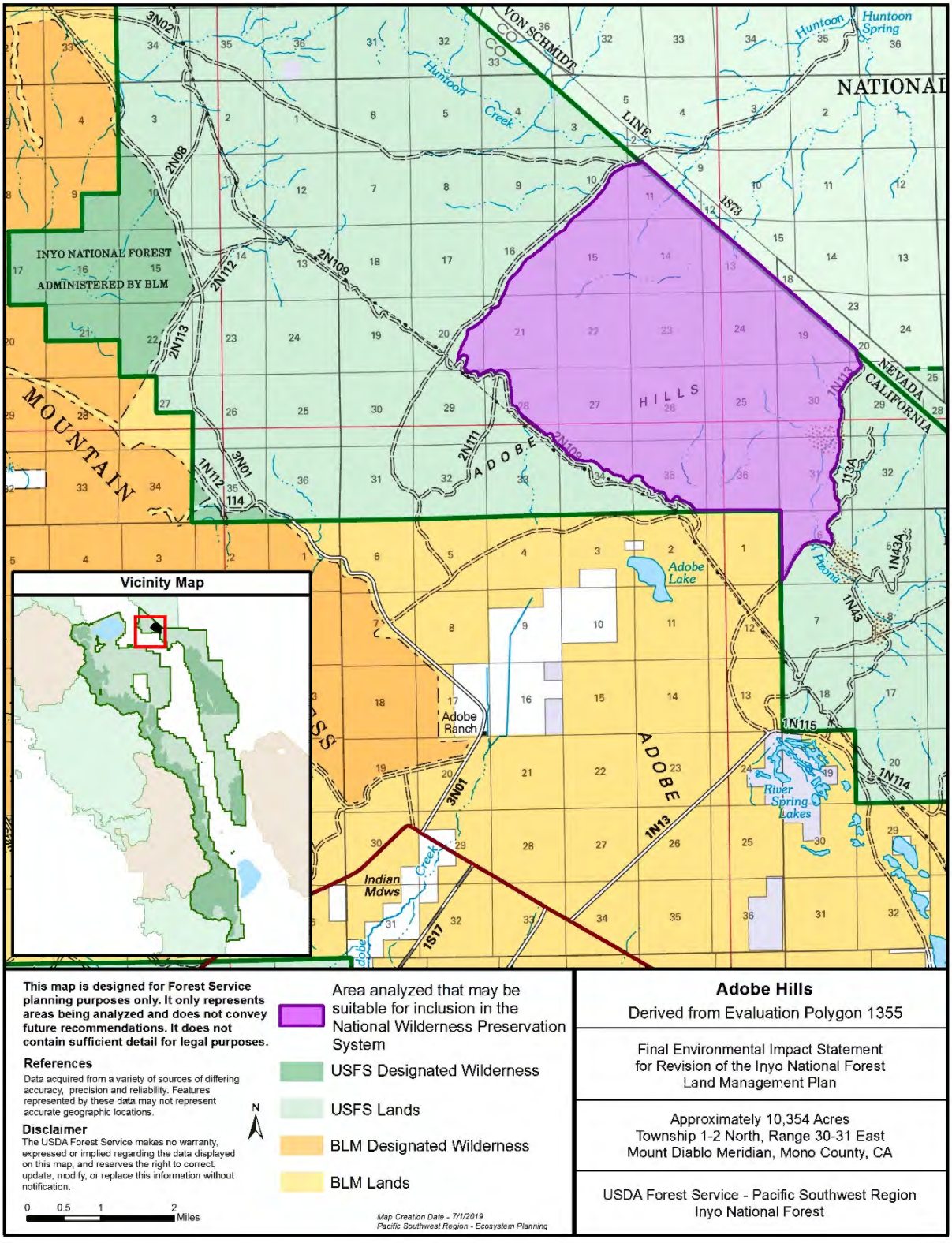

Figure 4. Adobe Hills recommended wilderness area

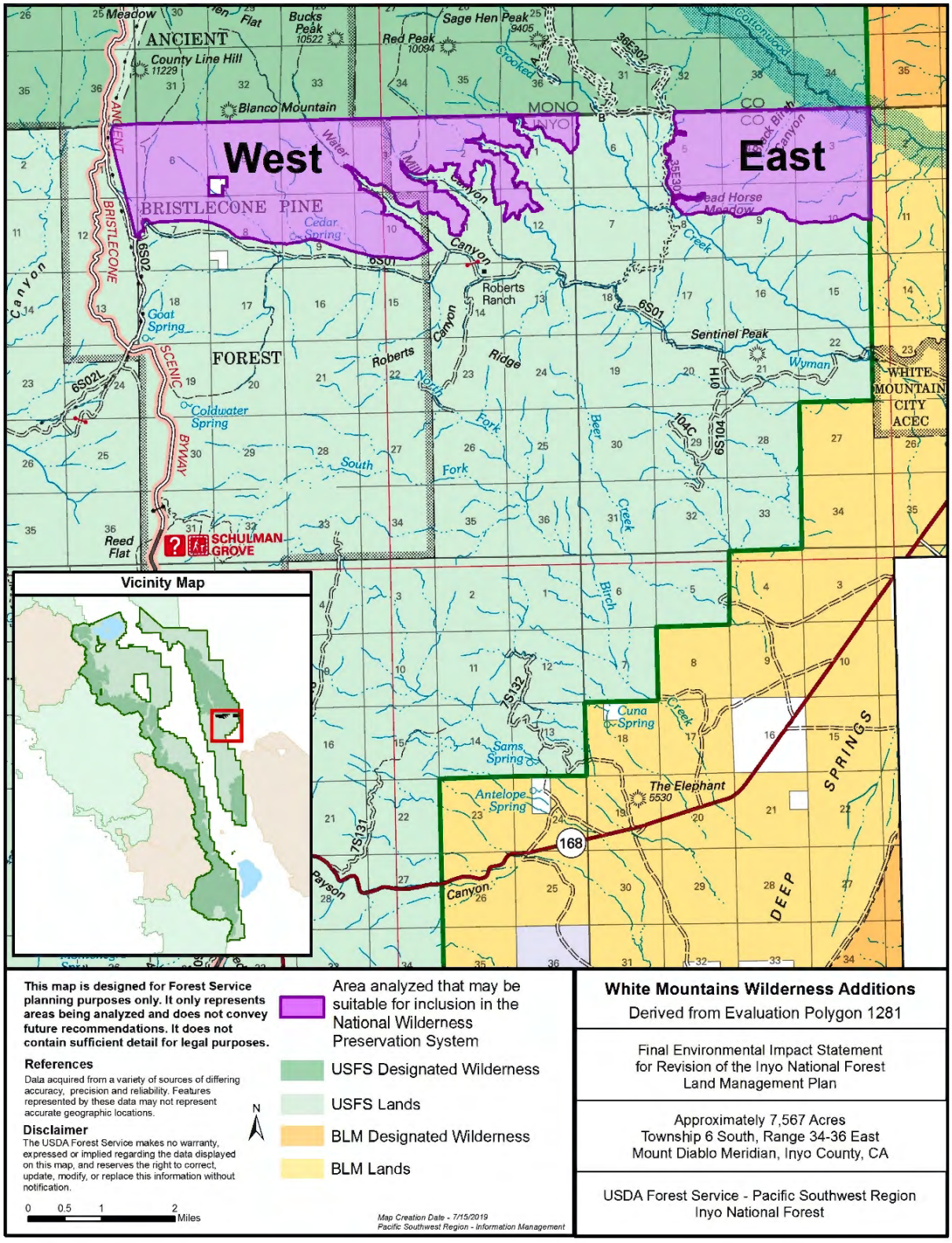

Figure 5. White Mountain Wilderness Additions recommended wilderness areas

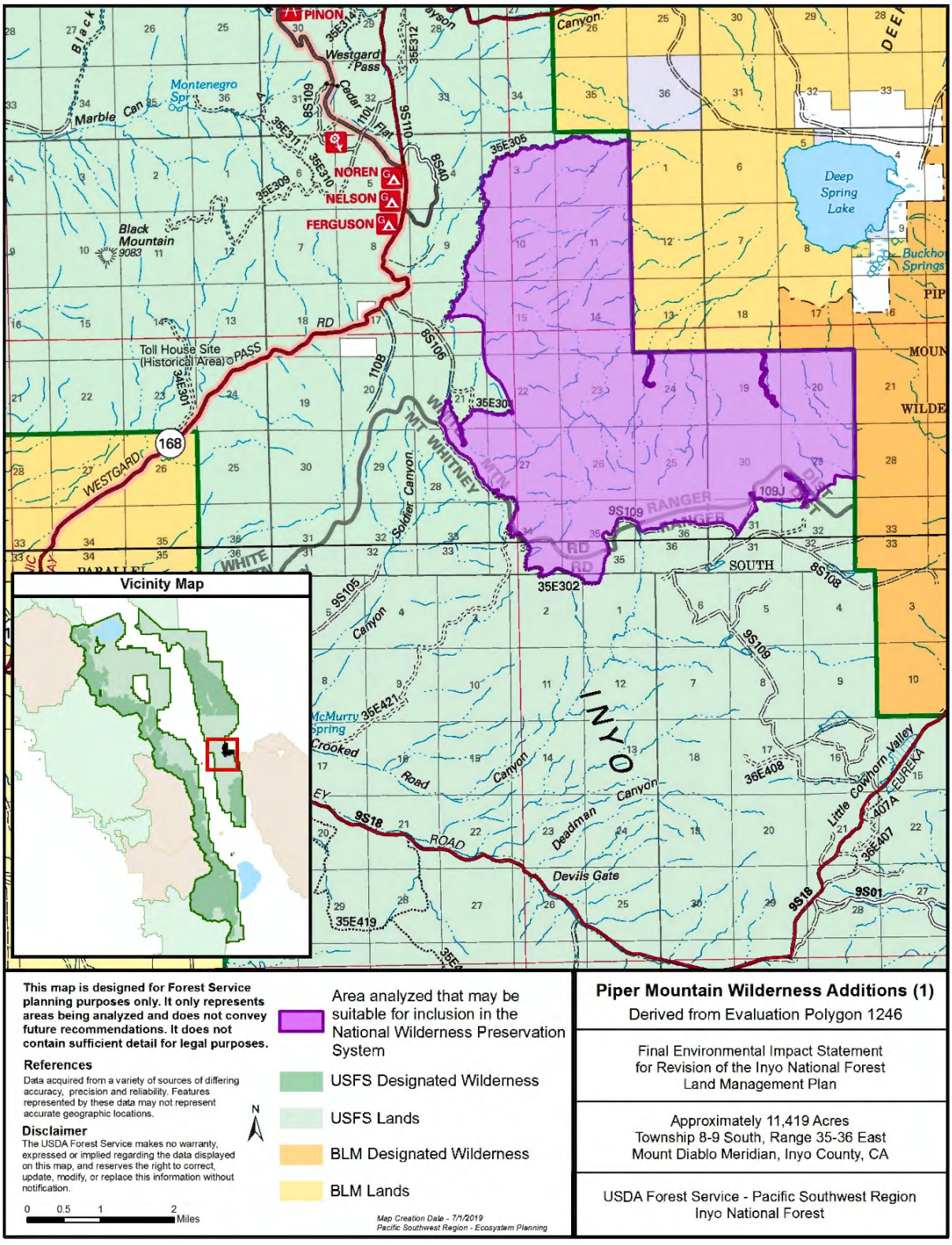

Figure 6. Piper Mountains Wilderness Additions (1) recommended wilderness area

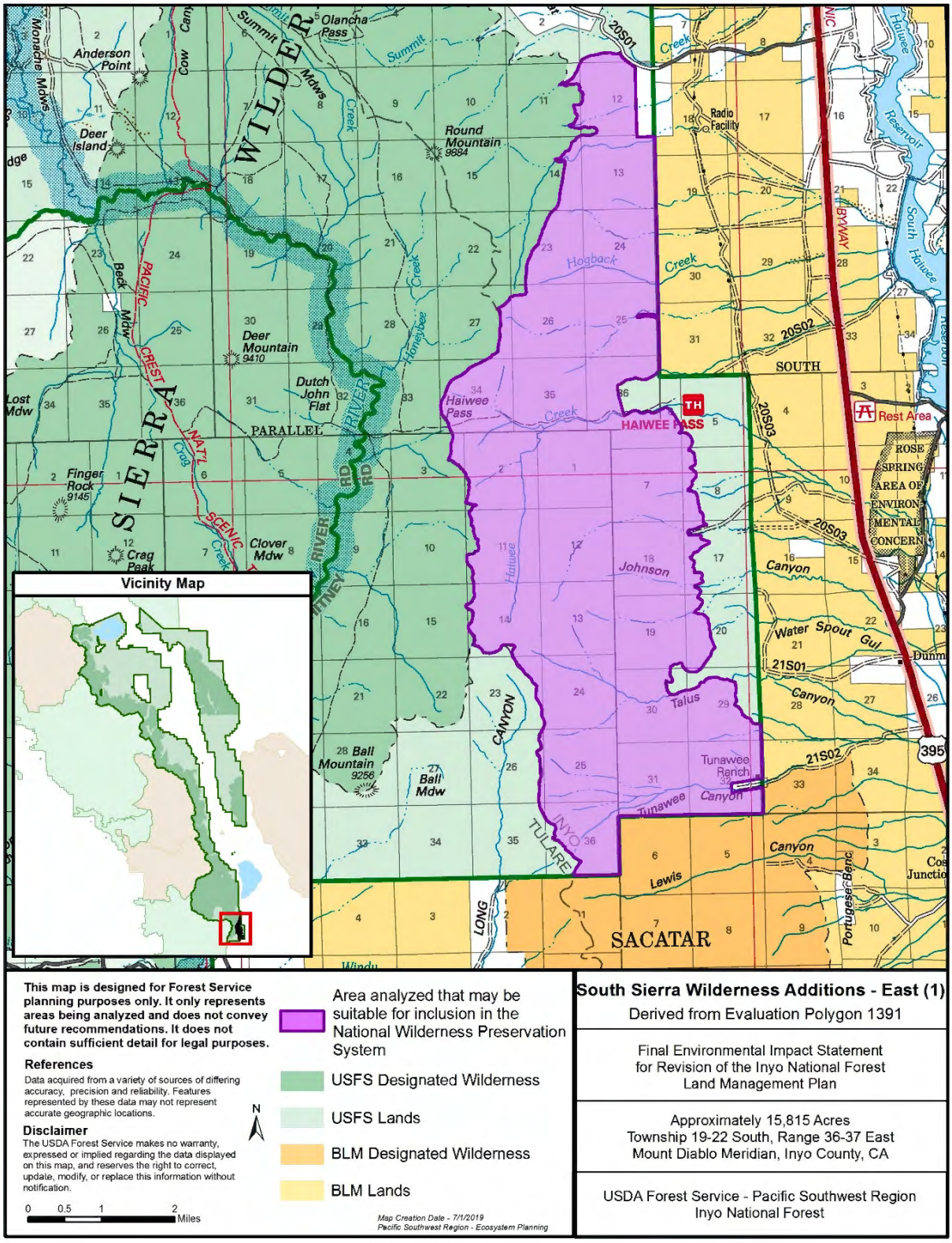

Figure 7. South Sierra Wilderness Additions – East (1) recommended wilderness area

Eligible Wild and Scenic Rivers

The list of list of eligible wild and scenic rivers and their segments in table 1 includes their outstandingly remarkable values, preliminary classification, and length

Table 1. List of eligible wild and scenic rivers and their segments, outstandingly remarkable values, preliminary classification and length.

River Name	Segment ID No.(s)	Beginning Point	End Point	Outstandingly Remarkable Values	Preliminary Classification	Length (miles)
Convict Creek	1.03	Headwaters	Convict Lake	Scenery, recreation, geology, other (botanical)	Wild	7.0
Cottonwood Creek (White Mountains)	1.028	Headwaters at White Mountains Wilderness Boundary	Wild and Scenic designated segment	Fish populations, prehistory	Wild	1.7
Cottonwood Creek (White Mountains)	1.027.2	Forest Boundary	Forest Boundary	History	Recreational	0.7
Cottonwood Creek	1.04.1 1.04.2	Headwaters	Southeast side of Forest Road 16S02	Scenery, recreation, geology, fish habitat, fish populations, history	Wild	4.7
Cottonwood Creek	1.04.3	Southeast side of Forest Road 16S02	Los Angeles Department of Water and Power land east of the Old Cottonwood Mill site	Recreation, fish populations, history	Recreational	1.4
Cottonwood Creek	1.04.4	Los Angeles Department of Water and Power land east of the Old Cottonwood Mill site	Golden Trout Wilderness boundary	Scenery, fish populations, history	Wild	3.8
Cottonwood Creek	1.04.5	Golden Trout Wilderness boundary	Intake in Section 27 just east of Forest Service Road 17S01	Scenery, fish populations, history, prehistory	Recreational	2.1
Crest Creek	1.031.1	Headwaters	Inlet to Gem Lake	History	Wild	3.3
Division Creek	1.041.2	Wilderness Boundary	Forest Boundary	History	Recreational	3.4
Fish Creek	1.053	Headwaters	Confluence with Middle Fork San Joaquin River	Scenery, recreation, geology, wildlife populations	Wild	20.4
Golden Trout Creek	1.07	Headwaters above Big Whitney Meadows	Confluence with the Kern River	Scenery, recreation, geology, fish populations, fish habitat, history	Wild	19.0
Hot Creek	1.067	Headwaters	Intersection of stream and Forest Road 3S45G	History, prehistory, other	Recreational	5.6
Hot Creek	1.09.1	Intersection of stream and Forest Road 3S45G	Fish Hatchery	Geology, prehistory, other (botanical)	Recreational	4.4

River Name	Segment ID No.(s)	Beginning Point	End Point	Outstandingly Remarkable Values	Preliminary Classification	Length (miles)
Hot Creek	1.09.2	Fish Hatchery	Forest boundary	Scenery, recreation, geology, fish populations, fish habitat, prehistory, other (botanical)	Recreational	2.9
Laurel Creek	1.11	Wilderness boundary	Los Angeles Department of Water and Power land	Scenery, recreation, geology	Scenic	3.8
Lee Vining Creek	1.12.1	Headwaters tributaries	Harvey Monroe Hall Research Natural Area	Scenery, recreation, geology	Wild	1.4
Lee Vining Creek	1.12.2	Harvey Monroe Hall Research Natural Area	Greenstone Lake	Scenery, recreation, geology	Wild	0.2
Lee Vining Creek	1.079.1	Inlet to Greenstone Lake	Inlet to Saddlebag Lake	Scenery, recreation, geology	Scenic	0.5
Lee Vining Creek	1.12.3	Saddlebag Lake	Hwy 120	Scenery, recreation, geology	Recreational	3.0
Lee Vining Creek	1.079.2	Highway 120	Inlet to Ellery Lake	Geology	Scenic	0.4
Lee Vining Creek	1.079.3	300 feet below Ellery Lake dam	Southern California Edison (SCE) Powerhouse	Geology	Scenic	1.2
Lee Vining Creek	1.12.4	Southern CA Edison Powerhouse	Los Angeles Department of Water and Power (DWP) Diversion Pond	Scenery, recreation, geology	Recreational	6.0
Lee Vining Creek	1.12.5	Inlet to DWP Diversion Pond	Outlet of DWP Diversion Pond	Scenery, recreation	Recreational	0.1
Lee Vining Creek	1.12.6	Outlet of DWP Diversion Pond	Inlet to Mono Lake	Scenery, recreation	Recreational	4.2
Little Hot Creek	1.084	Antelope Spring	Forest Boundary	Geology, prehistory, other	Recreational	3.9
Lone Pine Creek/North fork Lone Pine Creek	1.13 1.23	North Fork and South fork Headwaters	John Muir Wilderness boundary	Scenery, recreation, geology	Wild	4.7
Lone Pine Creek	1.087	John Muir Wilderness boundary	Inyo Forest boundary near Lone Pine Campground	Scenery, recreation, geology	Recreational	3.9
Mammoth Creek	1.094.4	Wilderness Boundary	Twin Lakes Outlet	Recreation, history, prehistory	Recreational	3.5
Mammoth Creek	1.15.1	Twin Lakes	Sherwin Campground	History, prehistory	Recreational	4.5
Mammoth Creek	1.094.2	Intersection with Sherwin Creek	0.04 miles after intersection with Sherwin Creek	History, prehistory	Recreational	0.04
Mammoth Creek	1.15.2	Sherwin Campground	South of Hot Creek by 0.02 miles	Prehistory	Recreational	2.4
Mammoth Creek	1.094.3	South of Hot Creek by 0.02 miles	Intersection with Hot Creek	History, prehistory	Recreational	0.02

River Name	Segment ID No.(s)	Beginning Point	End Point	Outstandingly Remarkable Values	Preliminary Classification	Length (miles)
McGee Creek	1.16	Headwaters	Wilderness boundary	Scenery, recreation, geology	Wild	6.7
McGee Creek	1.099	Wilderness Boundary	Forest Boundary	Geology	Recreational	3.8
Middle Fork Bishop Creek	1.104.1	Headwaters	Inlet of Sabrina Lake	Scenery	Wild	4.0
Middle Fork San Joaquin River	1.17	Headwaters are from an unnamed lake southwest of Thousand Island Lake	Middle Fork San Joaquin River at the northeast end of Thousand Island Lake	Scenery, recreation, geology	Wild	3.5
Mill Creek	1.105.2	Headwaters	Intersection with Mill Creek 1.18.1	Geology	Wild	1.1
Mill Creek	1.18.1 1.18.2	Headwaters	Wilderness boundary	Scenery, recreation, geology	Wild	4.0
Mill Creek	1.18.3	Wilderness boundary	Private Property	Scenery, recreation, geology	Scenic	1.4
Mill Creek	1.18.4	Private Property	Lundy Lake	Scenery, recreation, geology	Recreational	0.8
Mill Creek	1.105.1	Outlet of Lundy Lake	Forest boundary south of forest road 2N01	Scenery, recreation	Recreational	2.6
Mill Creek	1.18.5	Forest boundary south of forest road 2N01	Forest boundary southeast of Mono City	Scenery	Recreational	2.3
Mill Creek	1.18.12	Forest boundary southeast of Mono City	Inlet to Mono Lake	Scenery, geology	Recreational	2.5
North Fork Big Pine Creek	1.22.1 1.22.2	Northern headwaters on flank of Cloudripper	Wilderness boundary	Scenery, recreation, geology, history	Wild	5.5
North Fork Big Pine Creek/Big Pine Creek	1.02.1 1.22.3 1.22.4	Wilderness boundary	Private Property	Recreation, geology	Recreational	3.6
North Fork Crooked Creek	1.126	Headwaters	Confluence with South Fork Crooked Creek	Prehistory	Scenic	4.6
O'Harrel Canyon Creek	1.141.1	Headwaters	Inventoried roadless area boundary	Fish populations	Wild	2.3
O'Harrel Canyon Creek	1.141.2	Inventoried roadless area boundary	Forest boundary	Fish populations, prehistory	Recreational	3.0
Parker Creek	1.25.1	Headwaters	Wilderness Boundary	Scenery, recreation	Wild	4.4
Parker Creek	1.25.2	Wilderness Boundary	Forest boundary	Scenery	Recreational	1.9
Parker Creek	1.25.3	Forest boundary	Confluence with Rush Creek	Scenery	Recreational	4.1

River Name	Segment ID No.(s)	Beginning Point	End Point	Outstandingly Remarkable Values	Preliminary Classification	Length (miles)
Poison Creek	1.153	Headwaters	Intersection with South Fork Cottonwood Creek	Prehistory	Wild	3.4
Rock Creek	1.161	Headwaters	Box Lake	Scenery, recreation, geology	Wild	3.1
Rock Creek	1.27.1 1.27.2	Outlet of Box Lake	Wilderness Boundary	Scenery, recreation, geology, prehistory	Wild	1.2
Rock Creek	1.27.3	Wilderness boundary	Highway 395 bridge near Toms Place	Scenery, recreation, geology, prehistory	Recreational	12.0
Rock Creek –Lower	1.14.1 1.14.2	Highway 395 bridge near Toms Place	Forest boundary	Scenery, recreation, prehistory	Recreational	6.9
Rush Creek	1.165.1	Headwaters	Inlet of Waugh Lake	Scenery, recreation, wildlife populations	Wild	3.7
Rush Creek	1.165.2	Outlet of Waugh Lake below dam	Inlet to Gem Lake	Scenery, recreation, history, prehistory	Wild	1.9
Rush Creek	1.165.8	Outlet of Gem Lake below dam	Inlet to Agew Lake	History	Recreational	0.3
Rush Creek	1.165.4	Small dam structure 600 feet below Agnew Lake dam	Wilderness Boundary	History	Recreational	0.1
Rush Creek	1.165.7	Wilderness Boundary	Wilderness Boundary	History	Wild	0.2
Rush Creek	1.165.6	Wilderness Boundary	Confluence with Reversed Creek	History	Recreational	0.7
Rush Creek	1.28.1	Outlet of Silver Lake	Inlet to Grant Lake	Scenery, recreation	Recreational	2.6
Rush Creek	1.165.12 1.166	Grant Lake diversion ditch and Rush Creek natural channel confluence	Private Land boundary	Scenery, recreation	Recreational	4.2
Rush Creek	1.28.2	Private land boundary	Inlet to Mono Lake	Scenery, geology, other (cultural)	Recreational	4.3
South Fork Bishop Creek	1.30.1	Headwaters	Inlet at South Lake	Scenery, recreation, geology	Wild	3.6
South Fork Bishop Creek	1.30.2	Dam outlet at South Lake	Habeggers RV Park	Scenery, recreation, history	Recreational	5.2
South Fork Cottonwood Creek	1.180	Headwaters	Intersection with Cottonwood Creek	Prehistory	Wild	3.7
South Fork Mill Creek	1.32.1	Dore Pass Lake	Crystal Lake	Scenery, recreation, geology	Wild	1.1
South Fork Mill Creek	1.32.2	Crystal Lake	Hoover Wilderness boundary	Scenery, recreation, geology	Wild	1.6

River Name	Segment ID No.(s)	Beginning Point	End Point	Outstandingly Remarkable Values	Preliminary Classification	Length (miles)
South Fork Mill Creek	1.32.3	Hoover Wilderness boundary	Confluence with Mill Creek	Scenery, recreation	Scenic	0.2
South Fork Oak Creek	1.187.1	Headwaters	Wilderness boundary	Scenery, geology, other (botanical)	Wild	3.6
South Fork Oak Creek	1.187.2	Wilderness boundary	Road 13S04	Scenery, geology, other (botanical)	Recreational	3.9
Volcanic Creek	1.203	Volcano Meadow	Intersection with Golden Trout Creek	Geology	Wild	2.3
Walker Creek	1.33.1	Headwaters tributaries	Ansel Adams Wilderness boundary	Scenery, recreation	Wild	2.6
Walker Creek	1.33.2	Ansel Adams Wilderness boundary	Walker Lake	Recreation	Scenic	0.4
Walker Creek	1.205.2 1.205.3 1.206	Outlet of Walker Lake	Confluence with Rush Creek	Scenery	Recreational	6.3

Appendix B: Changes Made in Response to Objection Instructions and Suggestions, and Errata

The following table documents changes that were made in response to instructions outlined in the reviewing officer's letter in response to objections. The table indicates whether changes were made to the land management plan, the final environmental impact statement (FEIS) or the final record of decision (ROD). The following acronyms are used in this table: BASI – best available scientific information, ROS – recreation opportunity spectrum, SCC – species of conservation concern.

Instruction	Plan Change	FEIS Change	ROD Change	Description of instruction or suggestion implementation
Address in the ROD the departure from historic fire regime to a higher likelihood of high severity fire in large patches, and the fact that this condition is not consistent with desired conditions, to support TERR-FW-OBJ-2 and TERR-MONT-DC-2 in the plan.	x		x	The ROD includes more information about burn severity, why large patches of high vegetation burn severity are not within the natural range of variability for the plan area, and therefore not desirable. The ROD and FEIS better link forest health and burn severity in the rationale for the decision, and analysis. Definitions of fire severity and vegetation burn severity were added to the land management plan's glossary.
The article by van Wagtendonk and Fites-Kaufman (2006) is an important part of the plan decision and was referenced in the Science Consistency Review, and it should be included the BASI tables.		x		The planning team verified that the article (van Wagtendonk and Fites-Kaufman 2006) was in the previous BASI table, which was an exhibit in the project record. The article remains in the BASI table which is now part of appendix H of the FEIS and more accessible to the public.
Evaluate the additional literature provided by the objector in the objection letter and determine whether or not it is BASI.		x		The FEIS now includes appendix H, which contains tables showing whether the Forest considered submitted documents as BASI or not, and providing rationale for that decision. Most of the submitted information was already cited in the project record, either directly or because it was referred to in the Science Synthesis. New literature, where it provided new information, was added to the citations within the FEIS.
Evaluate all of the scientific information previously provided by the objector individually using the "most accurate, reliable, and relevant…" standard, rather than lumping them together as was done in the FEIS. If it is considered BASI and does not support the decision to be made, then it is recommended that the ROD documents the other factors used in the decision.		x		The project record includes tables showing whether the Forest considered submitted documents as BASI or not, and providing rationale for that decision, which will be filed on the project website. Most of the submitted information was already cited in the project record, either directly or because it was referred to in the Science Synthesis. New literature, where it provided new information, was added to the citations within the FEIS.

Instruction	Plan Change	FEIS Change	ROD Change	Description of instruction or suggestion implementation
Make the BASI determination spreadsheet publicly available by posting it on the website, in addition to the BASI summary.		x		The project record includes tables showing whether the Forest considered submitted documents as BASI or not, and providing rationale for that decision, which will be filed on the project website. Most of the submitted information was already cited in the project record, either directly or because it was referred to in the Science Synthesis. New literature, where it provided new information, was added to the citations within the FEIS.
Provide the definition of short term and long term impacts of fuels reduction treatments in the Scenery section of the FEIS.		x		An assumption was added to the introduction of the scenic resources analysis in chapter 3 of the FEIS. The paragraph describes different time frames for different vegetation types, and concludes, “In very general terms for the purpose of this analysis, short-term effects are those that last the timeframe of two to less than ten years, while the timeframe for long-term effects is greater than ten years.”
Correct the discrepancy in acres of lands suitable for timber production in the revised land management plan (pg. 56), the draft ROD (pages 8 and 18), appendix A of the FEIS, and appendix D of the revised land management plan.		x	x	The numbers in appendix D of the 2018 land management plan were updated based on the land allocations in the final 2019 plan. The final acreage of lands suitable for timber production is 74,814. This is slightly different than the acreage in Alternative B-modified.
Ensure that the timber volume, subtype, and units are consistent through all documents.	x	x	x	Ensured that the acres of lands suitable for timber production, timber volume, sustained yield limit, project wood sale quantity and its subset, projected timber sale quantity; all use the same units and have the same value throughout the project record. Each measure and its units are also more clearly defined as they are used throughout the ROD, FEIS, and the land management plan.
Clarify that all elements of the required plan content for the planned timber sale program in appendix D are a part of the plan. This could be done by moving part of this section into the plan, or incorporating appendix D into the body of the plan by reference. Clarify in the ROD that all elements of the plan are part of the decision.	x		x	Added to body of the plan, under *lands suitable for timber production*: “Appendix D contains more detailed information about areas suitable for timber production, estimated timber volume and sustained yield, and vegetation management practices that will be implemented under this plan. Appendix D is contained within this plan and all elements of appendix D are incorporated into the plan.” Added to the ROD under *Nature of this Decision:* “All information in the Plan, including appendices, are part of this decision.” Also added in the ROD, under *Decision and Rationale for the Decision,*” My decision also incorporates the guidance in Appendix D of the Final Plan regarding timber suitability and management.”

Instruction	Plan Change	FEIS Change	ROD Change	Description of instruction or suggestion implementation
Consider rewording TERR-CES-GDL-04 as requested by objector SFL, which would not materially change the intent or meaning, but might help to clarify that timber value is balanced against other considerations – "TERR-CES-GDL-04 Post disturbance restoration projects should be designed to recover some of the value of timber killed or severely injured by the disturbance."	x			Made the change as suggested. The guideline now reads, "04 Post-disturbance restoration projects should be designed to recover some of the value of timber killed or severely injured by the disturbance."
Clarify, pointing to science, how retaining complex early seral forests according to TERR-CES-GDL-05 is sufficient to provide for wildlife habitat, soil productivity, and ecosystem function.		x		Inserted additional text in the Complex Early Seral section of the FEIS to clarify how TERR-CES-GDL 05 is sufficient for resource protection.
Clarify how the fire specific-guidance for retention of 10 percent of CESF (TERR-CES-GDL 05) relates to the early seral forest category for vegetation type desired conditions (plan, table 1, pg. 18). This could include descriptions of how CESF structure and composition are influenced by overly dense forest stands that developed during fire suppression, and lack of reference conditions for landscape proportions of varying CESF structures and compositions.		x		Inserted additional text in the Complex Early Seral section of the FEIS to explain salvage retention and how it will move the forest toward desired conditions
Determine if the black-backed woodpecker conservation strategy is BASI. If it is, then it should be included in the updated BASI summary table and the determination made in the basis for BASI determination spreadsheet. If it is, but the plan decision is contrary to the BASI, then the other factors that influenced the decision should be described. If it isn't BASI, then that should be documented as well.		x		Determined that the strategy is BASI, however black-backed woodpecker is not a SCC so the strategy was not used to build plan components. Added the new citation to the updated 2019 SCC rationale document (pages 171-173) as well as FEIS (excavator section). See additional notes in BASI summary table in the project record and posted as supporting document on the project website.
In order to address the objector's issue with the best available scientific information for the TERR-FW-STD-01 diameter limit, the project record should describe, with references, why the 30-inch-diameter limit was established when the supplemental report describes multiple ranges. In particular, it should describe why the 24 inch diameter limit, per McIntyre et al. 2015, was not used. The project record should also explain why a single diameter limit was set for the plan area. This explanation should focus on how the BASI was used to inform the decision.	x	x		Inserted additional text in the Old Forests section of the final EIS with the subhheading "Old forest management and diameter limits"; edited the land management plan standard TERR-FW-STD 01 to clarify that trees over 40 inches dbh will not be removed except for safety. They are not subject to the exemptions for cutting trees over 30 inches.

Instruction	Plan Change	FEIS Change	ROD Change	Description of instruction or suggestion implementation
Clarify table 3 (plan, pg. 18) to address snags at the stand and patch scale.	x			Changed caption for table 3 in the 2019 land management plan to: Table 3. Snags and large logs at landscape scale in unburned and low to moderate severity burn patches. Also added a table note: Snag densities may exceed the upper limit in small patches (tens of acres) especially following moderate severity fire.
Provide the rationale for the amount of complex early seral forest directed for retention in TERR-CES-GDL-05 and tie it to the best available science and the natural range of variability (NRV) of complex early seral forest.		x		Inserted additional text in the Complex Early Seral section of the FEIS to address this issue.
Clarify that MA-RCA-STD-1 (the water temperature standard) does not preclude some vegetation removal or required safety actions for utility corridor management. Alternatively, include language in the revised land management plan that exempts all special use permits, including utility special use permits, from this standard.	x			The standard was modified to read: 01 Ensure that management activities do not adversely affect water temperatures necessary for local aquatic- and riparian-dependent species assemblages, unless vegetation removal or other actions are required for safety or mandated by state and federal regulations (such as vegetation clearances around utility lines). We did not make the changes to MA-RCA-GDL-07 because the guideline already includes language allowing the forest supervisor to make exceptions.
Include plan language to recognize that utility companies need to adhere to other laws and policies relevant to their infrastructure management.	x			Added to the Lands plan components introduction: “Plan components may be adjusted or excepted on a case-by-case basis in order to allow for compliance with State and federal laws and regulations, such as those governing utility line safety.” Added the following statement to the ROD, “Land uses such as utility corridors must comply with a host of State and Federal laws and regulations. This plan should not interfere with or supersede other laws and regulations special use permits must follow”.

Instruction	Plan Change	FEIS Change	ROD Change	Description of instruction or suggestion implementation
Clarify in the record why the wording of MA-RCA-STD 13 was changed in the revised plan from Standard 117 in the current plan, and how the changed language does not impart a different/lower level of protection for special aquatic features.	x			In the plan, standard MA-RCA-STD 13 (now STD 11, numbering changed based on other edits detailed below) was changed as follows: Assess the hydrologic function of riparian areas, meadows, fens, and other special aquatic features during rangeland management analysis. Ensure that characteristics of special features are, at a minimum, at proper functioning condition or functioning at risk and trending toward proper functioning condition, as defined in appropriate technical reports. If systems are functioning at risk ensure that grazing practices are not retarding rates of natural recovery and assess appropriate actions to move towards a proper functioning condition. Also altered RANG-FW-STD 07 to reflect the change to language in MA-RCA-STD 11.
Clarify that the intent behind guideline LAND-FW-GDL 02 is to have the least amount of impact to resources including soil temperature and habitat, and not create greater impacts. The remedy requested by the objector would be one way to clarify the intent of this plan component.	x		x	The guideline was modified to, "Where feasible, and less impactful to resources than overhead facilities, bury new or reconstructed power distribution lines (33 kilovolts or less) and telephone lines to reduce impacts to resources such as scenery and at-risk species habitat." Used language from objectors, but added "...to resources" to ensure that "less impactful" was not applied as less impactful to the utility. Also, under the "Nature of the Decision" section in the ROD, a general statement was added clarifying that federal and state laws and regulations governing permits may supersede land management plan direction.
Describe the rationale for the new 20% fen disturbance limitation in the record. Clarify why this disturbance limitation is not different from current management, and include the rationale, based on science, for this disturbance limitation.	x			Removed the standard MA-RCA-STD 08, due to lack of scientific consensus on percent fen disturbance. The 20% standard was based on a draft report that was never finalized and should not have been relied upon. Also combined fen standards MA-RCA-STD 10 and 11, into one standard, MA-RCA-STD 09, "Avoid or mitigate ground - disturbing activities (e.g. trampling from livestock, pack stock, wheeled vehicles, people and roads) that adversely affect hydrological processes that maintain water flow, water quality, or water temperature critical to sustaining fen ecosystems and the plant species that depend on these ecosystems." This addresses impacts to fens, so the 20% standard isn't necessary.
Include a summary in the ROD of the analysis within FEIS Volume 1 and FEIS, appendix F that provides an explanation of how the plan components meet the diversity requirements of § 219.9.	x			Added more information explaining how the plan meets diversity requirements in 219.9, and in the ROD, referred to page numbers from the FEIS when describing how we met the Planning Rule's diversity requirements.

Instruction	Plan Change	FEIS Change	ROD Change	Description of instruction or suggestion implementation
Consider the scientific article North et al. 2017, US Fish and Wildlife Service 2017, and Jones et al. 2016 concerning the California spotted owl, and make a determination of whether they should, or should not, be included as BASI. If they are considered BASI, reflect in the project record, and use to inform plan development. If t not considered BASI and contradictory to the BASI, then that should be noted in the project record. If these publications are considered BASI, but the plan decision is based on other relevant factors, then those relevant factors should be described in the record of decision.		x		All three documents are BASI and were added to the BASI spreadsheet. Context of their use is important to consider for relevance of information. On related topic of BASI and non-BASI citations from objectors (Issue Fire-3), additional text and references were provided in the Terrestrial Ecosystems section of FEIS for greater clarification.
The BASI Summary Table should be reviewed for consistency with the other scientific information references used in the project record to analyze impacts to California spotted owl.		x		New BASI added to FEIS and also the updated 2019 SCC rationale document in the project record (pages 39-43-summary and references). The new references did not change findings or analysis, because it was consistent with previous scientific information.
For all of the scientific information submitted – in a timely manner – by the objectors, document whether or not it is the BASI per the 2012 planning rule. For decisions that are counter to the BASI, or where there is a lack of consensus about BASI, describe the other relevant factors that informed the plan decision.		x		The project record includes tables showing whether the Forest considered submitted documents as BASI or not, and providing rationale for that decision, which will be filed on the project website. Most of the submitted information was already cited in the project record, either directly or because it was referred to in the Science Synthesis. New literature, where it provided new information, was added to the citations within the FEIS.
For the persistence analysis (project website and https://www.fs.usda.gov/goto/SCC) make sure all of the BASI is used to support the rationales for the species-specific plan components.				The persistence analysis supports and complements the effects analyses for SCC–it was only completed for the preferred alternative. The focus of the persistence analysis is how the plan components mitigate risk for each SCC and ensure viability across the landscape. References included are not contradictory to the FEIS. New BASI submitted by objectors was added to the persistence analysis and rationale document.

Instruction	Plan Change	FEIS Change	ROD Change	Description of instruction or suggestion implementation
For each place in the project record (e.g., environmental consequences, persistence analysis, biological evaluation), make sure the BASI citations used are consistent with the conclusions being made on any particular subject. When review articles are identified in the Updated BASI Summary Table, consider using the original research citations in the FEIS.		x		To address literature submitted by the objectors regarding California spotted owl, all literature was reviewed and determined whether it is considered BASI or not. Literature found to be BASI, was added as citations to the FEIS and Species of Conservation Concern (SCC) rationale document (updated June 2019). The new literature found to be BASI was consistent with what was already in the FEIS. Some references brought forward by the objectors were inconsistent with FEIS analysis, and these were added to a table showing literature that we found to not be BASI, and the rationale was documented in the BASI tables in the project record (included as a supporting document on the project website).
Remove the Destination Recreation Area exemption language.	x			The language regarding California spotted owl exemptions was deleted in its entirety. All plan components related to California spotted owl changed between the 2018 and 2019 land management plan, because the final decision was to choose alternative A, selected only for California spotted owl management, which in the case of California spotted owl is the retention of the 2004 Sierra Nevada land management plan amendment direction.
Clarify the record related to removing protected activity centers.	x			All California spotted owl plan components in Chapter 2, Ecological Sustainability and Diversity/Animal and Plant Species/California Spotted Owl section of the plan were replaced with plan components implementing alternative A, the no-action alternative. Alternative A was selected only for California spotted owl management. The direction in the 2004 Sierra Nevada land management plan amendment was used, though the language is different because it was converted to meet the requirements of the 2012 Planning Rule. Therefore, the direction on removing protected activity centers is no longer in the 2019 land management plan.

Instruction	Plan Change	FEIS Change	ROD Change	Description of instruction or suggestion implementation
The responsible official should consider if the Bi-State Sage grouse Technical Advisory Committee (TAC) (meeting, July 18, 2018), 2018 survey data, and the sage grouse related scientific articles Tymstra et al. 2018, Lammers and Collopy 2007, Prather and Messmer 2010, Slater and Smith 2008, and Dwyer and Doloughan 2014 are BASI. If they are considered BASI, that should be reflected in the project record (see the Updated BASI Summary Table and BASI basis for determination spreadsheet), and used to inform plan development (e.g., updated plan components, the plan decision, the monitoring program). If the TAC 2018 survey data, or articles are not considered BASI and contradictory to the BASI, then that should be noted in the project record. If the TAC 2018 survey data, or the articles are considered BASI, but the plan decision is based on other relevant factors, then those relevant factors should be described in the record of decision.	None	None	None	The information presented at the 2018 TAC meeting was preliminary, and is not available for the public or the Inyo National Forest staff as of this time. The information was shared by USGS staff in an informal presentation, for information only. While Forest employees did see that information, it is not yet available in print form, and has not yet been finalized. Therefore, this citation cannot be added to the project record, because it is not yet available. The information was related to the Long Valley population of bi-state sage grouse, and the preliminary finding was that the Long Valley population may not be continuing its upward trend, but the other populations continue to have an upward trend. The Long Valley population is mostly dependent on conditions on land other than the Inyo National Forest. The Forest did consider that preliminary information, but nothing shared in that information would change the land management plan content or the analysis of effects from this plan. The plan components are protective of the sage grouse, despite any change in status, or change in population for one management unit. The population information may be released within the next few months, as part of a USGS report, and the Forest will consider that information in future project-level decisions. The other literature was reviewed and included in the BASI tables of the 2019 land management plan.
The BASI summary table should be reviewed for availability of the information (e.g., the objector references a 7 inch stubble height but does not provide a citation) and consistency with the other scientific information references used in the project record to analyze impacts to bi-state sage grouse. In particular, Coates et al. 2014 should be subject to a BASI determination, given that it is cited by the objector and used extensively in the FEIS. The identification of BASI, does not need to "includ[e] thorough studies that scientifically compare control plots with treatment plots" as suggested by the objector because BASI is limited to scientific information that is available, not any information that could be collected.		x	x	BASI determination tables were updated and will be included on the project website. Coates et al. 2014 was added to the table and considered as BASI. It had already been used as a citation throughout the FEIS, so the addition of this literature to the BASI table does not affect any findings on sage grouse or change any of the plan direction or FEIS analysis. The ROD also contains additional language acknowledging the changed status. On p. 52, the following was added: "Since the publication of the Draft ROD, the Pacific fisher and the bi-state sage grouse have been reconsidered for listing, and are now proposed threatened species under the Endangered Species Act, but a final determination has not yet been made. The U.S. Fish and Wildlife Service's biological opinion stated that the Forest would not need to reinitiate consultation if a new species was listed within 15 years of plan adoption. Regardless of the status, the land management plan is protective of these species, and the new status does not change the finding of continued persistence."

Instruction	Plan Change	FEIS Change	ROD Change	Description of instruction or suggestion implementation
New information related to the court ruling related to the bi-state sage grouse should be incorporated into the project record.		x	x	A statement that the bi-state sage-grouse is currently proposed for listing as threatened was added to the SCC persistence analysis (which was moved to a separate document posted on the project website and at https://www.fs.usda.gov/goto/SCC), the ROD, and the 2019 land management plan. The ROD contains the clarification, "In May of 2018, the bi-state sage grouse status of the greater sage-grouse bi-state distinct population segment (hereafter called bi-state sage-grouse) changed to "candidate for listing", due to a court ruling, and is undergoing a new review for listing. Because of the changed status, the bi-state sage-grouse was removed from the Regional Forester's SCC list. This change in status does not affect plan components, because they were already protective of sage grouse." (p. 10).
Clarify in the record how the sage grouse related plan components from the Humboldt-Toiyabe Amendment were incorporated, or were not incorporated, and why. Specifically address the threat posed by energy development (wind/solar/mining), herbicide application, tall structures, and livestock facilities on the Inyo, and how Revised Plan direction provides for persistence in light of those threats.		x		Added explanation to the response to comments why the Forest did not use the Humboldt-Toiyabe sage-grouse plan amendment components with specific numerical desired conditions, because the scientific evidence does not support the Inyo National Forest having the same numerical desired conditions. Also revised the persistence analysis for the sage-grouse to highlight how this issues is addressed in plan components.
The BASI Summary Table should be reviewed for consistency with the other scientific information references used in the project record to analyze impacts and support the decision. Specifically, Manier et al. 2014 should also be evaluated for inclusion as BASI.		x		Manier et al. 2014 was evaluated for inclusion in the updated BASI tables. While it was used as a reference, and provided a good compendium of information about buffer distances for protecting greater sage-grouse nests, it was not considered BASI because it was not entirely relevant to the plan area. It was not specific to the bi-state population of greater sage-grouse, and covered the entire state of Nevada. The article also did not suggest specific buffer distances, but summarized the results of different studies regarding distance of nests from leks, and therefore made conclusions about the percent of nesting habitat that could be protected by buffers. Further, the bi-state Action Plan did not require specific buffers, and the Action Plan is the most recent, best available science for the bi-state distinct population segment.

Instruction	Plan Change	FEIS Change	ROD Change	Description of instruction or suggestion implementation
Clarify in the FEIS the history of Forest Order No. 05-04-50-18-05 and that the pack goat use restrictions pursuant to this Order were executed separately from this planning process. Also, clarify in the FEIS that the Forest Order is temporary and that any future actions would be taken if determined necessary, consistent with this plan revision.		x		Added the following explanation of the forest order to the FEIS: *"*In July of 2018, the Inyo National Forest Supervisor signed Forest Order No. 05-04-50-18-05, which prohibited possessing or storing a goat in all of the Inyo National Forest west of U.S. Highway 395. The order was executed separately from this planning process, in response to bighorn species movement data presented in April of 2018. The order contributed to Recovery Task 2.3.1 of the Recovery Plan for the Sierra Nevada Bighorn Sheep, to prevent contact between Sierra Nevada bighorn sheep and domestic sheep or goats. The order is temporary, effective through July 30, 2020, and any future actions will be taken if determined necessary, consistent with the final plan.*"*
Review the scientific information provided in the USFWS biological opinion (e.g., Drew and Weiser 2017, Besser *et al*. 2017, Heffelfinger 2004, Jansen *et al*. 2006, Cahn *et al.* 2011) and determine if it should also be identified as BASI in the project record. If this information is considered BASI it should be used to inform the plan decision and a description of how it was used to inform the plan decision should be included in the project record. If scientific information is found to contradict the BASI, then that should be documented in the basis for the BASI determination as well.		x		All of these citations were added to the BASI table in the project record and displayed on the project website, because information in them was relevant to the analysis of potential effects to bighorn sheep. They were used for background information about disease transmission to bighorn sheep, but were not used as the sole information to create plan components protective of bighorn sheep. The biological opinion from the USFWS explains how the USFWS recommended that pack goats not be suitable in areas where best available information indicates a high risk of contact with Sierra Nevada bighorn sheep.
Clarify the bighorn sheep suitability standard (SPEC-SHP-SUIT 01) in the revised land management plan to allow for mitigations of disease transmission risk.	x			Changed SPEC-SHP-SUIT 01 to: Domestic sheep or goats, including pack goats, are not suitable within the high risk area of disease transmission to Sierra Nevada bighorn sheep identified in the most recent bighorn sheep risk assessment, <u>unless the risk can be mitigated.</u>

Instruction	Plan Change	FEIS Change	ROD Change	Description of instruction or suggestion implementation
Clarify how and/or when “places people visit for high quality viewing experiences” is determined. Ensure that terminology in the phrase is consistent with that used in Landscape Aesthetics: A Handbook for Scenery Management (USDA, 1995).	x			Changed desired condition to: SCEN-FW-DC 03 to: In places with distinctive scenic attractiveness, and in “special places”, scenic integrity is maintained or improved to assure high quality viewing experiences. ~~Scenic integrity is maintained in places people visit for high quality viewing experiences~~. The Inyo National Forest’s scenic resources complement the recreation settings and experiences, as described by the range of scenery integrity objectives, while reflecting healthy and sustainable ecosystem conditions. The desired distribution of scenic integrity objectives is displayed in figure 8, appendix A Added footnotes to define “places with distinctive scenic attractiveness”, and “special places”, using definitions from the *Landscape Aesthetics: A Handbook for Scenery Management (USDA, 1995).*
Clarify the distinction between winter recreation use (current, not desired, conditions) and the summer ROS desired conditions, and clarify the intent of the winter recreation use map (referred to as the winter ROS map in the project record).	x			Addressed by agreement with objectors. Changes include removing the winter ROS map from the plan, removing all references to winter ROS from the FEIS and plan, and committing to a collaborative process to determine appropriate over snow vehicle use, as part of the Travel Management Rule (36 CFR Part 212, Subpart C) (page 37 of the ROD), beginning within one year of the Plan approval.
Clarify in REC-FW-DC-11 that the winter ROS map actually reflects current conditions, not desired conditions.	x			Addressed by agreement with objectors. Changes include removing the winter ROS map from the plan, removing all references to winter ROS from the FEIS and plan, and committing to a collaborative process to determine appropriate over snow vehicle use, as part of the Travel Management Rule (36 CFR Part 212, Subpart C) (page 37 of the ROD).
Clarify that the ROS tables in the Sustainable Recreation Management Areas section of the revised plan provides additional information on the recreation opportunities and settings for each area, while the Forest-wide desired condition REC-FW-DC-11 actually describes the ROS desired conditions.	map removed			Addressed by agreement with objectors. Changes include removing the winter ROS map from the plan, removing all references to winter ROS from the FEIS and plan, and committing to a collaborative process to determine appropriate over snow vehicle use, as part of the Travel Management Rule (36 CFR Part 212, Subpart C) (page 37 of the ROD).
The FEIS, Plan, and ROD should be reviewed to ensure consistency in how the winter ROS map is described, (current conditions, not desired).	x			Addressed by agreement with objectors. Changes include removing the winter ROS map from the plan, removing all references to winter ROS from the FEIS and plan, and committing to a collaborative process to determine appropriate over snow vehicle use, as part of the Travel Management Rule (36 CFR Part 212, Subpart C) (page 37 of the ROD).

Instruction	Plan Change	FEIS Change	ROD Change	Description of instruction or suggestion implementation
Either clarify or delete the statement in the FEIS that states adding the winter ROS settings "would be a positive effect to winter recreation opportunities, both motorized and non-motorized," as there is no explanation provided.		x		Addressed by agreement with objectors. Changes include removing the winter ROS map from the plan, removing all references to winter ROS from the FEIS and plan, and committing to a collaborative process to determine appropriate over snow vehicle use, as part of the Travel Management Rule (36 CFR Part 212, Subpart C) (page 37 of the ROD).
Clarify how the forestwide and management area plan components for areas that overlap the inventoried roadless areas, meet the purpose of the roadless rule "to provide lasting protection for inventoried roadless areas within the National Forest System in the context of multiple-use management." Clarify the description of inventoried roadless area management on page 106 of the plan.	x		x	Added desired conditions, guidelines and suitability components for inventoried roadless areas to the land management plan.
Ensure that outstandingly remarkable values provided in public comments are addressed in FEIS tables.		x	x	The Forest found all the suggested stream segments in the Mono Lake Basin to be eligible, other than Wilson Creek, based on reconsideration of outstandingly remarkable values suggested by objectors. Outstandingly remarkable values suggested by the objectors were added in appendix C (wild and scenic rivers evaluation) and in the final Wild and Scenic River table in the ROD (Table 1). All outstandingly remarkable values were added other than adding the Mono Lake Public Trust decision as a "historic" outstandingly remarkable value, because that decision did not fit the definition of a historic outstandingly remarkable value and there is no on-the-ground resource that the Forest could protect.
Consider as outstandingly remarkable values those segments restored as a result of the Mono Lake Public Land Trust Decision and identified to have nationally significant scenery within the Mono Lake Scenic Area;		x	x	The Forest found all the suggested stream segments to be eligible, except Wilson Creek, based on reconsideration of outstandingly remarkable values suggested by objectors. The Forest did not find Wilson Creek to be eligible because it is a man-made ditch and does not have outstandingly remarkable values. The Mono Lake Public Land Trust Decision is not an outstandingly remarkable value because it does not fit the definition of a "historic" outstandingly remarkable value (as suggested by objectors), and there is no resource on-the-ground that the Forest could protect.

Instruction	Plan Change	FEIS Change	ROD Change	Description of instruction or suggestion implementation
Evaluate river segments that cross the City of Los Angeles land, and document this evaluation in the WSR evaluation and in the FEIS.		x	x	The Forest evaluated the segments across Los Angeles Department of Water and Power (LADWP) land and found them to be eligible, based on their free-flowing character and having at least one outstandingly remarkable value. There was little difference between the streams on LADWP land and on Forest land upstream and downstream from the segments on LADWP land and non-Forest land is not a reason to find a segment not eligible.
Clarify if the two upper miles of the eligible segment of O'Harrel Canyon Creek was considered and determined ineligible for classification as "wild." If not, consider modifying the classification.		x	x	In response to objections, the Forest changed the preliminary classification of the upper 2 miles of O'Harrel Creek to "wild", based on the lack of roads, trails, or other development in the area.
Remove or edit the language in the draft record of decision, (Wild and Scenic Rivers, p. 20) related to "further review and possible modification by the Chief of the Forest Service, Secretary of Agriculture, or the President of the United States" to be consistent with policy.			x	Removed the language in the ROD, because it is not an accurate statement for an eligibility finding.
Clarify whether fixed anchors would be completely prohibited in recommended wilderness (and the mechanism for this prohibition) or whether they would be allowed (new or maintenance of existing) with the assistance of hand tools that are non-motorized.		x		Modified the following sentences on p. 541 and 543 of the FEIS: "Therefore, wilderness recommendations in the draft plan would not affect existing climbing opportunities, it would only prohibit the potential for developing future climbing routes <u>using power drills to install fixed anchors.</u> On p. 52 of the FEIS, the text was revised to read: "If all evaluated areas were recommended as wilderness on the Inyo National Forest, two additional recreation activities could be affected: rock/mountain climbing and mountain biking. Mountain climbing is a major draw to the Bishop, California area, and a part of its identity. It provides substantial economic value through tourism and equipment provision. Climbing is allowed as a primitive type of recreation activity in designated wilderness and recommended wilderness. Recommended wilderness would have no effect on the ability of people to rock climb in a currently developed or future climbing area. However, power tools would be prohibited in recommended wilderness areas, and therefore could no longer be used to install fixed anchors (bolts) to develop new climbing routes. This could affect the ease by which new climbing routes could be installed if the route developer wanted to use fixed anchors on the route. "

Instruction	Plan Change	FEIS Change	ROD Change	Description of instruction or suggestion implementation
Provide clarification in the Recommendation section of the FEIS appendix B on the factors/criteria used in deciding which polygons to include as recommended wilderness from the set of polygons that were analyzed (i.e., the process used). Ensure this clarification explains in more detail how the responsible official considered the analysis and input received from the public and how that resulted in the decision to recommend the four polygons and not recommend the others.			x	In response to objections, three more polygons, analyzed in alternative C, were added to the final decision, along with the four polygons from alternative B-modified. The rationale in the final ROD was modified to better explain why the seven polygons were chosen as recommended wilderness, while other polygons considered under alternative C were not. The final ROD clarified that the decision is not solely a technical inventory process, but that the Forest Supervisor carefully considered tradeoffs between managing the areas as recommended wilderness and managing them as other land allocations, as well as input from the public.
Clarify in the ROD how the responsible official considered the analysis and input received from the public and how that resulted in the decision to recommend the four polygons versus those not recommend.			x	In response to objections, three more polygons, analyzed in alternative C, were added to the final decision, along with the four polygons from alternative B-modified. The rationale in the final ROD was modified to better explain why the seven polygons were chosen as recommended wilderness, while other polygons considered under alternative C were not. The final ROD clarified that the decision is not solely a technical inventory process, but that the forest supervisor carefully considered tradeoffs between managing the areas as recommended wilderness and managing them as other land allocations, as well as input from the public.
Review the FEIS appendix B wilderness evaluation to ensure that existing activities and improvements are brought up in the context of impacts to apparent naturalness (or other wilderness characteristics if applicable). Update the evaluation narratives accordingly if necessary.		x		The evaluation and analysis sections of the FEIS appendix B were modified to: describe sights and sounds from outside evaluated and analyzed areas in terms of the pervasiveness of their impacts on opportunities for solitude; provide consistency in consideration of ecological representation; provide consistency in information across the evaluation section; and provide consistency in descriptions of impacts to apparent naturalness. The FEIS and appendix B were also updated to clarify that restoration activities for at-risk species, or wild horse management, would not be prohibited in recommended wilderness.
Review and modify the evaluation and analysis sections of the FEIS appendix B to ensure that sights and sounds from outside the evaluated area are not simply mentioned, but described in terms of their pervasiveness and influence on a visitor's opportunity for solitude within the area.		x		The evaluation and analysis sections of the FEIS appendix B were modified to: describe sights and sounds from outside evaluated and analyzed areas in terms of the pervasiveness of their impacts on opportunities for solitude.
Review and modify the evaluation and analysis sections of the FEIS appendix B to ensure that there is consistency in how ecological representation is considered in selecting an area for further analysis as recommended wilderness.		x		The evaluation and analysis sections of the FEIS appendix B were modified to provide consistency in consideration of ecological representation.

Instruction	Plan Change	FEIS Change	ROD Change	Description of instruction or suggestion implementation
Clarify what projects, uses (such as guzzlers and guzzler maintenance), and activities are allowed within recommended wilderness under the revised plan and how that impacts at-risk species and ecological integrity, including beneficial impacts. Address the science that is brought up by the objectors related to benefits of wilderness.	x			Suitability components for recommended wilderness were rewritten (MA-RWLD-SUIT). Desired condition and suitability plan components had references to the Wilderness Act removed, because the Wilderness Act does not apply to recommended wilderness. The suitability components were changed to clarify the actions that could occur in recommended wilderness areas. The following was added to MA-RWLD-SUIT, partially meeting the working group recommendation: "*Where applicable, man-made water sources (guzzlers) or spring enhancements may be used to help mitigate negative impacts on wildlife or encourage at-risk species. It is recognized that effective maintenance and operation of water source enhancements may require use of motorized transportation and tools. Requests for man-made water sources will be considered at a project level, and may be authorized by the Forest Supervisor*." This change does not fully meet the request of the working group, who asked that guzzler access also be excepted in designated wilderness. The Forest Supervisor chose not to allow guzzlers special exceptions in designated wilderness, as use of motor vehicles and permanent structures or installations are prohibited in designated wilderness under the Wilderness Act.
Clarify in the record why historic post-fire harvest levels, and economical, legal, and technical harvest limitations indicate the potential for future post-fire logging of black-backed woodpecker habitat would be under 33 percent per year.			x	For the most part, this information already existed in the SCC rationale document for the black-backed woodpecker. Added additional information from to ROD and SCC rationale documents clarifying language on percent harvested.
Clarify in the record with specific information related to past average acres burned in northern goshawk habitat and projected future acres burned		X (rationale document, supporting the FEIS)		Added information on past average acres burned and future acres burned to page 208 of the goshawk SCC rationale document.

In addition to the instructions addressed above, changes were made in response to the following suggestions from the reviewing officer in the objection response letter.

1. Consider modifying TIMB-FW-DC-03 language as suggested by the objector or in some other way to clarify that salvage is not required when fires burn within desired conditions.
2. Clarify how plan components that discourage salvage logging in areas burned by moderate severity fire, or patches of high severity fire within natural range of variation, that are within desired conditions, would be balanced against plan components that encourage recovering value from fire-killed timber.
3. Use consistent terminology and/or clarify the distinction between terms used, including: 1) The terms carbon stocks, carbon sequestration, and carbon stability in the Carbon Supplemental Report; and 2) The terms carbon carrying capacity in TERR-FW-DC, carbon storage capacity in TIMB-FW-DC, carbon storage in TIMB-FW-STD, and carbon carrying capacity and carbon storage in TIMB-FW-GDL.
4. In order to address the objector's issue with the vagueness of the term "overstocked", define overstocking (i.e. stocking that is outside of desired conditions for a particular forest type or location).
5. Clarify WTR-FW-STD-01 to specify exactly what from the other documents (best management practices) will be used as the management direction.
6. Clarify that rest of a grazing allotment is a potential management tool if conditions are not properly functioning, or functioning at risk with an upward trend.
7. Consider referring to FSM 2100, Chapter 2150, as relevant policy for integrated pest management approach.
8. Clarify in the record how the revised plan direction sufficiently protects sage grouse wintering habitat on the Inyo National Forest, to be consistent with the discretionary Conservation Recommendations provided in the revised plan programmatic biological opinion.
9. Consider including the list of species of conservation concern in the plan. If a list is provided, ensure consistency between what is put into the plan and what is in the response to comment and ensure that the record explains the process for revising the list with the clarification that no plan amendment would be required.
10. Clarify the basis for using 5 feet as a proxy for the observer in identifying the foreground under the Scenery Management System.
11. Clarify in the final EIS that the NEPA does not require a full revised plan be developed for each alternative in order to compare effects between alternatives. There is sufficient information in the alternative descriptions to compare indicators between the alternatives.
12. Consider removing the final EIS statement regarding "nature and purposes" of the Pacific Crest National Scenic Trail, as it is not necessary and reduces clarity concerning Pacific Crest National Scenic Trail requirements.
13. Clarify in the final EIS the following items related to guzzlers in recommended wilderness areas: validate guzzler description on p. 50; ensure the FEIS is properly referencing the appropriate plan components; clarify the impacts (who is responsible for maintenance, impacts of no new guzzlers, potential future designation of wilderness and associated guzzler removal).
14. Clarify in the ROD and final EIS if all of the inventory and evaluation areas that are included in alternative C but not in alternative B-modified would be managed as Challenging Backroad

Recreation Areas. If they are not all going to be managed as such, clarify how those areas would be managed.

15. Clarify that designations of roads, trails and areas (in particular, cross-country off-highway vehicle use in the Poleta area) made in the 2009 travel management decision will not change in the revised plan.
16. Add the Wild and Scenic Rivers Act to the list of "Findings Required by Other Laws and Relevant Directions" section of the Draft ROD (P 31-35).

The following changes were made for clarification or to fix an error in the record.

1. Corrected the date of the carbon supplemental report included in the record (cited as a 2017 document, but has a 2016 date).
2. Corrected the title of the carbon supplemental report (currently titled "Name of Project").
3. Included an inventoried roadless area map in appendix A of the revised plan.
4. The term "electronic sites" was replaced with "communication sites" in LAND-FW-GDL-03 in the final land management plan, for consistency with Forest Service handbook terminology.
5. Included definitions and/or clarifying use of the terms road, trail, route and area.
6. In order to address the objector's issue with the vagueness of the term "overstocked", defined overstocking (i.e. stocking that is outside of desired conditions for a particular forest type or location).
7. Moved TERR-CES-GOAL 01 to TERR-FW-GOAL 02. A goal previously applying only to complex early seral ecosystems (TERR-CES-GOAL 01) was moved into the Forestwide section so that it applies to all forested ecosystems (becoming TERR-FW-GOAL 02). I made this change because this goal about restoration projects following stand replacing events should be the same across the entire forest, and it was an error to only include it in the complex early seral portion of the 2018 land management plan.
8. Corrected some wild and scenic river eligibility mapping and inventory errors. Most were due to segments under reservoirs and large lakes being previously mapped as "free flowing" and in some cases eligible. However, reservoirs are not free flowing, and these segments were mistakenly included in the 2018 version of the plan. The plan, final EIS (including appendix C), ROD, and maps within those documents were changed to reflect these corrections. Corrections were not made to alternative analyses throughout the final EIS, because alternatives did not change. Only the final decision changed, and the eligibility and inventory results documented in appendix C of the final EIS.

References

Chambers, J.C., Roundy, B.A., Blank, R.R., Meyer, S.E. and Whittaker, A., 2007. What makes Great Basin sagebrush ecosystems invasible by Bromus tectorum? Ecological Monographs, 77(1), pp.117-145.

Clark, R.N. and Stankey, G.H., 1979. The recreation opportunity spectrum: a framework for planning, management, and research. Pacific Northwest Forest and Range Experiment Station. Gen. Tech. Rep. GTR-PNW-98. December 1979.

Dickard, M., M. Gonzalez, W. Elmore, S. Leonard, D. Smith, S. Smith, J. Staats, P. Summers, D. Weixelman, S. Wyman. 2015. Riparian area management: Proper functioning condition assessment for lotic areas. Technical Reference 1737-15. U.S. Department of the Interior, Bureau of Land Management, National Operations Center, Denver, CO.

English, D.B., Kocis, S.M., Zarnoch, S.J. and Arnold, J.R., 2002. Forest Service national visitor use monitoring process: research method documentation. Gen. Tech. Rep. SRS-57. Asheville, NC: US Department of Agriculture, Forest Service, Southern Research Station. 14 p.

Headwaters Economics, 2018, Economic Profile System, https://headwaterseconomics.org/tools/economic-profile-system/tech-info/, Bozeman MT date visited January 12, 2018.

Hessburg, P.F., Churchill, D.J., Larson, A.J. 2015. Restoring fire-prone Inland Pacific landscapes: seven core principles. Landscape Ecology 30:1805-1835.

IMPLAN Group LLC, 2016. IMPLAN System (data and software). 16905 Northcross Dr., Suite 120, Huntersville, NC 28078. www.IMPLAN.com.

Knick, S. and Connelly, J.W. eds., 2011. Greater sage-grouse: ecology and conservation of a landscape species and its habitats (Vol. 38). Univ. of California Press.

Landres, P., Boutcher, S., Merigliano, L., Barns, C., Davis, D., Hall, T., Henry, S., Hunter, B., Janiga, P., Laker, M. and McPherson, A., 2005. Monitoring selected conditions related to wilderness character: a national framework. RMRS-GTR-151. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station.

Long, J. W., L. Quinn-Davidson, and C. N. Skinner. 2014. Science Synthesis To Support Socioecological Resilience in the Sierra Nevada And Southern Cascade Range. Gen. Tech. Rep. PSW-GTR-247. Albany, CA: U.S. Department of Agriculture, Forest Service, Pacific Southwest Research Station. 723 p.

Mazor, R.D., Rehn, A.C., Ode, P.R., Engeln, M., Schiff, K.C., Stein, E.D., Gillett, D.J., Herbst, D.B. and Hawkins, C.P., 2016. Bioassessment in complex environments: designing an index for consistent meaning in different settings. Freshwater Science, 35(1), pp.249-271.

Meyer, M.D and North, M. 2019. Natural range of variation (NRV) of red fir and subalpine forests in the Sierra bioregion. Gen. Tech. Rep. PSW-GTR-263. Albany, CA: USDA Forest Service, Pacific Southwest Research Station. 135 p.

Meyer, M. D. 2013a. Natural range of variation (NRV) for red fir forests in the bioregional assessment area. USDA Forest Service.

Meyer, M. D. 2013b. Natural range of variation (NRV) for subalpine forests in the bioregional assessment area. USDA Forest Service.

Miller, J. D., E. E. Knapp, C. H. Key, C. N. Skinner, C. J. Isbell, R. M. Creasy, and J. W. Sherlock. 2009. "Calibration and validation of the relative differenced Normalized Burn Ratio (RdNBR) to three measures of fire severity in the Sierra Nevada and Klamath Mountains, California, USA." Remote Sensing of Environment 113 (3):645-656.

Miller, J. D., H. D. Safford, M. Crimmins, and A. E. Thode. 2009. "Quantitative evidence for increasing forest fire severity in the Sierra Nevada and southern Cascade Mountains, California and Nevada, USA." Ecosystems 12 (1 SRC - GoogleScholar):16-32.

Moyle, P. B. 1996. Potential Aquatic Diversity Management Areas. Chapter 57 in Sierra Nevada Ecosystem Project, Final Report to Congress, vol. II, Assessments and Scientific Basis for Management Options. Davis: University of California, Centers for Water and Wildland Resources.

North, M., P. Stine, K. OHara, W. Zielinski, and S. Stephens. 2009. An ecosystem management strategy for Sierran mixed-conifer forests. Gen. Tech. Rep. PSW-GTR-220. Albany, CA: USDA Forest Service.

North, M. 2012. Managing Sierra Nevada forests. Gen. Tech. Rep. PSW-GTR-237. Albany, CA: USDA Forest Service.

Page-Dumroese, D.S., Abbott, A.M. and Rice, T.M., 2009. Forest Soil Disturbance Monitoring Protocol: Volume I: Rapid assessment. Gen. Tech. Rep. WO-GTR-82a. Washington, DC: U.S. Department of Agriculture, Forest Service. 31 p.

Reeves, G.H.; Pickard, B.R.; Johnson, K. N. 2016. An initial evaluation of potential options for managing riparian reserves of the Aquatic Conservation Strategy of the Northwest Land management plan. Gen. Tech. Rep. PNW-GTR-937. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 97 p.

Rieman, B.E., Lee, D.C., Hessburg, P.F., Sedell, J.R. 2000. Toward an Integrated Classification of Ecosystems: Defining Opportunities for Managing Fish and Forest Health. Environmental Management 25 (4): 425-444.

Rieman, B.E., Hessburg, P.F., Luce, C. and Dare, M.R., 2010. Wildfire and management of forests and native fishes: conflict or opportunity for convergent solutions? BioScience, 60(6), pp.460-468.

Ritchie, M.W. 2016. Science Consistency Review Report: Draft Environmental Impact Statement for Revision of the Inyo, Sequoia and Sierra National Forests Land Management Plans, December 8, 2016.

Safford, H.D., M. Coppoletta, B.E. Estes, S.E. Gross, K.E. Merriam, M.D. Meyer, M. Slaton, and H. Stone. 2013. Natural range of variation (NRV) for terrestrial ecosystems in the

bioregional assessment area, including the Sierra Nevada, southern Cascades, and Modoc and Inyo National Forests.: USDA Forest Service, Pacific Southwest Region.

Safford, Hugh D, and Kip M Van de Water. 2014. "Using fire return interval departure (FRID) analysis to map spatial and temporal changes in fire frequency on national forest lands in California."

Steel, Z. L., H.D. Safford, and J.H. Viers. 2015. "The fire frequency-severity relationship and the legacy of fire suppression in California forests." *Ecosphere* 6 SRC - GoogleScholar (8).

United States Department of Agriculture, Forest Service. 1990. *ROS primer and field guide, R6-REC-021-90*. Washington, D.C.: U.S. Dept. of Agriculture, Forest Service.

United States Department of Agriculture, Forest Service. 2001. Sierra Nevada Land management plan Amendment: Final Supplemental Environmental Impact Statement and Record of Decision. Vallejo, CA: U.S. Department of Agriculture, Forest Service, Pacific Northwest Region.

United States Department of Agriculture, Forest Service. 2004. Sierra Nevada Land management plan Amendment: Final Supplemental Environmental Impact Statement and Record of Decision. Vallejo, CA: Forest Service, Pacific Southwest Region.

United States Department of Agriculture, Forest Service. 2011. Watershed Condition Framework: A Framework for Assessing and Tracking Changes to Watershed Condition. FS-977. May 2011.

United States Department of Agriculture, Forest Service. 2012. National Best Management Practices for Water Quality Management on National Forest System Lands FS-990. April 2012.

United States Department of Agriculture, Forest Service. 2013. Final Inyo National Forest assessment. Vallejo, CA. R5-MB-266. December 2013.

United States Department of Agriculture, Forest Service. 2014. Final Sierra Nevada bio-regional assessment. Vallejo, CA. R5-MB-268. February 2014.