

Additional Analysis
BIOLOGICAL ASSESSMENT
for
Revision of the Inyo National Forest
Land Management Plan

Addressing

Evaluation of effects for federally proposed species
and proposed critical habitat with changed status
after receipt of Biological Opinion:
West Coast DPS of fisher
Bi-State DPS of greater sage-grouse

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

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Purpose

In November of 2017 when the Biological Assessment for the Revision of the Inyo National Forest Land Management Plan was completed and submitted to the U.S. Fish and Wildlife Service (USFWS) to initiate formal consultation, neither the Bi-State distinct population segment (DPS) of greater sage-grouse or the West Coast DPS of fisher had legal status under the Endangered Species Act.

A proposed rule to list the Bi-State DPS of greater sage-grouse as a threatened species and a proposed rule to designate critical habitat were issued on 10/28/2013 (USDI Fish and Wildlife Service 2013a, b). On 4/23/2015, the proposed rules were withdrawn (USDI Fish and Wildlife Service 2015a), but those decisions were legally challenged on 3/9/2016 and a court decision in May of 2018 vacated the withdrawal and remanded to the USFWS. On 4/12/2019 the USFWS published a proposed rule and reopened the comment periods for the proposed threatened listing and proposed designation of critical habitat (USDI Fish and Wildlife Service 2019a).

A similar situation occurred for the West Coast DPS of fisher. A proposed rule to list as threatened was published on 10/7/2014 (USDI Fish and Wildlife Service 2014) and later withdrawn on 4/18/2016 (USDI Fish and Wildlife Service 2016). Legal action challenging the decision was initiated on 10/19/2016 and a court decision vacating the withdrawal and remanding to the USFWS was issued in September of 2018. The USFWS published a proposed rule to list the species as threatened and reopen the comment period on 1/31/2019 (USDI Fish and Wildlife Service 2019b). There was no proposed designation of critical habitat for the fisher.

Although neither species had legal status under the Endangered Species Act at the time of release of the draft Final Environmental Impact Statement for the forest plan revision, both species were evaluated and considered as species of conservation concern under the criteria of the 2012 Planning Rule. During the development of the plan, species-specific plan direction was developed for each species to complement the broader ecosystem-level plan direction.

Since this analysis determined that the Proposed Action is not likely to jeopardize the continued existence of either species nor likely to adversely modify proposed critical habitat for the Bi-State DPS of greater sage-grouse, further action or Conference with the U.S. Fish and Wildlife Service is not required.

NOTE: This analysis evaluates the effects of the Proposed Action for the Bi-State DPS of greater sage-grouse and proposed critical habitat and the West Coast DPS of fisher that was not included in the Biological Assessment submitted 11/14/2017 for federally listed and candidate species. Although, it is prepared in the form of additions and changes to the 11/14/2017 Biological Assessment, it includes some repetition of information from the Biological Assessment where helpful to make this analysis more readable and the effects more understandable. It does not repeat other sections, particularly analysis and discussion about the role of planning and some general effects analysis, and both this document and the original Biological Assessment should be considered for the full analysis of effects for these species. Where necessary, additions are shown in **bold underline** and deletions are shown in **~~bold-strikeout~~**. Editing notes on changes to the paragraphs or sections of the main Biological Assessment are shown in *[italic text in brackets]* below the section heading.

Changes relative to the November 2017 Biological Assessment

Executive Summary

[Add the following items to Table 1.]

Table 1. Determinations for analyzed species and critical habitats

Species	Status	Determination
Bi-State DPS greater sage-grouse	Proposed Threatened	May affect, not likely to jeopardize the continued existence of the species
Bi-State DPS greater sage-grouse critical habitat	Proposed	May affect, not likely to adversely modify proposed critical habitat
West Coast DPS fisher	Proposed Threatened	May affect, not likely to jeopardize the continued existence of the species

List of Acronyms Used

[Add the following]

PCH: Proposed Critical Habitat

PMU: Population Management Unit

I. Introduction

Purpose

[Replace the second and third paragraphs with the following changes]

The revision of the forest plan considered five alternative management approaches: the no-action alternative (alternative A) which represents the existing forest plan (as amended) and four action alternatives (alternatives B, C, D, and B modified), which are described in detail in the: *Final Environmental Impact Statement for the Revised Inyo National Forest Land Management Plan (FEIS) (USDA Forest Service 2018)*. There are also seven alternatives considered but not analyzed in detail. Alternative B modified was developed to incorporate changes as a result of comments received on the draft environmental impact statement and draft forest plan. **Further changes were made in the Proposed Action and Record of Decision, particularly for the Bi-State DPS of greater sage-grouse to resolve objections.**

The purpose of this biological assessment is to evaluate the potential consequences of the preferred alternative in the FEIS, alternative B modified **as adjusted to resolve objections**, on two federally proposed species and their habitats, including proposed critical habitats which have had a status change since the original consultation. This analysis is conducted for conferencing or consultation with the U.S. Fish and Wildlife Service (USFWS), as required under Section 7 of the Endangered Species Act (ESA; 16 U.S. Code 1536(a)-(d)). The revision of the Inyo NF Land Management Plan is a framework programmatic action that approves a framework for the development of future action(s) that are authorized, funded, or carried out at a later time, and any take of a listed species would not occur unless and until those future action(s) are authorized, funded, or carried out and subject to further Section 7 consultation. This analysis is prepared in compliance with the requirements of Forest Service Manual

(FSM) 2670 (USDA Forest Service 2005) and complies with the direction for interagency cooperation in implementing the Endangered Species Act of 1973, as amended (50 CFR Part 402).

Species Considered

[Add the following items to Table 2 and correct footer to add PT definition.]

Table 2. Federally designated threatened, endangered, proposed, and candidate species that occur in the Inyo National Forest plan area

Common Name ¹	Scientific Name	Status ²
Bi-State DPS of greater sage-grouse	<i>Centrocercus urophasianus</i>	PT
West Coast DPS of fisher	<i>Pekania pennanti</i>	PT

Consultation History

[Add the following bullets]

- See the June 12, 2018 Biological Opinion for additional consultation history items between November 14, 2017 and July 13, 2018.
- On July 13, 2018, the USFWS Reno Fish and Wildlife Office transmitted the Programmatic Biological Opinion for the Revision of the Inyo National Forest Land Management Plan (Fresno, Inyo, Madera, Mono, and Tulare Counties, California and Esmeralda and Mineral Counties, Nevada), File Number 2018-F-098 and dated June 12, 2018, to the Inyo NF.
- In January and April of 2019, the USFWS published rules reopening the comment periods and reinstating the proposed rules to list the Bi-State DPS of greater sage-grouse and West Coast DPS of fisher.
- In early July of 2019, the Forest Supervisor for the Inyo NF and USFWS Reno Fish and Wildlife Office Acting Field Supervisor informally agreed that conferencing was not needed in this situation.
- On July 31, 2019, the analysis of effects for West Coast DPS of fisher and Bi-State DPS of greater sage-grouse was completed and it was determined that further action with the USFWS Reno Fish and Wildlife Office is not needed.

IV. Description of Action Area and Proposed Alternative

Summary of the Major Proposed Action Programs and Activities

[Append the following sections. Some information is repeated verbatim from the original Biological Assessment for background and context. Some plan components were not included in the original BA and are noted with asterisks after the number in the tables. Any plan components in the original BA not referenced for these added species are not shown here. Some new narrative text is added.]

¹ DPS = Distinct Population Segment

² E = Endangered; T = Threatened; C = Candidate; PT = Proposed Threatened

No substantive changes were made to any of the major proposed action program areas evaluated in the original biological assessment. A few changes in management areas to include some additional areas as recommended wilderness occurred as well as identifying additional river segments as eligible for inclusion in the Wild and Scenic River System. Additionally some clarifications were made to some plan components, the relevant ones will be discussed below.

Relevant Plan Direction

The forest plan contains a specific coding system to identify plan components and where they apply using the following pattern: AAA-BBB-CCC. The series of letters before the first dash references either a resource area (for example, WTR for watersheds) or a type of spatial area (such as MA for management areas or TERR for terrestrial ecosystems and vegetation). The middle series of letters reference where the plan components apply (for example, FW for forestwide), land of specific character (such as ALPN for the subalpine and alpine zones), or mapped parcels of land (such as CWPZ for the community wildfire protection zone). The third series of letters references the type of plan components (such as DC for desired conditions). So the unique coding for air resources forestwide desired conditions begins with AIR-FW-DC, followed by the specific code number; and the codes for the management area wildfire restoration zone guidelines begins with MA-WRZ-GDL. Since potential management approaches are not plan components, they are listed by relevant resource but they are not identified by a coding system.

Note: Only direction relevant for assessing effects on analyzed species is listed here. As a result some of the numbers in the tables below are not sequential.

Overarching Plan Direction and Conservation Approaches

[For this additional analysis, relevant direction for the two species analyzed is listed here, including direction that was included in the original biological assessment. This will avoid needing to refer to this document and the original document for the key plan components. Plan components that were not included in the original biological assessment are noted with a single asterisk () while those that changed are noted with a double asterisk (**).]*

Forestwide Direction for Animal and Plant Species

This and subsequent sections under this heading include plan direction designed to maintain the diversity of plant and animal communities and support the persistence of native species within the plan area, subject to the extent of Forest Service authority and the inherent capability of the plan area. This includes plan components that address the needs of at-risk species within the plan area. The term “at-risk species” include (1) federally listed threatened, endangered, proposed, or candidate species under the federal Endangered Species Act, and (2) species of conservation concern.³ This section also includes direction that provides for the sustainable use and enjoyment of fish, wildlife, and plants.

For each species or group of species, the forest plan considers the extent that ecosystem-level plan components provide for ecosystem integrity and diversity to meet the ecological conditions necessary for those species within their range. Species-specific plan components are added as needed. Additional direction is provided for special habitats under the “Terrestrial Ecosystems and Vegetation” section to address unique habitats of some at-risk species.

³ The Regional Forester’s species of conservation list is dynamic and may be periodically updated. The current Regional Forester’s species of conservation concern list for the Inyo National Forest can be found on the Pacific Southwest Region’s website at <http://www.fs.usda.gov/main/r5/landmanagement/planning>.

Desired Conditions (SPEC-FW-DC)

Num	Plan language
01	Sustainable populations of native and desirable nonnative, plant and animal species are supported by healthy ecosystems, essential ecological processes, and land stewardship activities, and reflect the diversity, quantity, quality and capability of natural habitats on the national forest. These ecosystems are also resilient to uncharacteristic fire, climate change, and other stressors, which supports the long-term sustainability of plant and animal communities.
02	Habitats for at-risk species support self-sustaining populations within the inherent capabilities of the plan area. Ecological conditions provide habitat conditions that: contribute to the survival, recovery, and delisting of species under the Endangered Species Act; preclude the need for listing new species; improve conditions for species of conservation concern (including minimal impacts from diseases); and sustain both common and uncommon native species.
03	Land management activities are designed to maintain or enhance self-sustaining populations of at-risk species within the inherent capabilities of the plan area by considering the relationship of activities to species survival and reproduction.

Goals (SPEC-FW-GOAL)

Num	Plan language
01	Cooperate with partners and private landowners to encourage resource protection and restoration across ownership boundaries.
03	Work with the California Department of Fish and Wildlife (following the memoranda of understanding), Nevada Department of Wildlife, and U.S. Fish and Wildlife Service to restore and maintain essential habitat for at-risk species and implement other recovery actions according to species recovery plans.
04	Communicate and collaborate with other agencies, Tribes, landowners, and partners to maximize opportunities to improve conditions in the plan area for at-risk species and the habitats and ecological processes on which they depend for survival.

Standards (SPEC-FW-STD)

Num	Plan language
01	Design features, mitigation, and project timing considerations are incorporated into projects that may affect occupied habitat for at-risk species.

Guidelines (SPEC-FW-GDL)

Num	Plan language
01*	Known nest, roost, or den trees used by species of conservation concern or raptors, including surrounding trees that provide beneficial thermal or predatory protection, should not be purposefully removed, with the exception of the unavoidable removal of hazard trees and as required to meet other State or Federal regulatory requirements.
04	Habitat management objectives or goals from approved conservation strategies or agreements should be incorporated, if appropriate, in the design of projects that will occur within at-risk species habitat.

Potential Management Approach

- Incorporate the conservation of at-risk species into all program areas at appropriate times and scales, including but not limited to recreation, fire and fuels, vegetation management, minerals, range, engineering, and special uses.
- * Reduce human-caused mortalities associated with illegal marijuana growing and rodenticide use, road-related mortalities, and mortalities associated with water pipes and tanks.

Forestwide Direction for Invasive Species

Desired Conditions (INV-FW-DC)

Num	Plan language
01	Terrestrial and aquatic invasive species are controlled or eradicated when possible, and establishment of new populations is prevented.
02	The area affected by invasive species and introduction of new invasive species is minimized.

Objectives (INV-FW-OBJ)

Num	Plan language
01	Within 10 years of plan approval, take action to eliminate nonnative invasive plant species on at least 800 acres.
02	Within 10 years of plan approval, take action to eradicate at least three species of high priority nonnative invasive plants from the Inyo National Forest.

Standards (INV-FW-STD)

Num	Plan language
03	Use an integrated pest management approach in the planning and implementation of all projects and activities.

Guidelines (INV-FW-GDL)

Num	Plan language
01	Projects should be designed to minimize invasive species spread by incorporating prevention and control measures into ongoing management or maintenance activities that involve ground disturbance, terrestrial or aquatic habitat alteration, or the possibility of spreading invasive species. When feasible, projects should include measures to use invasive species-free gravel, fill, and topsoil; include follow-up inspections as needed and specified in regional or national strategies.
04	Weed control and prevention measures should be included as necessary when issuing, amending or reissuing permits, including but not limited to livestock grazing, special uses, and pack stock operator permits.

Forestwide Direction for Fire

Desired conditions and other plan components under this heading apply to forestwide fire management, including reducing damages and enhancing benefits from wildland fire. Other plan direction related to fire management is provided for each “Strategic Fire Management Zones” management areas (MA-CWPZ; MA-GWPZ; MA-WRZ; MA-WMZ).

Desired Conditions (FIRE-FW-DC)

Num	Plan language
01	Wildland fires burn with a range of intensity, severity and frequency that allow ecosystems to function in a healthy and sustainable manner. Wildland fire is a necessary process, integral to the sustainability of fire-adapted ecosystems (see TERR-FW-DC related to fire).

Guidelines (FIRE-FW-GDL)

Num	Plan language
01	Use naturally ignited and prescribed wildland fires to meet multiple resource management objectives, where and when conditions permit and risk is within acceptable limits.

Num	Plan language
02	When managing wildland fire (wildfire and prescribed fire), use a variety of fire management options, including hand and aerial ignitions, to achieve a mix of fire effects. When safe and feasible, limit extensive continuous areas of high-severity fire effects in old forest habitat.

Direction for Rangeland Livestock Grazing

Desired conditions and other plan components under this heading apply to rangeland management, which includes the authorized use and management of National Forest System lands for the purpose of livestock production and utilization of forage resources by livestock. Note additional direction in the sections “Animal and Plant Species,” “Wilderness” (pack stock), and “Riparian Conservation Areas” also applies.

Rangeland utilization is determined for different vegetation types based on similarity to desired vegetation condition and hydrologic function at grazing key areas. Allowable utilization can differ between the grazing systems being implemented. Definitions of the grazing systems are found in the glossary. The standards and guidelines for rangeland utilization are organized by the grazing systems potentially used within each vegetation type. After this initial allowable utilization standard is determined based on vegetation conditions, they are adjusted based on watershed conditions.

Desired Conditions (RANG-FW-DC)

Num	Plan language
01*	Rangelands, along with grazeable forestlands and woodlands, provide large areas of contiguous space supporting native vegetation that has the potential to be grazed. These grazeable landscapes sustain biological diversity and ecosystem integrity and help to preserve the rural landscape and cultural heritage of the central, southern and eastern Sierra Nevada.
02	Forage, browse, and cover meet the needs of wildlife, and authorized livestock are managed in balance with available forage. Areas that are grazed have, or are trending toward having, satisfactory soils, functional hydrology, and biotic integrity.

Goals (RANG-FW-GOAL)

Num	Plan language
03	Consider the impacts to animals and plants, recreation, watershed, and rangelands when designing rangeland improvements or structures, such as water storage structures.

Standards (RANG-FW-STD)

Num	Plan language
04	New livestock handling facilities and stock driveways, salting, and supplemental feeding are prohibited in meadow and riparian locations. Placement must be consistent with meeting watershed or water quality best management practices if located in riparian conservation areas.

Direction for Sustainable Recreation

Desired conditions and other plan components under this heading apply to forestwide recreation. The plan also describes recreation management areas that provide management direction for particular recreation experiences and activities in Sustainable Recreation Management Zones.

Desired Conditions (REC-FW-DC)

Num	Plan language
04	Areas of the national forest provide for a variety of activities with minimal impact on sensitive environments and resources.

Num	Plan language
08	Dispersed recreation occurs in areas outside of high visitation, developed facilities, or communities, and does not adversely impact natural or cultural resources.

Goals (REC-FW-GOAL)

Num	Plan language
02	Manage dispersed recreation activities when evidence of impacts to natural resources emerge or are causing damage.

Guidelines (REC-FW-GDL)

Num	Plan language
01	Avoid locating new recreation facilities within environmentally and culturally sensitive areas, such as at-risk species breeding habitat or at-risk plant species habitat.
03	Use integrated resource planning when designing projects to address impacts to at-risk species habitat and changing conditions in recreation settings.

Potential Management Approach

- Use management methods, such as seasonal road or trail closures, when appropriate to manage and protect resources and infrastructure.
- Use informational signs to inform the public on trail etiquette, wildlife awareness, and other responsible behaviors.
- Use available technology, interpretive messages and interactions, and partnerships to educate national forest users and develop sustainable recreation opportunities that are focused on the long-term sustainability of the land, animals, fish, and plant species that support a healthy forest ecosystem.

Direction for Challenging Backroad Areas*

[Add direction for Challenging Backroad Areas]

These areas are undeveloped, natural, and suited for dispersed recreation use and more challenging activities. Challenging backroad areas are maintained for low visitor use and density and limited Forest Service presence. They are generally in remote areas with few amenities and limited recreation management. The Forest Service may allow the continuation of such multiple uses as fuelwood gathering, vegetation management, livestock grazing, existing utility infrastructure, and mining. Challenging backroad areas provide opportunities for motorized and nonmotorized uses that are challenging, due to terrain and low density of roads and trails. Use levels are low and users are spread out, minimizing opportunities for conflict.

Desired Conditions (MA-CBRA-DC)*

Num	Plan language
01*	These landscapes provide opportunities for challenging and remote recreation experiences.
02*	These areas contribute to ecosystem and species diversity and sustainability, serve as habitat for fauna and flora, and offer wildlife corridors. These areas provide a diversity of terrestrial and aquatic habitats, and support species dependent on large, undisturbed areas of land.
04*	There is a low density of infrastructure and designated roads and trails.
06*	There are vast areas for nonmotorized cross-country travel, offering visitors opportunities for exploration and challenge in summer.

Standards (MA-CBRA-STD)*

Num	Plan language
02*	Recreation special use permits must be consistent with low-visitor use and the remote setting.

Direction for Recommended Wilderness*

[Add direction for recommended wilderness]

Suitability (MA-RWLD-SUIT)*

Num	Plan language
01*	Recommended wilderness areas are not suitable for road construction or reconstruction.
03*	New energy developments or leases shall not be permitted.
06*	Mechanized transport and motorized use are not suitable in recommended wilderness areas; motorized travel and uses shall not be allowed unless specifically authorized for emergency use or administrative needs.
07*	<p>Non-conforming projects or activities may be suitable if they are temporary in nature and are for purposes of ecological restoration for at-risk species habitat or for administrative purposes, and do not have lasting effects on the wilderness characteristics. Forest Supervisors must approve such temporary projects or activities.</p> <p>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.</p>

Direction for Energy

Standards (NRG-FW-STD)

Num	Plan language
01*	The location of fluid conveyance lines and facilities for geothermal development ensures connectivity of wildlife movement corridors.

Direction for Geology and Minerals

Standards (GEO-FW-STD)

Num	Plan language
01*	Conduct appropriate analysis before constructing roads or other permanent developments in known unstable areas.
04*	During mining-related activities, limit the clearing of trees and other vegetation to the minimum necessary. Clearing of vegetation must be pertinent to the approved phase of mineral exploration and development.

Direction for Lands

Guidelines (LAND-FW-GDL)

Num	Plan language
02*	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.

Direction for Infrastructure

Desired Conditions (INFR-FW-DC)

Num	Plan language
03*	Roads allow for safe and healthy wildlife movement in areas of human development. Vehicular collisions with animals are rare.

Direction for Designated Wilderness

Individual wilderness plans provide wilderness area-specific guidance in addition to the strategic-level guidance provided in this land management plan.

Desired Conditions (DA-WILD-DC)

Num	Plan language
01	The wilderness character of each wilderness, including the qualities of untrammeled, natural, undeveloped, opportunities for solitude or primitive recreation, and other features of value (such as ecological, geological or other features of scientific, educational, scenic, cultural or historical value specific to each wilderness area) are preserved and, when possible, enhanced.
05	Each wilderness area accommodates levels of recreation use that are ecologically sustainable.
08	Forest system trails that access wilderness are part of a high-quality wilderness experience for visitors. Forest system trails meet national quality standards, with minimal deferred maintenance and adhere to the national trail classification system. Trails in wilderness are located in resilient areas, and do not cause adverse impacts to at-risk species, water quality, soils, hydrologic connectivity, or cultural resources.
10	Resource impacts of user-created trails are reduced.

Direction for Inventoried Roadless Areas

The 2001 Roadless Area Conservation Rule (roadless rule, 36 CFR 294 Subpart B) established prohibitions and permissions on road construction, road reconstruction, and timber harvesting on 58.5 million acres of national forest system lands across the United States. About 26 percent of the Inyo National Forest has been designated as inventoried roadless areas, as governed by the Roadless Area Conservation Rule.

This plan does not incorporate the roadless rule; this direction is included in order to show the management direction the roadless rule provides and in a format that explains roadless rule management direction in the context of other forest plan direction.

Suitability (DA-IRA-SUIT)

Num	Plan language
02	<p>The roadless area characteristics present in the area are maintained, including:</p> <ul style="list-style-type: none"> • High quality or undisturbed soil, water, and air; • Sources of public drinking water; • Diversity of plant and animal communities; • Habitat for threatened, endangered, proposed, candidate, and sensitive species and for those species dependent on large, undisturbed areas of land; • Primitive, semi-primitive non-motorized, and semi-primitive motorized classes of dispersed recreation; • Reference landscapes; • Natural appearing landscapes with high scenic quality; • Traditional cultural properties and sacred sites; and

Num	Plan language
	<ul style="list-style-type: none"> Other locally identified unique characteristics.

Direction for Wild Horse and Burro Territories

Three administratively designated wild horse and burro territories occur on the Inyo National Forest: Montgomery Pass, White Mountain, and Saline Valley Wild Horse and Burro Territories. These three territories were established with the passage of the Wild Horse and Burro Act of 1971. Management of wild horse and burro territories is guided by individual management plans.

Goals (DA-WHT-GOAL)

Num	Plan language
01	Continue working with other agencies and Forest Service units, such as the Bureau of Land Management and the Humboldt-Toiyabe National Forest, and other partners or collaborative groups to manage wild horse herds or in the development of wild horse management plans.

Relevant to Terrestrial Ecosystems and Species

[Add additional plan direction relevant to greater sage-grouse and fisher. Change some plan components in November 2017 BA due to changes as a result of objection resolutions.]

Forestwide Direction for Terrestrial Ecosystems and Vegetation

Desired Conditions (TERR-FW-DC)

Num	Plan language
05	Ecological conditions contribute to the recovery of threatened and endangered species, conserve proposed and candidate species and support the persistence of species of conservation concern.
06*	The landscape contains a mosaic of vegetation types and structures that provide habitat, movement and connectivity for a variety of species including wide-ranging generalists such as bear, mountain lion, and deer; more localized, semi-specialists such as ground-nesting, shrub-nesting, and cavity-nesting birds and various bats; and specialists such as old forest and sagebrush-associated species.
08	Fire occurs as a key ecological process in fire-adapted ecosystems where it does not pose an unacceptable risk to life and property. Fire occurs within an ecological appropriate regime of frequency, extent, and severity, and enhances ecosystem heterogeneity and habitat and species diversity.

All Sierra Nevada Montane Zone

Desired Conditions (TERR-MONT-DC)

Num	Plan language
01*	At the landscape scale, the Sierra Nevada montane landscape is a heterogeneous mosaic of patches of red fir forest, mixed conifer, lodgepole pine forests, Jeffrey pine forests, meadows and riparian areas. These ecosystem types occur in a complex mosaic of different densities, sizes, and species mix across large landscapes that vary with topography, soils and snow accumulation. The composition, structure, and function of vegetation make them resilient to fire, drought, insects and pathogens, and climate change. The mix of seral stage patches, and open versus closed canopied areas, varies by forest type as described in table 1 and table 2 [in the Plan]. Large and old trees are common in most seral stages throughout the landscape and in varying densities (see “Old Forest Habitats” section [in the Plan]).

Old Forest Habitat*

Desired Conditions (TERR-OLD-DC)

Num	Plan language
02*	The landscape contains a mosaic of vegetation types and structures that provide foraging and breeding habitat, movement, and connectivity for a variety of old forest-associated species.
03*	Between 40 and 80 percent of the forested landscape contains old forest areas. Old forest areas are clumps and patches of old forests components such as old trees, snags, and large downed logs. These areas are irregularly distributed across the landscape and interspersed with stands of younger trees, shrubs, meadows, other herbaceous vegetation, and unvegetated patches.
04*	The number and density of old trees vary by topographic position and soil moisture. In general, more large and old trees are found on moister sites; on lower slopes, bottoms, and north and east aspects, especially where soils are deeper. Large trees are well distributed but are often clumpy. The densities vary by forest type as shown in table 4 [in the Plan]. Trees greater than 40 inches in diameter, generally over 150 years old, represent the oldest trees, and comprise a significant proportion of large and old trees. In many areas of high soil productivity, trees grow to large sizes (around 30 inches in diameter) in fewer than 100 years. On low and very low soil productivity sites, the oldest trees may be smaller in diameter. Sufficient numbers of younger trees are present to provide for recruitment of old trees over time.
05*	Old forests are composed of both vigorous trees and decadent trees. Clumps of large trees, snags, large logs, and decadent older trees are maintained on the landscape in sufficient numbers to benefit wildlife and are distributed throughout the planning area before and after disturbances.
06*	Large snags are scattered across the landscape, generally occurring in clumps rather than uniformly and evenly distributed, meeting the needs of species that use snags and providing for future downed logs.
07*	Coarse woody debris is distributed in patches and the density of large downed logs varies by vegetation type. Surface dead wood levels are sufficient to provide for legacy soil microbial populations.

Sagebrush*

Sagebrush ecosystems are broadly distributed across the Great Basin (often in large and contiguous expanses) and also occur across the eastern Sierra in more arid locations. This ecosystem is dominated by all subspecies of big sagebrush, low sagebrush, bitterbrush, and black sagebrush. In the absence of fire or other disturbance, conifers (especially pinyon and juniper, but also Jeffrey pine) may establish in sagebrush sites. The direction for sagebrush here includes all areas where sagebrush is the site potential under the natural fire regime, including areas that may be currently dominated by wooded shrublands and savannas but would presumably be absent of trees under the natural fire regime. Wooded shrublands and savannas differ from persistent woodlands, which have direction under the “Pinyon-Juniper” or “Jeffery Pine” sections below.

Desired Conditions (TERR-SAGE-DC)

Num	Plan language
01	The sagebrush type has a diversity of age classes, stand structure, cover classes and native understory composition.
02	Sagebrush ecosystems are resilient to fire and other disturbances including grazing, recreation, invasive species (including cheatgrass), and climate change.
03	Grazed areas have or are trending toward satisfactory soil conditions, functional hydrology, and biotic integrity. Sagebrush ecosystems contain all key elements and conditions, including sagebrush regeneration and recruitment, ecosystem productivity, native perennial grass and forb cover, biological soil crusts, and symbiotic fungal associations.

Num	Plan language
04	Open sagebrush habitat with no overstory trees (such as pinyon pine, juniper or Jeffrey pine) provides habitat connectivity for sagebrush-dependent species. Fire occurs within the natural range of variation (or in small extents) as a natural process, limiting encroaching conifer trees.
05	Where nonnative annual grasses exist in sagebrush vegetation communities, the native species persist with adequate structural and functional diversity including shrubs, perennial bunchgrasses, and forbs.

Goal (TERR-SAGE-GOAL)

Num	Plan language
01	Restoration projects following large-scale changes in sagebrush structure or species composition (type conversion to cheatgrass) from wildfires or other disturbances should be designed to consider: <ul style="list-style-type: none"> a. safety to people in the short and long terms; b. restoring habitat, including restoring connectivity; c. other ecological restoration actions in the affected area; d. the development of restoration strategies that move landscape conditions towards terrestrial and aquatic ecosystem desired conditions; e. the importance of the larger landscape or watersheds encompassing the impacted area, including watersheds or landscapes outside the affected area; f. future projections in climate and their influence on ecosystems in the affected area; and g. long-term maintenance of regional biodiversity in disturbed and adjacent undisturbed landscapes.

Species-Specific Direction for Greater Sage-grouse*

Desired Conditions (SPEC-SG-DC)

Num	Plan language
01	Suitable sage-grouse habitat includes breeding (nesting), brood-rearing, and wintering habitats that are distributed to allow for dispersal and genetic flow, with land cover dominated by sagebrush. Suitable habitat is predominantly sagebrush shrubland and sagebrush steppe, with associated mesic habitats. Specific vegetation conditions are closely tied to local conditions and ecological site potential.
02	High quality sage-grouse nesting cover including shrub and perennial grasses that provide for overhead and lateral concealment, conditions that support high levels of quality pre-laying hen habitat and dietary protein intake needs, and habitat supporting chick-rearing nutritional needs occur throughout breeding habitat in each population management unit based on local conditions and ecological site potential..
03	Sage-grouse brood-rearing habitat occurs in the Bodie, South Mono, and White Mountains population management units and includes an adequate range of shrub cover, perennial grass cover, forb density, and meadows to provide the necessary overhead and lateral concealment and nutritional needs, with specific desired conditions tied closely to local conditions and based on ecological site potential.
04	Sage-grouse winter habitat occurs in the population management units and includes an adequate range of sagebrush cover in sites such as wind swept ridges or tall shrubs that provide necessary cover and nutritional needs during winter. Specific vegetation conditions are closely tied to local conditions and ecological site potential.
05	Sage-grouse habitats do not include overstory trees, such as pinyon pine, juniper, or Jeffrey pine outside the natural range of variability.
06	The extent and dominance of nonnative annual grass species, such as cheatgrass, is limited and does not lead toward reduction in the suitability of sage-grouse habitat.
07	Unwanted fire (more frequent, severe, or larger than the natural range of variation) in sage-grouse priority habitat is limited or prevented.

Num	Plan language
08	At the stand/site scale (10 to 100 acres), sagebrush and understory cover occur in a mosaic across the site, with 1-acre patches meeting the desired conditions for nest sites and brood-rearing areas, in areas that are consistent with the site and the sagebrush species potential.
09	Meadows within sage-grouse range provide suitable habitat for sage-grouse, including desirable foraging species (insects and plants), have suitable sagebrush cover around the meadows edge, are hydrologically fully functional and vegetation is within mid-seral conditions. Within livestock allotments in sage-grouse range, meadow condition is trending towards or rated at fully functional based on forestwide range utilization standards.

Objectives (SPEC-SG-OBJ)

Num	Plan language
01	Within 10 years of the plan approval, up to 14,900 acres of sage-grouse habitat, within and between population management units, will be improved or restored to meet sage-grouse priority habitat desired conditions.

Goals (SPEC-SG-GOAL)

Num	Plan language
01	Participate in collaborative forums such as the executive oversight committee, technical advisory committee, and local area working group to ensure agency interests are considered and to collaboratively implement the Bi-State Action Plan to further sage-grouse conservation.
02	Continue to work with researchers, scientists, and partners to collect data sufficient to establish quantitative desired conditions for sage-grouse habitats in the Bodie, South Mono, and White Mountain Population Management Units specific to sagebrush species and ecological sites.
03	Continue population and vegetation monitoring efforts within the Bodie, South Mono, and White Mountain Population Management Units with State and Federal partners.
04	Continue coordination and communication with the California Department of Fish and Wildlife, Nevada Department of Wildlife and the U.S. Fish and Wildlife Service during project development for all projects occurring within sage-grouse habitat.

Standards (SPEC-SG-STD)

Num	Plan language
01	Habitat restoration projects for the sage-grouse shall be designed to meet one or more of the following habitat needs: a. Promote the maintenance of extensive, intact sagebrush communities; b. Limit the expansion or dominance of invasive species, including cheatgrass, and the expansion of pine species, including pinyon-juniper and Jeffrey pine; c. Maintain or improve soil site stability, hydrologic function, and biological integrity; and d. Enhance the native plant community.
02	Habitat restoration projects for the sage-grouse must include measures to improve suitability of breeding, or brood rearing, or wintering habitat.
03	Within sage-grouse habitat, ensure that habitat restoration activities, vegetation treatments, or other authorized uses on the national forest, maintain or move toward vegetation desired conditions for sage-grouse. Short-term (1 to 10 year) impacts are allowed to deviate from these habitat standards, if the long-term (10 to 30 years) project objective is to achieve desired conditions.
04	Mitigate long-term negative impacts to sage-grouse habitat from activities, to the extent practicable and within agency authority.
05	Require site-specific project mitigation if needed to insure no net loss of habitat within the Inyo National Forest due to project disturbance.
06	Establish a limited operating period for the sage-grouse breeding season (which current best available science indicates is March 1 to May 15) within suitable breeding habitat for any

Num	Plan language
	activities that would cause disturbances during this time. These dates can be adjusted based on current nesting conditions or risk assessment.
07	Establish a limited operating period for the sage-grouse nesting season (which current best available science indicates is May 1 to June 15) within suitable nesting habitat for any activities that would lead to disturbances during this time. These dates can be adjusted based on current nesting conditions or risk assessment.
08	When conducting livestock grazing allotment assessments, establish key areas in meadow or upland habitats where absent in occupied sage-grouse habitat.
09	Within sage-grouse priority habitat, use genetically and climatically appropriate native plant and seed material when seeding the area.
10	Subject to valid and existing rights, no new tall utility-type structures (e.g., poles that support lights, telephone and electrical distribution, communication towers, meteorological towers, and high-tension transmission towers, wind or solar generators or other similar infrastructure), which could serve as predator perches, will be authorized within 4 miles of an active lek in suitable habitat except as needed to adequately maintain existing infrastructure and comply with state and federal regulations. If structures are needed within this area protective stipulations (e.g. perch deterrents, guy wire removal) or mitigation will be required to offset the impacts of those structures then anti-perching devices shall be installed. During the permit renewal process, existing powerlines and other utility structures within 4 miles of active leks in suitable habitat will be retrofitted with perch-detering devices for such existing structures within 4 miles of an active lek in suitable habitat, protective stipulations or mitigations will be required to offset the impacts of those structures.
11	Subject to valid and existing rights, no new tall non-utility structures (e.g. fences, barriers, signs, buildings, water tanks, other structures necessary for resource management) that protrude noticeably above the dominant shrub layer will be installed in suitable sage-grouse habitat within 4 miles of an active lek except where the structure is necessary for safety or improvement of habitat and ecological conditions. All fences and other barriers constructed or replaced within 1.24 miles of a known active lek in suitable habitat must be wildlife friendly with features to reduce impacts to sage-grouse (e.g. let-down fences, and/or marked with fence markers or other fence types such as buck and rail). Installing any new fences within 1.2 miles of an active lek should be avoided whenever possible.
12	Within suitable habitat, manage permitted watering facilities to prevent drowning or entrapment and provide mosquito control to reduce the risk of creating a vector for diseases.
13	Do not locate new salting, supplemental feeding locations, livestock watering, and handling facilities on sage-grouse leks.
14	After soil disturbance or seeding, subsequent soil-disturbing management activities shall not occur until desired habitat conditions have been met within sage-grouse habitat unless a resource team determines that disturbance will help achieve desired conditions.
15	Consult a resource advisor during wildfires in sagebrush to identify suitable sage-grouse habitat and to suggest opportunities for retaining and protecting sagebrush stands. When safe and feasible, protect highly valued suitable sage-grouse habitat ahead of burn operations using techniques such as targeted burning and providing direct protection.

Guidelines (SPEC-SG-GDL)

Num	Plan language
01	Minimize the creation of new rights-of-way where feasible and less impactful by using existing public or private utility rights-of-way to reduce impacts on other resources.
02	Where feasible and where net impacts to habitat will be less than overhead facilities, bury new or reconstructed utility lines to reduce negative effects on sage-grouse habitat and other resources
03	Subject to valid and existing rights, where there would be a net benefit to habitat conditions, remove tall structures that protrude noticeably above the dominant shrub layer in suitable sage-grouse habitat within 4 miles of an active lek.

Num	Plan language
04	When agency personnel, contractors, and permit holders are driving off road and working in areas with known noxious weed infestation, the vehicles should be cleaned before entering a different area to reduce the spread of noxious weeds.
05	Vegetation treatments and disturbances that reduce connectivity should be seeded or transplanted with sagebrush to restore patches of sagebrush cover and connect existing patches to improve sage-grouse habitats within and between population management units.

Potential Management Approaches

- Prevent unwanted fire in priority habitat by managing sagebrush systems to be resilient, implementing proactive fire prevention, and limiting nonnative annual grass expansion.
- Use an adaptive management strategy when conducting vegetation treatments within sage-grouse habitat. Determine treatment methods and intensities based on the results of past treatments as information from those past treatments becomes available. If the results of past treatments show that those treatments have caused an increase in nonnative annual grasses and poor sagebrush recruitment, do not use the same prescription for further treatments within sage-grouse habitat.
- When a right-of-way is no longer in use, relinquish the right-of-way and reclaim the site by removing powerlines, reclaiming roads, and removing other infrastructure.
- Where sage-grouse habitat is being degraded due to wild horse and burro use, determine site-specific measures to improve or restore sage-grouse habitat.
- The Inyo National Forest will participate in collaborative forums such as the executive oversight committee, technical advisory committee, and local area working group to attempt to create a voluntary mitigation strategy to benefit sage-grouse. If created, this strategy could be used to establish alternative mitigation tools to perch deterrents or other protective stipulations to help offset the impacts of tall structures or other issues that arise that impact suitable habitat (see SPEC-SG-STD 05 and 10).

Species-Specific Direction for Sierra Marten and Fisher*

Desired Conditions (SPEC-SMPF-DC)

Num	Plan language
01	Risk of large high-severity fire is reduced from current conditions in marten habitat core areas and fisher Core Area 1 (see glossary).
02	Within marten core habitat and fisher Core Area 1, vegetation is trending toward desired conditions for terrestrial and riparian vegetation.
03	Marten and fisher habitat are well distributed throughout the marten’s range and fisher Core Area 1, providing for foraging, denning, and resting habitat and movement across large landscapes.
04	Essential fisher habitat elements, including large living and dead trees (especially pines and oaks) and structures used by fishers for resting and denning (cavities, deformities), are common and well distributed throughout fisher Core Area 1.

Guidelines (SPEC-SMPF-GDL)

Num	Plan language
01	Within marten core habitat and fisher Core Area 1, retain overtopping and multi-storied canopy conditions, including some shade-tolerant understory trees such as firs, especially in drainages,

Num	Plan language
	swales and canyon bottoms and on north- and east-facing slopes. Retain a patchy mosaic of shrubs and understory vegetation, separated by more open areas, to reduce fuel continuity, increase habitat heterogeneity, support prey, and provide hiding cover, with a goal of 10 to 20 percent shrub cover at the home range scale.
02	Maintain or increase understory heterogeneity in marten denning habitat and fisher high value reproductive habitat (see glossary) to promote hiding cover such as shrub patches, coarse woody debris, and slash piles following vegetation treatments. Project design should include non-linear edges that decrease susceptibility to predation.
03	To minimize disturbance to breeding females and their offspring, apply a limited operating period prohibiting mechanical vegetation treatment activities during the breeding season (March 1 to June 30) and prescribed fire activities during the early breeding season (March 1 to May 1) within fisher high value reproductive habitat in fisher Core Area 1. Projects proposed in fisher high value reproductive habitat in Core Area 1 during the breeding season should be assessed by a biologist knowledgeable about fishers to determine whether potential benefits to fishers are likely to outweigh the risks, in which case the activities may be exempt from the LOP restrictions if they are carefully designed and implemented to mitigate risks.

Potential Management Approaches

- Generally, management in fisher Core Area 1 to favor tree growth, increased canopy cover, and recruitment of essential fisher habitat elements is likely to benefit the fishers.

Relevant to Aquatic Ecosystems and Species

The Proposed Action includes a broader and more comprehensive approach to aquatic habitat conservation. It strengthens and replaces the approach using small, isolated critical aquatic refuges and independently identified priority watersheds with an approach centered on larger conservation watersheds and a more integrated prioritization of watershed restoration opportunities. It retains but clarifies direction applied to riparian conservation areas.

Management Area Components for Riparian Conservation Areas

Plan Components for All Riparian Conservation Areas

Desired Conditions (MA-RCA-DC)

Num	Plan language
02	Riparian conservation areas have ecological conditions that contribute to the recovery of threatened and endangered species and support persistence of species of conservation concern as well as native and desired nonnative aquatic and riparian-dependent plant and animal species.
05*	Riparian areas provide a range of substrates to sustain habitat for a variety of aquatic and terrestrial fauna within their natural capacity of the system.

Standards (MA-RCA-STD)

Num	Plan language
17	Locate new livestock handling facilities and stock driveways, salting, and supplemental feeding outside of meadows and riparian areas except where there are no other feasible alternatives and where placement is consistent with meeting watershed or water quality best management practices if located in riparian conservation areas.

Guidelines (MA-RCA-GDL)

Num	Plan language
03	During permit reissuance for livestock, evaluate impacts of facilities on the riparian conservation areas and consider relocating existing livestock facilities outside of meadows and riparian areas.

Plan Components for Meadows

Desired Conditions (RCA-MEAD-DC)

Num	Plan language
01	Meadows are hydrologically functional. Sites of accelerated erosion, such as gullies and headcuts are stabilized, recovering, or within the natural range of variation. Vegetation roots occur throughout the available soil profile. Meadows with perennial and intermittent streams have the following characteristics: (1) stream energy from high flows is dissipated, reducing erosion and improving water quality; (2) streams filter sediment and capture bedload, aiding floodplain development; (3) meadow conditions enhance floodwater retention and groundwater recharge; and (4) root masses stabilize streambanks against cutting action.
03	Meadows are resilient and recover rapidly from natural and human disturbances. They exhibit a high degree of hydrologic connectivity laterally across the floodplain and vertically between surface and subsurface flows. They provide important ecosystem services such as high-quality water, recharge of streams and aquifers, and moderation of climate variability and change.
05	Meadows have substantive ground cover and a rich and diverse species composition, especially of grasses and forbs. Meadows have high plant functional diversity with multiple successional functional types represented. Perennial streams in meadows contain a diversity of age classes of shrubs along the streambank, where the potential exists for these plants.
06	A complexity of meadow habitat types and successional patterns support native plant and animal communities. Meadow species composition is predominantly native, where graminoid (grass-like) species are well represented and vigorous, and regeneration occurs naturally. Healthy stands of willow, alder, and aspen are present within and adjacent to meadows with suitable physical conditions for these species. Natural disturbances and management activities are sufficient to maintain desired vegetation structure, species diversity, and nutrient cycling.

Objectives (RCA-MEAD-OBJ)

Num	Plan language
01	Maintain, enhance, or improve conditions on at least five meadows of any size, within 10 years following plan approval.

Plan Monitoring Program

Terrestrial Ecosystems*

[Add the following section]

Table 3. Monitoring questions and associated indicators that evaluate select ecological conditions for key characteristics of terrestrial ecosystems

Code	Selected Desired Condition and Objective or Other Plan Component	Monitoring Question	Associated Indicators
TE01*	TERR-OLD-DC-03 Between 40 and 80 percent of the forested landscape contains old forest areas. Old forest areas are clumps and patches of old forest components such as old trees, snags and large downed logs. These areas are irregularly distributed across the landscape and interspersed with stands of younger trees, shrubs, meadows, other herbaceous vegetation and unvegetated patches.	What is the status and trend of large trees in the Sierra Nevada montane forest?	<ul style="list-style-type: none"> • Proportion of area with large trees • Number of large trees, snags, large downed logs per acre by forest type
TE03*	TERR-SAGE-DC-01 The sagebrush type has a diversity of age classes, stand structure, cover classes and understory composition.	What is the condition of sagebrush communities?	<ul style="list-style-type: none"> • Proportions of seral classes, sagebrush cover • Acres of treatment to improve age class distribution • Acres of wildland fire • Percent native understory vegetation

Aquatic Ecosystems

A select set of ecological conditions are monitored for riparian and aquatic ecosystems. The monitoring questions and indicators are selected to measure the effectiveness of the plan to maintain or restore ecological conditions for key ecosystem characteristics associated with composition, structure, function and connectivity.

Table 4. Monitoring questions and associated indicators: select ecological conditions for key characteristics of aquatic ecosystems

Code	Selected Desired Condition and Objective or Other Plan Component	Monitoring Question	Associated Indicators
AE01	RCA-MEAD-DC-05 Meadows have substantive ground cover and a rich and diverse species composition, especially of grasses and forbs. Meadows have high plant functional diversity with multiple successional functional types represented. Perennial streams in meadows contain a diversity of age classes of shrubs along the streambank, where the potential exists for these plants.	What is the vegetative condition of selected grazed and ungrazed meadows?	<ul style="list-style-type: none"> • Rangeland ecological condition • Species richness, species diversity, and plant functional groups • Range greenline monitoring • Vegetation community types

Focal Species

Focal species are a small subset of species whose status permits inference to the integrity of the larger ecological system to which they belong. Focal species monitoring provides information regarding the effectiveness of the plan in providing the ecological conditions necessary to maintain the diversity of plant and animal communities and the persistence of native species in the plan area. They should act as indicators for the attributes of community composition, structure, connectivity or function, or factors that regulate them.

An effective focal species, or assemblage of species, will be sensitive to the ecosystem components or habitat attributes of concern. There are a few key qualities of well-selected focal species: the species is taxonomically well known and stable; the species is specialized within a narrow habitat; and the species is a permanent resident (migrants are subject to a variety of sources of mortality and stress on their wintering grounds and during migration). A focal species could be a keystone species, an ecological engineer, an umbrella species, a link species, or a species of conservation concern, but need not be any of these species categories. Monitoring questions should relate the species to the ecological condition and reason for its selection, and indicators may include affected attributes of the species, such as presence or occupancy, habitat use, reproductive rate, and population trends. If the focal species' sensitivity to habitat changes cannot be directly attributable to a cause-and-effect relationship, then the influence of habitat change on the focal species may not be separable from the influence of other factors on the species, such as climate change, predation, disease, or competition.

Focal species, as used by the Forest Service, are not meant to act as surrogates for other species. Focal species monitoring is also not the same as monitoring those species in which we have a particular interest, such as threatened or endangered species, invasive species, or other species for which we deliberately manage the landscape.

Focal species are intended to reduce the cost and effort of ecosystem monitoring and should only be used when direct measurement of resources is not efficient or practical.

Table 5. Monitoring questions and associated indicators that evaluate the status of focal species to assess the ecological conditions required under section 219.9

Code		Selected Desired Condition and Objective or Other Plan Component	Monitoring Question	Associated Indicators
FS01*		<p>TERR-SAGE-DC-02 Sagebrush ecosystems are resilient to fire and other disturbances including grazing, recreation, invasive species (including cheatgrass) and climate change.</p> <p>TERR-PINY-DC-01 Pinyon-juniper types have a mosaic of trees and open areas that provide wildlife habitat, contribute to functional soils, and are resilient to disturbances such as fire, invasive species and climate change.</p> <p>SPEC-SG-DC-06 The extent and dominance of nonnative annual grass species, such as cheatgrass, is limited and does not lead toward reduction in the suitability of sage-grouse habitat.</p>	How is the abundance of Cheatgrass and red brome (nonnative <i>Bromus</i> spp.) changing?	<ul style="list-style-type: none"> Spatial extent and percent cover

Ecological Conditions for At-risk Species

For select at-risk species, a select set of ecological conditions, including habitat, is monitored. The selected ecological conditions are necessary to provide for diversity of plant and animal communities and to contribute to the recovery of, conserve, or maintain the viability of at-risk species within the plan area. At-risk species include federally recognized threatened, endangered, proposed, and candidate species plus the species of conservation concern identified for the Inyo NF. The select set of ecological conditions monitored for select at-risk species may include characteristics at both the ecosystem and species-specific levels of terrestrial, riparian, or aquatic ecosystems.

Table 6. Monitoring questions and associated indicators: the status of a select set of ecological conditions for at-risk species

Code	Selected Desired Condition and Objective or Other Plan Component	Monitoring Question	Associated Indicators
AR03*	SPEC-SG-DC-01 Suitable sage-grouse habitat includes breeding, brood-rearing, and wintering habitats that are distributed to allow for dispersal and genetic flow.	How is the condition of seasonal sage-grouse habitats and connectivity changing?	<ul style="list-style-type: none"> Sagebrush stand condition from monitoring plots (e.g., cover, species composition) Acres of treatment (e.g., conifer removal, meadow restoration, invasive removal)

Climate Change and Other Stressors

The plan monitoring program includes monitoring questions and associated indicators to determine whether there are measurable changes on the plan area resulting from climate change and other stressors.

Table 7. Monitoring questions and associated indicators: changes on the plan area related to climate change and other stressors

Code	Selected Desired Condition and Objective or Other Plan Component	Monitoring Question	Associated Indicators
CC03	FIRE-FW-DC-01 Wildland fires burn with a range of intensity, severity, and frequency that allows ecosystems to function in a healthy and sustainable manner. Wildland fire is a necessary process, integral to the sustainability of fire-adapted ecosystems.	How are fire regimes changing compared to the desired conditions and the natural range of variation?	<ul style="list-style-type: none"> • Fire return interval departure; • Number and acres of fire by ecosystem type; • Fire severity by ecosystem type.

Progress toward Meeting the Desired Conditions, Objectives, or other Plan Components

Progress toward meeting desired conditions, objectives, or other plan components that do not fall under one of the other eight required items are included in the monitoring program. Specifically, the plan monitoring program must contain one or more questions and associated indicators addressing the plan contributions to communities, social and economic sustainability of communities, multiple-use management in the plan area, or progress toward meeting the desired conditions and objectives related to social and economic sustainability.

Table 8. Monitoring questions and associated indicators: progress toward meeting the desired conditions and objectives in the plan

Code	Selected Desired Condition and Objective or Other Plan Component	Monitoring Question	Associated Indicators
PC03	FIRE-FW-GOAL-01 Reduce fuel accumulations, help maintain and protect habitat for a variety of species, reduce smoke from larger fires, provide added protection for communities, and restore fire on the landscape. These actions are also an integral part of achieving sustainable recreation, particularly by maintaining scenic attractiveness, integrity, and character.	What management actions are contributing to the achievement of desired conditions relating to fire regimes?	<ul style="list-style-type: none"> • Acres of fires managed for resource objectives by ecosystem type; • Acres of fire by objective within each fire management zone; • Acres of prescribed fire; • Acres of mechanical treatment

V. Affected Species and Environmental Effects

[This section summarizes legal status, habitat requirements, and historic and current occurrences for the two proposed species not included in the original biological assessment.]

This section presents the analysis of effects of adopting the Proposed Action, the forest plan described by alternative B modified, as summarized in the original BA and with additions or changes noted in Part IV above. As a reminder, since forest plans themselves do not compel any action, authorize projects or activities, or guarantee specific results and do not directly affect any existing activity, project, or action, there are no direct effects from adopting the Proposed Action. This analysis focuses on potential indirect and cumulative effects from implementing the framework programmatic action. Project-level effects will be evaluated in a separate site-specific analysis at the time that projects and activities are proposed and may require project-level consultation with the USFWS as directed by Section 7 of the ESA and Forest Service policy.

Plan Analysis Approach

This additional analysis considered the overarching desired conditions for Animal and Plant Species to provide for sustainable populations of native species (SPEC-FW-DC-01) and especially habitats to support at-risk species (SPEC-FW-DC-02) and land management activities consider the relationship of activities to species survival and reproduction (SPEC-FW-DC-03). A management intent of a **potential management approach** is to incorporate conservation of at-risk species in all program areas at appropriate times.

Species Effects Matrix

[Add the following rows to the species effects matrix (Table 9).]

Table 9. Matrix of programs and activities that may affect species

Species	Fire Mgmt	Veg & Fuels Mgmt	Range Mgmt	Recreation Mgmt	Restoration Activities	Roads / Infra-structure
Bi-State DPS of greater sage-grouse	X	X	X	X	X	X
West Coast DPS of fisher	X			X		

[Add the following species sections]

Proposed Bi-State DPS of Greater Sage-grouse and Proposed Critical Habitat

The Species Status Assessment for the Bi-State Distinct Population Segment of Greater Sage-Grouse (USDI Fish and Wildlife Service 2015b) and the Bi-State Action Plan (Bi-State Technical Advisory Committee Nevada and California 2012) provides a description of the current range, distribution and population estimates for each population management unit as well as an assessment of threats. The relevant information is summarized here, generally without the specific source attributions, except where other sources are used or where it may aid in identifying which document contains additional detail.

Classification, Critical Habitat and Recovery Plan

The Bi-State DPS of greater sage-grouse was originally proposed for listing as a threatened species on October 28, 2013 (USDI Fish and Wildlife Service 2013b) and critical habitat was also proposed (USDI Fish and Wildlife Service 2013a), but that proposed rules were subsequently withdrawn on April 23, 2015. The basis for the withdrawal was challenged on March 9, 2016 and the court subsequently vacated the listing withdrawal decision and remanded to the USFWS to prepare a new determination. On April 12, 2019 the USFWS reopened the comment period on the October 28, 2013 proposed rules to list the Bi-State DPS of greater sage-grouse as threatened and to designate critical habitat (USDI Fish and Wildlife Service 2019a).

Habitat and Life History

Sage-grouse in California are dependent on specific sagebrush habitats, primarily involving two species of sagebrush, *Artemisia tridentata* and *A. arbuscula* (Hall et al. 2008, Schroeder et al. 1999). A diversity or mosaic of sagebrush with native forbs and grasses are needed with different preferences for lekking (breeding display areas), nesting, molting, and wintering.

Since 2012, the Inyo NF has implemented a sage-grouse interim policy that allows for consistent management across the forest when conducting or approving activities within sage-grouse habitat on forest lands (USDA Forest Service 2012). This document uses design criteria that have been implemented over the past several years and have been shown to lead toward maintaining, improving or restoring sage-grouse habitat. This interim policy addresses livestock grazing, wildfire, vegetation management, and mineral and energy development. The forest used the best available science when developing this interim policy.

Historic and Current Distribution

Bi-State sage-grouse occur on the Inyo NF within designated population management units (PMUs) which are areas delineated around the subpopulation of bi-state sage-grouse and correspond with proposed critical habitat. Part or all of the following population management units are contained and designated within the Inyo NF: Bodie, South Mono, and White Mountains. The PMUs align to the proposed critical habitat as shown as the color shaded areas in Figure 1, with the Bodie PMU occupying the southern portion of the North Mono Lake proposed critical habitat along the north side of Mono Lake. This analysis will focus on effects within the proposed critical habitat on the Inyo NF. While current population estimates for sage-grouse on the Inyo specifically are unknown, three leks are known to occur on Inyo NF.

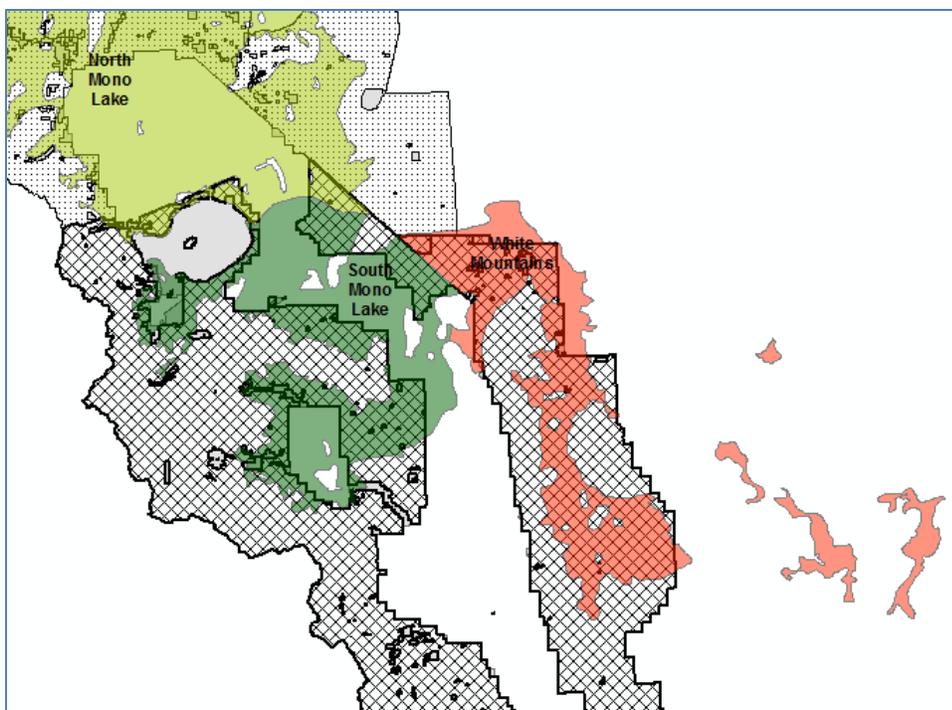


Figure 1. Map of proposed critical habitat units (color shaded) on the Inyo NF (crosshatch)

From Table 10, the Inyo NF only manages about three percent of the North Mono Lake PCH unit (light green shaded, northern unit), about half of the South Mono Lake PCH unit (dark green shaded, middle unit), and about two-thirds of the White Mountains PCH unit (red shaded, southern unit). Of the portions managed by the Inyo NF, approximately half of the South Mono Lake PCH unit and approximately two-thirds of the White Mountains PCH unit are in designated wilderness areas or in inventoried roadless areas.

Table 10. Acres of proposed critical habitat on Inyo NF and in existing wilderness and inventoried roadless areas

PCH Unit Name	Total Acres of PCH Unit	Acres on INF	Acres in Existing Wilderness	Acres in Inventoried Roadless Area
North Mono Lake	853,397	27,156	411	2,582
South Mono Lake	398,999	195,295	4,123	86,687
White Mountains	314,125	209,678	92,027	45,708

Population and Habitat Status and Trends

The following general population trends have been observed on population management units that include the Inyo NF. From 2003 to 2017, the Bodie Hills population management unit has been increasing while the Long Valley population has been decreasing, although there is uncertainty about the true trend in both populations (Mathews et al. 2018). In 2016, a mark-recapture study of eight individuals was initiated to assess population trends for the White Mountain PMU. Telemetry work conducted from March to May of 2017 identified a total of 42 nests across the Bodie Hills, Long Valley, and Parker Meadows study areas which occur on or near the Inyo National Forest (USDI United States Geological Survey 2017).

Greater sage-grouse in California are dependent on sagebrush habitats that include a diversity of sagebrush mixed with native forbs and grasses (Hall et al. 2008, Schroeder et al. 1999). Lekking, nesting,

molting, and wintering all require different configurations of sagebrush habitat, which increases the species vulnerability (Hall et al. 2008). On the Inyo National Forest, the ecological conditions for greater sage grouse occur in the sagebrush shrub assessment type, which occupies approximately 300,000 acres on the Inyo. This acreage does not include those areas currently occupied by pinyon-juniper that could potentially be a sagebrush shrub type. The sagebrush shrub assessment type includes all subspecies of big sagebrush (*Artemisia tridentata*), as well as the other woody sagebrush species found on the national forest, and shrub communities where sagebrush is dominant but other species co-occur (such as low sagebrush, sagebrush-bitterbrush, black sagebrush, and silver sagebrush). Sagebrush shrub communities occur from the floor of the Owens Valley on Los Angeles Department of Water Power lands, in disjointed bands all the way up to and including subalpine areas in the Sierra Nevada, and the White, Inyo, and Glass Mountains. Research natural areas that include the sagebrush shrub assessment type include White Mountain, McAfee Meadow, and Indiana Summit, with some small areas of the sagebrush shrub vegetation type within the Whippoorwill Flat and Sentinel Meadow Research Natural Areas. Approximately 30 percent (89,894 acres) of the sagebrush assessment type on the Inyo National Forest is located within designated wilderness. The Inyo National Forest manages approximately 213,670 acres (20 percent) of a total of 1,075,730 acres of priority habitat for the sage-grouse. Primary management units include Bodie, South Mono and White Mountains.

Threats

Because sage-grouse are sagebrush obligates, they are threatened by actions and processes that reduce the extent and integrity of this habitat (Hall et al. 2008) and warrant area specific habitat guidelines (Stringham and Snyder 2017). Western juniper expansion is a major threat to sage-grouse occupation in northeastern California and to a lesser extent in Mono and Inyo Counties. Encroaching juniper displaces sagebrush and other shrubs (Crawford et al. 2004). Juniper also provides additional perches for aerial predators and cover for terrestrial predators. Predation by ravens has the potential to negatively affect sage-grouse and there are some areas documented on the Inyo that have low understory and shrub cover, which could leave nests exposed. However, these areas are within the natural range of variation for the Inyo National Forest. Sage-grouse avoid areas with abundant juniper (Sage-Grouse Conservation Team (SGCT) 2004, Hall et al. 2008). Jeffery pine and pinyon/juniper expansion is occurring in the sagebrush shrub assessment type on the Inyo National Forest, possibly the result of fire suppression, livestock grazing and changing climate. Pinyon-juniper expansion has been observed throughout the bi-state area (Bi-State Technical Advisory Committee Nevada and California 2012) and an estimated 25,261 acres of sagebrush shrublands are undergoing active encroachment by pinyon and juniper trees on the Inyo National Forest, as determined from aerial photography interpretation.

Both prescribed fires and wildfires have the capacity to degrade sage-grouse habitat significantly. Sagebrush is typically slow to reestablish following fire, has poor seed dispersal, and has little ability to naturally reestablish in sites dominated by annual grassland (Shaw et al. 2005). Fire also facilitates the invasion of cheatgrass, which commonly occupies sites following disturbance, especially burning (Connelly et al. 2000). Frequent (less than 20- to 30-year interval) or late-summer burning favors cheatgrass invasion and may be a major cause of cheatgrass expansion in sagebrush habitats. The Inyo has experienced recent wildfires within sagebrush ecosystems that have led to some cheatgrass expansion. However, these wildfires have not led to complete type conversions or reduced the suitability of these areas for sage-grouse.

Habitat loss from pinyon juniper expansion, conifer encroachment, wildfire and cheatgrass invasion are the most immediate threats; however, some other activities are thought to provide a low or medium threat. Anthropogenic activity can result in reduced availability and suitability of sage-grouse habitat, usually by fragmenting or removing sagebrush cover, increasing opportunities for predation, or increasing noise

disturbance. Energy development (wind/solar), mining, and livestock range improvements occur to varying degrees on the Inyo National Forest. Development is currently limited on the forest, with most development occurring on private lands adjacent to the forest. Areas where development may impact sage-grouse use or movements include the Chiatovich Creek area on the eastside of the White Mountains in Nevada. Proposals for development of wind, solar and geothermal energy can be expected to increase in the coming years, potentially resulting in additional impacts to sagebrush ecosystems in the future. Some expansion of existing geothermal production is currently occurring with potential impacts primarily to Jeffrey pine assessment types. The risk is primarily from an increase of associated infrastructure (e.g., roads, fences and transmission lines). In addition to reducing and degrading habitat condition, developments can impact sage-grouse use and movement in habitats, especially winter range use where new roads and private land housing development can fragment habitat.

Although livestock grazing is not considered to pose a high threat on the Inyo National Forest, some livestock grazing practices have been modified to reduce the risk of impacts to habitat and disturbance to individuals from trampling. Associated infrastructure related to livestock grazing such as fences, watering sites, and gathering and handling facilities can serve as perches for avian predators such as ravens or more direct threats of sage-grouse mortality from striking fences or drowning in watering facilities or increased risk of diseases such as West Nile virus from mosquitos at watering sites.

Analysis of Effects

For the Bi-State DPS of greater sage-grouse, the baseline environmental condition includes past project-level decisions, made in coordination with the USFWS and CDFW, that changed annual operations on livestock grazing allotments in areas of high risk of adverse effects with sage-grouse breeding sites.

The current forest plan includes four forestwide standards and guidelines and three management area specific standards and guidelines that apply to greater sage-grouse but does not clearly differentiate the plan direction into specific types of plan components and includes some overlap between items. The Proposed Action replaces and strengthens these plan components for greater sage-grouse with clearer and broader plan components designed to better describe the plan's contribution to the species' recovery. The Proposed Action includes nine desired conditions, one objective, four goals, fifteen standards, five guidelines, and five potential management approaches specific to greater sage-grouse. In addition, there are two overarching relevant goals that apply to all at-risk species (**SPEC-FW-GOAL-01**, **SPEC-FW-GOAL-02**). A summary crosswalk of plan direction for sage-grouse is found in Appendix B – Plan Components for At-risk Species.

Indirect Effects

A number of forestwide plan components emphasize consistency with other conservation plans and strategies that should benefit sage-grouse on the Inyo NF. These include a broad forestwide guideline for all at-risk species (**SPEC-FW-GDL 04**) but also species specific goals for sage-grouse that promote partnership coordination and collaboration including participation on the executive oversight committee, technical advisory committee, and local working groups (**SPEC-SG-GOAL-01**) and continuing coordination and communication with the USFWS and CDFW (**SPEC-SG-GOAL-04**) to support a number of sage-grouse specific conservation measures and relevant guidance outlined in the Bi-State Action Plan (Bi-State Technical Advisory Committee Nevada and California 2012), among others. The forest would continue to work with researchers, scientists, and partners to collect data on sage-grouse populations and habitats (**SPEC-SG-GOAL-03**) which would better inform quantitative desired conditions and restoration actions in sage-grouse primary management units, including wintering habitat (**SPEC-SG-GOAL-02**). The forest would also communicate and collaborate with other agencies, Tribes,

landowners, and partners to improve conditions for sage-grouse in the plan area (**SPEC-FW-GOAL-04**). A **potential management approach** is to collaboratively develop a mitigation strategy that provides alternative mitigation tools to address the risks of predation from perches and tall structures and other issues.

Broadly, providing for habitat and other ecological conditions for at-risk species is provided in **TERR-FW-DC-05** and **TERR-FW-DC-06**. Specifically, ecological conditions for the sagebrush vegetation type is provided by several desired conditions addressing: general conditions (**TERR-SAGE-DC-01**); resilience to fire, disturbances and climate change (**TERR-SAGE-DC-02**); conditions when grazed (**TERR-SAGE-DC-03**); connectivity (**TERR-SAGE-DC-04**); and non-native grasses (**TERR-SAGE-DC-05**). One goal addresses considerations for restoration projects following large-scale disturbances in sagebrush ecosystems, which includes restoring habitat and habitat connectivity (**TERR-SAGE-GOAL-01**).

Species specific desired condition ensures suitable sage-grouse habitat includes breeding, brood-rearing, and wintering habitats dominated by sagebrush shrubland and sagebrush steppe, with associated mesic habitats (**SPEC-SG-DC-01**). In addition, a desired condition recognizes the ecological conditions needed to provide cover and nutritional needs of wintering habitat (**SPEC-SG-DC-04**) and a standard (**SPEC-SG-STD-02**) directs that restoration activities in sage-grouse habitat include measures to improve wintering habitat, as well as brood and nesting habitat.

Fire Management

Wildfires will continue to burn across the Inyo NF and they will continue to be actively managed using a range of fire management responses. The Proposed Action aims to manage more naturally ignited wildfires where and when it can do so safely and where the expected fire effects are likely to provide a positive benefit to resources. Given the sensitivity of sagebrush to wildfire and the risks of nonnative annual grass invasion or spread following wildfires, some adjustments were made to the final strategic fire management zones to better reflect the active management, particularly fire suppression that will likely continue within sagebrush habitats when wildfire effects are expected to be adverse to sage-grouse habitats.

Although a moderate amount of each of the proposed critical habitat units are mapped as occurring in the Wildfire Restoration Zone or Wildfire Maintenance Zone (Table 11), a species-specific desired condition (**SPEC-SG-DC-07**) states that unwanted fires that are more frequent, more severe, or outside the natural range of variation would be limited or prevented in priority sage-grouse habitat and a **potential management approach** describes the intent to prevent unwanted fire in priority habitats.. Further, **SPEC-SG-STD-15** directs that a resource advisor is consulted when wildfires burn in sagebrush habitats to identify suitable sage-grouse habitats and that when safe and feasible efforts are made to protect high value suitable sage-grouse habitat during burn operations.

Table 11. Acres of strategic fire zone by proposed critical habitat unit

Strategic Fire Zone	North Mono Lake	South Mono Lake	White Mountains
Community Wildfire Protection Zone	4,254	19,809	4,179
General Wildfire Protection Zone	2,387	81,165	71,584
Wildfire Restoration Zone	10,755	67,032	41,971
Wildfire Maintenance Zone	9,399	25,818	91,392

Vegetation and Fuels Management

Vegetation management and fuels reduction activities are unlikely to have an effect on sage-grouse except to the extent associated activities could disturb breeding or nesting in areas near upland forests. If

vegetation management or fuels reduction projects are planned near breeding or nesting habitat, a limited operating period would restrict activities between March 1 and May 15 for the breeding season (**SPEC-SG-STD-06**) and from May 1 to June 15 for the nesting season (**SPEC-SG-STD-07**). Active vegetation treatments would be limited to areas outside of designated wilderness and largely outside of inventoried roadless areas.

To the extent that prescribed burning is used in sagebrush ecosystems, **SPEC-SG-STD-04** directs that long-term negative impacts to sage-grouse habitat would be mitigated to the extent practicable and within agency authority. Further spring burning would be constrained by limited operating periods for the breeding (**SPEC-SG-STD-06**) and nesting (**SPEC-SG-STD-07**) seasons to avoid disturbance. Where needed and logistically possible, these activities could occur within the recommended wilderness as allowed by **MA-RWLD-SUIT-07**.

Range Management

In general, plan components for rangeland livestock grazing is to manage for sustainable grazing (**RANG-FW-DC-01**) that meets the needs of both wildlife and livestock (**RANG-FW-DC-02**) while maintaining desired conditions of rangeland vegetation types. Although livestock grazing is not identified as a high threat in the Bi-State Action Plan (2012) for the Bodie, White Mountains, or South Mono population management unit, it can cause disturbance and trampling of nest sites. There are 49 cattle and horse and sheep and goat allotments identified on the Inyo NF. Of these, 30 occur within priority sage-grouse habitat, with 20 of those being active. Reissuance of grazing permits since 2009 includes design features to reduce impacts to sage-grouse. Related infrastructure (fences and posts) has been identified as an additional threat to greater sage-grouse because it may increase predation risk (USDI Fish and Wildlife Service 2015b, Hall et al. 2008). Prolonged grazing by wild horses can cause plant community changes that can have negative impacts on sage-grouse and other sagebrush-obligate wildlife with effects ranging from limited sagebrush recruitment, reduction in sagebrush density, reduce grass abundance and cover, lower plant species diversity, increase dominance of forbs unpalatable to sage-grouse, and compact surface soil horizons (USDA Forest Service and USDI Bureau of Land Management 2015). However, very little of the White Mountain Wild Horse Territory is currently occupied. Horses occupy the north and east foothills of the White Mountain Range along the edge of Fish Lake Valley year around with most impacts occurring on public and private lands outside of these territories and off the national forest.

Plan components minimize loss of forage, cover and habitat for lekking and nesting and ensure meadow habitat in active livestock allotments is compatible with sage-grouse habitat needs and trending toward desired conditions (**RANG-FW-DC-02**, **TERR-SAGE-DC-02**, **TERR-SAGE-DC-03**, **SPEC-SG-DC-09**). Livestock facilities, new salting areas, and supplemental feeding locations are prohibited in meadow and riparian areas (**RANG-FW-STD-04**, **MA-RCA-STD-17**) and in leks (**SPEC-SG-STD-13**) and existing facilities are evaluated during permit reissuance (**MA-RCA-GDL-03**). A forestwide goal for range emphasizes that impacts to animals will be considered when designing rangeland improvements including structures (**RANG-FW-GOAL-03**). A goal for designated areas for wild horse and burro territories (**DA-WHT-GOAL-01**) supports collaborative work with other agencies and partners to manage wild horses and a **potential management approach** is to determine site-specific measures where sage-grouse habitat is being degraded. Species specific standards establish key meadow or upland areas for sage-grouse in active allotments (**SPEC-SG-STD-08**) and ensure fencing is not a barrier to movement near known leks (**SPEC-SG-STD-11**) and that permitted watering facilities are managed in a way to prevent drowning of animals and mitigate disease spread (**SPEC-SG-STD-12**).

Recreation Management

The Proposed Action manages four new areas within proposed critical habitat as recommended wilderness and identifies a challenging backroad area recreation management area with low recreation visitor use and few developed recreation opportunities (**MA-CBRA-DC-01, MA-CBRA-DC-04**) as shown in Table 12. Recreation in the challenging backroad area emphasizes non-motorized uses (**MA-CBRA-DC-06**) and developments are minimized (**MA-CBRA-STD-03**) and permitted uses are consistent with the low visitor use and remote settings (**MA-CBRA-STD-02**). The lower levels of recreation use in the challenging backroad areas help them contribute to habitat needs and provide for connectivity for wildlife (**MA-CBRA-DC-02**). Notably, approximately 98 percent of the White Mountains and 62 percent of the South Mono Lake proposed critical habitat units are within existing wilderness, recommended wilderness, inventoried roadless area or challenging backroad area. Approximately 47 percent of the North Mono Lake proposed critical habitat unit meets those same criteria. For greater sage-grouse, these areas would have fewer human disturbances than other areas with higher levels of recreation use and they would have lower potential for expansion of recreation access which could disturb breeding and wintering sage-grouse.

Dispersed recreation is managed to reduce impacts on natural resources (**REC-FW-DC-04; REC-FW-DC-08; REC-FW-GOAL-02**). If recreation uses are found to be adversely impacting sage-grouse, especially lek sites, **REC-FW-GDL-03** guides the use of integrated resource planning to address impacts. Additionally a management intent of several **potential management approaches** would use management methods such as seasonal road and trail closures when appropriate to protect resources and to use informational signs and other technology to inform the public on wildlife awareness and sustainable recreation opportunities.

Table 12. Acres of recreation emphasis in proposed critical habitat

PCH Unit Name	Acres on INF	Acres in Existing Wilderness or IRA	Acres in Recommended Wilderness	Acres in Challenging Backroad Area
North Mono Lake	27,156	2,993	8,866	1,030
South Mono Lake	195,295	90,810	8,145	22,147
White Mountains	209,678	137,735	24,233	59,925

Restoration Activities

Relevant restoration activities in sage-grouse habitat would predominately be to remove encroaching trees from sagebrush habitats, manage invasive species, and restore meadows. The Proposed Action includes the identification of additional areas within the proposed critical habitat units as recommended wilderness (See Recreation Management section above). Although activities such as road construction or reconstruction (**MA-RWLD-SUIT-01**) and mechanized transport and motorized uses (**MA-RWLD-SUIT-06**) are generally not suitable within recommended wilderness, such activities could be allowed for the purpose of sage-grouse habitat restoration if temporary and if they would not have a lasting effect on wilderness characteristics (**MA-RWLD-SUIT-07**). However, these areas would generally not occur within existing wilderness areas and overall may be hampered most from occurring due to lack of existing roads and limited access.

Plan components ensure the appropriate habitat components necessary for lekking, nesting, wintering and brood rearing are available and are resilient to threats from invading trees and nonnative species. Desired conditions for sagebrush (**TERR-SAGE-DC-04**) and sage-grouse (**SPEC-SG-DC-05**) recognize the need for open sagebrush with no overstory trees. Limiting the impact of nonnative annual grasses, especially cheatgrass (which out-competes native grasses with higher dietary value and alters natural fire regimes),

in sagebrush habitats is recognized by desired conditions (**SPEC-SG-DC-06**, **TERR-SAGE-DC-05**). Although not specific to sagebrush habitats, specific and measurable objective focus on elimination of high priority invasive plants on the Inyo NF (**INV-FW-OBJ-01**, **INV-FW-OBJ-02**) to meet the objectives of controlling or eradicating invasive species (**INV-FW-DC-01**); designing projects to minimize spread (**INV-FW-GDL-01**); and limiting the spread to new areas (**INV-FW-DC-02**). When coupled with the objective to improve up to 14,900 acres of sage-grouse habitat within 10 years of plan approval (**SPEC-SG-OBJ-01**), it is highly likely some activities to eliminate invasive plants would occur within sage-grouse habitats. A **potential management approach** expresses the intent to use an adaptive management strategy to determine treatment methods and intensities that limit nonnative annual grass spread and poor sagebrush recruitment based upon the results of past treatments. Together, the forest plan provides guidance to minimize competition from nonnative plant species that outcompete native species and provide cover and protection from predators.

Ecosystem level plan components for meadows, rivers and streams and riparian conservation areas promote ecosystems that are resilient to disturbance and hydrologically functional. Meadows contain a diversity of grasses and forbs with complex habitat for native plant and animal communities. A desired condition for watersheds ensures nutritive forage is available for grazing and that healthy populations are sustained in upland and riparian communities. Standards constrain livestock grazing activities that impair riparian conservation areas, meadows, and fens and guidelines minimize disruption of hydrologic connectivity of streams, meadows, and wetlands. An objective promotes enhanced meadow conditions.

The Proposed Action includes a species specific desired condition that promote healthy riparian and meadow areas necessary for late season brood rearing, promotes hydrologic and ecological integrity and species composition needed for brood rearing habitat (**SPEC-SG-DC-09**). This complements the forestwide desired condition for riparian conservation areas that they contribute to the persistence of at-risk species (**MA-RCA-DC-02**) and the desired conditions for meadows, particularly **RCA-MEAD-DC-01**, **RCA-MEAD-DC-03**, **RCA-MEAD-DC-05**, and **RCA-MEAD-DC-06**. Where needed, projects to restore ecological conditions for sage-grouse within meadows could be implemented to meet plan objectives to restore meadows (**RCA-MEAD-OBJ-01**) or sage-grouse habitat (**SPEC-SG-OBJ-01**).

Ecosystem level plan components incorporate restoration measures that enhance sagebrush communities that have experienced large landscape scale disruptions in composition, structure and function from wildfires or other disturbances (**TERR-SAGE-GOAL-01**). Additionally, standard **SPEC-SG-STD-14** requires that areas with soil-disturbance or seeding be protected from additional disturbance until desired conditions are met.

In the past, herbicides have been judiciously used in some areas of the forest to restore sagebrush and this has not been identified as a high viability risk for sage-grouse on the Inyo NF (Bi-State Technical Advisory Committee Nevada and California 2012). Regardless, the Proposed Action includes several plan components that could address herbicide use in sage-grouse habitats. These include desired conditions that emphasize sagebrush and perennial grasses for nesting, brood-rearing, and wintering habitat and limiting nonnative annual grasses (**SPEC-SG-DC-01**, **SPEC-SG-DC-02**, **SPEC-SG-DC-03**, **SPEC-SG-DC-04**, **SPEC-SG-DC-06**, **SPEC-SG-DC-08**) and a standard (**SPEC-SG-STD-01**) to design habitat restoration projects for sage-grouse to specifically provide for habitat needs. In addition, a standard (**INV-FW-STD-03**) emphasizing integrated pest management for all projects and activities and several species specific guidelines (**SPEC-SG-STD-06**, **SPEC-SG-STD-07**) that establish limited operating periods during the sage-grouse breeding and nesting seasons. This includes treatments for invasive species and herbicide spraying. Collectively these plan components should mitigate any unintended consequences that might arise from herbicide use in sage-grouse habitat.

Roads and Infrastructure

The effects of roads that fragment habitat and infrastructure, particularly tall structures like fences and structures and facilities that can serve as perches for sage-grouse predators, is increasingly recognized as concerns for the recovery of the species. Ground disturbance and associated structures related to energy development are also concerns.

The Proposed Action includes several standards and guidelines (**SPEC-FW-STD-01; SPEC-SG-GDL-01, SPEC-SG-GDL-02, SPEC-SG-GDL-03, SPEC-SG-GDL-04; SPEC-SG-GDL-05; INV-FW-GDL-04; LAND-FW-GDL-02, GEO-FW-STD-01, GEO-FW-STD-04; NRG-FW-STD-01; INFR-FW-DC-03; MA-RWLD-SUIT-03**) specifically address the threat of habitat loss and fragmentation resulting from energy and related infrastructure development. These plan components promote practices that minimize additional rights of way; reclaim unneeded rights-of-way (**potential management approach**); prevent additional energy development in recommended wilderness, and bury utility lines and limit geothermal tower development to reduce impacts to habitat and habitat connectivity. Although the threat to sage-grouse from predation facilitated by fences, powerlines, and roads is thought to be relatively low and localized at this time compared to other threats (Bi-State Technical Advisory Committee Nevada and California 2012) the plan includes several desired conditions, standards and guidelines (**SPEC-SG-STD-10, SPEC-SG-STD-11; SPEC-SG-GDL-01, SPEC-SG-GDL-02, SPEC-SG-GDL-03; SPEC-FW-STD-01; NRG-FW-STD-01; INFR-FW-DC-03; DA-IRA-SUIT-02**) to address this issue. A management intent expressed through a **potential management approach** is to participate in collaborative forums to attempt to create a voluntary mitigation strategy to address risks such as predation related to tall structures.

Effects to Proposed Critical Habitat

As described above in the recreation section, a large amount of the proposed critical habitat is within designated wilderness areas, recommended wilderness areas, inventoried roadless areas, or challenging back roads areas in the Proposed Action. These areas will essentially remain undeveloped with limited opportunities for active management or restoration. The exception is that within the portions of the recommended wilderness areas that overlap habitat, use of mechanized or motorized equipment could occur for ecological restoration for greater sage-grouse if effects do not have lasting effects on wilderness characteristics (**MA-RWILD-SUIT-07**). The Proposed Action includes plan components to address energy development and the effects of potential energy development is discussed in the section on Roads and Infrastructure above. New recreation sites would be avoided where it might affect breeding habitat (**REC-FW-GDL-01**). The risk of fire affecting sagebrush habitats within proposed critical habitat is discussed in the Fire Management section above. Direction for fire management in sage-grouse habitat will emphasize appropriate actions to minimize adverse effects to sagebrush and sage-grouse habitats.

Cumulative Effects

The cumulative effects analysis area includes the area around proposed critical habitat on the Inyo NF and adjacent non-federal lands that are used by Bi-State greater sage-grouse. This is an appropriate scale for determining cumulative effects since it includes all habitat potentially affected by implementing the Proposed Action. The cumulative effects time frame is 15 years into the future, which is the expected timeframe when the forest plan would be revised. The cumulative effects of all past non-federal actions are incorporated into the environmental baseline condition.

Concerns for effects to habitat and individuals from non-federal actions could include human development on private lands, nest predation from utilities infrastructure such as fences and tall structures that occur on adjacent non-federal lands, changes in timing and flow of water and water availability from

water uses on non-federal lands, and livestock grazing that occurs off-forest. We are unaware of specific non-federal proposals that may occur within the proposed critical habitat areas. However, as described in the Bi-State Action Plan (Bi-State Technical Advisory Committee Nevada and California 2012), the Mono County General Plan contains county-wide goals and policies and area specific policies that recognize sage-grouse habitat values.

Given these and other potential nonfederal future actions, we do not anticipate a significant increase in the level of impacts to the species population in the plan area beyond what has already been noted in the analysis of effects resulting from implementing the Proposed Action.

Determination

The Bi-State distinct population segment of greater sage-grouse is a sagebrush obligate with highly specific habitat needs. Juniper expansion, fire, and invasive species are primary threats to habitat integrity and long-term persistence of this species in the plan area. Based upon this evaluation, the final set of ecosystem plan components and the additional species-specific plan components, when carried out, would provide the necessary ecological conditions to maintain a viable population of Bi-State greater-sage grouse within the plan area.

Key conclusions:

- The forest plan provides a programmatic framework for future site-specific projects and actions but does not prescribe specific projects or assign project locations. Plan components exist to ensure proposed actions avoid, mitigate or minimize impacts to Bi-State greater sage-grouse. All future project level activities that may affect this species will require project-specific assessments and conference or consultation under Section 7 of the Endangered Species Act.
- A combination of ecosystem level plan components and species-specific plan components for Bi-State greater sage-grouse provide for the ecological conditions that would contribute to the recovery of the species.
- The forest plan includes plan components that collectively work to move sage-grouse habitat toward desired conditions that should provide more optimal breeding, nesting, dispersal and wintering habitat in the future by minimizing predation, disturbance, and fragmentation from forest management activities as well as habitat loss resulting from encroachment, altered fire regime and cheatgrass invasion.
- The forest plan identifies an objective to restore up to 14,900 acres of sage-grouse habitat within 10 years of plan adoption. This will improve habitat conditions within and between population management units.
- Species specific desired conditions promote healthy riparian and meadow areas necessary for late season brood rearing, promotes hydrologic/ecological integrity and species composition needed for brood rearing habitat.
- A large amount of the proposed critical habitat is within existing designated wilderness areas, new recommended wilderness areas, inventoried roadless areas, and areas managed for more primitive recreation experiences. These areas will remain essentially undisturbed by management activity and may be benefited by restoring sagebrush ecosystems, including reducing the risk of adverse impacts from wildfires.

Based on our analysis, we determined that because some actions and activities may disturb and displace individuals and habitat could be affected by future wildfires and continued degradation from tree encroachment and spread of nonnative invasive species, adoption of the Proposed Action *may affect, but is not likely to jeopardize the continued existence* of the Bi-State DPS of greater sage-grouse.

Although portions of the proposed critical habitat occurs in areas with limited access (designated wilderness and inventoried roadless areas) with limited opportunities for management actions to restore habitat, the forest plan intends to improve almost 15,000 acres of sage-grouse habitat. Since actions to improve sage-grouse habitat could have short-term effects, we determined that adoption of the Proposed Action *may affect, but is not likely to adversely modify proposed critical habitats* on the Inyo National Forest.

Proposed West Coast DPS of Fisher

The Southern Sierra Nevada Fisher Conservation Strategy, Version 1.0 (Spencer, Sawyer, Rosmos, et al. 2015) and subsequent author statement (Spencer et al. 2017), Southern Sierra Nevada Fisher Conservation Assessment (Spencer, Sawyer, Romsos, et al. 2015), and the proposed rule to list the species as threatened (USDI Fish and Wildlife Service 2014) and subsequent withdrawal (USDI Fish and Wildlife Service 2016) describes key habitat, life history requirements, distribution and threats compiled from a variety of best available science sources. The relevant information is summarized here, generally without the specific source attributions, except where other sources are used or where it may aid in identifying which document contains additional detail.

Classification, Critical Habitat and Recovery Plan

The West Coast DPS of fisher was originally proposed for listing as a threatened species on October 7, 2014 (USDI Fish and Wildlife Service 2014), but that proposed rule was subsequently withdrawn on April 18, 2016 (USDI Fish and Wildlife Service 2016). The basis for the withdrawal was challenged on October 19, 2016 and the court subsequently vacated the listing withdrawal decision and remanded to the USFWS to prepare a new determination. On January 31, 2019 the USFWS reopened the comment period on the October 7, 2014 proposed rule to list the West Coast DPS of fisher as threatened (USDI Fish and Wildlife Service 2019b). No critical habitat has been proposed.

Habitat and Life History

Habitat is described at multiple spatial scales in the Conservation Assessment. At the landscape scale habitat is generally described as dense, mature mixed-conifer forests at elevations that do not accumulate deep and persistent snow. At the home-range and sub-home range scale, habitat is described as mature coniferous forest, typically more mesic than xeric, with supporting features such as large diameter trees and snags, multi-layered canopies, large down wood, high canopy closure, and structurally diverse and complex understory that support prey and denning and resting sites.

Historic and Current Distribution

The Southern Sierra Fisher Conservation Assessment (Spencer, Sawyer, Romsos, et al. 2015) and Conservation Strategy (Spencer, Sawyer, Rosmos, et al. 2015) describe seven fisher population core areas in the southern Sierra Nevada, five of which are occupied, and two of which are currently unoccupied. Fishers on the Inyo NF make up a small part of the Core 1 population. This core is mostly on the Kern Plateau in the southeastern portion of the fisher assessment area and is the only core not on the west slope of the Sierra Nevada. It is largely within Sequoia NF, with a small portion on the Inyo NF (about 13,400 acres). The Kern Plateau has unique environmental conditions, due to differences in climate, geology, and

vegetation, compared to the west-slope cores (Miles and Goudey 1998). It receives less annual precipitation (about 10-30 inches) than forests in other cores (about 40-60 inches), and the vegetation is somewhat more open. Pinyon-juniper woodlands, canyon oak woodlands, and birch-leaf mountain mahogany are a greater component of the vegetation of the Kern Plateau than other portions of the Fisher Assessment Area, and California black oak, an important component of fisher habitat where it occurs, is rare or absent. The Conservation Assessment suggests that the lesser accumulation of snow in this core may explain why fishers occupy higher elevations here than elsewhere in the assessment area and why martens (which are more snow-adapted than fishers) are absent.

Occupancy modeling shows this core area to have the lowest occupancy rates in the region (Zielinski et al. 2013), suggesting lower population densities here than elsewhere. Twenty-six sample units of the Sierra Nevada bioregional carnivore monitoring occur on the Inyo NF and the Conservation Assessment reports that 4 have detected fisher at various times over the last 15 years. While reproduction has not been confirmed in this area, genetic analysis of hair samples have detected females multiple times, and in 2012 surveyors detected multiple individuals with genotypes consistent with a mother and two offspring (J. Tucker, unpublished data cited in (Spencer, Sawyer, Romsos, et al. 2015)).

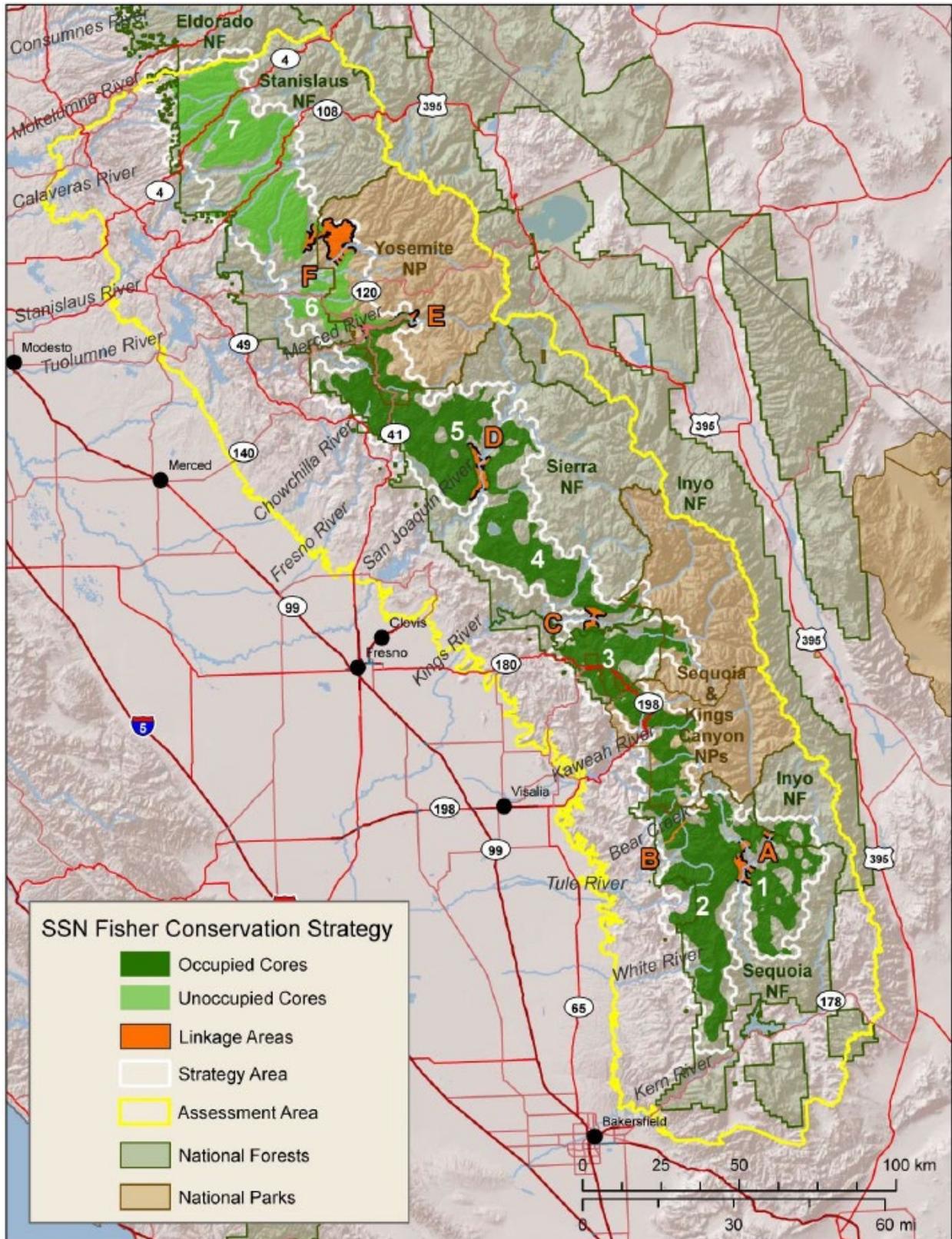


Figure 2. Map of Southern Sierra Nevada fisher strategy area showing core areas and linkage areas

Population and Habitat Status and Trends

Fisher Core 1 is the smallest occupied core area, had the lowest predicted habitat value of any core, and appeared to lack potential suitable resting and denning habitat (Spencer, Sawyer, Romsos, et al. 2015). Further, the Fisher Conservation Strategy model the core as containing no currently suitable fisher hexagon grid cells. Fisher occupancy in Core 1 suggests that the habitat models used are unable to capture both the breadth of habitat that fisher will use, as well as the factors determining habitat selection in the Kern Plateau area, an area that is ecologically distinct from the rest of the fisher range in the Southern Sierra Nevada. Subsequent to publishing the Fisher Conservation Assessment and Fisher Conservation Strategy, the strategy authors noted that due to the widespread tree mortality in the southern Sierra Nevada that the habitat suitability modeling and ratings for fisher hexagon grid cells should not be used pending further review of the habitat model (Spencer et al. 2017).

Threats

The Fisher Conservation Assessment identifies the need for more research and information about fisher use of the unique habitats of the Kern Plateau and retention and improvement of mature forest conditions and habitat elements as being important for fisher conservation. In addition, of the general threats identified in the Conservation Assessment, habitat loss and fragmentation, primarily from large and severe wildfires and lack of fire as a natural disturbance process is the most relevant threat for fisher in the plan area.

A large portion of Core 1 within the Golden Trout Wilderness burned in the 2002 McNally Fire and some re-burned in the 2017 Indian Fire. The eastern portion in the inventoried roadless area contains the most forested area that may provide the best habitat as it has no recorded large fire history.

Between 1993 and 2017 there have been 24 recorded fires within Core 1 on the Inyo NF. Of those, 20 were reported with lightning as the cause and of those, only 1, the 2017 Indian Fire, was managed and burned to almost 2,300 acres. The other fires were suppressed and burned less than 1.5 acres, with most less than 0.1 acres. Thirteen of the lightning ignitions occurred prior to the 2002 McNally fire that started over 20 miles to the south of the Inyo NF portion of Core 1. It's been speculated that had some of those fires been managed to burn then the size and severity of the McNally Fire might have been lessened, retaining more habitat suitable for use by fisher.

Analysis of Effects

The 2004 Sierra Nevada Forest Plan Amendment (USDA Forest Service 2004) identified the southern Sierra fisher conservation area on the Stanislaus, Sierra, and Sequoia NFs that went up to the Inyo NF boundary but did not include the occupied area on the Inyo NF on the Kern Plateau. The direction for this area on those other forests contains a desired condition and one standard and guideline to design projects to protect individual large trees and patches of dense trees, snags, down logs. The current Inyo NF forest plan does contain direction from the Sierra Nevada Forest Plan Amendment for fisher den site buffers, which includes a desired condition and three standards and guidelines to protect known fisher den sites by minimizing fuels treatments and limiting disturbance during the breeding season.

The Proposed Action includes some plan direction that considers the findings and recommendations of the Southern Sierra Nevada Fisher Conservation Strategy (Spencer, Sawyer, Romsos, et al. 2015). In determining how to best incorporate the findings and recommendations, we considered that the strategy authors recognize the uncertainty of fisher ecology and response to management actions given the widespread tree mortality on the southern Sierra Nevada (Spencer et al. 2017). Very little is known about how fisher will react to the changed environment caused by the widespread tree mortality, both in the

short-term and in the long-term. Regardless, fisher scientists and land managers are in the process of evaluating the current fisher conservation strategy in light of the widespread tree mortality and changed conditions in the southern Sierra Nevada to determine how findings and recommendations should be updated. We also considered that only approximately 13,400 acres (seven percent) of the approximately 198,900 acre Core 1 occurs on the Inyo NF and approximately 71 percent of those acres are within the Golden Trout Wilderness and the remainder is within the South Sierra Inventoried Roadless Area. The Proposed Action contains desired conditions for the portion of the Inyo NF in Fisher Core Area 1 and a guideline to provide for habitat conditions and key structural elements. Instead of focusing on fisher den sites, which are difficult to identify due to the secretive behavior of fisher and due to their frequent movement of young, the Proposed Action provides a guideline to provide habitat conditions within high value reproductive habitat and a guideline to limit human disturbance from vegetation treatments and prescribed burning during the breeding season. It's unknown to what extent fisher are disturbed by recreation-related disturbance but the Proposed Action includes guidance to address adverse effects if they are found to occur. A summary crosswalk of plan direction for fisher is found in Appendix B – Plan Components for At-risk Species.

Indirect Effects

Higher fuel loading, and changes in forest structure and composition associated with fire suppression coupled with a changing climate and related increases in drought and insect outbreaks can cause significant changes in forest structure, function and composition (Meyer 2013). Events such as high-severity fire and activities such as fuel reduction and vegetation management treatments designed to lessen the risk of high severity fire could negatively affect or remove mature forest or lower canopy cover in the short-term. In the short-term, these activities would be designed to retain most existing mature forest where it exists, and many key structural elements such as large live trees, large-diameter snags, and down logs that are important for resting, denning, and predator avoidance while intending to increase the sustainability and resilience of these elements in the long-term.

Most of the threats for Pacific fisher can be addressed through ecosystem-level plan components that emphasize resilient, connected forests containing the complex structural attributes fishers need for survival and reproduction. However, species-specific plan components have been added in a few instances for greater clarity and emphasis. Loss of old growth habitat and key structural attributes for denning and resting are key threats and desired conditions for Pacific fisher (**SPEC-SMPF-DC-01; SPEC-SMPF-DC-02; SPEC-SMPF-DC-03; SPEC-SMPF-DC-04; TERR-OLD-DC-02; TERR-OLD-DC-03; TERR-OLD-DC-04; TERR-OLD-DC-05; TERR-OLD-DC-06; TERR-OLD-DC-07; fisher potential management approach**) minimize the risk from high severity fire in fisher Core Area 1, ensure overarching desired conditions from terrestrial (**TERR-MONT-DC-01**) and riparian vegetation are met and that fisher habitat is well distributed throughout the landscape providing for foraging, denning and resting habitat and connectivity large landscapes. Four guidelines (**SPEC-SMPF-GDL 01; SPEC-SMPF-GDL-02; SPEC-SMPF-GDL-03; SPEC-FW-GDL 01**) specify projects are designed in a way to minimize disturbance, predation, and provide hiding cover and denning habitat and retention of complex forest structure in key fisher habitat. However, fuels and vegetation activities will not occur within designated wilderness and, while not prohibited, are unlikely within the inventoried roadless areas due to the lack of road access, limitations on road construction, and long distance from residential infrastructure.

Recent studies have documented a significant threat to fisher from rodenticide poisons commonly used in illegal marijuana plantations, with males being more affected than females (Gabriel et al. 2012, Gabriel et al. 2015). A large proportion of fisher carcasses recovered in the southern Sierra research sites on the Sierra NF showed evidence of exposure to one or more rodenticides (Thompson et al. 2013). More than 300 illegal marijuana sites have been located in these research areas since 2002 and this is a likely risk

factor for fisher in the plan areas on the west side of the Sierra Nevada. On national forests, marijuana growing activity is extensive, illegal, and neither authorized, funded, nor carried out by the Forest Service but is not expected in this area on the Inyo NF due to the remoteness and generally drier conditions in this area. The Proposed Action includes an intent to work with local, State and Federal agencies to remove and remediate poisons and pesticides from marijuana cultivation sites (**Potential Management Approach for Animals and Plants**).

Fisher may benefit by watershed restoration activities that maintain and improve the connectivity of watersheds by creating corridors of resilient riparian vegetation that can be used for movement across the plan area (**MA-RCA-DC-02, MA-RCA-DC-05**). However, similar to the situation with fuels and vegetation management, it is not likely that watershed restoration projects would occur within designated wilderness of the remote inventoried roadless area.

The primary program areas that may affect fisher that are within the authority of the Forest Service include the fire management and recreation management.

Fire Management

Wildfires will continue to burn across the Inyo NF and they will continue to be actively managed using a range of fire management responses. The Proposed Action aims to manage more naturally ignited wildfires where and when it can do so safely and where the expected fire effects are likely to provide a positive benefit to resources. As wildfires are managed for resource benefits, it is likely that there will be longer periods of human activity when monitoring or managing the fire, but with less intensity than if full suppression actions occur. Human presence related to monitoring wildfires or taking limited suppression actions would be expected to occur and could disturb and displace individual fisher in areas around active fires. In addition, aircraft reconnaissance or aerial firefighting actions may be associated with fire management activities, although landing of helicopters and low-level flights are more restricted within and over designated wilderness areas and the use of aerial retardants in wilderness areas is generally limited to protecting immediate threats to life and property.

Most (65 percent) of the fisher Core 1 habitat area is within the wildfire restoration zone or wildfire maintenance zone (Table 13) where the emphasis will be on restoring fire to the ecosystem (**FIRE-FW-DC-01, FIRE-FW-GDL-01, TERR-FW-DC-08**). Within the remaining areas, fire risk modeling suggests a higher likelihood of higher flame lengths when fires burn and this could adversely affect habitat conditions for fisher. Although areas are identified as having fire risks associated with the community wildfire protection zone and in the general wildfire protection zone, for the reasons stated above, it is unlikely that fuels and vegetation treatments using a combination of mechanical treatments and prescribed burning to reduce the risk of wildfire to infrastructure would occur as this area is either designated wilderness or inventoried roadless area. Due to the proximity to trailheads and some remote buildings, some fires will likely continue to be suppressed, although some fires may be managed to meet resource objectives when it is safe to do so (**FIRE-FW-GDL-02**).

Table 13. Acres of fisher core 1 habitat by strategic fire zone

Strategic Fire Zone	Acres
Community Wildfire Protection Zone	2,643
General Wildfire Protection Zone	2,009
Wildfire Restoration Zone	753
Wildfire Maintenance Zone	7,958

Recreation Management

Within wilderness, recreation is managed to minimize impacts to the area (**DA-WILD-DC-01**, **DA-WILD-DC-08**) and be ecologically sustainable (**DA-WILD-DC-05**). In wilderness, one of the more potentially impactful actions is concentration of human uses along trails. There are some designated recreation trails that occur within the Golden Trout Wilderness, especially trails out of the Blackrock Trailhead and trails out of the Monache Meadows area. The Proposed Action continues the emphasis to manage and where needed, decrease the impacts of trail use in wilderness on the ecosystem (**DA-WILD-DC-10**).

Dispersed recreation occurs in the inventoried roadless area and is managed to reduce impacts on natural resources (**REC-FW-DC-04**; **REC-FW-DC-08**; **REC-FW-GOAL-02**). If recreation uses are found to be adversely impacting fisher, especially fisher den sites, **REC-FW-GDL-03** guides the use of integrated resource planning to address impacts.

Cumulative Effects

The cumulative effects analysis area is the Strategy Area identified in the Southern Sierra Nevada Fisher Conservation Strategy on the Inyo NF (see Figure 2). This is an appropriate scale for determining cumulative effects since it includes all habitat potentially affected by implementing the Proposed Action. The cumulative effects time frame is 15 years into the future, which is the expected timeframe when the forest plan would be revised. The cumulative effects of all past non-federal actions are incorporated into the environmental baseline condition.

Within the Strategy Area in the plan area there are an additional 18,400 acres of on the Inyo NF outside of Core 1, 13,660 acres of designated wilderness and 4,700 acres of inventoried roadless area. There is limited non-Forest Service lands in three parcels within the area: 58 acres within Core 1 and 132 acres outside of Core 1. Of those acres, two parcels are located as excluded inholdings within the outer boundary of the Golden Trout Wilderness and one parcel of about 25 acres is located as an excluded parcel within the outer boundary of the South Sierra Inventoried Roadless Area in the BakeOven Meadows area. All three parcels contain buildings but otherwise the parcels appear undeveloped. There are no known non-federal actions expected to occur on these parcels.

Given these and other potential nonfederal future actions, we do not anticipate a significant increase in the level of impacts to these species' population in the plan area beyond what has already been noted in the analysis of effects resulting from implementing the Proposed Action.

Determination

Given the limited extent of habitat on the Inyo NF, it is not within the inherent capability of the plan area to maintain or restore the ecological conditions to maintain an independent viable population of the fisher in the plan area. Nonetheless, the plan components should maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range on the adjacent Sequoia NF.

Key conclusions:

- The forest plan provides a programmatic framework for future site-specific projects and actions but does not prescribe specific projects or assign project locations. Plan components exist to ensure proposed actions avoid, mitigate or minimize impacts to old forest habitats and fisher. All future project level activities that may affect this species will require project-specific assessments and consultation under Section 7 of the Endangered Species Act.

- All of the area of fisher Core 1 on the Inyo NF is within the Golden Trout Wilderness or the South Sierra Inventoried Roadless Area and only three small parcels are privately owned. There is expected to be limited active fuels and vegetation management.
- There is an emphasis to restore fire as an ecosystem function, especially within designated wilderness and other areas where it can be done safely. To the extent that this occurs, it will lessen the risk and impact of future wildfires that might otherwise burn at high severity outside the natural range of variation.
- A combination of ecosystem level plan components and species-specific plan components for would improve sustainability and resilience of habitat and avoid or minimize impacts to individuals or important habitats.
- Very few fishers currently occur, in a very limited location, on the Inyo NF. Connectivity is high between the Inyo and Sequoia National Forests, and between Fisher Core Areas 1 and 2, providing some protection against risks associated with small population numbers.
- The forest plan includes guidance to address conditions if recreation uses are adversely affecting fisher. However, individual animals may be affected by short-term disturbance and displacement by human activities.

Based on our analysis, we determined that because some actions and activities may disturb and displace individuals and habitat could be affected by fire management and continued recreation uses of the area, adoption of the Proposed Action *may affect, but is not likely to jeopardize the continued existence* of the West Coast DPS of fisher.

VII. Contributors

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Appendix B – Plan Components for At-risk Species

[Add the following species to Appendix B]

Bi-State DPS of Greater Sage Grouse

Note: In the existing forest plan sage grouse were considered a management indicator species and a harvested or hunted species.

Vegetation conditions - Desired Conditions

Existing Forest Plan

Forestwide Standard and Guideline

Maintain a shrub canopy cover of at least 20 percent on at least 30 percent of vegetation treatment areas within six miles of known strutting grounds (leks)

Revised Forest Plan

Sage-grouse Desired Condition SPEC-SG-DC-01

Suitable sage-grouse habitat includes breeding (nesting), brood-rearing, and wintering habitats that are distributed to allow for dispersal and genetic flow, with land cover dominated by sagebrush. Suitable habitat is predominantly sagebrush shrubland and sagebrush steppe, with associated mesic habitats. Specific vegetation conditions are closely tied to local conditions and ecological site potential.

Sage-grouse Desired Condition SPEC-SG-DC-02

High quality sage-grouse nesting cover including shrub and perennial grasses that provide for overhead and lateral concealment, conditions that support high levels of quality pre-laying hen habitat and dietary protein intake needs, and habitat supporting chick-rearing nutritional needs occur throughout breeding habitat in each population management unit based on local conditions and ecological site potential..

Sage-grouse Desired Condition SPEC-SG-DC-03

Sage-grouse brood-rearing habitat occurs in the population management units and includes an adequate range of shrub cover, perennial grass cover, forb density, and meadows to provide the necessary overhead and lateral concealment and nutritional needs, with specific desired conditions tied closely to local conditions and based on ecological site potential.

Limit Disturbance

Existing Forest Plan

Forestwide Standard and Guideline

Allow no vegetative treatment in sage grouse habitat that would have a significant negative impact on this species.

Forestwide Standard and Guideline

Recognize the sensitivity of sage grouse leks during the period from March 1 and April 30. Resolve conflicts in favor of sage grouse.

Benton-Casa Diablo (#12) Management Area

Protect important sage grouse wintering grounds and strutting grounds/nesting complex from detrimental disturbance.

Revised Forest Plan

Sage-grouse Standard SPEC-SG-STD-02

Habitat restoration projects for the sage-grouse must include measures to improve suitability of breeding, brood rearing, or wintering habitat.

Sage-grouse Standard SPEC-SG-STD-04

Mitigate long-term negative impacts to sage-grouse habitat from activities, to the extent practicable and within agency authority.

Sage-grouse Standard SPEC-SG-STD-05

Require site-specific project mitigation if needed to insure no net loss of habitat within the Inyo National Forest due to project disturbance.

Sage-grouse Standard SPEC-SG-STD-06

Establish a limited operating period for the sage-grouse breeding season (which current best available science indicates is March 1 to May 15) within suitable breeding habitat for any activities that would cause disturbances during this time. These dates can be adjusted based on current nesting conditions or risk assessment.

Sage-grouse Standard SPEC-SG-STD-07

Establish a limited operating period for the sage-grouse nesting season (which current best available science indicates is May 1 to June 15) within suitable nesting habitat for any activities that would lead to disturbances during this time. These dates can be adjusted based on current nesting conditions or risk assessment.

Forestwide Animal and Plant Species Standard SPEC-FW-STD-01

Design features, mitigation, and project timing considerations are incorporated into projects that may affect occupied habitat for at-risk species.

Collaboration and Cooperation with Partners

Existing Forest Plan

Forestwide Standard and Guideline

Cooperate with the California Department of Fish and Game in reintroduction efforts.

Revised Forest Plan

Forestwide Animal and Plant Species Standard SPEC-FW-GOAL-03

Work with the California Department of Fish and Wildlife (following the memoranda of understanding), Nevada Department of Wildlife, and U.S. Fish and Wildlife Service to restore and maintain essential habitat for at-risk species and implement other recovery actions according to species recovery plans.

Sage-grouse Goal SPEC-SG-GOAL-01

Participate in collaborative forums such as the executive oversight committee, technical advisory committee, and local area working group to ensure agency interests are considered and to collaboratively implement the Bi-State Action Plan to further sage-grouse conservation.

Enhance Meadows and Habitat

Existing Forest Plan

Upper Owens River (#7) Management Area

Encourage water spreading to enhance forage for livestock grazing and sage grouse where feasible

Upper Owens River (#7) Management Area

Maintain the productivity of meadows for sage grouse

Revised Forest Plan

Sage-grouse Desired Condition SPEC-SG-DC-01

Suitable sage-grouse habitat includes breeding (nesting), brood-rearing, and wintering habitats that are distributed to allow for dispersal and genetic flow, with land cover dominated by sagebrush. Suitable habitat is predominantly sagebrush shrubland and sagebrush steppe, with associated mesic habitats. Specific vegetation conditions are closely tied to local conditions and ecological site potential.

Sage-grouse Desired Condition SPEC-SG-DC-09

Meadows within sage-grouse range provide suitable habitat for sage-grouse, including desirable foraging species (insects and plants), have suitable sagebrush cover around the meadows edge, are hydrologically fully functional and vegetation is within mid-seral conditions. Within livestock allotments in sage-grouse range, meadow condition is trending towards or rated at fully functional based on forestwide range utilization standards.

West Coast DPS of Fisher

Note: The direction for the Southern Sierra Fisher Conservation Area did not apply to the Inyo National Forest because the area was not mapped to occur on the Inyo NF.

Designation and Desired Conditions

Existing Forest Plan

Southern Sierra Fisher Conservation Area Designation: The southern Sierra fisher conservation area encompasses the known occupied range of the Pacific fisher in the Sierra Nevada. The southern Sierra fisher conservation area is shown on the Modified Alternative 8 map included in the FEIS. This Decision allows for minor adjustments to correct the boundaries of the southern Sierra fisher conservation area.

Southern Sierra Fisher Conservation Area Desired Condition: Within known or estimated female fisher home ranges outside the WUI, a minimum of 50 percent of the forested area has at least 60 percent canopy cover. Where home range information is lacking, use HUC 6 watershed as the analysis area for this desired condition.

SNFPA S&G #30: If fishers are detected outside the southern Sierra fisher conservation area, evaluate habitat conditions and implement appropriate mitigation measures to retain suitable habitat within the estimated home range. Institute project-level surveys over the appropriate area, as determined by an interdisciplinary team.

Revised Forest Plan

Glossary: Fisher Core Area 1: The Pacific Fisher distribution in the Southern Sierra is mapped into seven core areas (Spencer et al. 2015, 2017). Core areas represent contiguous polygons of modeled suitable fisher habitat large enough to support at least 5 adult females, and informed by the results of spatially explicit habitat models and the landscape genetic and occupancy patterns (Spencer et al. 2015, 2017). The mapped core areas provides a biologically relevant subdivision for planning and management purposes. Core Area 1 occurs on the Kern Plateau, located largely within the Sequoia National Forest. 54.5 km² of the 429.5 km² Core 1 occur on the Inyo National Forest.

Desired Conditions SPEC-SMPF-DC-01: Risk of large high-severity fire is reduced from current conditions in marten habitat core areas and fisher Core Area 1 (see glossary).

Desired Conditions SPEC-SMPF-DC-02: Within marten core habitat and fisher Core Area 1, vegetation is trending toward desired conditions for terrestrial and riparian vegetation.

Desired Conditions SPEC-SMPF-DC-03: Marten and fisher habitat are well distributed throughout the marten's range and fisher Core Area 1, providing for foraging, denning, and resting habitat and movement across large landscapes.

Desired Conditions SPEC-SMPF-DC-04: Essential fisher habitat elements, including large living and dead trees (especially pines and oaks) and structures used by fishers for resting and denning (cavities, deformities), are common and well distributed throughout fisher Core Area 1.

Potential Management Approach

Generally, management in fisher Core Area 1 to favor tree growth, increased canopy cover, and recruitment of essential fisher habitat elements is likely to benefit the fishers.

Den Site - Desired Conditions

Existing Forest Plan

Forest Carnivore Den Site Buffers Designation:

Fisher den sites are 700-acre buffers consisting of the highest quality habitat (CWHR size class 4 or greater and canopy cover greater than 60 percent) in a compact arrangement surrounding verified fisher birthing and kit rearing dens in the largest, most contiguous blocks available.

Forest Carnivore Den Site Buffers Desired Conditions

Areas surrounding fisher den sites include at least two large (greater than 40 inches dbh) conifers per acre, and one or more oaks (greater than 20 inches dbh) per acre with suitable denning cavities. Canopy closure exceeds 80 percent.

Revised Forest Plan

Glossary: Fisher high value reproductive habitat: California Wildlife Habitat Relationship (CWHR) habitat types: Douglas Fir, Eastside Pine, Jeffrey Pine, Lodgepole Pine, Montane Hardwood-Conifer, Montane Hardwood, Montane Riparian, Ponderosa Pine, Red Fir, Subalpine Conifer, Sierran Mixed Conifer, or White Fir; CWHR size and density classes: 4D, 5M, 5D, and 6.

Fragmentation and Connectivity

Existing Forest Plan

SNFPA Standard and Guideline #27

Minimize old forest habitat fragmentation. Assess potential impacts of fragmentation on old forest associated species (particularly fisher and marten) in biological evaluations.

Revised Forest Plan

Guideline SPEC-SMPF-GDL-01

Within marten core habitat and fisher Core Area 1, retain overtopping and multi-storied canopy conditions, including some shade-tolerant understory trees such as firs, especially in drainages, swales and canyon bottoms and on north- and east-facing slopes. Retain a patchy mosaic of shrubs and understory vegetation, separated by more open areas, to reduce fuel continuity, increase habitat heterogeneity, support prey, and provide hiding cover, with a goal of 10 to 20 percent shrub cover at the home range scale.

Limited Operating Periods

Existing Forest Plan

SNFPA Standard and Guideline #85:

Protect fisher den site buffers from disturbance with a limited operating period (LOP) from March 1 through June 30 for vegetation treatments as long as habitat remains suitable or until another Regionally-approved management strategy is implemented. The LOP may be waived for individual projects of limited scope and duration, when a biological evaluation documents that such projects are unlikely to result in breeding disturbance considering their intensity, duration, timing, and specific location.

SNFPA Standard and Guideline #86:

Avoid fuel treatments in fisher den site buffers to the extent possible. If areas within den site buffers must be treated to achieve fuels objectives for the urban wildland intermix zone, limit treatments to mechanical clearing of fuels. Treat ladder and surface fuels to achieve fuels objectives. Use piling or mastication to treat surface fuels during initial treatment. Burning of piled debris is allowed. Prescribed fire may be used to treat fuels if no other reasonable alternative exists.

Revised Forest Plan

Guideline SPEC-SMPF-GDL-03

To minimize disturbance to breeding females and their offspring, apply a limited operating period prohibiting mechanical vegetation treatment activities during the breeding season (March 1 to June 30) and prescribed fire activities during the early breeding season (March 1 to May 1) within fisher high value reproductive habitat in fisher Core Area 1. Projects proposed in fisher high value reproductive habitat in Core Area 1 during the breeding season should be assessed by a biologist knowledgeable about fishers to determine whether potential benefits to fishers are likely to outweigh the risks, in which case the activities may be exempt from the LOP restrictions if they are carefully designed and implemented to mitigate risks.

Provide Habitat Elements (Snags, Logs, Cover)

Existing Forest Plan

SNFPA Standard and Guideline #90:

Prior to vegetation treatments, design measures to protect important habitat structures as identified by the wildlife biologist, such as large diameter snags and oaks, patches of dense large trees typically ¼ to 2 acres, large trees with cavities for nesting, clumps of small understory trees, and coarse woody material. For example, use firing patterns, place fire lines around snags and large logs, and implement other prescribed burning techniques to minimize effects to these attributes. Use mechanical treatments when appropriate to minimize effects on preferred fisher habitat elements.

Revised Forest Plan

Guideline SPEC-SMPF-GDL-02

Maintain or increase understory heterogeneity in marten denning habitat and fisher high value reproductive habitat (see glossary) to promote hiding cover such as shrub patches, coarse woody debris, and slash piles following vegetation treatments. Project design should include non-linear edges that decrease susceptibility to predation.