DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

[Docket No. FWS–R8–ES–2018–0105; 4500030113]

RIN 1018–BD85

Endangered and Threatened Wildlife and Plants; Threatened Species Status for West Coast Distinct Population Segment of Fisher With Section 4(d) Rule

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Revised proposed rule; availability of proposed section 4(d) rule; and reopening of comment period.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), notify the public that we are making changes to our October 7, 2014, proposed rule to list the West Coast Distinct Population Segment (DPS) of fisher (*Pekania pennanti*) as a threatened species under the Endangered Species Act (Act). Based on new information since 2014 and a reconsideration of the best available information in our files (including all comments received to date), we are revising the proposed rule to list the DPS as a threatened species under the Act. We also propose a concurrent rule under section 4(d) of the Act for this DPS. We are reopening the comment period to allow comments on the new information presented in this document relevant to the changes and proposed 4(d) rule described below. If we finalize this listing rule as proposed, it would extend the Act's protections to this DPS and, accordingly, add this DPS to the List of Endangered and Threatened Wildlife.

DATES: We will accept comments received or postmarked on or before December 9, 2019. Please note that if you are using the Federal eRulemaking Portal (see **ADDRESSES**, below), the deadline for submitting an electronic comment is 11:59 p.m. Eastern time on this date. We must receive requests for public hearings, in writing, at the address shown in **FOR FURTHER INFORMATION CONTACT** by December 23, 2019.

ADDRESSES: You may submit comments by one of the following methods:

(1) *Electronically:* Go to the Federal eRulemaking Portal: *http://www.regulations.gov.* In the Search box, enter FWS–R8–ES–2018–0105, which is the docket number for this rulemaking. Then, click on the Search button. On the resulting page, in the Search panel on the left side of the screen, under the Document Type heading, click on the Proposed Rule box to locate this document. You may submit a comment by clicking on ''Comment Now!'' Please ensure that you have found the correct rulemaking before submitting your comment.

(2) *By hard copy:* Submit by U.S. mail or hand delivery to: Public Comments Processing, Attn: Docket No. FWS–R8–ES–2018–0105; U.S. Fish and Wildlife Service, MS: JAO/1N, 5275 Leesburg Pike, Falls Church, VA 22041–3803.

We request that you send comments only by the methods described above. We will post all comments on *http://www.regulations.gov.* This generally means that we will post any personal information you provide us (see ''Public Comments,'' below). See Information Requested, below, for more information on submitting comments on the proposed rule.

Document availability: The revised proposed rule is available on *http://www.regulations.gov* at Docket No. FWS–R8–ES–2018–0105 and on our website at *https://www.fws.gov/Yreka.* Comments and materials we received during previous comment periods for the preceding proposed rule, as well as supporting documentation we used in preparing the preceding proposed rule, are also available for public inspection at Docket No. FWS–R8–ES–2014–0041. In addition, the supporting files for this revised proposed rule will be available for public inspection, by appointment, during normal business hours, at our Yreka Fish and Wildlife Office, 1829 South Oregon Street, Yreka, CA 96097; telephone 530–842–5763.

FOR FURTHER INFORMATION CONTACT: Jenny Ericson, Field Supervisor, Yreka Fish and Wildlife Office, telephone: 530–842–5763. Direct all questions or requests for additional information to: WEST COAST DPS FISHER QUESTIONS, U.S. Fish and Wildlife Service, Yreka Fish and Wildlife Office, 1829 South Oregon Street, Yreka, CA 96097. Persons who use a telecommunications device for the deaf may call the Federal Relay Service at 1–800–877–8339.

SUPPLEMENTARY INFORMATION:

Executive Summary

Why we need to publish a rule. Under the Act, if we determine that a species may be an endangered or threatened species throughout all or a significant portion of its range, we are required to promptly publish a proposal in the **Federal Register** and make a determination on our proposal within 1 year. To the maximum extent prudent and determinable, we must designate critical habitat for any species that we determine to be an endangered or threatened species under the Act. Listing a species as an endangered or threatened species and designation of critical habitat can only be completed by issuing a rule.

What this document does. This document revises the proposed rule to add the West Coast DPS of fisher (*Pekania pennanti*) as a threatened species to the List of Endangered and Threatened Wildlife in title 50 of the Code of Federal Regulations at 50 CFR 17.11(h) and proposes a rule under section 4(d) of the Act (a ''4(d) rule'').

The basis for our action. Under the Act, we may determine that a species is an endangered or threatened species based on any of five factors: (A) The present or threatened destruction, modification, or curtailment of its habitat or range; (B) Overutilization for commercial, recreational, scientific, or educational purposes; (C) Disease or predation; (D) The inadequacy of existing regulatory mechanisms; or (E) Other natural or manmade factors affecting its continued existence. We have determined that the threats to the West Coast DPS of fisher are loss and fragmentation of habitat resulting from high-severity wildfire and wildfire suppression (*i.e.,* loss of snags and other large habitat structures on which the species relies, which are removed for human safety concerns), climate change, forest insects and tree diseases, and vegetation management; and potential direct impacts to individuals (*e.g.,* increased mortality, decreased reproductive rates, increased stress/hormone levels, alterations in behavioral patterns) from wildfire, increased temperatures resulting from climate change, disease and predation, exposure to toxicants, and potential effects associated with small population size. These factors are resulting in a cumulative effect to such a degree that the best available information indicates the West Coast DPS of fisher meets the definition of a threatened species.

Peer review. In accordance with our joint policy on peer review published in the **Federal Register** on July 1, 1994 (59 FR 34270), we sought the expert opinions of multiple appropriate specialists on the 2014 draft Species Report to ensure that our decisions are based on scientifically sound data, assumptions, and analyses. Information received has been incorporated into the final (2016) Species Report and this revised proposed rule. Because we will consider all comments and information received during the comment period, our final determination may differ from

this proposal. Based on the new information we receive (and any comments on that new information), we may conclude that the species is endangered instead of threatened, or we may conclude that the species does not warrant listing as either an endangered species or a threatened species. Such final decisions would be a logical outgrowth of this proposal as long as we: (a) Base the decisions on the best scientific and commercial data available after considering all of the relevant factors; (2) do not rely on factors Congress has not intended us to consider; and (3) articulate a rational connection between the facts found and the conclusions made, including why we changed our conclusion.

Information Requested

We will accept written comments and information during this reopened comment period on our revised proposed listing for the West Coast DPS of fisher. We will consider information and recommendations from all interested parties. We intend that any final action resulting from this revised proposal be as accurate as possible and based on the best available scientific and commercial data.

We are particularly interested in new information and comments regarding:

(1) Information related to anticoagulant and neurotoxicant rodenticides, and other toxicants, including law enforcement information and trend data.

(2) Information regarding population trend studies or data for the West Coast DPS of fisher, including information regarding areas that have been surveyed compared to areas that have not been surveyed, as well as all positive and negative survey results to help us assess distribution and population trends.

(3) Information regarding the threat of wildfire, including studies or information pertaining to current and future trends in wildfire frequency and severity, as well as information pertaining to the immediate response of fishers to post-fire landscapes in the West Coast DPS of fisher.

(4) Information regarding changes in low- to mid-elevation forests in different eco-regions within the range of the West Coast DPS of fisher, including scope and severity of vegetation management on Federal and non-Federal lands.

(5) Information regarding any effects associated with population size and isolation relevant to the West Coast DPS of fisher (*e.g.,* low reproductive capacity, inbreeding depression, demographic and environmental stochasticity).

(6) Information regarding any effects of ongoing and widespread tree mortality in the Sierra Nevada range on the West Coast DPS of fisher.

(7) Information regarding any conservation efforts designed to benefit the West Coast DPS of fisher that have been planned or implemented since the October 7, 2014, proposed rule.

(8) Information regarding our revised DPS determination.

(9) Information on regulations that are necessary and advisable for the conservation of the West Coast DPS of fisher to include in a section 4(d) rule for the species. Section 4(d) of the Act provides that when a species is listed as a threatened species, the Secretary shall issue such regulations as he deems necessary and advisable to provide for the conservation of such species. The Service has proposed such measures here and will evaluate ideas provided by the public in considering the prohibitions that are appropriate to include in the 4(d) rule.

(10) The reasons why we should or should not designate habitat as ''critical habitat'' under section 4 of the Act (16 U.S.C. 1531 *et seq.*) including information to inform the following factors such that a designation of critical habitat may be determined to be not prudent:

(a) The species is threatened by taking or other human activity and identification of critical habitat can be expected to increase the degree of such threat to the species;

(b) The present or threatened destruction, modification, or curtailment of a species' habitat or range is not a threat to the species, or threats to the species' habitat stem solely from causes that cannot be addressed through management actions resulting from consultations under section 7(a)(2) of the Act;

(c) Areas within the jurisdiction of the United States provide no more than negligible conservation value, if any, for a species occurring primarily outside the jurisdiction of the United States;

(d) No areas meet the definition of critical habitat;

(11) Specific information on:

(a) The amount and distribution of habitat for the West Coast DPS of fisher,

(b) What areas, that are considered occupied at the time of listing and that contain the physical or biological features essential to the conservation of the species, should be included in the designation and why,

(c) Special management considerations or protection that may be needed in critical habitat areas we may propose, including managing for the potential effects of climate change, and

(d) What areas not occupied at the time of listing are essential for the conservation of the species. We particularly seek comments regarding:

(i) Whether occupied areas are inadequate for the conservation of the species; and,

(ii) Specific information that may support a determination that unoccupied areas will, with reasonable certainty, contribute to the conservation of the species and, contain at least one physical or biological feature essential to the conservation of the species.

(12) Any probable economic, national security, or other relevant impacts of designating any area that may be included in a proposed and final designation, and the benefits of including or excluding areas that may be impacted.

As indicated under **SUMMARY**, above, if you previously submitted comments or information on the October 7, 2014, proposed rule, please do not resubmit them. We have incorporated previously submitted comments into the public record, and we will fully consider them in the preparation of our final determination. Our final determination concerning this revised proposed listing will take into consideration all written comments and any additional information we have received since April 18, 2016 (81 FR 22710).

You may submit your comments and materials concerning the revised proposed rule by one of the methods listed in **ADDRESSES**. We request that you send comments only by the methods described in **ADDRESSES**.

If you submit information via *http://www.regulations.gov,* your entire submission—including any personal identifying information—will be posted on the website. If your submission is made via a hardcopy that includes personal identifying information, you may request at the top of your document that we withhold this information from public review. However, we cannot guarantee that we will be able to do so. We will post all hardcopy submissions on *http://www.regulations.gov.*

Public Hearing

Section 4(b)(5) of the Act provides for one or more public hearings on this proposal, if requested. Requests for public hearings must be received by the date specified in **DATES** at the address shown in **FOR FURTHER INFORMATION CONTACT**. We will schedule public hearings on this proposal, if any are requested, and announce the dates, times, and places of those hearings, as well as how to obtain reasonable accommodations, in the **Federal**

Register and local newspapers at least 15 days before the hearing.

Previous Federal Actions

We first found the West Coast DPS of fisher (previously delineated as a contiguous area encompassing parts of the three States of Washington, Oregon, and California) to be warranted for listing in 2004 and each subsequent year in the annual Candidate Notice of Review. On October 7, 2014, we proposed to list the West Coast DPS of fisher as a threatened species under the Endangered Species Act of 1973, as amended (Act; 16 U.S.C. 1531 *et seq.*) (79 FR 60419; Docket No. FWS–R8–ES–2014–0041). On April 18, 2016, we withdrew the proposed rule to list the West Coast DPS of fisher (81 FR 22710), concluding that the potential threats (stressors) acting upon the DPS were not of sufficient imminence, intensity, or magnitude to indicate that they were singly or cumulatively resulting in significant impacts at either the population or rangewide scales.

On October 19, 2016, the Center for Biological Diversity, Environmental Protection Information Center, Klamath-Siskiyou Wildlands Center, and Sierra Forest Legacy filed a complaint for declaratory and injunctive relief, alleging that our determination on the West Coast DPS of fisher violated the Act. By Order Re: Summary Judgment issued on September 21, 2018, the District Court for the Northern District of California vacated the listing withdrawal and remanded the Service's final determination for reconsideration. The Court's amended order, dated November 20, 2018, directs the Service to prepare a new determination by September 21, 2019.

On January 31, 2019, we reopened the comment period on the October 7, 2014, proposed rule to list the DPS as a threatened species (84 FR 644).

On May 17, 2019, the District Court for the Northern District of California granted a request by the Service for a 35-day extension to comply with the November 20, 2018, order as a result of delays due to the Federal Government's lapse in appropriations that prohibited the Service from working on this determination. The Court's amended order directed the Service to submit for publication a final listing determination or notice of a revised proposed rule by October 26, 2019, and in the event of publishing a revised proposed rule, submit for publication a final listing determination by April 25, 2020.

Additional information on Federal actions concerning the West Coast DPS of fisher prior to October 7, 2014, is outlined in the October 7, 2014, proposed listing rule (79 FR 60419) (hereafter referred to as the 2014 Proposed Rule).

Summary of Changes From the 2014 Proposed Rule

In this revised proposed listing rule, we incorporate additional information regarding the fishers, their habitat, and threats potentially impacting the species or its habitat; make clarifications regarding the delineation of the DPS; include a proposed 4(d) rule; and provide some changes to the structure of the rule as they relate to our analysis and policy information. Specifically:

(1) We have revised our delineation of the DPS for the West Coast population of fishers. In the 2014 Proposed Rule, we explained that the West Coast DPS encompassed the area where fishers historically occurred throughout western Washington, western Oregon, and California to the Sierra Nevada. We further elaborated that the West Coast DPS occurred in two original native populations (Northern California-Southwestern Oregon Population [NCSO] and the Southern Sierra Nevada Population [SSN]), three reintroduced populations (Northern Sierra Nevada Reintroduced Population [NSN] in California, Southern Oregon Cascades Reintroduced Population [SOC] in Oregon, and the Olympic Peninsula Reintroduced Population [ONP] in Washington). In this revised proposed listing rule, the West Coast DPS is now identified as comprising the two extant historically native subpopulations, NCSO and SSN, as well as the NSN and SOC subpopulations that resulted from reintroductions within a portion of the historical range of the DPS. Our decision to revise the DPS was predominantly based on: (a) The apparent absence of any extant historically native subpopulations in Washington or northern Oregon; and (b) the marked separation of the fisher subpopulations in the NCSO, SOC, NSN, and SSN from fishers reintroduced in Washington.

(2) The structure of this revised proposed rule varies slightly from the 2014 Proposed Rule. Information is organized in roughly the same order, although new sections have been added or sections have been revised to accommodate new information received since 2014; we have also updated policy standards and added discussion where relevant (*e.g.,* addition of a section on the DPS's resiliency, redundancy, and representation).

(3) New information has been added to this revised proposed rule that was not available for the 2014 Proposed Rule or 2014 draft Species Report (Service 2014, entire). Our record also includes our 2016 final Species Report (Service 2016, entire).

(4) At the time of the 2014 Proposed Rule, fisher populations in Oregon and California were identified and described as the historically native extant NCSO and SSN subpopulations, the NSN subpopulation established with fishers from the NCSO subpopulation, and the SOC subpopulation established with fishers from British Columbia and Minnesota populations. Since that time, the best available information indicates that the range of the NCSO subpopulation is adjacent to the range of the (reintroduced) SOC subpopulation, with documented interbreeding activity occurring in the SOC range (Pilgrim and Schwartz 2016, entire; Pilgrim and Schwartz 2017, entire). Therefore, we determined it was appropriate to conduct our new evaluation of the status of the DPS by including the contribution of the SOC, along with the other three subpopulations (NCSO, SSN, and NSN), to the DPS's overall viability.

(5) We added a proposed section 4(d) rule because we determined it was necessary and advisable to issue protective regulations in order to reduce the likelihood of the West Coast DPS of fisher becoming an endangered species. Under our proposed section 4(d) rule, with specific exceptions, all prohibitions and provisions that apply to endangered wildlife under section 9(a)(1) of the Act would apply to the DPS. The specific exceptions from prohibitions include forestry management activities for the purposes of reducing the risk or severity of wildfires, forestry management activities pursuant to an approved fisher conservation plan or strategy, forestry management activities that are consistent with the conservation needs of the fisher but are not specifically designed as fisher conservation plans or strategies, and management activities designed to identify and clean-up toxicant-contaminated sites.

Distinct Population Segment Analysis

Under section 3(16) of the Act, we may consider for listing any species, including subspecies, of fish, wildlife, or plants, or any DPS of vertebrate fish or wildlife that interbreeds when mature (16 U.S.C. 1532(16)). Such entities are considered eligible for listing under the Act (and, therefore, are referred to as listable entities), should we determine that they meet the definition of an endangered or threatened species.

Under the Service's DPS Policy, three elements are considered in the decision concerning the determination and classification of a possible DPS as

threatened or endangered. These elements include:

(1) The discreteness of a population in relation to the remainder of the species to which it belongs;

(2) The significance of the population segment to the species to which it belongs; and

(3) The population segment's conservation status in relation to the Act's standards for listing, delisting, or reclassification (*i.e.,* is the population segment endangered or threatened).

In considering a DPS analysis for fisher involving the segment of the species' distribution that historically occupied suitable habitat in portions of the three Pacific Coast States (western Washington, western Oregon, and northern California and the Sierra Nevada mountain range, *i.e.,* the West Coast range), we examined information in published range maps, published works that included historical occurrences, unpublished studies related to fisher distribution, and other submitted data, including comments received previously and during the most recent comment period (January 31, 2019; 84 FR 644). The historical distribution of fishers in this West Coast range is discussed in detail in the ''Prehistorical and Historical Distribution across the Range of the Species'' section of the final Species Report (Service 2016, pp. 25–26). As described above in Summary of Changes from the 2014 Proposed Rule, the current distribution of fishers in the West Coast range comprises various subpopulations, including several that had been established by introducing fishers taken from other parts of the species' range into areas in the West Coast range that supported fishers historically. These ''nonnative'' fishers, from British Columbia and Alberta, Canada, as well as from Minnesota, have established breeding populations in various parts of Washington (British Columbia- and Alberta-origin fishers) and southern Oregon (SOC; British Columbia- and Minnesota-origin fishers). These subpopulations of nonnative fishers in the West Coast range are in addition to the extant historically native subpopulations (NCSO and SSN) in southern Oregon and California. Therefore, while the West Coast range of fishers was historically occupied by fishers native to this region, it is now occupied both by fishers native to the three Pacific Coast States, as well as by fishers whose lineage was derived from nonnative fishers.

Further examination of this distribution clarifies that the northern portion of the West Coast range, the State of Washington and the northern part of Oregon, appears unoccupied by any subpopulations of native fishers, but nonnative fishers reintroduced in the State of Washington continue to persist and reproduce in several areas (although it is too soon to conclude that these breeding individuals will persist). By contrast, the southern portion of the West Coast range (*i.e.,* southern Oregon, northern California, and the southern Sierra Nevada) is predominantly occupied by subpopulations of native fishers. However, this southern portion of the range also includes the SOC subpopulation of reintroduced nonnative fishers, which has now been documented as interbreeding with native fishers of the NCSO (Pilgrim and Schwartz 2016, entire; Pilgrim and Schwartz 2017, entire).

Our 2014 Proposed Rule represented our response to the petition that was filed seeking the listing of the West Coast DPS of fisher, consisting of fishers in Washington, Oregon, and California. At that time, we recognized that the West Coast DPS encompassed the area where fishers historically occurred throughout western Washington, western Oregon, and California to the Sierra Nevada. We are now proposing a different DPS based on the apparent absence of any extant, historically native subpopulations in Washington or northern Oregon, and the marked separation of the fisher subpopulations within the newly identified DPS to the fishers that have been reintroduced from British Columbia and Alberta into the Olympic National Park and the southern and northern Washington Cascades in Washington State. Based on this demographic and geographic disparity between the northern and southern portions of the range, coupled with the fact that there is currently no tangible connection between nonnative fishers in the northern portion and the native and nonnative fishers occupying the southern portion, we now have determined that the appropriate DPS to consider in this evaluation was the segment consisting of the southern subpopulations, *i.e.,* NCSO, SSN, NSN, and SOC. Below, we summarize discreteness and significance for this DPS.

Discreteness

Under the DPS policy, a population segment of a vertebrate taxon may be considered discrete if it satisfies either one of the following conditions:

(1) It is markedly separated from other populations of the same taxon as a consequence of physical, physiological, ecological, or behavioral factors. Quantitative measures of genetic or morphological discontinuity may provide evidence of this separation.

(2) It is delimited by international governmental boundaries within which differences in control of exploitation, management of habitat, conservation status, or regulatory mechanisms exist that are significant in light of section 4(a)(1)(D) of the Act.

The West Coast DPS of fisher is markedly separate from other North American fisher populations of the east by enormous distances, geographical barriers, unsuitable habitat, and urban development. Fishers in this DPS are separated from the Rocky Mountains and the rest of the taxon in the central and eastern United States by natural physical barriers including the nonforested high desert areas of the Great Basin in Nevada and eastern Oregon. Other physical barriers that separate the West Coast population from Rocky Mountain and eastern U.S. fisher populations include major highways, urban and rural open-canopied areas, agricultural development, and other nonforested areas. In addition, all West Coast DPS subpopulations are markedly separate from the nearest other fisher populations to the north by approximately 270 miles (mi) (430 kilometers (km)), well beyond the various reported dispersal distances (as described in more detail in Service 2016, pp. 13–14). An additional component contributing to marked separation between the DPS subpopulations and fishers in Washington is the Columbia River and adjacent human developments (*e.g.,* roads and towns), which likely acts as a physical impediment to crossing by any fishers dispersing in either direction. Therefore, it is extremely unlikely that any transient individuals from the DPS subpopulations could disperse far enough to reach the Washington range of reintroduced fishers, and even if they attempted to do so, they would likely not be able to cross the Columbia River. In summary, the subpopulations comprising the West Coast DPS of fisher are all geographically isolated from all other subpopulations of the species. Therefore, the marked separation condition for discreteness is met by geographical barriers, urban development, and distances that are beyond the known dispersal distance of fishers.

Significance

If a population segment is considered discrete under one or more of the conditions described in the Service's DPS policy, its biological and ecological significance will be considered in light

of Congressional guidance that the authority to list DPSs be used ''sparingly'' (see Senate Report 151, 96th Congress, 1st Session). In making this determination, we consider available scientific evidence of the DPS's importance to the taxon to which it belongs. Since precise circumstances are likely to vary considerably from case to case, the DPS policy does not describe all the classes of information that might be used in determining the biological and ecological importance of a discrete population. However, the DPS policy describes four possible classes of information that provide evidence of a population segment's biological and ecological importance to the taxon to which it belongs. As specified in the DPS policy (61 FR 4722, February 7, 1996), this consideration of the population segment's significance may include, but is not limited to, the following:

(1) Persistence of the DPS in an ecological setting unusual or unique to the taxon;

(2) Evidence that loss of the DPS would result in a significant gap in the range of a taxon;

(3) Evidence that the DPS represents the only surviving natural occurrence of a taxon that may be more abundant elsewhere as an introduced population outside its historical range; or

(4) Evidence that the DPS differs markedly from other populations of the species in its genetic characteristics.

To be considered significant, a population segment needs to satisfy only one of these conditions, or other classes of information that might bear on the biological and ecological importance of a discrete population segment, as described in the DPS policy (61 FR 4722, February 7, 1996). For the fisher, we found that loss of the West Coast DPS would result in a significant gap in the range of the taxon. Losing the West Coast DPS would significantly impact representation of the species by shifting the southern boundary of the taxon approximately 900 mi (1,448 km) to the north. Therefore, the significance element of the DPS policy is met for the West Coast DPS of fisher.

Summary of DPS Analysis

Given that both the discreteness and significance elements of the DPS policy are met, we find that the West Coast DPS of fisher is a valid DPS, and therefore a listable entity under the Act. We now assess the DPS's conservation status in relation to the Act's standards for listing (*i.e.,* whether this DPS meets the definition of an endangered or threatened species under the Act).

Background

At the time of the 2014 Proposed Rule, a comprehensive draft Species Report (Service 2014, entire) was prepared that included new genetic and survey information. This report was subsequently updated in 2016 with additional information related to taxonomy, habitat, life-history characteristics (*e.g.,* reproduction), habitat description, habitat use (*e.g.,* dispersal and food habits), distribution and abundance, and potential threats across Washington, Oregon, and California (Service 2016, entire). Information related to the resources on which the species relies, conditions the species may experience currently or in the future, and threats (*i.e.,* an activity or process that may have some negative effect on fishers or their habitat) are outlined in these reports and summarized herein where applicable. These reports, coupled with new information available since 2016 and our reconsideration of the best available scientific and commercial data, including comments received in connection with the 2014 Proposed Rule and our January 31, 2019 (84 FR 644), **Federal Register** document, provide the scientific basis that informs our regulatory decision regarding the range of the DPS, and whether the DPS should be listed as an endangered or threatened species under the Act. New information available since 2016 and the results of our reconsideration of the best available scientific and commercial information are presented in this revised proposed rule.

I. Revised Proposed Listing Determination

Species Information and Distribution

The fisher is a medium-sized, light brown to dark blackish-brown mammal found only in North America, with the face, neck, and shoulders sometimes being slightly gray, and the chest and underside often having irregular white patches. The fisher is classified in the order Carnivora, family Mustelidae, which is a family that also includes weasels, mink, martens, and otters (Service 2016, p. 8). The occurrence of fishers at regional scales is consistently associated with low- to mid-elevation coniferous and mixed conifer and hardwood forests with characteristics of mid- and late-successional forests (*e.g.,* diverse successional stages, moderate to dense forest canopies, large-diameter trees, coarse downed wood, and singular features of large snags, tree cavities, or deformed trees). Throughout their range, fishers are obligate users of tree or snag cavities for denning, and they select resting sites with a high proportion of characteristics of late-successional forests. These characteristics are maintained and recruited in the forest through ecological processes such as fire, insect-related tree mortality, disease, and decay (*e.g.,* Service 2016, pp. 64, 123–124).

Fishers on the west coast of the continent have historically occurred in British Columbia, Washington, Oregon, and California. Fishers native to the west coast in the contiguous United States were historically well distributed in the habitats described above, from the State of Washington south through Oregon, and into northern California and the Sierra Nevada mountains. Subpopulations of these native fishers still occur in northern California/southwestern Oregon and the Sierra Nevada; however, populations of native fishers were extirpated from Washington (Lewis and Hayes 2004, p. 1) and northern Oregon (Aubry and Lewis 2003, pp. 81–82). Recent surveys in the northern Oregon Cascades yielded no fishers (Moriarty *et al.* 2016, entire), suggesting they remain absent in this area, whereas surveys in the southern Oregon Cascades suggest fisher range may be contracting to the south (Barry 2018, pp. 22–23) relative to where we estimated the fisher's range to be in the southern Oregon Cascades in both 2014 and 2016 (Service 2014 and 2016, entire). Fishers now occurring and reproducing in Washington were established using fishers translocated from outside this three-State region. Fishers from British Columbia were reintroduced to the Olympic Peninsula from 2008 to 2010 (Happe *et al.* 2017, p. viii), and to the Washington Cascade Range south of Mt. Rainier from 2015 to 2017 (Lewis *et al.* 2018, p. 5). Reproduction has been documented in both areas. Beginning in 2018, fishers from Alberta were released in the northern Washington Cascades in North Cascades National Park; translocations are expected to continue over the next 2 years in this area, completing planned reintroductions for western Washington (Hayes and Lewis 2006, p. 35).

Fishers were once well distributed throughout their historical range in the habitats described above. Now in Oregon and California, outside of the existing NCSO and SSN known subpopulations in Oregon and California (see figure 2, below), fishers are considered likely extirpated. Additionally, in California, recent survey efforts have not detected fishers south of the reintroduced NSN

subpopulation or north of the SSN subpopulation.

BILLING CODE 4333–15–P

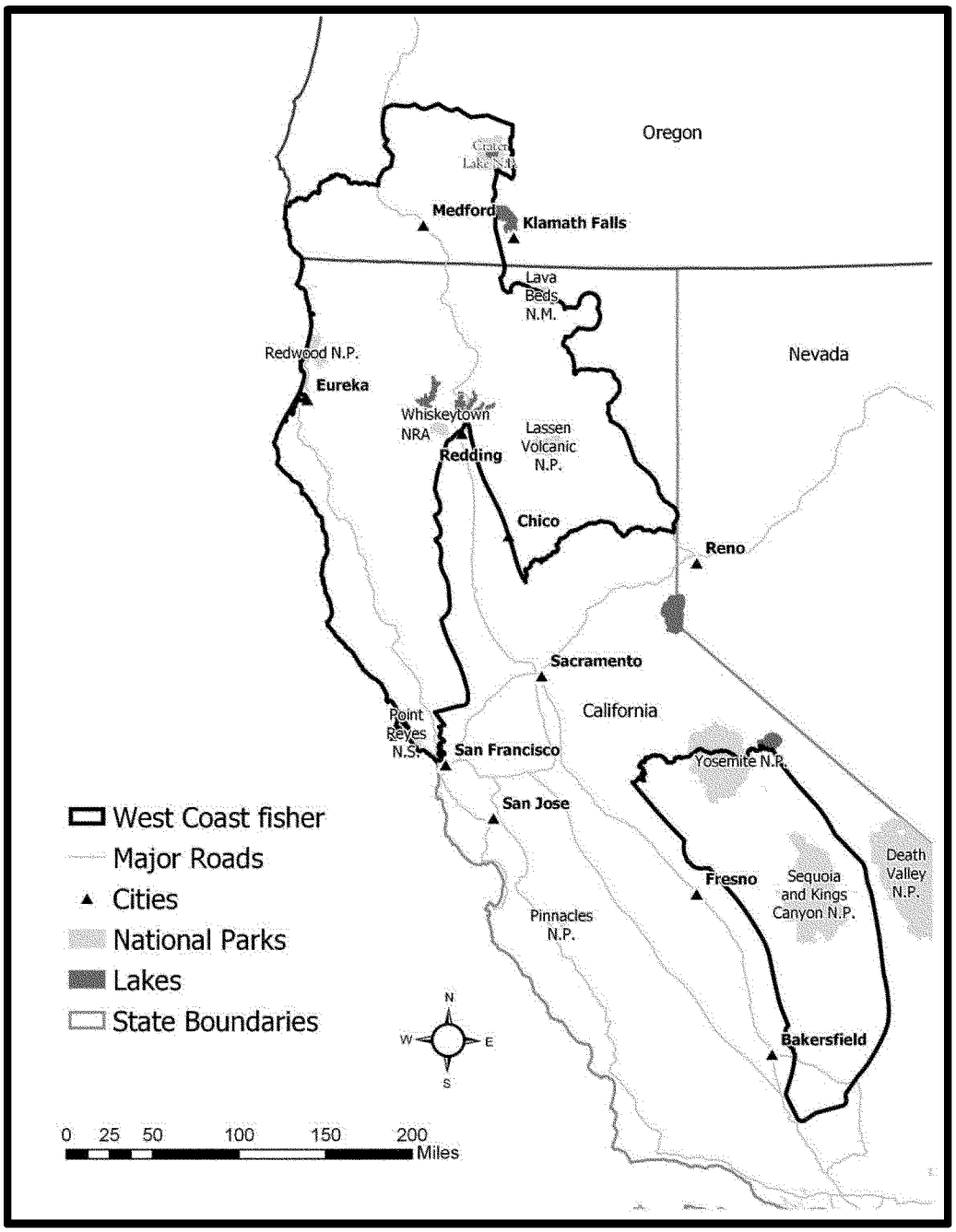

Figure 2. Current distribution of the West Coast DPS of fishers. (The northernmost boundary of the Southern Sierra Nevada (SSN) subpopulation, per current camera survey information, indicates fishers are south of the Tuolumne River in Yosemite National Park.)

BILLING CODE 4333–15–C

Additional information on the species' biology and distribution is described in the final Species Report (Service 2016, pp. 9–12, 25–53).

Summary of Biological Status and Threats

Section 4 of the Act (16 U.S.C. 1533) and its implementing regulations (50 CFR part 424) set forth the procedures for determining whether a species is an ''endangered species'' or a ''threatened species.'' The Act defines an endangered species as a species that is ''in danger of extinction throughout all or a significant portion of its range,'' and a threatened species as a species that is

''likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.'' The Act requires that we determine whether any species is an ''endangered species'' or a ''threatened species'' because of any of the following factors: (A) The present or threatened destruction, modification, or curtailment of its habitat or range; (B) Overutilization for commercial, recreational, scientific, or educational purposes; (C) Disease or predation; (D) The inadequacy of existing regulatory mechanisms; or (E) Other natural or manmade factors affecting its continued existence. These factors represent broad categories of natural or human-caused actions or conditions that could have an effect on a species' continued existence. In evaluating these actions and conditions, we look for those that may have a negative effect on individuals of the species, as well as other actions or conditions that may ameliorate any negative effects or may have positive effects.

We use the term ''threat'' to refer in general to actions or conditions that are known to or are reasonably likely to negatively affect individuals of a species. The term ''threat'' includes actions or conditions that have a direct impact on individuals (direct impacts), as well as those that affect individuals through alteration of their habitat or required resources (stressors). The term ''threat'' may encompass—either together or separately—the source of the action or condition or the action or condition itself.

However, the mere identification of any threat(s) does not necessarily mean that the species meets the statutory definition of an ''endangered species'' or a ''threatened species.'' In determining whether a species meets either definition, we must evaluate all identified threats by considering the expected response by the species, and the effects of the threats—in light of those actions and conditions that will ameliorate the threats—on an individual, population, and species level. We evaluate each threat and its expected effects on the species, and then analyze the cumulative effect of all of the threats on the species as a whole. We also consider the cumulative effect of the threats in light of those actions and conditions that will have positive effects on the species—such as any existing regulatory mechanisms or conservation efforts. The Secretary determines whether the species meets the definition of an ''endangered species'' or a ''threatened species'' only after conducting this cumulative analysis and describing the expected effect on the species now and in the foreseeable future. In our determination, we correlate the threats acting on the species to the factors in section 4(a)(1) of the Act.

Current Condition of the West Coast DPS of Fisher

Following are brief accounts of the NCSO (and by inclusion the SOC and NSN subpopulations) and SSN subpopulations. Primary threats are introduced in these summaries and described in more detail below in the ''*Risk Factors for the West Coast DPS of Fisher*'' section. Additional detail is also found in the ''Review of Stressors'' section of the final Species Report (Service 2016, pp. 53–162), although we provide updated/new information since 2016 in this document, when applicable. Regulatory and voluntary conservation efforts resulting from the plans and strategies being implemented within both subpopulations were previously described in detail in the 2016 final Species Report, and are updated in this document.

However, as explained in more detail below in the ''Existing Regulatory Mechanisms and Voluntary Conservation Measures'' section of this rule, we determined that we did not need to evaluate these voluntary conservation efforts under our Policy for Evaluation of Conservation Efforts When Making Listing Decisions (PECE; 68 FR 15100). While it is reasonably likely these conservation efforts will provide some benefit for fishers, we also note that these benefits will be realized at more of an individual fisher/local scale where implemented, and not necessarily at a scale and magnitude sufficient to ameliorate the primary significant threats imperiling the DPS. Therefore, while we acknowledge that the DPS may see conservation benefits from these efforts, we recognize that these benefits will not be sufficient to outweigh the DPS's primary threats, and as such, there is no reason to evaluate these conservation efforts under PECE for certainty of implementation and effectiveness.

NCSO—Northern California-Southwestern Oregon Subpopulation

Abundance information for the NCSO population is presented based on three different geographic portions of this subpopulation. First, the SOC portion west of Crater Lake is predominantly represented by nonnative, reintroduced individuals. However, recent analyses have documented that at least some of these nonnative SOC individuals and native NCSO individuals are overlapping in range, with confirmed interbreeding (Pilgrim and Schwartz 2016, entire; Pilgrim and Schwartz 2017, entire). Second, the NSN portion is represented by native, reintroduced fishers whose genetic stock is from fishers relocated from the Klamath-Siskiyou and Shasta-Trinity subregions (in the historically native NCSO subpopulation) to the northern Sierra Nevada. This geographic portion of the NCSO subpopulation occurs on land known as the SPI Stirling Management Unit in Butte, Plumas, and Tehama Counties, California (Powell *et al.* 2019, p. 2). Third, the remainder of the native fishers in the NCSO subpopulation occupy the California Coast Range mountains in southern Oregon and northern California, the Klamath-Siskiyou and Shasta-Trinity subregions in northern California, and the western portion of the southern Cascades in northern California.

Fishers in the SOC portion of the NCSO subpopulation stem from a translocation of 30 fishers from British Columbia and Minnesota to the southeastern Cascade Range and west of Crater Lake between 1977 and 1981, after an earlier reintroduction in 1961 failed (Aubry and Lewis 2003, p. 84; Lofroth *et al.* 2010, pp. 43–44). Based on survey and research efforts starting in 1995, genetic evidence shows these fishers continue to persist (Drew *et al.* 2003, p. 57; Aubry *et al.* 2004, pp. 211–215; Wisely *et al.* 2004, p. 646; Pilgrim and Schwartz 2014–2017, entire; Moriarity *et al.* 2017, entire; Barry 2018, pp. 6, 22–24). Prior to 2015, survey work in the Oregon Cascades north of the NCSO subpopulation was mainly limited to opportunistic or small-scale efforts. Fishers had not been detected, except for two single fishers: One detected just north of the SOC subpopulation in 2014 (Wolfer 2014, pers. comm.); and a single dispersing juvenile male detected in the same general area in the 1990s (Aubry and Raley 2006, p. 5), suggesting individuals may disperse north through the central Oregon Cascades. Over the winter of 2015–2016, systematic camera surveys occurred in the northern Oregon Cascades (specifically, the southern portion of the Mt. Hood National Forest and northern portion of the Willamette National Forest). No fishers were detected (Moriarty *et al.* 2016, entire), suggesting fishers may not reach this far north in the Oregon Cascades. Additionally, surveys over the past 3 years have not detected fishers north of the Rogue River in the central Oregon Cascades (Barry 2018, pp. 22–23) (see below).

Information is not available on population size for the SOC portion of

the NCSO subpopulation. In the northern portion of the SOC area, fishers were detected in the northern and eastern portions of Crater Lake National Park between 2013 and 2015 (Mohren 2016, pers. comm.). However, systematic surveys were conducted in 2016 and 2017 north and east of Crater Lake National Park and south to the Klamath Falls Resource Area (KFRA; south of the reintroduction area) of the Bureau of Land Management (BLM) Lakeview District (Barry 2018, entire). Few fishers were detected in an area east of Crater Lake National Park where fishers were captured and radio-collared in the early 1990s by Aubry and Raley (2002, entire). Fishers were found on the KFRA, south of where they were previously estimated to occur, and in areas where they were not previously detected (Hayner 2016, pers. comm.). These results suggest that fisher in the SOC area ''appears to have contracted, shifted south, or the previous population extent was incorrectly estimated'' (Barry 2018, pp. 22–24).

Fishers in the NSN portion of the NCSO subpopulation stem from a 2009 to 2011 translocation of 40 fishers (24 females, 16 males) from Humboldt, Siskiyou, and Trinity Counties, California, to the Sierra Pacific Industries (SPI) Stirling Management Unit in Butte, Plumas, and Tehama Counties, California. Ongoing monitoring has confirmed that fishers born onsite have established home ranges and have successfully reproduced. Trapping efforts in the fall of 2017 as part of ongoing monitoring of the reintroduced subpopulation indicate a minimum of 61 fishers (38 females, 23 males), which is 21 more than were originally introduced (Powell *et al.* 2019, p. 2).

Older estimates for the NCSO subpopulation (excluding the SOC and NSN reintroduced subpopulations) using various methodologies range from a low of 258–2,850 individuals, based on genetic data (Tucker *et al.* 2012, pp. 7, 9–10), to a high of 4,018 individuals based on extrapolation of data from two small study areas within the NCSO subpopulation to the entire NCSO subpopulation (Self *et al.* 2008, pp. 3–5). In 2017, a new estimate was developed for the NCSO subpopulation that includes southern Oregon and coastal California but excludes SOC and NSN (Furnas *et al.* 2017, pp. 2–3). Furnas *et al.* (2017) based their estimate of population size on the assumption of a density of 6.6 fishers per 39 mi^2 (100 km^2) across the area they defined for the NCSO subpopulation (rationale described in detail in Furnas *et al.* 2017, pp. 12–15). Using this estimate of fisher density, the NCSO subpopulation is estimated to be 3,196 individuals (2,507–4,184; 95 percent Confidence Interval (C.I.)) Furnas *et al.* 2017, p. 12). With the exception of the reintroduced NSN subpopulation area estimate, which is based on trapping results, Self *et al.* (2008) and Furnas *et al.* (2017) base their estimates for the size of the NCSO subpopulation on fisher habitat available prior to 2014.

Trend information for fishers within the NCSO subpopulation is based on the following two long-term study areas. As indicated above, we now consider the NCSO subpopulation to include the areas previously represented as the SOC and NSN reintroduced fisher subpopulations.

(1) The Hoopa study area is approximately 145 mi^2 (370 km^2) on the Hoopa Valley Indian Reservation north of California State Highway 299 and near Highway 96, which is largely surrounded by the Six Rivers National Forest and other private lands. The study area represents the more mesic portion (containing a moderate amount of moisture) of the NCSO subpopulation area. Fisher studies have been ongoing since 1996. The population trend in the period 2005–2012 indicates declining populations with lambda (population growth rate) of 0.992 (C.I. 0.883–1.100) with a higher lambda rate for females 1.038 (0.881–1.196) than males 0.912 (0.777–1.047) (Higley *et al.* 2014, p. 102, Higley 2015, pers. comm.).

(2) The Eastern Klamath Study Area (EKSA) is approximately 200 mi^2 (510 km^2) in size straddling the California/Oregon border. This study area represents the more xeric portion (containing little moisture; very dry) of the NCSO subpopulation area. Monitoring has occurred since 2006 (Green *et al.* 2018a, entire). The estimate for population growth rate in the period 2006–2013 is increasing (lambda = 1.06; C.I. 0.97–1.15) (Green *et al.* 2018a, p. 818). However, two years of data collected from 2014–2016 following two large fires in the study area indicate an estimated 40 percent reduction in the number of fishers post-fire (Green *et al.* 2019, p. 8).

The major habitat-based threats experienced by the NCSO subpopulation are loss of complex canopy forests and den/rest sites, and fragmentation of habitat, from high-severity wildfire, wildfire suppression activities (*e.g.,* backburning, fuel breaks, and snag removal), and vegetation management (*e.g.,* fuels reduction treatments, salvage, hazard tree removal). Major non-habitat related threats are exposure to toxicants and, in some areas, predation. Within the Oregon portion of the NCSO subpopulation, two dead fishers were tested for the presence of rodenticides; exposure was found in both (Clayton 2016, pers. comm.).

In addition to these threats acting on the DPS, there are also several conservation efforts designed to benefit fishers. Such efforts include those being implemented within the portion of the range covered by the Northwest Forest Plan (NWFP), including measures associated with Endangered Species Act section 7 consultations in overlapping northern spotted owl (*Strix occidentalis caurina*) designated critical habitat. Two principal conservation efforts exist in Oregon. First, there is an intergovernmental Memorandum of Understanding (MOU) for fisher conservation (DOI *et al.* 2016, entire), which provides a framework for cooperation and achieving mutual fisher conservation goals among Federal and State agencies (Service 2016, pp. 120–121). Second, a template Candidate Conservation Agreement With Assurances (CCAA) for fishers in western Oregon (81 FR 15737, March 24, 2016) requires conservation measures to protect occupied den sites, as well as additional contributions toward a fisher conservation program or work described in the template CCAA. A permit was recently issued under this template CCAA (84 FR 4851, February 19, 2019) and we are in the process of considering five additional permit applications (84 FR 31903, July 3, 2019).

For the portion of the NCSO subpopulation in California, reintroduction efforts have resulted in establishment of a fisher subpopulation in the SPI Stirling Management Area within the NSN (northern Sierra Nevada) with the potential to connect with fishers in the remainder of the NCSO subpopulation to the north. In 2016, an approximately 1.6 million-acre (ac) (647 thousand-hectare (ha)) CCAA for fishers on Sierra Pacific Industries (SPI) ownership in the Klamath, Cascade, and Sierra Nevada mountains was completed (SPI and Service 2016, entire), which incorporated the area and earlier monitoring agreements for the SPI Stirling Management Area CCAA (SPI and Service 2008, entire). Implementation and monitoring has been under way since October 2016. The objectives of this CCAA are to secure general forested habitat conditions for fishers for the 10-year time period and the retention of important fisher habitat components (large trees, hardwoods, and snags) suitable for denning and resting into the future. Additionally, the Green Diamond Forest HCP (GDRC 2018,

entire) is anticipated to provide a conservation benefit for fishers and their habitat (portions of forests on the west slope of the coastal and Klamath Mountains) in Del Norte and Humboldt Counties, California. Conservation benefits anticipated include (but are not limited to): Identifying and retaining fisher denning and resting trees, including maintaining a 0.25-mi (402-m) radius no-harvest buffer around active fisher dens; fisher-proofing water tanks and pipes; implementing measures that detect, discourage, and remove unauthorized marijuana cultivation and associated pesticide use; and cooperating with any Federal or State-approved fisher capture and relocation/reintroduction recovery programs (Service 2019a, p. 2).

SSN—Southern Sierra Nevada Subpopulation

The SSN native subpopulation of fisher is small and is geographically separated from the remainder of the DPS. The SSN subpopulation is found in Mariposa, Madera, Fresno, Tulare, and Kern Counties in California. Historically, the subpopulation likely extended farther north, but may have contracted due to unregulated trapping, predator-control efforts, habitat loss and fragmentation, or climatic changes. Today the approximate northern boundary is the Tuolumne River in Yosemite National Park (Mariposa County) and the southern limit is the forested lands abutting the Kern River Canyon, while the eastern limit is the high-elevation, granite-dominated mountains, and the western limit is the low-elevation extent of mixed-conifer forest. Multiple lines of genetic evidence suggest that the isolation of the SSN subpopulation from other subpopulations of native fishers within the West Coast States is longstanding and predates European settlement (Knaus *et al.* 2011, entire; Tucker *et al.* 2012, entire; Tucker 2015, pers. comm., pp. 1–2).

Estimates for the SSN subpopulation range from a low of 100 to a high of 500 individuals (Lamberson *et al.* 2000, entire). A recent estimate of 256 female fishers was based on habitat availability at the time (Spencer *et al.* 2016, p. 44). Other population estimates are: (1) 125–250 adult fishers based on fisher carrying capacity in currently occupied areas (Spencer *et al.* 2011, p. 788); and (2) fewer than 300 adult fishers or 276–359 fishers that include juveniles and subadults based on extrapolation from portions of the subpopulation where fishers have been intensely studied to the range of the entire population (Spencer *et al.* 2011, pp. 801–802). These population estimates are based on habitat conditions for fishers in the Sierra Nevada that predate the ongoing, large-scale tree mortality event in this geographic area that began in approximately 2010. The Sierra tree mortality event is affecting many of the key components of fisher habitat such as complex forest canopy structure and connected closed-canopy forest conditions. Research is currently ongoing to determine to what extent these large-scale habitat changes will have on the SSN subpopulation.

An 8-year monitoring study that sampled an average of 139.5 units (range 90–189) per year during the period 2002–2009 throughout the SSN subpopulation showed no declining trend in occupancy (Zielinski *et al.* 2013, pp. 3, 10–14; Tucker 2013, pp. 82, 86–91). However, this study had been designed to be run for 10 years while sampling 288 units per year and was intended to have an 80 percent probability of detecting a 20 percent decline over 10 years (Zielinski *et al.* 2013, p. 11; Tucker 2013, p. 82). As a result of the smaller sample size and shorter duration, the results of this study must be considered inconclusive.

Another study of radio-collared fishers monitored from 2007 through 2014 in the Sugar Pine area (49 mi^2 (128 km^2)) of the SSN subpopulation showed the survival rate (calculated using demographic parameters) of adult males, but not females, is lower than other subpopulations in the West Coast States. Specifically, Sweitzer *et al.* (2015a pp. 781–783; 2015b, p. 10) stated that their analysis ''suggested slightly negative growth ($\lambda = 0.966$) for the period of the research (Table 2). The upper range for λ (1.155) was well above 1.0, however, suggesting stability or growth in some years. The estimated range for λ (Table 2) was consistent with the estimated population densities, which did not indicate a persistent decline during 4 years from 2008–2009 to 2011–2012.'' Additionally, in a new report (Purcell *et al.* 2018) based on fishers studied in the previously mentioned Sugar Pine area, results for radio-collared fishers monitored from 2007 through 2017 (totaling 139 collared fishers) in the Sugar Pine area are updated, indicating an estimated lambda of 0.99 (C.I. 0.826 to 1.104) based on female fisher survival rates (Purcell *et al.* 2018, pp. 5–6, 17). Specifically, Purcell *et al.* (2018) stated: ''Given the length and intensity of the monitoring associated with calculating these estimates, and the lack of significant difference from zero, the SNAMP/Sugar Pine fisher population appears stable over the study period.'' Thus, population growth in the Sugar Pine portion of the SSN subpopulation is estimated to trend less than 1.0; however, the authors suggest that the population in this area is not in persistent decline but is offset by periods of stability or growth (Sweitzer *et al.* 2015a, p. 784; Purcell *et al.* 2018, p. 6). Finally, the authors express concern for the subpopulation and the need for continued monitoring (Sweitzer *et al.* 2015b, p. 10; Purcell *et al.* 2018, p. 6).

Available population estimates and trend information for the SSN subpopulation does not take into consideration extensive tree mortality that has impacted the habitat since 2015 to present. Research is currently being conducted to determine any potential effects that tree mortality may be having on the SSN fisher subpopulation, but results are not yet available (Green *et al.* 2019, entire).

The major threats for the SSN subpopulation are loss and fragmentation of habitat resulting from high-severity wildfire and wildfire suppression activities, vegetation management, and forest insects and tree diseases, as well as direct impacts that include high mortality rates from predation, exposure to toxicants, and potential effects associated with small population size. Tree mortality may be an additional threat on this subpopulation given the species' needs, but more information is necessary to determine population-level impacts. Potential conservation measures include the development of the Southern Sierra Nevada Fisher Conservation Strategy (Spencer *et al.* 2016, entire).

Risk Factors for the West Coast DPS of Fisher

Potential threats currently acting upon the West Coast DPS of fisher or likely to affect the species in the future are evaluated and addressed in the final Species Report (Service 2016, pp. 53–162). We consider these threats in light of the statutory factors identified in the Act, including: (A) The present or threatened destruction, modification, or curtailment of its habitat or range; (B) Overutilization for commercial, recreational, scientific, or educational purposes; (C) Disease or predation; (D) The inadequacy of existing regulatory mechanisms; or (E) Other natural or manmade factors affecting its continued existence. The reader is directed to the Species Report (Service 2016, entire) for a more detailed discussion of the threats summarized in this document (*http://www.fws.gov/cno/fisher/*). However, please note that our most recent consideration of new data since 2016

coupled with our reevaluation of the entirety of the best available scientific and commercial information is represented and summarized in this revised proposed rule.

Our analysis represents an evaluation of the biological status of the species, based upon our assessment of the cumulative impact of all effects anticipated from the identified threats, and how that cumulative impact may affect the species' continued existence currently and in the future. We used the best available scientific and commercial data, and the expert opinions of the analysis team members. Based on the analysis and discussion contained herein, in this document we evaluated potential habitat-based threats including high-severity wildfire, wildfire suppression activities, and post-fire management actions; climate change; forest insects and tree diseases; vegetation management; and human development (Factor A). We also evaluated potential threats related to direct mortality of fishers including trapping and incidental capture (Factor B), research activities (Factor B), disease or predation (Factor C), collision with vehicles (Factor E), exposure to toxicants (Factor E), and potential effects associated with small population size (Factor E). Finally, we also evaluated the inadequacy of existing regulatory mechanisms (Factor D).

The timing (immediacy) of each threat was assessed independently based upon the nature of the threat and time period that we can be reasonably certain the threat is acting on fisher populations or their habitat. In general, we considered that the trajectories of the threats acting on fisher subpopulations across the DPS's range could be reasonably anticipated over the next 35–40 years. We estimated this timeframe as a result of our evaluation of an array of time periods used in modeling. For example, climate models for areas with fisher habitat, habitat conservation plans (HCPs), and timber harvest models generally predict 50 to 100 years into the future, and forest planning documents often predict over shorter timeframes (10 to 20 years). We considered 40 years at the time of the 2014 Proposed Rule, and given the 5-year time period since, we are modifying the foreseeable future time period to a range of 35–40 years. This is a timeframe that we can reasonably determine that both the future threats and the species' responses to those threats are likely. This time period extends only so far as the predictions into the future are reliable, including a balance of the timeframes of various models with the types of threats anticipated during the 35- to 40-year time period.

As we conducted our threats analysis, we determined that the most significant drivers of the species' future status were: Wildfire and wildfire suppression, damage to forest health from disease and insect infestations, and the potential for climate change to exacerbate both of these threats, as well as the threats related to vegetation management and exposure to toxicants. While our assessment of the species' status was based on the cumulative impact of all identified threats, as explained above, we are only presenting our analyses on these specific primary threat drivers for the purposes of this revised proposed rule. Full detailed analyses for all the other individual threats, we refer the reader to the Species Report (Service 2016, entire).

Wildfire and Wildfire Suppression

Our evaluation includes both the effects of wildfire on fisher habitat as well as those activities associated with wildfire suppression that may result in changes to fisher habitat (for example, backburning, fuel breaks, and snag removal). Naturally occurring fire regimes vary widely within the range of fishers on the West Coast (Service 2014, p. 58). Potential for high-severity wildfire to affect fisher habitat and fisher populations is concentrated in northern California-southwestern Oregon and the Sierra Nevada areas as compared to the remainder of the fisher's historical range in the West Coast States (Service 2014, pp. 62–63). In general, high-severity wildfire has the potential to remove suitable fisher habitat by removing forest canopy, large trees, and structurally diverse understories, which can take from decades to a century or more to regrow, depending on the habitat feature (Service 2014, pp. 59–60). Mixed-severity wildfire includes patches of low-severity wildfire and patches of high-severity wildfire (Jain *et al.* 2012, p. 47).

At the landscape scale, mixed-severity wildfire effects to fisher habitat may only affect an area's ability to support fishers for a short period of time due to the patchy nature of burned and unburned areas. Additionally, a beneficial aspect of mixed-severity wildfires (as opposed to just high-severity wildfires) is that these wildfires may contribute to the regeneration of the hardwood component of mixed-conifer forest used by fisher (Cocking *et al.* 2012, 2014, entire). Low-severity wildfire may reduce some elements of fisher habitat temporarily, but also helps to contribute to the ecological processes necessary to create tree cavities essential for denning and resting fishers (Weir *et al.* 2012, pp. 237–238). Low-severity wildfire is unlikely to remove habitat, and post-wildfire areas are likely to still be used by fishers (Naney *et al.* 2012, p. 6; Truex and Zielinski 2013, p. 90).

Within shrub, grassland, and forested lands across the western United States (including the Sierra Nevada, southern Cascades, and Coast ranges), the wildfire season length increased over each of the last 4 decades, from 65 days in the 1970s to 140 days in the 2000s (Westerling 2016, pp. 3, 8, and 10). The lengthening of the wildfire season is largely due to declining mountain snowpack and earlier spring snowmelt, which contributes to a decrease in vegetation moisture that enables more frequent large wildfires and an increase in the total area burned (Westerling 2016, pp. 8–9). In the SSN subpopulation area, changes in climate are associated with large increases in the area burned by wildfire (Dettinger *et al.* 2018, p. 72), and increases in the frequency of large wildfires greater than 24,700 (ac) (9,996 (ha) (Westerling 2016, pp. 6–7). Recent publications on wildfire occurrence and severity within the NCSO and SSN fisher subpopulations have not changed our conclusions about this threat from the 2014 Proposed Rule (79 FR 60419, October 7, 2014; p. 60429).

Recent information on fishers' behavioral and localized population response to wildfires is available for both the NCSO and SSN fisher subpopulations, as shown below.

Northern California-Southern Oregon (NCSO)

In a monitored fisher population in the Klamath-Siskiyou area, declines in the overall fisher population occurred after wildfires in the study area in 2014 and 2015 (Green *et al.* 2019, entire). This population of fishers was monitored for 8 years pre-wildfire and the population was considered relatively stable. The decline in the number of fishers due to the wildfires is 40 percent, a decrease that became apparent the first full year following the fires and has persisted for at least 2 more years (Green *et al.* 2019, p. 8). Fisher densities declined across all wildfire severity types but declined the most in areas with more than a 50 percent loss of tree basal area (Green *et al.* 2019, p. 6).

Within the Biscuit Fire area in southwest Oregon, which burned in 2002, surveys conducted in 2016 and 2017 did not detect fishers within the burn perimeter (Barry 2018, pp. 22–23), suggesting fishers may not yet occupy

the area. The Biscuit Fire appears to have been unusually large and severe for the Klamath-Siskiyou region based on estimates of crown damage (Odion *et al.* 2004, p. 932) and area affected by surface fire (Thompson and Spies 2009, pp. 1,692–1,693).

To update our 2014 analysis of wildfire effects within the NCSO subpopulation, we conducted an analysis similar to the one completed for the 2014 draft Species Report (Service 2014, pp. 62–64; Service 2019b, unpublished data). Using the fisher habitat map developed for the 2014 Proposed Rule and U.S. Forest Service data for burn severity for 2008–2018 (USDA Forest Service 2019), we estimated the effects of high-severity wildfire to fisher habitat over the past 10 years. We assumed wildfires that burned at high severity (greater than 50 percent basal area loss) changed fisher habitat to a condition that would not be selected by fishers; this assumption was based on the recent results as reported in Green *et al.* (2019a, p. 6). Overall, high and intermediate quality fisher habitats in the NCSO subpopulation have decreased by 526,424 ac (213,036 ha) from 7,050,035 ac (2,853,047 ha) to 6,523,610 ac (2,640,011 ha), or approximately 7 percent, as a result of wildfires since 2008. The total area assessed was approximately 10,459,612 ac (4,232,855 ha).

For comparison purposes, in our 2014 draft Species Report, we estimated 4 to 8 percent of fisher habitat would be lost over the next 40 years due to high-severity wildfire (Service 2014, p. 64). Our 2014 area of analysis for the NCSO subpopulation was based on fire data from 1984 to 2011 and assessed approximately 24,080,693 ac (9,745,111 ha). The results of our new analysis is based on fire data from the period 2008 to 2018, a 10-year period of actual data, which indicates our earlier estimates of changes to fisher habitat from wildfire over the next 40 years may have been an underestimate.

Southern Sierra Nevada (SSN)

In an analysis of a portion of the SSN fisher subpopulation, fisher occupancy of sample units trends lower among those units burned by either prescribed burning or wildfire (Sweitzer *et al.* 2016, pp. 218–220); nonetheless, the overall results of this analysis did not include a consistent negative effect of fire on fisher habitat use. Results of modeling the variables of forest structure important to fishers for denning habitat on the Sierra National Forest and Yosemite National Park suggest that suitable denning habitat is maintained in burned forests, though primarily those with low-severity wildfire conditions (Bomdahl 2018, entire). Fisher behavior in post-wildfire landscapes in the French (2014) and Aspen Fires (2013) indicated an avoidance of areas affected by high- and moderate-severity wildfires, and a higher probability of being found in ravines or canyon bottoms in combination with unburned or lightly burned patches (Thompson *et al.* 2019, pp. 13–14). This new information differs from that reported in our final Species Report (Service 2016, p. 66) and may be due to different scales of analysis, the values chosen to identify wildfire severity classes, or the 2–4 year vs. 10-year post-wildfire sampling period (Hanson *et al.* 2013, entire; Thompson *et al.* 2019, pp. 15–18). Without demographic data on age class, survival, or reproduction, it is difficult to say with certainty whether fisher use of post-wildfire landscapes is for dispersal or whether such areas act as population sinks, as has been identified for the proposed coastal DPS of Pacific marten (*Martes caurina*) (Thompson *et al.* 2019, pp. 17–18).

For comparison purposes based on data compiled for a new analysis of effects of wildfire on fisher habitat in the southern Sierra Nevada, the Conservation Biology Institute (CBI) analyzed high severity fire data from 2003 to 2017 (CBI 2019, pp. 26–28). This new analysis shows a loss of fisher denning, resting, and foraging habitat of approximately 25 percent over the time period 2003–2017, with most of that loss occurring between 2013 and 2017 (approximately 22 percent) (CBI 2019, p. 28). In addition, the wildfires occurring on the Sierra and Sequoia National Forests bisected and disrupted connectivity between—or reduced the overall size of—key core areas as identified in the SSN fisher conservation strategy (Spencer *et al.* 2016, p. 10; CBI 2019, pp. 26–28).

Wildfire and Wildfire Suppression Summary

When considering the best available scientific and commercial information regarding wildfire and wildfire suppression activities (including new information since the time of the 2014 Proposed Rule and our reevaluation of peer reviewer and other comments received), we maintain that wildfire is a natural ecological process. As stated above, wildfire may be increasing in terms of frequency, severity, and magnitude in California and southern Oregon. We acknowledge there is debate concerning whether wildfire severity is increasing (Mallek *et al.* 2013, pp. 11–17; Stephens *et al.* 2015, pp. 12–16; Hanson and Odion 2016, pp. 12–17; Odion *et al.* 2016, entire). Our best professional judgment leads us to conclude that if the severity and extent of wildfires are such that substantial areas of canopy and large trees are lost, multiple decades of forest growth and structural development would be necessary for those burned areas to support fisher reproduction. Alternatively, if wildfire severity is low or mixed, important habitat elements to fisher (*e.g.,* den trees) can be both created and removed within a home range such that the burned habitat may continue to support both fisher foraging and reproduction. Therefore, based on the research and data currently available (as described above and in Service 2014, p. 64; Sequoia Forest Keeper 2019, pers. comm.; Spencer *et al.* 2016, p. 10), we believe that, in areas where wildfires remove 50 percent or more of the basal area of trees in the habitats fisher select (high and intermediate quality), fisher occupancy and reproduction is negatively affected. In areas where less than 50 percent of the basal area is lost, the degree to which wildfire (and wildfire suppression activities) affects fisher populations depends on the forest type, landscape location, size, and intensity of the wildfire.

Climate Change

At the time of the 2014 Proposed Rule, we stated and reaffirm here that, overall, fisher habitat is likely to be affected by changing climate conditions, but the severity will vary, potentially greatly, among different regions, with effects to fishers ranging from negative, neutral, or potentially beneficial. Climate change is likely to alter the structure and tree species composition of fisher habitat, and also result in changes to habitat of prey communities and ultimately prey availability. Studies of climate change present a range of effects including some that indicate conditions could remain suitable for fisher, and others that indicate a reduction in habitat quality or suitability could lead to increased chronic stress of fishers. Climate throughout the West Coast States is projected to become warmer over the next century, and in particular, summers will be hotter and drier, with heat waves that are more frequent (Hayhoe *et al.* 2004, p. 12,423; Tebaldi *et al.* 2006, pp. 191–200; Mote and Salathé 2010, p. 41; Salathé *et al.* 2010, p. 69; Cayan *et al.* 2012, pp. 4, 10; Mote *et al.* 2013, p. 34; Pierce *et al.* 2013, pp. 844, 848).

- In Oregon, Dalton *et al.* (2017, pp. 4, 8) evaluated greenhouse gas emissions via global climate models

with future emission pathways called ''representative concentration pathways'' (RCPs). They considered multiple greenhouse gas emission scenarios, including low (RCP 4.5) and business-as-usual (RCP 8.5). Their analysis indicates that extreme heat events are expected to increase in frequency, duration, and intensity by the 2050s due to warming temperatures (RCP 4.5 = mean annual temperature increase predicted on average 3.6 degrees Fahrenheit (°F); RCP 8.5 = mean annual temperature increase predicted on average 5.0 °F). Summers are expected to warm more than the annual average and likely to become drier. Annual precipitation is projected to increase slightly, although with a high degree of uncertainty. Extreme heat and precipitation events are expected to increase in frequency, duration, and intensity.

• In California, information from Pierce *et al.* (2013) and Safford *et al.* (2012) used multiple general circulation models and downscaling with regional climate models to develop probabilistic projections of temperature and precipitation changes over California by the 2060s. Predictions indicate an annual mean temperature increase of 4.3 °F (2.4 degrees Celsius (°C)) by 2060 (Pierce *et al.* 2013, p. 844), which falls in line with already increased temperatures of around 1 to 2.5 °F (0.5 to 1.4 °C) over the past 75 to 100 years specifically in the Sierra Nevada (Safford *et al.* 2012, p. 25). In the Klamath Mountains portion of the NCSO subpopulation area, precipitation is likely to fall increasingly as rain rather than snow, becoming mainly rain-dominated by mid-century (Dalton *et al.* 2017, p. 17).

Higher temperatures during spring and summer, coupled with early snow melt, will reduce moisture of both live fuels and dead surface fuels by increasing evaporative demands during the dry season (Kelly and Syphard 2016, pp. 2–3). Additionally, annual precipitation changes have been and are likely to continue to be inconsistent across California (Polade *et al.* 2017, p. 1), as well as the remainder of the West Coast States.

Studies specific to predicting the effects of climate change on suitable fisher habitat have produced a wide range of results. Ecotype conversion to woodland, shrubland, or grassland would result in the loss of suitable fisher habitat. This type of shift is predicted, for example, in the southern Sierra Nevada (Gonzalez *et al.* 2010, fig. 3; Lawler *et al.* 2012, p. 388). On the other hand, shifts from conifer forest to hardwood-dominated mixed forest in the southern Sierra Nevada or Klamath region could either increase or decrease available habitat to fishers (Lawler *et al.* 2012, pp. 384–386; Loarie *et al.* 2008, p. 4 and fig. 4). Given the contribution of hardwood trees to fisher habitat in drier parts of the NCSO and SSN subpopulations, a shift to increasing hardwoods in the more coastal or higher elevation forest types could improve habitat. However, trees are long-lived and mature forests can persist under suboptimal conditions, preventing better-suited vegetation from becoming established until disturbance removes the original forest (Sheehan *et al.* 2015, p. 27). Consequently, the increase in the hardwood component of fisher habitat in predominantly conifer areas may not occur until after fires have removed enough of the existing stand to allow hardwood establishment, potentially decreasing suitable habitat in the interim.

Other studies suggest that climate change will adversely impact forest habitat by intensifying large-scale, high-severity wildfire, drought, and tree mortality (Kadir *et al.* 2013, pp. 132, 137; Westerling 2016, pp. 1–2; Stephens *et al.* 2018, p. 77). A wide range of assumptions and caveats typically accompanies these types of predictions.

Variables predicting fisher resting habitat as described by Zielinski and Gray 2018 (p. 903) include stand characteristics such as canopy closure, basal area of conifer and hardwood trees, and diameter and age of dominant conifers. To date climate change has not significantly affected resting habitat for fishers, which, according to Zielinski and Gray (2018, pp. 899, 903), has remained stable over the past 20 years across the California-portion of the DPS's range, although habitat suitability tended to be lower on private lands than public lands. However, when considering resting habitat trends over these 20 years to help us project potential future resting habitat conditions in light of climate change projections, survey data in the Eldorado and Sierra National Forests (within a portion of the SSN subpopulation area) indicate the beginning of a negative trend in resting habitat suitability (Zielinski and Gray 2018, p. 903), whereas resting habitat examined within the NCSO subpopulation area varied greatly (*i.e.,* suitable resting habitat decreased in the Shasta-Trinity National Forest, increased in the Six Rivers National Forest, and remained unchanged over time for both the Klamath and Mendocino National Forests).

In addition to the potential climate change effects to fisher habitat discussed above, some researchers have suggested climate change may cause direct effects to fishers, including increased mortality, decreased reproductive rates, alterations in behavioral patterns, and range shifts. Fishers may be especially sensitive, physiologically, to warming summer temperatures (Zielinski *et al.* 2004, p. 488; Slauson *et al.* 2009, p. 27; Facka 2013, pers. comm.; Powell 2013, pers. comm.). As a result, researchers (*e.g.,* Burns *et al.* 2003, Zielinski *et al.* 2004, Lawler *et al.* 2012, Olson *et al.* 2014) theorize that fishers likely will either alter their use of microhabitats or shift their range northward and upslope, in order to avoid thermal stress associated with increased summer temperatures.

Although we indicated in the 2014 Proposed Rule that climate change is not viewed as a direct threat to fishers or their habitat, the best available information indicates there is a link between changing climate conditions (temperature and precipitation changes, more frequent and prolonged droughts) and the resulting changes to overall habitat suitability and availability for fishers throughout their range, as well as potential to increase fisher stress levels when habitat changes occur. These changes more specifically affect the amount and distribution of habitat necessary for female fishers to be able to have places to den and raise their young. For example:

• *Climate change, wildfire, and air quality:* Ongoing climate change in California is likely to result in significant or amplified wildfire activity and air quality challenges, with area burned and severity likely to increase (Hurteau *et al.* 2019, pp. 1, 3; Moritz *et al.* 2018, p. 36). This in turn can result in reduced denning habitat availability for fishers, such as in the Coast Range and Klamath Mountains portion of the NCSO subpopulation area, which is projected to experience wildfire return intervals decreased by half and thus result in a near tripling of the annual area burned in this century compared to last (Sheehan *et al.* 2015, pp. 20–22; Dalton *et al.* 2017, p. 46).

• *Drought, tree mortality, and wildfire:* With increased drought conditions, tree mortality and large-scale high-severity wildfire are likely to increase in frequency and size, especially if fuel loads in forests are not decreased (Young *et al.* 2017, p. 78; Westerling and Bryant 2008, pp. S244–S248; Abatzoglou and Williams 2016, pp. 11,770, 11,773). The loss of adequate forest canopy cover to provide habitat suitable for denning female fishers is occurring due to tree mortality

as a result of drought and wildfire (CBI 2019, p. 9).

With regard specifically to droughts: Although we can expect that future droughts may be more intense, it is unknown whether or not droughts in the future will be worse than our worst droughts in the past (Keeley and Syphard 2016, p. 6). Regardless, it appears that climate change is exacerbating the effects of drought, given that changing climate conditions are estimated to have contributed 5 to 18 percent to the severity of one of the worst recent droughts in 20th-century California history (Keeley and Syphard 2016, p. 6).

• *Climate change, wildfire, disease, tree mortality:* The observed increases in wildfire activity in Oregon are partially due to climate change; increasing wildfire activity is expected under future warming, which in turn can exacerbate tree mortality from agents such as mountain pine beetles (Dalton *et al.* 2017, p. 46). Tree mortality (whether from changing climate conditions or any other factor), in turn, is likely to result in fishers experiencing reduced fitness (a positive relationship between higher amounts of tree mortality and higher cortisol levels in fishers), as documented in one portion of the SSN subpopulation (Kordosky 2019, pp. 14, 36) and an overall reduction in forest stand conditions known to be suitable denning habitat (CBI 2019, entire; Green *et al.* 2019, pp. 3–4).

Overall, at this time, the best available scientific and commercial information suggest that changing climate conditions (particularly increasing air temperatures coupled with prolonged and more frequent drought conditions) are exacerbating other threats to the fishers and their habitat within the West Coast DPS, including high-severity wildfires, the spread of forest insects, and tree diseases. Please see additional discussion about potential impacts to fishers or their habitat associated with wildfire (''Wildfire and Wildfire Suppression,'' above) and tree mortality (''Forest Insects and Tree Diseases,'' below) under those risk factor sections of this document.

Forest Insects and Tree Diseases

Since 2010, severe drought events have led to more than 147 million dead trees in California, with a high concentration in the southern Sierras due to increased susceptibility to forest insects and tree disease (CAL FIRE and USFS 2019, no page number). Over half of the potential fisher habitat in the SSN subpopulation has been significantly impacted by canopy loss due to tree mortality (CBI 2019, pp. 3–9, 29). Additionally, sudden oak death (*Phytophthora ramorum*) has caused some tree mortality in southwestern Oregon and northwestern California (COMTF 2019, p. 1; Oregon Department of Forestry (ODF) 2016, pp. 1–2). There is limited information on the direct impacts to fisher of tree mortality due to forest insects and tree disease. The usual pattern of localized outbreaks and low density of tree-consuming insects and tree diseases are beneficial, providing structures conducive to rest and den site use by fishers or their prey. However, large, area-wide epidemics of forest disease and insect outbreaks may displace fishers if canopy cover is lost and salvage and thinning prescriptions in response to outbreaks degrade the habitat (Naney *et al.* 2012, p. 36).

Preliminary information in the SSN subpopulation indicates a change in fisher habitat use whereby fishers avoid tree mortality areas (Green *et al.* 2019, entire). In addition, increased tree mortality on the landscape has resulted in reduced female fisher survival within the SSN population due to increased stress hormones (cortisol) (Kordosky 2019, pp. 31–34, 36–40, 54–61, 65–68, 94). Loss of canopy cover and large trees due to tree mortality from insects and tree diseases likely reduces habitat suitability for fishers, but it is unknown if the level of habitat loss will significantly impact fisher subpopulations throughout the DPS's range. It is likely that tree mortality will continue to be a threat into the future due to predicted increases in drought conditions that will likely continue to weaken trees and make them susceptible to bark beetles and disease (Millar and Stephenson 2015, pp. 823–826; Young *et al.* 2017, pp. 78, 85).

Vegetation Management

Vegetation management techniques of the past (primarily timber harvest) have been implicated as one of the two primary causes for fisher declines across the United States. Many fisher researchers have suggested that the magnitude and intensity of past timber harvest is one of the main reasons fishers have not recovered in the western United States as compared to the northeastern United States (Service 2014, pp. 54–56). At the time of the 2014 Proposed Rule, we stated that vegetation management techniques have, and can, substantially modify the overstory canopy, the numbers and distribution of structural elements, and the ecological processes that create them. Overall, fisher home ranges tend to be composed of mosaics of forest stand types and seral stages but often with a high proportion of mid- to late-seral forests (Raley *et al.* 2012, p. 231). Fishers occupy managed landscapes and stands where timber harvest and other vegetation management activities occur; the degree to which fishers tend to be found in these areas often depends on a multitude of factors, including the scale, intensity, and rate of activities, as well as the composition and configuration of suitable habitat, and amount and type of retained legacy structures (Service 2016, pp. 59–60; Thompson and Clayton 2016, pp. 11–16, 22; Marcot *et al.* 2018, p. 400; Parsons 2018, pp. 31, 53–55, 63; Purcell *et al.* 2018, pp. 60–61, 69–70).

At the time of the 2014 Proposed Rule, we concluded that data limitations in most subregions across the DPS prevented us from quantifying what proportion of the treatments actually resulted in habitat loss or downgrade. Thus, at that time, the severity scores presented in the 2014 draft Species Report and summarized in the 2014 Proposed Rule represented our best estimate and constituted a relatively broad range to incorporate this uncertainty. Our previous quantitative analysis of threats resulting in habitat loss also did not account for ingrowth (*i.e.,* forest stands becoming habitat as a result of forest succession) of fisher habitat over our 40-year analysis timeframe and, therefore, provided no values for net habitat change; while we acknowledged that ingrowth occurs, primarily on Federal lands, we lacked the data at that time to quantitatively estimate that ingrowth (Service 2014, pp. 84–92). Although we recognized data limitations in most subregions across the range of the DPS and we did not account for ingrowth, we found that vegetation management is a threat because activities that remove or substantially degrade fisher habitat through the removal of large structures and overstory canopy are projected to take place within the range of the DPS over the next 40 years.

Since the time of our 2014 Proposed Rule, we reevaluated our analysis and changed our approach to rely on available data on forest disturbances and past changes in older forest. Several sources of data provide information on past changes in vegetation in different areas of the DPS. Because of the large area encompassed by the fisher, these different sources are not directly comparable and do not easily combine to paint a complete picture of the vegetation trends within the West Coast DPS. We have acknowledged the limitations of this information, and we explicitly requested information from the public in our 2014 Proposed Rule to better inform our analysis of this threat

and to help us make a final determination. Specifically, we requested information related to the scope and degree of vegetation management on Federal land within the range of the fisher, and scientific or commercial information on the type, scope, and degree of vegetation management (timber harvest, restoration thinning, fuels reduction, etc.) on non-Federal land in Oregon and Washington. We also requested scientific evaluation of our use of the northern spotted owl habitat data as a surrogate for fisher habitat data, and its use in our 2014 draft Species Report as the best available data to determine the scope and degree of vegetation management effects on Federal lands.

Currently, no analysis explicitly tracks changes in fisher habitat in recent decades where loss specifically attributable to vegetation management can be determined. Therefore, we used other available information, as described below, and our best professional judgment to analyze the potential effects of this threat on the DPS of fisher. After considering the best available data, including comments received from peer reviewers and the public regarding the vegetation management threat analysis presented in the draft Species Report (Service 2014, pp. 85–96) and summarized in the 2014 Proposed Rule, we updated and reconsidered our analysis. Our updated analysis included the use of several different sources of information to depict forest vegetation changes caused by vegetation management activities within the range of the DPS. With the exception of the non-Federal timber harvest database in California (California Department of Forestry and Fire Protections (CAL FIRE) 2013), all of these sources are either new or updated since 2014 (Davis *et al.* 2015, entire; USDA Forest Service 2016, entire; Spencer *et al.* 2016, entire; Spencer *et al.* 2017, entire; gradient nearest neighbor (GNN) data/maps). Because we were able to use these sources of data, we did not need to rely on northern spotted owl habitat data as a surrogate for fisher habitat data in this evaluation. Our revised methodology is described in detail for the historical, three-State range of the DPS in the 2016 final Species Report (Service 2016, pp. 98–111); we summarize it below and describe its application to our revised proposed DPS.

While historical loss of older forests via timber harvest through much of the 1900s resulted in a substantial loss of fisher habitat in the West Coast States, harvest volume has sharply declined throughout this area since 1990, primarily on Federal lands, but also on non-Federal lands. Although timber harvest is still ongoing throughout the West Coast States, habitat ingrowth is also occurring, offsetting some of those losses.

Within the portion of the DPS overlying the Northwest Forest Plan region, we used information from the draft late-successional and old-growth forest monitoring report (Davis *et al.* 2015, entire) to assess changes in fisher habitat as a result of vegetation management. This information included use of the ''old growth structure index'' (OGSI), which is an index of 0–100 that consists of four old-growth elements: (1) The density of large live trees; (2) the density of large snags; (3) the amount of down wood cover; and (4) the tree size diversity of the stand. Over a 20-year period (1993–2012), Davis *et al.* (2015, pp. 5–6, 16–18) tracked changes in forests classed as OGSI–80, which represents forests that begin to show stand structures associated with older forests (*e.g.,* large live trees, snags, down wood, and diverse tree sizes). Though OGSI–80 forests are not a comprehensive representation of fisher habitat, we considered this report to be the best available scientific and commercial information to assess changes in fisher habitat within the NWFP area. This information was the only data set available that identified the amount of acres lost to specific disturbance types (*e.g.,* timber harvest or vegetation management, fire, and insects) and calculated specific acres of forest ingrowth, allowing us to explicitly track loss of a specific forest type condition to a specific disturbance category (vegetation management). All remaining data sets provided a net change in vegetation type but did not categorize or quantify the disturbance types (*e.g.,* acres and type of loss, acres of ingrowth).

Details of our analysis of Davis *et al.* (2015, entire) are explained in the 2016 final Species Report (Service 2016, pp. 101–102). We have since modified that analysis to only include data for the provinces that cover the current range of native fishers in the West Coast States (*i.e.,* the West Coast DPS of fisher, as described in Summary of Changes From the 2014 Proposed Rule, above). The California portion of the DPS covers all of the California physiographic provinces analyzed in Davis *et al.* (2015, pp. 10, 30–31). The Oregon portion of the DPS occurs mostly within the Oregon Klamath province, but overlaps somewhat into small portions of the western and eastern Cascades provinces (Davis *et al.* 2015, pp. 10, 30–31). We assessed the results of including and excluding the data from the two Cascades provinces, and because no substantial differences were revealed between the two data sets, we report here the results for including only the Oregon Klamath province data, along with data for all of the California physiographic provinces located within the NWFP.

Although loss of older forest habitat due to timber harvest on non-Federal lands (11.1 percent since 1993) was substantially greater than on Federal lands (1.0 percent since 1993), in combining all ownerships, the percent loss due to timber harvest over the past 20 years was low (5.0). This translates to a 2.5 percent loss per decade. However, this may underestimate future harvest trends because timber harvest volume within the NWFP area on Federal lands has been on a general upward trend since 2000. During the first decade of NWFP implementation, Federal agencies offered, on average annually, 54 percent of the timber harvest sale goals (probable sale quantity or PSQ) identified in the Plan, whereas volume offered in 2012 was at about 80 percent of the PSQ identified in the NWFP, as agencies became more familiar with implementing the NWFP (USDI BLM 2015, p. 340; Spies *et al.* 2018, pp. 8–9). In addition, BLM has recently revised their management plans in western Oregon and is no longer operating under the NWFP. Consequently, that agency is predicting an increase in timber volume above the NWFP sale quantity in the first decade (USDI BLM 2015, pp. 350–352). Hence, overall harvest trends on Federal lands over the next decade or so may be closer to rates observed in the last decade of NWFP implementation; however, the OGSI–80 harvest data we used was categorized by decade so we were not able to determine what the higher harvest rate during that time period translated to in terms of estimated habitat loss for fishers.

The net loss of habitat, however, is somewhat less because 2.5 percent per decade does not include ingrowth of OGSI–80 stands. Ingrowth is those stands that did not meet the OGSI–80 structural thresholds at the beginning of the 20-year monitoring period that, through vegetation succession, reached those thresholds at the end of the monitoring period. Ingrowth would result in a reduction in overall net habitat change because stands that grow into suitable habitat are assumed to offset the loss of habitat through disturbances such as fire or vegetation management. However, we acknowledge that fisher habitat occurs on a continuum, and habitat lost to timber

harvest or some other disturbance is not necessarily equivalent in quality to habitat that recently crosses a threshold of becoming suitable habitat.

Ingrowth of OGSI–80 stands within the NWFP area occurred at a rate of 8 percent over the 20-year period, or 4 percent per decade (calculated from Davis *et al.* (2015, tables 6 and 7, pp. 30–31)). While this change would offset the OGSI–80 stands lost to vegetation management, there is still a net loss of 1 percent per decade if we incorporate all disturbances (*i.e.,* wildfire and insects). Ingrowth rates are expected to increase in the foreseeable future on Federal lands within the NWFP area because forests regenerating from the post-World War II harvest boom starting in the 1940s are beginning to meet the OGSI–80 threshold (Davis *et al.* 2015, p. 7).

Elsewhere in the West Coast States, while we could track vegetation changes over time, the available data did not indicate the amount or types of disturbances affecting the specific vegetation types; that is, we could only determine net vegetation change of a particular vegetation type, not the specific amount of that type that was lost to a specific disturbance type, unlike in the NWFP area. Timber harvest records were available for the Sierra Nevada region, but idiosyncrasies in the FACTS (Forest Service Activity Tracking System) database (see Spencer *et al.* (2016, p. A–30)) and the fact that the available private lands database (CAL FIRE timber harvest plans) did not indicate types of treatment or what portion of the plans may have actually been implemented, led to concerns in translating acres of ''treatment'' as depicted in these databases into on-the-ground changes in forest vegetation types that could represent fisher habitat. Instead, we relied on net vegetation change data to display actual changes in forests that represent fisher habitat, realizing that net changes include other disturbances and that vegetation management will be some unknown portion of that change.

In the SSN subpopulation area, we approximated fisher habitat change using a vegetation trend analysis to track changes in forests with large structural conditions thought to be associated with fisher habitat. Note that the vegetation category tracked in this analysis is not equivalent to the OGSI–80 forests used by Davis *et al.* (2015, entire). Instead, available data limited us to using predefined structure conditions describing forests with larger trees (greater than 20 in (50 cm)), realizing this may not include all vegetation types used by fishers. This analysis showed that net loss of forests with larger structural conditions in the SSN subpopulation area was 6.2 percent across all ownerships over the past 20 years, which equates to a loss of 3.1 percent per decade, similar to the 2.5 percent loss per decade within the NWFP portion of the DPS.

In the single analysis where fisher habitat was actually modeled and tracked through time (*i.e.,* the SSN subpopulation area), ingrowth of fisher habitat actually replaced habitat lost by all disturbances between 1990 and 2012, showing a net increase in fisher habitat at the female home range scale (Spencer *et al.* 2016, pp. 44, A–21). However, the authors of this report have since cautioned that these conclusions may no longer be accurate based on ''dramatic changes [that] have occurred in Sierra Nevada mixed conifer forests due to drought and extraordinary tree mortality'' (Spencer *et al.* 2017, p. 1). Consequently, they recommended delaying application of habitat conservation targets until vegetation data can be updated and fisher habitat condition reassessed (Spencer *et al.* 2017, pp. 1–2). Hence, although our earlier analysis concluded that fisher habitat in the SSN subpopulation area may actually be increasing, we can no longer support that conclusion based on recent vegetation mortality.

Extensive areas of suitable habitat remain unoccupied by fishers, suggesting that there are also areas where habitat may not be the limiting factor for current or potential fisher populations. Recent fisher surveys in the western Cascades of Oregon suggest fishers do not occur in the northern portion of the Cascades, and their former distribution may even be contracting southward (Moriarty *et al.* 2016, entire; Barry 2018, pp. 20–23, 31–32). Lack of fisher detections in large areas with suitable habitat raises questions about our understanding of suitable habitat within the Oregon Cascades, and what the limiting factors are for fishers in Oregon. One such mechanism could be predation. Recent research in California suggests that landscape changes as a result of disturbances over the past century may have altered the carnivore community and affected predation rates on fishers by bobcats (Wengert 2013, pp. 59–66, 93, 97–100); proximity to open and brushy areas (vegetation selected for by bobcats) increased the risk of predation on fishers. Hence, while vegetation management may not be affecting large areas of suitable fisher habitat, fishers may be precluded from using the habitat due to other limiting factors.

Vegetation Management Summary

Old-forest losses on all ownerships combined in the past two decades were less than 2.5 percent per decade due to timber harvest within the NWFP area (which includes the NCSO subpopulation area), and 3.1 percent per decade as a result of all disturbance types within the Sierra Nevada region (which includes the SSN subpopulation area). Additionally, and specifically within the SSN subpopulation area, fisher habitat appeared to be increasing until recent vegetation mortality due to fires and drought. However, it is difficult to conclude the degree to which vegetation management threatens fishers throughout the DPS. Given the large home range of fishers and the geographic extent of forest management activities throughout the range of the DPS, some fisher individuals are likely affected as a result of habitat impacts (*e.g.,* Thompson and Clayton 2016, pp. 11–16; Purcell *et al.* 2018, pp. 60–61).

Although fishers occur in landscapes and stands where timber harvest has occurred (*e.g.,* Slauson *et al.* 2003, pp. 7–9; Self and Callas 2006, entire; Hamm *et al.* 2012, pp. 421–422; Clayton 2013, pp. 7–19; Niblett *et al.* 2015, entire), there is no information on how different vegetation management activities affect fisher subpopulations and their persistence within the DPS's range. Analysis is further confounded because the category of vegetation management contains activities ranging from those that result in substantial loss of habitat attributes valuable to fishers (*e.g.,* large clear-cut harvests that remove almost all tree canopy and structural features) to activities that modify habitat at small-scale levels yet appear to retain functionality as fisher habitat (*e.g.,* minor reductions in canopy cover and retention of structural features suitable for rest sites, den sites, or prey production). In addition, some of the trend data we analyzed did not allow us to tease out vegetation management disturbance from disturbances due to fire or other natural events. Finally, there appears to be substantial amounts of unoccupied fisher habitat, suggesting that habitat is not limiting for fishers and, therefore, habitat loss is not a threat. However, this finding may also be due to errors in our understanding of habitat, or that our definition of fisher habitat includes conditions suitable for other factors that may be limiting fishers (*e.g.,* unsuitable prey habitat or suitable predator habitat (see ''Disease or Predation,'' below)), or that still other factors unrelated to habitat are limiting fisher distribution. Consequently, based on the best available scientific and

commercial information, we find that some levels of vegetation management may threaten fisher, and will continue to do so in the foreseeable future, but many of the effects are exacerbated by other forms of habitat loss such as tree mortality from drought and severe wildfires.

Exposure to Toxicants

Rodenticides analyzed as a threat to fishers include first- and second-generation anticoagulant rodenticides and neurotoxicant rodenticides. First-generation anticoagulant rodenticides are in a bait form that is targeted for rodents to consume for several consecutive feedings (*i.e.,* sublethal doses) that deliver a lethal dose. Second-generation rodenticides are significantly more potent than first-generation rodenticides because a lethal dose can be ingested in a single feeding. Additionally, second-generation rodenticides are more likely to poison predatory wildlife (*e.g.,* fishers) that eat live or dead poisoned prey, or other non-target wildlife. Neurotoxicant rodenticides are delivered in either single or multiple doses and have highly variable potency (multiple hours or days).

Both first- and second-generation anticoagulant rodenticides and neurotoxicant rodenticides are most often used to kill small mammals that are destroying crops. Rodenticides impair an animal's ability to produce several key blood-clotting factors (anticoagulant rodenticides) or affect brain and liver function (neurotoxicant rodenticides). Anticoagulant rodenticide exposure is manifested by such conditions as bleeding nose and gums, extensive bruises, anemia, fatigue, difficulty breathing, and also damage to small blood vessels, resulting in spontaneous and widespread hemorrhaging. A sublethal dose of a rodenticide can produce significant clotting abnormalities and hemorrhaging, leading to a range of symptoms, such as difficulty moving and the decreased ability to recover from physical injury. Ingestion of the neurotoxicant bromethalin has fast-acting and physical effects such as unsteadiness and weakness, and at higher dosage levels, seizures. Both anticoagulant and neurotoxicant rodenticides can change or impede normal movement and foraging behaviors of fishers and therefore may increase the probability of mortality from other sources.

Both the draft and final Species Reports detail the exposure of fishers to rodenticides in the West Coast States (Service 2014, pp. 149–166; Service 2016, pp. 141–159). Data available since completion of the final Species Report in 2016 continue to document exposure and mortalities to fishers from rodenticides in both the NCSO and SSN subpopulations (Gabriel and Wengert 2019, unpublished data, entire). Fishers monitored as part of other studies, and that have died during these studies, have been collected and tested for causes of mortality and exposure to rodenticides (Gabriel and Wengert 2019, unpublished data). Data for 97 fishers collected in California in the period 2007–2014 indicate 81 percent of fishers tested positive for one or more rodenticides; 48 fishers were collected during 2015–2018, and the positive detection rate for rodenticides was 83 percent (Gabriel and Wengert 2019, unpublished data). Mortalities due to rodenticide toxicosis have increased from 5.6 to 18.7 percent since collection and testing of fisher mortalities began in 2007 (Gabriel *et al.* 2015, p. 7). From 2015 to 2018, additional fisher mortalities due to both anticoagulant and neurotoxicant rodenticides have been documented, including data verifying the exposure of neonatal kits to rodenticides through transplacental transfer (Gabriel and Wengert 2019, unpublished data, p. 4).

The most likely source of exposure of fishers to these toxicants continues to be rodenticides associated with illegal marijuana cultivation sites within occupied fisher habitat on public, private, and tribal lands in California and Oregon (Gabriel *et al.* 2015, pp. 14–15; Thompson *et al.* 2014, pp. 97–98). Data pertaining to the amount and types of rodenticides has been collected in more than 300 trespass grow sites in California during the period 2012–2018 (Gabriel and Wengert 2019, unpublished data, pp. 5–7). Collection of these data has shown that a lesser amount of second-generation rodenticides are being found at grow sites due to policy changes in 2014 related to pesticide use and additional restrictions now in place on the use of second-generation rodenticides in California. The change in policy has led to a more intensive use of first-generation anticoagulant rodenticide and the highest amount of neurotoxicant rodenticide use since 2012 (Gabriel and Wengert 2019, unpublished data, pp. 5–7). Please see additional discussion on the effects of first- and second-generation rodenticides in the 2016 Species Report (Service 2016, pp. 150–159).

Data are limited for the amount of pesticides used at sites outside of California. The U.S. Forest Service documented 63 trespass grows between 2006 and 2016, with toxicants present for all sites visited (Clayton 2019, pers. comm.). To date, only one site in southern Oregon has been sampled using the same protocol as in California. This southern Oregon location had 54 pounds (lb) (24.5 kilograms (kg)) of first-generation anticoagulant rodenticide and 8 lb (3.6 kg) of neurotoxicant rodenticide (Gabriel and Wengert 2019, unpublished data, p. 7) onsite.

As was stated in our 2014 Proposed Rule, the extent to which rodenticides may act as a threat varies across the landscape and our [then] determination regarding this threat was influenced by the availability of data for different parts of the fisher's range. In order to evaluate the risk to fishers from trespass grows and any differences between populations, a Maximum Entropy (MAXENT) model was developed to identify high and moderate likelihood of trespass marijuana grow sites being located within fisher habitat (Gabriel and Wengert 2019, unpublished data, pp. 7–10). This model indicates that 44 percent of habitat modeled (combined NCSO and SSN subpopulations) for fishers is within areas of high and moderate likelihood for marijuana cultivation. Separating these model results into the two fisher subpopulation areas (NCSO and SSN) indicates a difference in potential overlap of grow sites with fisher habitat between NCSO and SSN. In the NCSO subpopulation, there is a potential of 53 percent overlap between grow sites and fisher habitat; in the SSN subpopulation, there is a potential for 22 percent overlap of grow sites in fisher habitat. These modeled differences demonstrate the variability of this threat to fishers within the extant subpopulations. The extent to which the use of toxicants occurs on private land marijuana cultivation sites, as well as other agricultural, commercial, and public land sites within the range of the fisher (and habitats that fishers select for) is unknown.

At this time, our evaluation of the best available scientific and commercial information regarding toxicants and their effects on fishers leads us to conclude that individual fishers within the NCSO and SSN subpopulations have died from toxicant exposure. New data indicate a total of 19 mortalities specifically within the monitored fisher subpopulations (in both NCSO and SSN in California) have been directly caused by toxicant exposure (Gabriel and Wengert 2019, unpublished data, p. 5). In addition, of the two fishers found in Oregon that were tested for rodenticide exposure, both tested positive (Clayton 2016, pers. comm.). Toxicologists assume that fishers exposed to one or

more rodenticides and determined to have died from some other cause besides toxicosis were also experiencing sublethal levels of effects from these chemicals (from Rattner and Mastrota 2018, pp. 68–71; Elliott *et al.* 2016 *in:* López-Perea and Mateo 2018, p. 159). The degree of impact from sublethal toxicant exposure is unknown (see additional discussion on sublethal exposure in the 2016 Species Report, pp. 150–156); complex behavioral responses like prey capture efficiency and predator avoidance are not well studied (Rattner and Mastrota 2018, pp. 68–71).

Our analysis of this threat includes additional effort to reevaluate a variety of toxicant information in our files, including comments previously provided by peer reviewers on the 2014 Species Report, as well as new information such as:

(1) *Concentrations of active ingredients in bait and a description of how exposure to rodenticides is confirmed* (Erickson and Urban 2004, entire; Vandenbrouke *et al.* 2008, entire; Rattner *et al.* 2014, entire)—The livers of various species where mortality has occurred show a wide range of thresholds of rodenticide concentrations and that a toxicity threshold would need to account for adverse sublethal effects (Erckson and Urban 2004, p. 95). Thus, due to differences in individual fishers and rodenticide exposure, it remains unknown at what level of toxicant exposure fishers may be experiencing adverse impacts.

(2) *Rodent diversity at marijuana cultivation sites*—In grow sites sampled, rodent diversity at marijuana cultivation sites that were treated with rodenticides and sampled after remediation contained only mice, as compared to nearby untreated sites where rodenticides were not used and that contained large-bodied rodents (*e.g.,* woodrats, squirrels, chipmunks). These larger bodied rodents are the prey species that the fisher prefers (Gabriel *et al.* 2017, p. 10). This information provides support for the possibility that fishers could experience indirect effects from rodenticide use such as preferred prey species shifting outside of their home range, or prey depletion within their home ranges. Changes in prey abundance within fisher home ranges could lead to impaired reproduction or starvation of the resident fishers.

(3) *Estimating the extent of fisher exposure to rodenticides and determining the source(s)*—The delay in toxicity caused by rodenticides and their persistence within food webs can result in contaminated rodents being found within and adjacent to treated areas weeks or months after bait application (Geduhn *et al.* 2014, pp. 8–9; Tosh *et al.* 2012, pp. 5–6; Sage *et al.* 2008, p. 215). Predators that are (a) nocturnal, (b) opportunistic in feeding habitats where rodents are an important part of their diet, and (c) nonmigratory and live close to or within landscapes that are heavily impacted by human activities (*e.g.,* the grow sites) have a higher incidence of exposure to rodenticides and have relatively high liver residue concentrations of multiple rodenticide compounds (Hindmarch and Elliott 2018, p. 251). Because fishers are territorial (nonmigratory) mammals, and females specifically make few if any movements once they have established a territory (Arthur *et al.* 1993, p. 872), they are vulnerable to rodenticide exposure from grow sites within their home ranges. Additionally, fisher diets consist primarily of small mammals (Golightly *et al.* 2006, entire), which are the target species for rodenticides used in grow sites (Gabriel *et al.* 2015, entire; Thompson *et al.* 2014, pp. 97–98). Therefore, even though it may be difficult to assess persistence of rodenticides in food webs it is likely that fisher life-history traits make them vulnerable to long-term exposure to rodenticides.

(4) *Unreclaimed sites across the landscape.* During the ''Operation Forest Watch, Department of Justice'' campaign in California between October 2017 and September 2018, more than 20,000 pounds of fertilizer, pesticides, and chemicals were removed from 160 trespass cannabis grow sites (Department of Justice (DOJ) 2018, p. 2). Currently, 766 sites are still in need of reclamation (DOJ 2018, p. 2). Of the 160 grow sites mentioned above, 89 percent were confirmed or strongly suspected to have carbofuran or methamidophos (*i.e.,* toxic pesticides or insecticides that cause central nervous system dysfunction) present, up from the previous year total of 75 percent (DOJ 2018, p. 2). Estimates of the number of sites that necessitate reclamation of toxicants vary. In addition, law enforcement specialists estimate they locate and raid roughly 20 to 40 percent of sites each year and only about 10 percent of those are remediated (Thompson *et al.* 2017, p. 45). If these estimates are accurate, it is reasonable to conclude that hundreds to thousands of sites—known and unknown, and with an undetermined amount of toxicants present—remain scattered within both the NCSO and SSN subpopulations where trespass grows have been detected (Gabriel *et al.* 2015, entire; Thompson *et al.* 2017, p. 45).

(5) *Cannabis cultivation contributing to forest fragmentation*—Expansion of cannabis cultivation as a landscape use on private land is changing forest conditions within areas currently occupied by fishers. In Humboldt County, California (a portion of the NCSO subpopulation area), a recent analysis examined changes to forest patch metrics between 2000 and 2013 (Wang *et al.* 2017, entire). While many of the watershed-scale changes were due to timber harvest, the smaller scale changes (*e.g.,* approximately 0.4 mi^2 (1 km^2) of both timber harvest and cannabis cultivation) had many similar effects on forest fragmentation (Wang *et al.* 2017, pp. 4–5).

(6) *Habitat effects resulting from legal cannabis cultivation*—Since the 2014 Proposed Rule, the legal status of cannabis cultivation changed in Oregon (2015) and California (2016). We have no data to indicate that legalization of cannabis cultivation will change black market sales or how municipalities enacting local restrictions for cannabis cultivation on private lands will alter the number of illegal grows on public land. Data in Oregon pertaining to permitted cannabis cultivation show that, within counties currently occupied by fisher, 405 legal operations have been approved (Oregon Liquor Control Commission 2019, pp. 12–13, 18–34). Given the rural nature of these Oregon counties (Jackson, Josephine, Curry), many of these operations likely occur within areas occupied by fishers. At this time, we have limited data about the prevalence of rodenticide use on legal private grow sites and whether fishers are at risk from rodenticide use on private land. However, we have documentation of one radio-collared fisher within a wildland urban interface area in Jackson County, Oregon, that tested positive for two rodenticides and whose home range included two grow sites and rural residences (Clayton 2019, pers. comm.).

Marijuana cultivation sites are present on public and private land within or near fisher subpopulations in California and Oregon. The broad use of toxicants at illegal marijuana cultivation sites in these States has been documented to occur within or adjacent to habitat supporting fishers within the DPS (Gabriel and Wengert 2019, unpublished data, pp. 7–9). There are other possible sources of rodenticides from legal applications in agriculture and around buildings in rural areas. The legalization of marijuana in California and Oregon adds an element of uncertainty to evaluating the potential future effects of toxicant exposure to fishers. It is unknown whether or how the

legalization of marijuana will change grow-site location and potentially affect exposure and mortality rates of fishers due to rodenticides. The incidence of fisher exposure to toxicants from all uses across its range is unknown, and the best available mortality data are limited (19 individuals in California), given there are no wide-ranging studies across the DPS specifically focused on fisher toxicant exposure.

We view toxicants as a potentially significant threat to fishers because of reported mortalities of fishers from toxicants, the variety of potential sublethal effects due to exposure to rodenticides, and the degree to which illegal cannabis cultivation overlaps with the range and habitat of the fisher. The exposure rate of more than 80 percent of fisher carcasses tested in the NCSO and SSN subpopulations has not declined between 2007 and 2018 (Gabriel and Wengert 2019, unpublished data, pp. 3–4), while toxicosis has increased since 2007 (Gabriel *et al.* 2015, p. 7). We do not know the exposure rate of live fishers to toxicants as the data has not been collected. In addition, the minimum amount of anticoagulant and neurotoxicant rodenticides required for sublethal or lethal poisoning of fishers is currently unknown; however, we have evidence of fisher mortality and sublethal effects as a result of rodenticides. Overall, rodenticides are likely a threat to fisher within the DPS now and in the foreseeable future, although we do not have information about the magnitude or mechanisms of population-level effects at this point in time.

Effects Associated With Small Population Size

In general, species that occupy a narrow geographic range with specific habitat requirements and that always occur in small populations have a high conservation priority (Primack 2014, p. 158). Small populations are vulnerable to a rapid decline in their numbers and localized extinction due to the following: (1) Loss of genetic variability (*e.g.,* inbreeding depression, loss of evolutionary flexibility), (2) fluctuations in demographic parameters (*e.g.,* birth and death rates, population growth rates, population density), and (3) environmental stochasticity or random fluctuations in the biological (*e.g.,* predation, competition, disease) and physical environment (*e.g.,* wildfire, drought events, flooding) (Primack 2014, pp. 252–268). Some information is available that demonstrates fisher's vulnerability to small population effects, particularly in the SSN population area, including fisher's decreased genetic variability from north to south, limited gene flow, and existing barriers to dispersal (Wisely *et al.* 2004, pp. 642–643; see also additional discussion in Service 2016, pp. 134–137). While we do not have data across the entire range demonstrating that the West Coast DPS is exhibiting these specific effects associated with small population size, consideration of these three elements along with life-history traits can provide an extinction vulnerability profile for the West Coast DPS of fisher. In sum, this DPS exhibits the following attributes that may limit its distribution and population growth:

(1) Loss of large contiguous areas of historical habitat in combination with restriction of the species to forested habitats that have been lost or modified due to timber harvest practices, human development, and large, high-severity wildfires whose frequency and intensity are in turn influenced by the effects of climate change.

(2) Dependence on specific elements of forest structure that may be limited on the landscape, including microsites for denning and resting.

(3) Susceptibility to injury or mortality due to predation from co-occurring larger predators.

Each of these vulnerabilities may separately, or together, exacerbate any of the threats described in this analysis for the West Coast DPS of fisher.

A scarcity of verifiable sightings in the Oregon Cascades, coastal Oregon, and the north and central sections of the Sierra Nevada in California indicate that subpopulations of fishers in the DPS are isolated from fishers elsewhere in North America. Native fishers in the West Coast States are currently restricted to two historically extant native subpopulations (NCSO and SSN) and one extant reintroduced native subpopulation (NSN). The NCSO subpopulation has not expanded and may have even contracted, nor have fishers recovered portions of their range in Oregon beyond our previous estimates (Barry 2018, p. 22). We continue to recognize that the two geographic areas of fisher subpopulations in the DPS (*i.e.,* SSN and NCSO, the latter of which includes the SOC and NSN for this analysis) are geographically isolated from one another with little opportunity for genetic interchange. Additionally, we continue to recognize that the SSN subpopulation is relatively small. With regard to small populations, we note that forest carnivore populations are often isolated and generally occur in low densities. Because we lack specific information about genetic processes in small, isolated forest carnivore populations, it is unknown whether generalities about persistence based on untested theoretical models may apply to fisher (Ruggiero *et al.* 1994, p. 146), at least with regard to the SSN subpopulation. In the specific case of fishers in this DPS, our evaluation of the best scientific and commercial information available indicates that the separation of the SSN and NCSO subpopulations occurred a very long time ago, possibly on the order of more than a thousand years, pre-European settlement (Tucker *et al.* 2012, pp. 1, 7). Despite their isolation and the small size of the SSN subpopulation, the native NCSO and SSN subpopulations have persisted over a long period of time.

At this point in time, the fisher subpopulations are already considered relatively small, especially when taking into account the original/historical range of the species within the West Coast states, and the population growth rates do not indicate that the subpopulations are increasing. The best available information suggests these populations are expected to remain small (as has been apparent since pre-European settlement). The SSN subpopulation is likely to remain smaller than the NCSO subpopulation into the future, primarily given the other stressors that have the potential to exacerbate the impacts of small population size. Estimates of fisher population growth rates for the NCSO subpopulation and the portion of the SSN subpopulation surveyed do not indicate any overall positive or negative trend. The NCSO subpopulation, which encompasses both the SOC and NSN reintroduction sites, covers a relatively large geographic area of approximately 15,444 mi^2 (40,000 km^2). The most recent subpopulation size estimate is 3,196 individuals (range 2,507–4,184); however, this estimate excludes SOC and NSN individuals (Furnas *et al.* 2017, pp. 2–3). Although the areas monitored for population trend are limited, for the Hoopa study area, the population trend from 2005 through 2012 indicates a population growth rate of 0.992 (C.I. 0.883–1.100) with a higher growth rate for females 1.038 (0.881–1.196) than males 0.912 (0.777–1.047) (Higley *et al.* 2014, p. 102, Higley 2015, pers. comm.). Additionally, the most recent information for the Eastern Klamath Study Area suggests a growth rate of 1.06 (C.I. 0.97–1.15, years 2006–2013) (Powell *et al.* 2014, p. 23); however, this growth rate may no longer be valid as suggested by 2 years of data (2014–2016) that follow two large fires in the study area, which indicate an

estimated 40 percent reduction in the number of fishers post-fire (Green *et al.* 2019, p. 8).

For the SSN subpopulation, which is smaller and estimated to range anywhere in size from 100 to 500 individuals (Service 2016, pp. 48–50), the population growth rate is estimated as 0.97 (C.I. 0.79–1.16, years 2007–2014) (Sweitzer *et al.* 2015a, p. 784). At this point in time, we do not have sufficient information to predict whether population trends of the two DPS subpopulation areas will be positive or negative into the foreseeable future.

Overall, a species (or DPS) with relatively few populations may be a concern when there are significant threats to the species such that one or more populations may be permanently lost in the future. One of the two remaining native fisher subpopulations, SSN, is considered relatively small, and both the SSN and NCSO subpopulations have not appeared to grow or expand, despite the availability of suitable habitat. At this time, the best available information for monitored subpopulations within the DPS (*e.g.,* Green 2017, Higley *et al.* 2014, Powell *et al.* 2014, entire, Sweitzer *et al.* 2015a, entire) does not indicate whether the NCSO or SSN subpopulations, as a whole, are stable or exhibiting significant declines.

Existing Regulatory Mechanisms and Voluntary Conservation Measures

We stated in the 2014 Proposed Rule, and we reaffirm here that there are many Federal and State existing regulatory mechanisms that provide a benefit to fishers and their habitat. For example, trapping restrictions have substantially reduced fisher mortality throughout the range of the West Coast DPS of fisher. In some places, forest management practices are explicitly applied to benefit fishers or other species with many similar habitat requirements, such as the northern spotted owl. In addition, some HCPs are in place and to provide a benefit to fishers and their habitat.

State and Federal regulatory mechanisms have abated the large-scale loss of fishers to trapping and loss of fisher habitat, especially on Federal land (Service 2014, pp. 117–141). Additionally, rodenticides are regulated under Federal and State laws. However, fishers may still be exposed to such rodenticides in certain areas where they can still be used legally. Fishers are also exposed to some degree to rodenticides used illegally (as discussed below).

Forest Service and BLM

A number of Federal agency regulatory mechanisms pertain to management of fisher (and other species and habitat). Most Federal activities must comply with the National Environmental Policy Act of 1969, as amended (NEPA) (42 U.S.C. 4321 *et seq.*). NEPA requires Federal agencies to formally document, consider, and publicly disclose the environmental impacts of major Federal actions and management decisions significantly affecting the human environment. NEPA does not regulate or protect fishers, but requires full evaluation and disclosure of the effects of Federal actions on the environment. Other Federal regulations affecting fishers are the Multiple-Use Sustained Yield Act of 1960, as amended (16 U.S.C. 528 *et seq.*) and the National Forest Management Act of 1976, as amended (NFMA) (90 Stat. 2949 *et seq.;* 16 U.S.C. 1601 *et seq.*).

NFMA specifies that the Forest Service must have a land and resource management plan to guide and set standards for all natural resource management activities on each National Forest or National Grassland. Additionally, the fisher has been identified as a sensitive species by the Forest Service throughout its range. BLM management is directed by the Federal Land Policy and Management Act of 1976, as amended (43 U.S.C. 1704 *et seq.*). This legislation provides direction for resource planning and establishes that BLM lands shall be managed under the principles of multiple use and sustained yield. This law directs development and implementation of resource management plans, which guide management of BLM lands at the local level. Fishers are also designated as a sensitive species throughout its range on BLM lands.

In addition, the NWFP was adopted by the Forest Service and BLM in 1994 to guide the management of more than 24 million ac (9.7 million ha) of Federal lands within the range of the northern spotted owl, which overlaps with portions of the West Coast DPS of fisher's range in Oregon and northwestern California (U.S. Department of Agriculture (USDA) and U.S. Department of the Interior (USDI) 1994, entire). The NWFP Record of Decision amended the management plans of National Forests and BLM Districts and provided the basis for conservation of the northern spotted owl and other late-successional and old-growth forest associated species on Federal lands. However, in 2016 the BLM revised their Resource Management Plan (RMP), replacing NWFP direction for BLM-administered lands in western Oregon, totaling approximately 2.5 million ac (1 million ha) (USDI BLM 2016a, 2016b, entire).

Compared with management under the NWFP, BLM's revised RMP results in a decrease in land allocated for timber harvest, from 28 percent of their planning area in the Matrix allocation under NWFP, to 20 percent under their revised RMP. However, volume of timber harvest is expected to increase to 278 million board feet per year through the first decade, up from the highest NWFP annual amount of about 250 million board feet, and the average NWFP annual amount of 167 (USDI BLM 2015, pp. 350–352). Forest stand conditions assumed to represent fisher habitat are expected to decline in the first two decades under the revised RMP, similar to projections under the NWFP. However, by decade three, habitat is projected to increase under the revised plan compared to the NWFP because more fisher habitat is in reserve allocations under the revised plan (75 percent of fisher habitat on BLM land) than under the NWFP (49 percent) (USDI BLM 2015, pp. 1,704–1,709).

Federal lands are important for fishers because they have retained a network of late-successional and old-growth forests (LSRs) that currently provide fisher habitat, and the amounts of habitat are expected to increase over time. Also, the National Forest and BLM units with anadromous fish watersheds provide buffers for riparian reserves on either side of a stream, depending on the stream type and size. With limited exceptions, timber harvesting is generally not permitted in riparian habitat conservation areas, and the additional protection guidelines provided by National Forests and BLM for these areas may provide refugia and connectivity among more substantive blocks of fisher habitat. Also, the Forest Service under the NWFP, while anticipating losses of late-successional and old-growth forests in the initial decades of plan implementation, projected that recruitment would exceed those losses within 50 to 100 years (Davis *et al.* 2015, p. 7). Furthermore, BLM, under its revised management plans, is also projecting an increase in forest stand conditions that are assumed to represent fisher habitat above current conditions beginning in the third decade of plan implementation (USDI BLM 2015, p. 875).

National Park Service

Statutory direction for the National Park Service lands within the range of the DPS is provided by provisions of the

National Park Service Organic Act of 1916, as amended (54 U.S.C. 100101). Land management plans for the National Parks within Oregon and California do not contain specific measures to protect fishers, but areas not developed specifically for recreation and camping are managed toward natural processes and species composition and are expected to maintain fisher habitat. In addition, hunting and trapping are generally prohibited in National Parks (*e.g.,* 16 U.S.C. 60, 98, 127, 204c, and 256b).

Tribal Lands

Several tribes within the range of the DPS recognize fishers as a culturally significant species, but only a few tribes have fisher-specific guidelines in their forest management plans. Some tribes, while not managing their lands for fishers explicitly, manage for forest conditions conducive to fisher (for example, marbled murrelet (*Brachyramphus marmoratus*) habitat, old-forest structure restoration). Trapping is typically allowed on most reservations and tribal lands, and is frequently restricted to tribal members. Whereas a few tribal governments trap under existing State trapping laws, most have enacted trapping laws under their respective tribal codes. However, trapping (in general) is not known to be a common occurrence on any of the tribal lands.

Rodenticide Regulatory Mechanisms

The threats posed to fishers from the use of rodenticides are described under ''Exposure to Toxicants,'' above. In the 2016 final Species Report (Service 2016, pp. 187–189), we analyzed whether existing regulatory mechanisms are able to address the potential threats to fishers posed from both legal and illegal use of rodenticides. As described in the 2016 final Species Report, the use of rodenticides is regulated by several Federal and State mechanisms (*e.g.,* Federal Insecticide, Fungicide, and Rodenticide Act of 1947, as amended, (FIFRA) 7 U.S.C. 136, *et seq.;* California Final Regulation Designating Brodifacoum, Bromadiolone, Difenacoum, and Difethialone (Second Generation Anticoagulant Rodenticide Products) as Restricted Materials, California Department of Pesticide Regulation, 2014). The primary regulatory issue for fishers with respect to rodenticides is the availability of large quantities of rodenticides that can be purchased under the guise of legal uses, but are then used illegally in marijuana grows within fisher habitat. Both the Environmental Protection Agency (EPA), through its 2008 Risk Mitigation Decision for Ten Rodenticides (EPA 2008, entire), which issued new legal requirements for the labeling, packaging, and sale of second-generation anticoagulants, and California's Department of Pesticide Regulation, through a rule effective in July 2014, which restricts access to second-generation anticoagulants, are attempting to reduce the risk posed by second-generation anticoagulants.

State Regulatory Mechanisms

Oregon

The fisher is a protected wildlife species, which prohibits killing or possessing fishers in the State of Oregon (Oregon Administrative Rule (OAR) 635–044–0430). In addition, ODFW does not allow trapping of fishers in Oregon. Although fishers can be injured and/or killed by traps set for other species, known fisher captures are infrequent. State parks in Oregon are managed by the Oregon Parks and Recreation Department, and many State parks in Oregon provide forested habitats suitable for fisher. The Oregon Forest Practice Administrative Rules (OAR chapter 629, division 600) and Forest Practices Act (Oregon Revised Statutes (ORS) 527.610 to 527.770, 527.990(1) and 527.992) (ODF 2018, entire) apply to all non-Federal and non-tribal lands in Oregon, regulating activities that are part of the commercial growing and harvesting of trees, including timber harvesting, road construction and maintenance, slash treatment, reforestation, and pesticide and fertilizer use. The OAR provides additional guidelines intended for conserving soils, water, fish and wildlife habitat, and specific wildlife species while engaging in tree growing and harvesting activities, and these rules may result in retention of some structural features (*i.e.,* snags, green trees, downed wood) that contribute to fisher habitat. Management of State forest lands is guided by forest management plans. Managing for the structural habitats as described in existing plans should increase habitat for fishers on State forests.

California

At the time of the 2014 Proposed Rule, fishers were a Candidate Species in California; thus, take (under the CESA definition) was prohibited during the candidacy period. On June 10, 2015, CDFW submitted its status review of the fisher to the California Fish and Game Commission, indicating that listing of the fisher in the Southern Sierra Nevada ESU as threatened was warranted, but that fishers in the Northern California ESU were not threatened (CDFW 2015, entire). On August 6, 2015, the California Fish and Game Commission voted to list the southern Sierra Nevada Evolutionarily Significant Unit (ESU) of the fisher as a threatened species under the California Endangered Species Act (CESA). Consequently, take (*i.e.,* removing, harming, or killing a protected species), is prohibited by California only in the southern Sierra Nevada portion of the proposed DPS's range. It is also illegal to intentionally trap fishers in California (Cal. Code Regs. title 14, § 460 (2017).

The California Environmental Quality Act (CEQA) can provide protections for a species that meets one of several criteria for rarity (CEQA 15380). Fishers throughout the proposed DPS's range in California meet these criteria, and under CEQA, a lead agency can require that adverse impacts be avoided, minimized, or mitigated for projects subject to CEQA review that may impact fisher habitat. All non-Federal forests in California are governed by the State's Forest Practice Rules (FPR) under the Z'Berg Nejedly Forest Practice Act of 1973, a set of regulations and policies designed to maintain the economic viability of the State's forest products industry while preventing environmental degradation. FPRs do not contain rules specific to fishers, but they may provide some protection of fisher habitat as a result of timber harvest restrictions.

Voluntary Conservation Mechanisms

Northern California-Southern Oregon (NCSO)

An intergovernmental MOU for fisher conservation was signed by Federal and State agencies in Oregon (DOI *et al.* 2016, entire) to facilitate fisher conservation activities. The western Oregon template fisher CCAA (81 FR 15737, March 24, 2016) has been published, and we are negotiating site plans and processing permit applications. Conservation actions in the CCAA include protection of occupied den sites as well as landowner participation and collaboration with fisher surveys and research as part of a defined program of work.

In 2009, a programmatic Safe Harbor Agreement (SHA) was completed for northern spotted owls in Oregon (74 FR 74 35883, July 21, 2009). The agreement authorizes the ODF to extend incidental take coverage with assurances through issuance of Certificates of Inclusion to eligible, non-Federal landowners who are willing to carry out habitat management measures benefitting the northern spotted owl. The purpose of

the agreement is to encourage non-Federal landowners to create, maintain, and enhance spotted owl habitat through forest management, which would also benefit fishers given the two species' use of similar habitat components.

In 2016, an approximately 1.6 million-ac (647 thousand-ha) CCAA for fishers on lands in Sierra Pacific Industries (SPI) ownership in the Klamath, Cascade, and Sierra Nevada mountains was completed (SPI and Service 2016, entire). This CCAA encompasses approximately 5 percent of potentially suitable fisher habitat in California, 2.7 percent of which is within the currently occupied range. Implementation and monitoring has been under way since that time. The objectives of this CCAA are to secure general forested habitat conditions for fishers for a 10-year time period and the retention of important fisher habitat components (large trees, hardwoods, and snags) suitable for denning and resting into the future.

In 2019, we finalized an incidental take permit for the Green Diamond Forest HCP (GDRC 2018, entire), which is anticipated to provide a conservation benefit for fishers and their habitat (portions of forests on the west slope of the coastal and Klamath Mountains) in Del Norte and Humboldt Counties, California. Conservation benefits anticipated include (but are not limited to): Identifying and retaining fisher denning and resting trees, including maintaining a 0.25-mi (402-m) radius no-harvest buffer around active fisher dens; fisher-proofing water tanks and pipes; implementing measures that detect, discourage, and remove unauthorized marijuana cultivation and associated pesticide use; and cooperating with any Federal or State-approved fisher capture and relocation/reintroduction recovery programs (Service 2019a, p. 2).

Southern Sierra Nevada (SSN)

The Sierra Nevada Fisher Working Group completed a conservation strategy in 2016 (Spencer *et al.* 2016, entire), but the authors of the report later released a changed circumstances letter due to new tree mortality information (Spencer *et al.* 2017, entire). The changed circumstances letter provides details on the conservation measures that may no longer be applicable and an interim process for designing and evaluating vegetation management projects. Current benefits that still exist for fisher from the conservation strategy and the changed circumstances letter include long-term desired conditions representing a range of characteristics to strive for in various areas to inform fine-scale assessment of key fisher habitat elements, including their connectivity within potential home ranges and across the landscape (Spencer *et al.* 2017, pp. 2–6). A revised/final conservation strategy that addresses the new tree mortality information does not yet exist.

Resiliency, Representation, and Redundancy of the West Coast DPS of Fishers

In this section, we synthesize the information above to evaluate resiliency, redundancy, and representation as they relate to fishers in the proposed West Coast DPS both currently and into the future.

- Resiliency reflects a species' ability to withstand stochastic events (events arising from random factors). Resiliency refers to the capacity of an ecosystem, population(s) (or DPS), or organism to recover quickly from disturbances such as random fluctuations in reproductive rates and fecundity (demographic stochasticity), variations in temperature or rainfall (environmental stochasticity), and the effects of anthropogenic activities. Resilient populations demonstrate an ability to tolerate or adapt to changes or effects caused by a disturbance or a combination of disturbances.
- Redundancy reflects a species' ability to withstand catastrophic events (such as a rare destructive natural event or episode involving one or many populations). Redundancy is about spreading the risk of such an event across multiple or large resilient population(s). As such, redundancy can be measured by the number or distribution of resilient population(s) across the range of the species. In this context, a species with adequate or high-level redundancy compensates for fluctuations in or loss of populations across the species' range such that the loss of a single population (or a portion of a single large population) has little or no lasting effect on the structure and functioning of the species as a whole.
- Representation characterizes the ability of a species to adapt to changing environmental conditions. This adaptive potential can be measured by genetic and ecological variability. Representation is directly correlated to a species' ability to adapt to changes (natural or human-caused) in its environment.

The degree of resiliency of a species (or a DPS) is influenced by both the representation and redundancy of the species. Resiliency increases with increasing genetic diversity or a higher number of individuals; it decreases when the species has less genetic diversity or fewer individuals. Resiliency can also decrease depending on the magnitude, extent, and immediacy of impacts affecting one or more populations. In the case of the proposed West Coast DPS of fisher, resiliency may be lower than historical levels to some degree because the total population size is considered by some as small, particularly in the SSN subpopulation; although, forest carnivores generally occur at low densities (Ruggiero *et al.* 1994, p. 146).

The West Coast DPS of fisher faces a variety of threats including loss and fragmentation of habitat (*i.e.,* from high-severity wildfire and wildfire suppression actions, climate change, forest insects and tree diseases, vegetation management, and development) and potential direct impacts to individuals (*e.g.,* increased mortality, decreased reproductive rates, increased stress/hormone levels, alterations in behavioral patterns) from wildfire, increased temperatures, increased tree mortality, disease and predation, exposure to toxicants, and potential effects associated with small population size. These threats (some more than others) cumulatively play a large role in both the current and future resiliency of the species. Of greatest importance at this time are:

(1) The long-term suitability of habitat conditions throughout the DPS's range given the continued presence/extent of high-severity and wide-ranging wildfires, and prolonged drought conditions that exacerbate forest insects and tree diseases. These conditions: (a) Reduce the availability of the natural resources (*e.g.,* appropriate canopy cover, old growth forest structure with large trees and snags) that the species relies on to complete its essential life-history functions, (b) contribute to increased stress hormones (cortisol) and reduced female fisher survival (as noted in one study in a portion of the SSN subpopulation), and (c) increase habitat fragmentation within and between populations.

(2) The sustained presence of toxicants from marijuana grow sites across a likely significant proportion of the landscape (primarily the NCSO subpopulation area) that contribute to continued fisher mortalities. Fisher mortalities continue to occur either by direct consumption or sublethal exposure to anticoagulant rodenticides, the latter of which may increase fisher death rates from other impacts such as predation, disease, or intraspecific conflict.

(3) Continued fragmentation of habitat in conjunction with the isolation and

potential inbreeding (due to an overall small population size) of the SSN subpopulation (see the SSN subpopulation discussion above under ''Current Condition of the West Coast DPS of Fisher'') when taking into account primarily (1) above (and likely to an insignificant degree (2) above). The ongoing threats exacerbate this subpopulation's vulnerability to extinction from stochastic events. Regardless of this subpopulation's potential for growth into the small amount of available but unoccupied suitable habitat present, we do anticipate this subpopulation will be small into the long-term future (see also Service 2016, pp. 133–137). Comments on the 2014 Proposed Rule received to date generally agree that the SSN subpopulation is small. Comments received to date on the NCSO subpopulation vary widely between consideration of this subpopulation as large or small.

Overall, the West Coast DPS of fisher has remained somewhat resilient across its current range given the degree of habitat loss and fragmentation from prolonged drought conditions and wildfire impacts, coupled with mortalities from toxicants (both anticoagulant and neurotoxicant rodenticides), and given at least some reduced female survival associated with increased stress hormones and reduced habitat suitability documented in a portion of the SSN subpopulation (see ''Forest Insects and Tree Diseases,'' above). However, considering the best available science and information at this time, it is likely that the resiliency of the DPS is likely to decrease in the near-term future given the cumulative impacts associated with current climate change model predictions for continued periodic but prolonged drought conditions, predictions of continued and increased intensity of wildfires across southern Oregon and northern California, the high likelihood of continued presence and spread of forest insect and tree diseases, and the low likelihood that a significant proportion of existing toxicants on the landscape would be removed in the near-term future.

Multiple, interacting populations across a broad geographic area or a single wide-ranging population (redundancy) provide insurance against the risk of extinction caused by catastrophic events. As was known at the time of the 2014 Proposed Rule, population redundancy continues to exist across the range of the DPS as a result of there being two native subpopulations: (1) The NCSO subpopulation (which for the purposes of this analysis and as described in this proposed rule, incorporate the interbreeding nonnative SOC subpopulation and the adjacent native NSN subpopulation) in southern Oregon and northern California; and (2) the SSN subpopulation in the Sierra Nevada range of California. The existence of these subpopulations, one of which is broadly distributed, contributes to the probability that fishers in the DPS will persist into the future and contribute to long-term genetic and demographic viability across the range. If either the NCSO or SSN native subpopulations or a significant proportion of the wider-ranging NCSO subpopulation were to be permanently lost, the fisher's redundancy in the DPS would be lowered, thereby decreasing the DPS's chance of survival in the face of potential environmental, demographic, and genetic stochastic factors and catastrophic events (extreme drought, wildfire, etc.).

We consider representation (*i.e.,* demographic persistence and preservation of overall genetic diversity) across the West Coast DPS of fisher to be moderate at this point in time, considering the persistence of two native (NCSO and SSN) subpopulations, including the reintroduced native NSN individuals. Also taken into consideration are the nonnative fishers reintroduced as the SOC subpopulation (now documented to be interbreeding with the NCSO native subpopulation); technically, these genes provide for increased representation. Finally, native fishers no longer appear to be present in some fragmented, suitable habitat areas across the DPS's range, including (but not limited to) north of the NSN reintroduction site, fragmented areas throughout portions of the NCSO subpopulation area, and throughout most of the unoccupied, suitable habitat in central and northern Oregon. Overall, fishers are represented across a smaller range than their historical presence, and occur in smaller numbers than historically with some introduction of nonnative genes from the NSN reintroduction.

Determination of the West Coast DPS of Fisher

Section 4 of the Act (16 U.S.C. 1533) and its implementing regulations (50 CFR part 424) set forth the procedures for determining whether a species meets the definition of ''endangered species'' or ''threatened species.'' The Act defines an ''endangered species'' as a species that is ''in danger of extinction throughout all or a significant portion of its range,'' and a ''threatened species'' as a species that is ''likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.'' The Act requires that we determine whether a species meets the definition of ''endangered species'' or ''threatened species'' because of any of the following factors: (A) The present or threatened destruction, modification, or curtailment of its habitat or range; (B) Overutilization for commercial, recreational, scientific, or educational purposes; (C) Disease or predation; (D) The inadequacy of existing regulatory mechanisms; or (E) Other natural or manmade factors affecting its continued existence.

Status Throughout All of Its Range

We evaluated threats to the species and assessed the cumulative effect of the threats under the section 4(a)(1) factors. Our 2016 Species Report (Service 2016, entire) is the most recent detailed compilation of fisher ecology and life history, and has a significant amount of analysis related to the potential impacts of threats within the DPS's range. In addition, we collected and evaluated new information available since 2016 to ensure a thorough analysis, as discussed above. Our analysis as reflected in this finding included our reassessment of the previous information and comments received on the 2014 Proposed Rule regarding the potential impacts to the West Coast DPS of fisher, as well as our consideration of new information regarding the past, present, and future threats to the DPS.

We considered whether the West Coast DPS of fisher is presently in danger of extinction, and determined that endangered species status is not appropriate. While threats are currently acting on the species and many of those threats are expected to continue into the future (see below), we did not find that the species is currently in danger of extinction throughout all of its range. With two subpopulations occurring across a large portion of the DPS's range, the current condition of the species still provides for enough resiliency, redundancy, and representation such that it is not currently in danger of extinction.

At this time, the best available information suggests that future resiliency for the West Coast DPS of fisher is low. As discussed above in the ''Risk Factors for the West Coast DPS of Fisher'' section (along with some detail in the 2014 draft and 2016 final Species Reports (Service 2014 and 2016, entire)), the species faces a variety of threats including: Loss and fragmentation of habitat resulting from high-severity

wildfire and wildfire suppression, climate change, forest insects and tree diseases, vegetation management, and development; and potential direct impacts to individuals (*e.g.,* increased mortality, decreased reproductive rates, increased stress/hormone levels, alterations in behavioral patterns) from wildfire, increased temperatures, increased tree mortality, disease and predation, exposure to toxicants, and potential effects associated with small population size (primarily the SSN subpopulation).

Currently, fishers in the West Coast DPS exist in two extant subpopulations: One small SSN subpopulation, and a larger NCSO subpopulation. The estimate of the SSN subpopulation is approximately 300 individuals (range = low of 100 to a high of 500 individuals), but there is no statistically detectable trend in population size or growth. There are no discernible positive or negative total trends in the NCSO subpopulation, and studies have suggested both positive and negative population trends at various times and at localized study sites. The most recent estimate of the NCSO subpopulation (excluding NSN and SOC is 3,196 individuals (range = low of 2,507 to a high of 4,184 individuals) (Furnas *et al.* 2017, p. 12). Overall, the West Coast DPS of fisher exists in two separate subpopulations (with the SSN subpopulation appearing significantly smaller than the NCSO subpopulation; see NCSO and SSN population descriptions, above, under ''Current Condition of the West Coast DPS of Fisher'') that have persisted but do not appear to be expanding.

We took into consideration all of the threats operating within the NCSO and SSN subpopulation areas that currently represent the West Coast DPS of fisher; these subpopulations are reduced in size due to historical trapping and past loss of late-successional habitat and, therefore, are more vulnerable to extinction from random events and increases in mortality. We evaluated the potential for synergistic effects (interaction of two or more threats that produce an effect greater than the sum of their individual effects) of multiple threats, although we are unable to quantify the scope and degree of synergistic effects and the variation of these effects across the landscape. However, just as threats are not occurring in equal scope and degree across the DPS's range, it is reasonable to conclude that the effects from these threats are occurring more in some areas than others. Some examples of the synergistic effects of multiple threats on fisher include:

- Destruction, modification, or curtailment of habitat, which may increase fishers' vulnerability to predation (Factors A and C);
- Impacts associated with climate change, such as increased risk of wildfire and tree mortality (tree insects and disease), and environmental impacts of human development, that will likely interact to cause large-scale ecotype conversion including shifts away from habitat types used by fisher, which could impact the viability of populations and reduce the likelihood of reestablishing connectivity (Factors A and E);
- Increases in disease caused by climate change (Factors A and C); and
- Human development (primarily within the Sierra Nevada), which is likely to cause increases in vehicle collisions, conflicts with domestic animals, and infections contracted from domestic animals (Factors A, C, and E).

Depending on the scope and degree of each of the threats and how they combine cumulatively, these threats can be of particular concern where populations are small and isolated. The cumulative effect (all threats combined) is of concern currently and particularly so in the foreseeable future, mainly in areas not managed for retention and recruitment of fisher habitat attributes, areas sensitive to climate change, and areas where direct mortality of fishers reduces their ability to maintain or expand their populations (Service 2014, pp. 166–169). Additionally, although there is currently a wide array of regulatory mechanisms and voluntary conservation measures in place to provide some benefits to the species and its habitat (see ''Existing Regulatory Mechanisms and Voluntary Conservation Measures,'' above), these measures are currently insufficient to protect the species from becoming an endangered species in the foreseeable future as a result of the current scope and degree of the threats (in particular threats related to illegal rodenticide use, increasing high-severity wildfires, and prolonged droughts that exacerbate the effects from wildfire, forest insects, and tree disease.

Overall and as stated above, we found that several threats are likely resulting in population-level impacts (as opposed to impacts to a few individuals) within the DPS's range, although there is some uncertainty in regard to the scope and degree of impacts. While there is uncertainty, the best available information suggests that impacts occur in both the NCSO and SSN subpopulations, although they appear particularly problematic in the SSN subpopulation area because of the narrow band of habitat that comprises this subpopulation and probable negative impacts associated with its small population size. As noted in our analysis, preliminary habitat-based population models suggest that the configuration of habitat affects population numbers in this region, and that some areas with high-quality habitat may remain unoccupied even at equilibrium population sizes, probably due to restricted connectivity between these locations and the main body of the population (Service 2016, p. 44; Rustigian-Romsos 2013, pers. comm.). Therefore, the cumulative impacts related to the habitat-based threats are likely to have a negative effect on the DPS because connectivity would likely decrease further (Service 2016, p. 69).

For the mortality-related threats, we reaffirm our quantitative assessment from 2014 regarding potential cumulative impacts in those portions of the DPS's range where data were available to do so. For fishers within this DPS, mortality related to research activities, collisions with vehicles, and anticoagulant rodenticide poisoning collectively add 3–17 percent annual mortality to naturally occurring mortality from disease and predation (collectively 6–32 percent mortality) and other natural sources such as starvation (as was last analyzed/reported in the final Species Report (Service 2016, p. 160)). For example, modeling completed for the SSN subpopulation demonstrate that a 10 to 20 percent increase in mortality rates could prevent fisher populations from the opportunity to expand in the future (Spencer *et al.* 2011, pp. 10–12). Coupled with habitat-related threats, the best available information suggests that cumulative effects to the West Coast DPS of fisher are reducing the resiliency of fisher subpopulations to such a degree that the species is likely to become an endangered species in the foreseeable future throughout all of its range (in other words, the future resiliency for the West Coast DPS of fisher is likely to be low). We also recognize that there likely will be differences in how the threats, both singly and cumulatively, present themselves across the landscape within the DPS's range.

Based on our review of the best scientific and commercial data available, we have determined the West Coast DPS of fisher meets the definition of a threatened species under the Act. Per our 2014 draft and 2016 final Species Reports, as well as our most recent analysis summarized herein, we find the most significant threats to the West Coast DPS are the cumulative

impact of all identified threats, especially habitat loss and fragmentation due to high-severity wildfire (Factor A) and vegetation management (Factor A) (noting that forest insects and tree diseases are exacerbated by changing climate conditions and thus also play a role under Factor A), and exposure to toxicants (Factor E). The existing regulatory mechanisms (Factor D) are not sufficient to address these threats to the level that the species does not meet the definition of a threatened species. We also find that the threat of trapping (Factor B) that was prevalent in the early 1900s is no longer a threat to the West Coast DPS of fisher, but the two extant populations are not expanding geographically even though this threat has been removed.

Thus, after assessing the best available information, we conclude that the West Coast DPS of fisher is not currently in danger of extinction, but is likely to become in danger of extinction within the foreseeable future (estimated as 35–40 years) throughout all of its range. In reaching this conclusion, we have considered available conservation measures and existing regulatory mechanisms that may ameliorate these threats.

Status Throughout a Significant Portion of Its Range

Under the Act and our implementing regulations, a species may warrant listing if it is in danger of extinction or likely to become so in the foreseeable future throughout all or a significant portion of its range. Because we have determined that the West Coast DPS of fisher is likely to become an endangered species within the foreseeable future throughout all of its range, we find it unnecessary to proceed to an evaluation of potentially significant portions of the range. Where the best available information allows the Services to determine a status for the species rangewide, that determination should be given conclusive weight because a rangewide determination of status more accurately reflects the species' degree of imperilment and better promotes the purposes of the Act. Under this reading, we should first consider whether the species warrants listing ''throughout all'' of its range and proceed to conduct a ''significant portion of its range'' analysis if, and only if, a species does not qualify for listing as either an endangered or a threatened species according to the ''throughout all'' language. We note that the court in *Desert Survivors* v. *Department of the Interior,* No. 16-cv-01165–JCS, 2018 WL 4053447 (N.D. Cal. Aug. 24, 2018), did not address this issue.

Determination of Status

Our review of the best available scientific and commercial information indicates that the West Coast DPS of fisher meets the definition of a threatened species. Therefore, we propose to list the West Coast DPS of fisher as a threatened species in accordance with sections 3(20) and 4(a)(1) of the Act.

Available Conservation Measures

Conservation measures provided to species listed as endangered or threatened species under the Act include recognition, recovery actions, requirements for Federal protection, and prohibitions against certain practices. Recognition through listing results in public awareness and conservation by Federal, State, tribal, and local agencies, private organizations, and individuals. The Act encourages cooperation with the States and other countries and calls for recovery actions to be carried out for listed species. The protection required by Federal agencies and the prohibitions against certain activities are discussed, in part, below.

The primary purpose of the Act is the conservation of endangered and threatened species and the ecosystems upon which they depend. The ultimate goal of such conservation efforts is the recovery of these listed species, so that they no longer need the protective measures of the Act. Subsection 4(f) of the Act calls for the Service to develop and implement recovery plans for the conservation of endangered and threatened species. The recovery planning process involves the identification of actions that are necessary to halt or reverse the species' decline by addressing the threats to its survival and recovery. The goal of this process is to restore listed species to a point where they are secure, self-sustaining, and functioning components of their ecosystems.

Recovery planning includes the development of a recovery outline shortly after a species is listed and preparation of a draft and final recovery plan. The recovery outline guides the immediate implementation of urgent recovery actions and describes the process to be used to develop a recovery plan. Revisions of the plan may be done to address continuing or new threats to the species, as new substantive information becomes available. The recovery plan also identifies recovery criteria for review when a species may be ready for downlisting or delisting, and methods for monitoring recovery progress. Recovery plans also establish a framework for agencies to coordinate their recovery efforts and provide estimates of the cost of implementing recovery tasks. Recovery teams (composed of species experts, Federal and State agencies, nongovernmental organizations, and stakeholders) are often established to develop recovery plans. When completed, the recovery outline, draft recovery plan, and the final recovery plan will be available on our website (*http://www.fws.gov/endangered*), or from our Yreka Fish and Wildlife Office (see **FOR FURTHER INFORMATION CONTACT**).

Implementation of recovery actions generally requires the participation of a broad range of partners, including other Federal agencies, States, Tribes, nongovernmental organizations, businesses, and private landowners. Examples of recovery actions include habitat restoration (for example, restoration of native vegetation), research, captive propagation and reintroduction, and outreach and education. The recovery of many listed species cannot be accomplished solely on Federal lands because their range may occur primarily or solely on non-Federal lands. To achieve recovery of these species requires cooperative conservation efforts on private, State, and tribal lands. If the West Coast DPS of fisher is listed, funding for recovery actions will be available from a variety of sources, including Federal budgets, State programs, and cost share grants for non-Federal landowners, the academic community, and nongovernmental organizations. In addition, pursuant to section 6 of the Act, the States of California and Oregon would be eligible for Federal funds to implement management actions that promote the protection or recovery of the West Coast DPS of fisher. Information on our grant programs that are available to aid species recovery can be found at: *http://www.fws.gov/grants*.

Although the West Coast DPS of fisher is only proposed for listing under the Act at this time, please let us know if you are interested in participating in recovery efforts for this species. Additionally, we invite you to submit any new information on this species whenever it becomes available and any information you may have for recovery planning purposes (see **FOR FURTHER INFORMATION CONTACT**).

Section 7(a) of the Act requires Federal agencies to evaluate their actions with respect to any species that is proposed or listed as an endangered or threatened species and with respect to its critical habitat, if any is designated. Regulations implementing

this interagency cooperation provision of the Act are codified at 50 CFR part 402. Section 7(a)(4) of the Act requires Federal agencies to confer with the Service on any action that is likely to jeopardize the continued existence of a species proposed for listing or result in destruction or adverse modification of proposed critical habitat. If a species is listed subsequently, section 7(a)(2) of the Act requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of the species or destroy or adversely modify its critical habitat. If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency must enter into consultation with the Service.

Federal agency actions within the species' habitat that may require conference or consultation or both as described in the preceding paragraph include management and any other landscape-altering activities as well as toxicant use on Federal lands administered by the U.S. Fish and Wildlife Service, U.S. Forest Service, BLM, and National Park Service; issuance of section 404 Clean Water Act permits by the Army Corps of Engineers; and construction and maintenance of roads or highways by the Federal Highway Administration.

II. Critical Habitat

Section 4(a)(3) of the Act, as amended, and implementing regulations (50 CFR 424.12), require that, to the maximum extent prudent and determinable, the Secretary shall designate critical habitat at the time the species is determined to be an endangered or threatened species. Our regulations (50 CFR 424.12(a)(1)) state that:

(1) The specific areas within the geographical area occupied by the species, at the time it is listed in accordance with the provisions of section 4 of this Act, on which are found those physical or biological features (a) Essential to the conservation of the species, and (b) Which may require special management considerations or protection; and

(2) Specific areas outside the geographical area occupied by the species at the time it is listed in accordance with the provisions of section 4 of this Act, upon a determination by the Secretary of the Interior that such areas are essential for the conservation of the species. Our regulations (50 CFR 424.12(a)(1)) state that the Secretary may, but is not required to, determine that a designation would not be prudent in the following circumstances:

(i) The species is threatened by taking or other human activity and identification of critical habitat can be expected to increase the degree of threat to the species;

(ii) The present or threatened destruction, modification, or curtailment of a species' habitat or range is not a threat to the species, or threats to the species' habitat stem solely from causes that cannot be addressed through management actions resulting from consultations under section 7(a)(2) of the Act;

(iii) Areas within the jurisdictions of the United States provide no more than negligible conservation value, if any, for a species occurring primarily outside the jurisdiction of the United States;

(iv) No areas meet the definition of critical habitat; or

(v) The Secretary otherwise determines that designation of critical habitat would not be prudent based on the best scientific data available.

We did not identify any of the factors above to apply to the West Coast DPS of fisher. Therefore, we find designation of critical habitat is prudent for the West Coast DPS of fisher.

Our regulations (50 CFR 424.12(a)(2)) further state that critical habitat is not determinable when one or both of the following situations exists: (1) Information sufficient to perform required analysis of the impacts of the designation is lacking; or (2) the biological needs of the species are not sufficiently well known to permit identification of an area as critical habitat. A careful assessment of the economic impacts that may occur due to a critical habitat designation is not yet complete, and we are in the process of working with the States and other partners in acquiring the complex information needed to perform that assessment. Because the information sufficient to perform a required analysis of the impacts of the designation is lacking, we therefore find designation of critical habitat for the West Coast DPS of fisher to be not determinable at this time.

III. Proposed Rule Issued Under Section 4(d) of the Act

Provisions of Section 4(d) of the Act

Under section 4(d) of the Act, the Secretary of the Interior has the discretion to issue such regulations as he deems necessary and advisable to provide for the conservation of threatened species. The Secretary also has the discretion to prohibit by regulation with respect to any threatened species of fish or wildlife any act prohibited under section 9(a)(1) of the Act. The prohibitions of section 9(a)(1) of the Act make it illegal for any person subject to the jurisdiction of the United States to take (which includes harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect; or to attempt any of these) endangered species of fish or wildlife within the United States or on the high seas. In addition, it is unlawful to import; export; deliver, receive, carry, transport, or ship in interstate or foreign commerce in the course of commercial activity; or sell or offer for sale in interstate or foreign commerce any endangered fish or wildlife species. It is also illegal to possess, sell, deliver, carry, transport, or ship any such wildlife or fish that has been taken illegally. To the extent the section 9(a)(1) prohibitions apply only to endangered species, this proposed rule would apply those same prohibitions to the West Coast DPS of fisher with some exceptions, in accordance with section 4(d) of the Act. In other words, we are not applying the full suite of section 9(a)(1) protections to the West Coast DPS of fisher, and instead are including some exceptions to the section 9(a)(1) prohibitions for specific management activities that result in a long-term benefit to the species.

The courts have recognized the extent of the Secretary's discretion to develop prohibitions, as well as exclusions from those prohibitions, that are appropriate for the conservation of a species. For example, the Secretary may decide not to prohibit take, or to put in place only limited take prohibitions. See *Alsea Valley Alliance* v. *Lautenbacher,* 2007 U.S. Dist. Lexis 60203 (D. Or. 2007); *Washington Environmental Council* v. *National Marine Fisheries Service,* 2002 U.S. Dist. Lexis 5432 (W.D. Wash. 2002). In addition, as affirmed in *State of Louisiana* v. *Verity,* 853 F.2d 322 (5th Cir. 1988), the protective regulations for a species need not address all the threats to the species. As noted by Congress when the Act was initially enacted, ''once an animal is on the threatened list, the Secretary has an almost infinite number of options available to him with regard to the permitted activities for those species.'' He may, for example, ''permit taking, but not importation of such species,'' or he may choose to forbid both taking and importation but allow the transportation of such species, as long as the measures will ''serve to conserve, protect, or restore the species concerned in accordance with the purposes of the

Act'' (H.R. Rep. No. 412, 93rd Cong., 1st Sess. 1973).

Proposed 4(d) Rule for the West Coast DPS of Fisher

As explained above, we have determined that the West Coast DPS of fisher meets the definition under the Act of a threatened species, in that it is likely to become an endangered species within the foreseeable future throughout its range. As such, we are proposing to add the West Coast DPS of fisher as a threatened species to the List of Endangered and Threatened Wildlife (50 CFR 17.11). However, we have also determined that it is necessary and advisable to issue protective regulations under section 4(d) of the Act in order to reduce the likelihood of the West Coast DPS of fisher becoming an endangered species. Under our proposed section 4(d) rule, except as described and explained below, all prohibitions and provisions that apply to endangered wildlife under section 9(a)(1) of the Act would apply to the West Coast DPS of fisher. Applying these section 9(a)(1) prohibitions will help minimize threats that could cause further declines in the status of the species for this DPS. Central to the protections afforded by this application is the prohibition of take. Take is defined under the Act as to ''harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct,'' and, therefore, any actions that would result in unlawful take of the species would be prohibited as a result of this proposed section 4(d) rule.

The fisher is a forest-dwelling species, and, as such, the potential for take may arise anywhere the effects of actions coincide with the occupied forested habitat in the range of this DPS. Numerous forest management activities occur within the range of the DPS, many of which could potentially result in take of fishers, either through death or injury to fishers resulting from significant habitat modification or degradation of their habitat. However, we also recognize that many of these activities are conducted under the scope of forest management plans or actions that are likely to have an overarching net beneficial impact for the conservation of fishers in this DPS. Therefore, while activities conducted under such forest management plans or actions may result in some short-term or small level of localized negative effect to fishers, we are providing exceptions to the section 9(a)(1) prohibitions for these activities, as we believe doing so will provide a net conservation benefit for the species.

Our first exception is aimed at forestry management activities for the purposes of reducing the risk or severity of wildfires. The proposed exception states that these activities could include forest management practices such as those to remove horizontal and vertical fuels, to remove fuels within 150 ft (45.7 m) of legally permitted structures and within 300 ft (91.4 m) of habitable structures, or to implement Fuel Break/Defensible Space Prescriptions that allow for the removal of trees or other vegetation to create shaded fuel breaks along roads or natural features or to create defensible space. All actions taken during a wildfire to support fire suppression activities would also be exempt.

With regard to Exception 1, we note that the long-term viability of the fisher, as with many wildlife species, is intimately tied to the condition of its habitat. As described in our analysis of the species' status, one of the primary driving threats to the fisher's continued viability is the destruction of its habitat from large-scale, stand-replacing wildfires (see ''Wildfire and Wildfire Suppression,'' above). Because of climate change and warming temperatures, the increase in the frequency and severity of these large-scale, stand-replacing wildfires increases the risk to the species from this threat. Actions taken by forest managers in the range of the fisher to reduce the risk or severity of uncharacteristically large and severe wildfires, while potentially resulting in some short-term or localized negative effects to fishers, will likely further the goal of reducing the likelihood of the species from becoming an endangered species, and will ultimately contribute to its conservation and long-term viability. Therefore, we will not apply the section 9(a)(1) prohibitions to these actions. Although we propose this exception to take prohibitions for these forest management activities, we encourage forest managers to design them in a way that avoids take of fishers provided the fire reduction purposes of the activities still can be achieved.

Our second exception is related to forestry management activities conducted in the range of the West Coast DPS of fisher pursuant to a fisher conservation plan or strategy approved by the Service or the California Department of Fish and Wildlife. With regard to this exception, we note that extensive work has gone into developing specific forest management measures, as part of overarching fisher conservation plans or strategies, which can contribute to the conservation needs of the fisher. Forest management conducted under the scope of such publicly available fisher conservation plans or strategies (*e.g.,* Southern Sierra Nevada Fisher Conservation Strategy (Spencer *et al.* 2016, entire; and subsequent addendum letter, Spencer *et al.* 2017)) that include the objectives outlined below, while having the potential to result in some small level of localized disturbance or temporary negative effects to fishers or their habitats, is expected to improve overall habitat conditions and contribute to the species' overall long-term viability. Therefore, we will not prohibit incidental take of fishers that may occur as a result of actions implemented under such conservation plans or strategies.

Our third exception is aimed at forestry management activities conducted in the range of the West Coast DPS of fisher and with Federal or State oversight that are not specifically designed as fisher conservation plans or strategies, but are nevertheless consistent with the conservation needs of the West Coast DPS of fisher. Activities consistent with the conservation needs of fisher could include the following measures: Retention of known den and rest sites; retention of multi-layered, structurally diverse forests; retention of larger diameter trees, including those with damage or decay; increased vegetation diversity, including desirable species such as hardwoods or mast- or fruit-bearing trees; retention of shrubs and smaller trees in areas with sparse overstory cover; and no poisoning of prey species, such as mountain beavers, porcupines, snowshoe hares, and woodrats.

With regard to Exception 3, we acknowledge that there are forest management activities conducted under management mechanisms that are not specifically designed for fisher conservation, in contrast to Exception 2 above, but that are implemented in ways that serve to maintain forest habitat conditions beneficial to fishers. The management mechanisms included under this Exception vary, but all are conducted with Federal or State oversight. While activities conducted under such mechanisms have the potential to result in some small level of localized disturbance or temporary negative effects to fishers or their habitats, the overall forest habitat will be maintained in conditions beneficial to fishers, which will contribute to the DPS's long-term viability. Therefore, incidental take of fishers that may occur as a result of actions implemented under such forest management mechanisms will not be prohibited under this section 4(d) rule.

Our fourth exception is for management activities conducted for the purpose of identification and clean-up of toxicant-contaminated sites for which the Service has determined that such activities to remove toxicants would be consistent with conservation strategies for the West Coast DPS fishers. Those activities could include use of machinery that may cause localized, short-term disturbance to West Coast DPS fishers (*e.g.,* helicopters or off-road vehicles), as well as require limited removal of some habitat structures valuable to West Coast DPS fishers (*e.g.,* hazard trees that may be a suitable den site).

With regard to Exception 4, we note that exposure to toxicants, especially anticoagulant and neurotoxicant rodenticides, is a threat to the fisher, and that illegal marijuana cultivation sites are the biggest source of these toxicants in the forested habitats used by the species. These types of toxicants in the environment can result in both lethal and sublethal effects to fishers through their ingestion of contaminated prey items, and also cause indirect effects to fishers as a result of declines in their prey base. Identification and cleanup of such contaminated sites is vitally important in removing this threat; however, site reclamation may involve machinery that can disturb fishers (*e.g.,* helicopters, off-road vehicles), and hazardous material removal activities may eliminate some structures used by fisher. As a result, these cleanup activities have the potential to result in negative impacts to fisher individuals. However, the removal of these toxicants that can have long-term detrimental effects on fishers or their prey will reduce the potential for lethal and sublethal effects in fishers, and will improve the overall condition of the habitat, thereby contributing to the long-term viability of the species. Accordingly, incidental take of fishers that may occur as a result of toxicant cleanup activities will not be prohibited under this section 4(d) rule.

Therefore, as explained above, we are proposing to issue protective regulations under section 4(d) of the Act. The prohibitions under section 9(a)(1) will apply to fishers throughout the range of the West Coast DPS, with specific exceptions tailored to the conservation needs of the species. While we are providing these exceptions to the prohibitions and provisions of section 9(a)(1), we clarify that all Federal agencies (including the Service) that fund, permit, or carry out the activities described above will still need to ensure, in consultation with the Service (including intra-Service consultation when appropriate), that the activities are not likely to jeopardize the continued existence of the DPS. Private entities who undertake any actions other than those described in the exceptions above that may result in adverse effects to the West Coast DPS of fisher, when there is no associated Federal nexus to the action, may wish to seek an incidental take permit from the Service before proceeding with the activity. The proposed provisions of the 4(d) rule are set forth at the end of this document in the rule portion.

Nothing in this proposed 4(d) rule would change in any way the recovery planning provisions of section 4(f) and consultation requirements under section 7 of the Act, or the ability of the Service to enter into partnerships for the management and protection of the West Coast DPS of fisher.

Required Determinations

Clarity of the Rule

We are required by Executive Orders 12866 and 12988 and by the Presidential Memorandum of June 1, 1998, to write all rules in plain language. This means that each rule we publish must:

(1) Be logically organized;

(2) Use the active voice to address readers directly;

(3) Use clear language rather than jargon;

(4) Be divided into short sections and sentences; and

(5) Use lists and tables wherever possible.

If you feel that we have not met these requirements, send us comments by one of the methods listed in **ADDRESSES**. To better help us revise the rule, your comments should be as specific as possible. For example, you should tell us the numbers of the sections or paragraphs that are unclearly written, which sections or sentences are too long, the sections where you feel lists or tables would be useful, etc.

National Environmental Policy Act (42 U.S.C. 4321 et seq.)

We have determined that environmental assessments and environmental impact statements, as defined under the authority of the National Environmental Policy Act (NEPA; 42 U.S.C. 4321 *et seq.*), need not be prepared in connection with listing a species as an endangered or threatened species under the Endangered Species Act. We published a notice outlining our reasons for this determination in the **Federal Register** on October 25, 1983 (48 FR 49244).

Government-to-Government Relationship With Tribes

In accordance with the President's memorandum of April 29, 1994 (Government-to-Government Relations with Native American Tribal Governments; 59 FR 22951), Executive Order 13175 (Consultation and Coordination With Indian Tribal Governments), and the Department of the Interior's manual at 512 DM 2, we readily acknowledge our responsibility to communicate meaningfully with recognized Federal Tribes on a government-to-government basis. In accordance with Secretarial Order 3206 of June 5, 1997 (American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act), we readily acknowledge our responsibilities to work directly with tribes in developing programs for healthy ecosystems, to acknowledge that tribal lands are not subject to the same controls as Federal public lands, to remain sensitive to Indian culture, and to make information available to tribes. In development of the 2014 Species Report, we sent letters noting our intent to conduct a status review and requested information from all tribal entities within the historical range of the West Coast DPS of fisher, and we provided the draft Species Report to those tribes for review. We also notified the tribes via email to ensure they were aware of the January 31, 2019, document in the **Federal Register** to reopen the comment period on the October 7, 2014, proposed rule to list the DPS as a threatened species. As we move forward in this listing process, we will continue to consult on a government-to-government basis with tribes as necessary.

References Cited

A complete list of references cited in this rulemaking is available on the internet at *http://www.regulations.gov* and upon request from the Yreka Fish and Wildlife Office (see **FOR FURTHER INFORMATION CONTACT**).

Authors

The primary authors of this proposed rule are the staff members of the Pacific Southwest Regional Office.

List of Subjects in 50 CFR Part 17

Endangered and threatened species, Exports, Imports, Reporting and recordkeeping requirements, Transportation.

Proposed Regulation Promulgation

Accordingly, we propose to amend part 17, subchapter B of chapter I, title

50 of the Code of Federal Regulations, as set forth below:

PART 17—ENDANGERED AND THREATENED WILDLIFE AND PLANTS

■ 1. The authority citation for part 17 continues to read as follows:

Authority: 16 U.S.C. 1361–1407; 1531–1544; and 4201–4245; unless otherwise noted.

■ 2. Amend part 17.11(h) by adding an entry for ''Fisher (West Coast DPS)'' in alphabetical order under Mammals to the List of Endangered and Threatened Wildlife to read as follows:

§ 17.11 Endangered and threatened wildlife.

* * * * *

(h) * * *

EPA—APPROVED OHIO REGULATIONS

Common name	Scientific name	Where listed	Status	Listing citations and applicable rules
MAMMALS				
*	*	*	*	*
Fisher (West Coast DPS) ...	*Pekania pennanti*	U.S.A. (CA and OR)	T	[**Federal Register** citation when published as a final rule]; 50 CFR 17.40(s).[4d]
*	*	*	*	*

* * * * *

■ 3. Amend § 17.40 by adding paragraph (s) to read as set forth below:

§ 17.40 Special rules—mammals.

* * * * *

(s) West Coast DPS of fisher (*Pekania pennanti*).

(1) *Prohibitions.* Except as noted in paragraph (a)(2) of this section, all prohibitions and provisions of section 9(a)(1) of the Act apply to the West Coast DPS of fisher.

(2) *Exceptions from prohibitions.* Incidental take of the West Coast DPS of fisher will not be considered a violation of the Act if the take results from any of the following activities:

(i) Forestry management activities conducted in the range of the West Coast DPS of fisher for the purposes of reducing the risk or severity of wildfires. These activities could include forest management practices such as those to remove horizontal and vertical fuels, to remove fuels within 150 ft (45.7 m) of legally permitted structures and within 300 ft (91.4 m) of habitable structures, or to implement Fuel Break/Defensible Space Prescriptions that allow for the removal of trees or other vegetation to create shaded fuel breaks along roads or natural features or to create defensible space. All actions taken during a wildfire to support fire suppression activities would also be exempt.

(ii) Forestry management activities conducted in the range of the West Coast DPS of fisher pursuant to a fisher conservation plan or strategy approved by the Service or the California Department of Fish and Wildlife.

(iii) Forestry management activities conducted in the range of the West Coast DPS of fisher and with Federal or State oversight that are not specifically designed as fisher conservation plans or strategies, but are nevertheless consistent with the conservation needs of the West Coast DPS of fisher. Activities consistent with the conservation needs of fisher could include the following measures: Retention of known den and rest sites; retention of multi-layered, structurally diverse forests; retention of larger diameter trees, including those with damage or decay; increased vegetation diversity, including desirable species such as hardwoods or mast- or fruit-bearing trees; retention of shrubs and smaller trees in areas with sparse overstory cover; and no poisoning of prey species, such as mountain beavers, porcupines, snowshoe hares, and woodrats.

(iv) Management activities conducted for the purpose of identification and clean-up of toxicant-contaminated sites for which the Service has determined that such activities to remove toxicants would be consistent with conservation strategies for the West Coast DPS fishers. Those activities could include use of machinery that may cause localized, short-term disturbance to West Coast DPS fishers (*e.g.,* helicopters or off-road vehicles), as well as require limited removal of some habitat structures valuable to West Coast DPS fishers (*e.g.,* hazard trees that may be a suitable den site).

(v) Take as set forth at § 17.31(b).

* * * * *

Dated: October 21, 2019.

Margaret E. Everson,

Principal Deputy Director, U.S. Fish and Wildlife Service, Exercising the Authority of the Director, U.S. Fish and Wildlife Service.

[FR Doc. 2019–23737 Filed 11–6–19; 8:45 am]

BILLING CODE 4333–15–P