

Determination

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

Our regulations direct us to determine if a species is endangered or threatened due to any one or combination of these five threat factors identified in the Act (50 CFR 424.11(c)). Our 2016 final 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 NCSO DPS’s range. In addition, we collected and evaluated new information available since 2016, including new information made available to us during the recent comment periods in 2019, to ensure a thorough analysis, as discussed above. We also held numerous internal Service discussions regarding interpretation of the best available information and what it meant for the status of fisher both prior to and following both the October 7, 2014 (79 FR 60419) and November 7, 2019 (84 FR 60278), Proposed Rule and

Revised Proposed Rule, respectively, for the West Coast DPS of fisher. During these internal discussions, varied opinions were expressed and vetted. The extensive disparity in comments received (including those from peer reviewers and others) during the comment periods highlighted the fact that there is considerable variation in the interpretation of potential threats to fisher and its current and future status.

As explained above, we evaluated all the identified threats to the NCSO DPS of fishers. Across the DPS, the actions or conditions we identified that were known to or were reasonably likely to negatively affect individuals of the DPS included:

- Habitat-based threats such as high-severity wildfire, wildfire suppression activities, and post-fire management actions; climate change; tree mortality from drought, disease, and insect infestation; vegetation management; and human development.
- Direct mortality-based threats including trapping and incidental capture; research activities; disease or predation; collision with vehicles; exposure to toxicants; and the potential for effects associated with small population size.

With the exception of trapping, which is no longer a lawful activity in the range of the NCSO DPS, all of these identified threats have the potential to negatively affect fishers, either through direct impacts to individual animals or to the resources they need. However, the extent and magnitude of the threats vary, relative to the distribution of the DPS across its range (i.e., not all threats affect every fisher).

In conducting our evaluation of the DPS's status, we attempt to assess how the cumulative impact of all of the identified threats acts on the viability of the DPS as a whole. That is, all the anticipated effects from both habitat-based and direct mortality-based threats are examined in total and then evaluated in the context of what those combined negative effects will

mean to the future condition of the DPS. However, for the vast majority of potential threats, the effect on the DPS (e.g., total losses of individual fishers or their habitat) cannot be quantified with available information. Instead, we use the best available information to gauge the magnitude of each individual threat on the DPS, and then assess how those effects combined (and as may be ameliorated by any existing regulatory mechanisms or conservation efforts) will impact the DPS's future viability.

Based on our understanding of the available information indicating the potential magnitude and scale of how all identified threats may affect the DPS, we began under the premise that those with the greatest potential to become significant drivers of the future status of the NCSO DPS were: wildfire and wildfire suppression; tree mortality from drought, disease, and insect infestation; the potential for climate change to exacerbate both wildfire and tree mortality; threats related to vegetation management; and exposure to toxicants. The available information about the remaining threats from the list identified above indicated a lower potential for becoming significant drivers.

After conducting our analyses on all these threats, we found that the NCSO DPS as a whole will experience:

- Changing climate conditions, likely in the manner of becoming generally warmer and drier, with subsequent potential to affect habitat conditions for fisher, as well as the potential for increased stress levels in individual fishers. However, these potential reactions to changing climate conditions will likely vary across the DPS, due to the DPS's wide variety of topography and vegetation in its physiographic provinces, and unpredictable variability in how these provinces will respond to the changing climate conditions.

- Increased potential for wildfire frequency and intensity, influenced by changing climate conditions. Wildfire as a threat, while having the potential to cause significant losses of fishers and their habitat resources where fires occur, is sporadic and episodic across the DPS, and is moderated by terrain including slope and aspect.
- Low likelihood of widespread tree mortality resulting from climate-influenced susceptibility to diseases or insect infestations.
- Limited exposure to potential effects from vegetation management actions. Although fishers may experience localized fragmentation of habitat conditions or an increased risk of predation where vegetation management actions will occur, the available information indicates only a small proportion of the suitable habitat in the DPS's range is likely to undergo these actions.
- Some continued level of exposure to toxicants from illegal marijuana grow sites. Such sites are generally widely dispersed within remote landscapes across the NCSO DPS range, suggesting potential significant exposure to fishers is limited to where the grow sites are located. However, where they do occur within fisher ranges, illegally used toxicants have the potential to harm those exposed individual fishers. While there is no certain discernible trend regarding whether illegal grow sites may increase or decrease as a result of marijuana legalization, it will still likely take many years before the currently existing sites can be found and remediated.
- Some continued level of risk regarding both the effects associated with small population size (e.g., inbreeding depression) and the general risk of extinction. As we have described herein and previously, the NCSO DPS is isolated from other fisher populations, and small relative to the taxon as a whole. As such, the risks of small

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Commented [WE2]: Variable slopes in NCSO DPS...steeper can be more prone to extreme fire runs uphill especially when they are south or west facing (see comment below).

Commented [WE3]: South and west facing slopes are hotter and drier than north and east facing slopes which are cooler and moister...creates a mosaic of fire severity (i.e., not all high severity).

Commented [WE4]: Also tied the variability of the terrain I mentioned above. Hotter drier more prone to stress than moister wetter.

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population size effects and of extinction exist. However, the broad distribution of the DPS across its range, in combination with the DPS occurring in multiple subpopulations with no barriers to genetic exchange within and between those subpopulations, and the low likelihood of a catastrophic event at a scale that could hypothetically affect the entire DPS, indicates that the risks of small population size effects and of extinction are very low.

- Potentially increased incidences of predation in localized settings (e.g. vegetation management action sites), and continued low incidences of collisions with vehicles. Both of these threats are likely to continue, but likely accounting for losses of only small numbers of individuals.
- No change in normal incidence of disease across the range.

In summary, the NCSO DPS will experience mortality and sub-lethal effects to individual fishers across the range from the combined threats of changing climate conditions, wildfire and wildfire suppression activities, exposure to toxicants, predation, and collisions with vehicles. Localized effects to fisher habitat resources may also occur as a result of future tree mortality events or vegetation management actions, although these will have a low likelihood of causing individual fisher losses. All these effects will be in addition to any mortalities or sub-lethal effects the DPS would typically experience from things such as age or disease.

At the same time as we conduct our evaluation of threats to the DPS, we also attempt to assess how any existing regulatory mechanisms or conservation efforts may act to eliminate or ameliorate the effects of those threats on the DPS. We provided our analyses of existing regulatory conservation measures and voluntary conservation efforts above in this document. In that discussion, we identified a number of measures that are likely to provide benefits to the

DPS, either directly or indirectly, in the manner of maintaining or improving habitat conditions. Federal and state agency management plans involving forest management, while designed, in part, for the harvesting of timber, also include provisions for the long-term maintenance of those forests, providing for the retention of forest habitat and structural elements beneficial to fishers. We also describe regulatory mechanisms at both the state and Federal level designed to minimize the potential for non-target poisoning by pesticides, as well as state and voluntary efforts to remediate illegal marijuana sites contaminated by rodenticides. In addition, implementation of existing conservation measures in the form of a recently signed MOU will improve communication and coordination surrounding the implementation of fuels reduction projects, which in turn may help to ameliorate the loss of habitat due to wildfire.

As noted earlier, there is no information available that would allow us to quantify either the cumulative effect of the identified threats on the DPS, or the cumulative effect of existing regulatory mechanisms or conservation efforts to ameliorate the effects of those threats. However, in evaluating the anticipated impact of both in total, we find that the sum of effects to the DPS are such that: the resiliency of the various subpopulations, and hence the DPS as a whole, will not be significantly negatively affected; its representation, i.e., its breadth of genetic and environmental diversity, will not be reduced; and its redundancy will remain as it currently is, with multiple subpopulations distributed across a substantial range of habitat.

Upon careful consideration and evaluation of all of the information before us, we have analyzed the status of fishers within the NCSO DPS. In our 2019 Revised Proposed Rule, we evaluated the status of the West Coast DPS, the NCSO DPS and SSN DPS combined, and concluded that both the NCSO and SSN were reduced in size from historical conditions, and that threats were acting on fishers across the range of both. However, we also noted that the

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distribution of threats and their effects, both singly and cumulatively, were likely unequal in magnitude and scale across the full landscape. While multiple threats such as wildfire and wildfire suppression activities, climate change, exposure to toxicants, predation, and vehicle collisions will continue to occur within the range of the NCSO DPS, we conclude that the cumulative effect of threats does not rise to the level of threatening the continued existence of the DPS. Hence, based on the best available scientific and commercial information, we conclude that the NCSO DPS of fishers is not in danger of extinction, nor likely to become so in the foreseeable future.

There are extensive uncertainties regarding population limiting factors for the DPS and the fishers within, more specifics on what comprises suitable habitat (especially related to disturbances) suitability, and the degree to which the threats affect the DPS over the long term. We recommend continuation of population monitoring studies as well as studies assessing the effects of specific stressors on fisher populations.