

Public Comments Processing
Attn: FWS-R8-ES-2019-0006
U.S. Fish and Wildlife Service
MS: BPHC, 5275 Leesburg Pike
Falls Church, VA 22041-3803

Submitted via: <https://www.regulations.gov/comment?D=FWS-R8-ES-2019-0006-0001>

March 9, 2020

Re: Docket ID FWS-R8-ES-2019-0006

To Whom It May Concern:

Central Sierra Environmental Resource Center (CSERC), Defenders of Wildlife, Friends of the Inyo, National Parks Conservation Association, Sierra Forest Legacy, Winter Wildlands Alliance and the Center for Biological Diversity respectfully submit the following comments in response to the proposal by the U.S. Fish and Wildlife Service (USFWS or Service) to list the Sierra Nevada Distinct Population Segment (DPS) of the Sierra Nevada red fox (SNRF). Our organizations, representing hundreds of thousands of members and supporters across the state, strongly agree that the USFWS and its partner agencies have rigorously documented sufficient scientific evidence to fully justify the listing of the SNRF as endangered under the federal Endangered Species Act (ESA).

The USFWS at this time in the listing process is primarily requesting additional scientific data and new information that has become available since the initial proposal to list the SNRF in 2015. However, it is also important to underscore that the scientific information, study results, monitoring detections, and genetic analysis done for the SNRF prior to 2015 still provide significant evidence and rationale to support the proposed listing of the Sierra Nevada DPS of

SNRF. Fieldwork conducted by California Department of Fish and Wildlife (CDFW), Yosemite National Park (YNP), UC Davis and others since 2015, coupled with ongoing genomic research, have further added to the record of extinction risk for the species.

The single most compelling fact in support of listing is the determination that the Sierra Nevada population may be entirely comprised of as few as 15 and no more than 50 adults (the 2015 estimate by USFWS was approximately 29 individuals). That incredibly small population number, in a wider range than previously believed, underscores the extreme challenge that the SNRF faces if it is to persist and eventually rebound to a healthier, more sustainable population. The new data on the DPS range coupled with the population estimate of 50 or fewer adults reflects how essential it is for the Sierra Nevada DPS to gain protections under the ESA.

There is extremely important scientific information provided in the Service's Species Status Assessment Report¹ (hereafter "species assessment") concerning the small population size, vulnerability due to inbreeding and low reproduction, and other significant factors that pose cumulative risk to the survival of the DPS in the central Sierra. The science is clear in the species assessment, however we present here new science shared at the recent SNRF Working Group workshop (in Redding on February 7, 2020) and other important factors when considering the listing, including competition with coyotes and the U.S. Forest Service (USFS) winter recreation management direction in SNRF suitable habitat.

The species assessment for the Sierra Nevada DPS of the SNRF was produced by the USFWS to both consider the current status of the species as well as to consider its viability in the future, based upon a projection of 25 generations out 50 years. As spelled out in the species assessment report, USFWS attempted to utilize the best available scientific information to characterize the viability of the SNRF based on Resiliency, Redundancy, and Representation.

The species assessment also considered a variety of environmental and demographic characteristics important to the viability of the SNRF. Those ranged from environmental characteristics such as the extent of subalpine habitat, depth of winter snow cover, rodent and leporid populations, and the presence of whitebark pine. Risk factors affecting the environmental characteristics continue to be highly publicized as climate change, global temperatures, extreme variability in annual weather conditions, and an increase in drought events are all featured in the media and in scientific literature.

Yosemite National Park

Yosemite Park biologists have consistently surveyed for SNRF since 2011 with a high degree of effort totaling 50 cameras with three in the area of past detections. Despite this effort, cameras have only detected nine animals, all north of Tioga Pass, with the most recent detection in September of 2018. Scat survey results since 2011 have identified only one female and three

¹ U.S. Fish and Wildlife Service. 2018. Species Status Assessment Report for the Sierra Nevada Distinct Population Segment of the Sierra Nevada Red Fox. Dated February 2018. Sacramento Fish and Wildlife Office, Sacramento, California. 53 pp.

different males with a fifth individual still being identified. In recent years biologists have also adjusted survey techniques and habitat specificity, consistent with CDFW protocol on the Inyo and Sierra national forests, to increase detection probability.

CSERC biologists have also assisted YNP biologists with photo-detection game camera surveys throughout the summer-fall season in high elevation areas within Yosemite Park over a number of years. None of those years of surveys produced photo evidence of SNRF, although a wide range of other furbearer species were consistently documented. Having so many years of cameras set up in suitable SNRF habitat (in both the Stanislaus National Forest and Yosemite National Park) with so few detections underscores the evidence consistent with the USFWS species assessment that the SNRF population is extremely limited and scattered, and thus vulnerable to inbreeding and hybridization.

Stanislaus National Forest

CSERC has been using remote cameras in a cooperative effort with biologists with both the Stanislaus National Forest and Yosemite National Park (noted above) to assess the presence of rare forest carnivores over the past 15 years. At one location early in those years of surveys, a significant number of SNRF photos were taken in the national forest at the very crest of the range at a site north of Sonora Pass. Despite the placement of high numbers of game cameras from the Ebbetts Pass area south to the Emigrant Wilderness boundary with Yosemite National Park, the number of positive SNRF detections has been extremely limited. Fox detection photos in the area south of Ebbetts Pass in October 2015 (see Appendix A) and a few fox photos from the area south of the Sonora Pass in October 2016 are the only successful evidence of SNRF detections by CSERC cameras.

Inyo and Sierra National Forests

The USFWS proposed rule document states that the Sierra Nevada population of SNRF in the general vicinity of Sonora Pass (Ebbetts Pass to Yosemite) is one of only two small known populations of SNRF in California, with the Lassen population being a separate DPS associated with SNRF in the southern Cascade range of Oregon and California. However, spurred by a camera detection in YNP in 2014, CDFW began an extensive effort to search for SNRF in other parts of the high Sierra in the fall of 2018. This ongoing work has resulted in discoveries of small populations in the southern part of the DPS with three fox detections near the YNP boundary near Donohue Pass/Mt. Lyell and 17 detections in the Mono Creek drainage. The Mono Creek population consists of at least three individuals and continuous detections indicate they are residents. Most of the detections are on the Sierra National Forest, west of the Sierra Crest, with four confirmed detections on the Inyo National Forest (McGee Creek, and north of Thousand Island Lake in the upper San Joaquin River watershed). This new information indicates that the limited population of the species is more dispersed throughout the Central Sierra, but in extremely low numbers with isolated family groups and in very specific habitat. This new science further adds to the justification for listing.

Coyote Competition

As part of CSERC's years of partnering with both Forest Service and Park Service biologists in cooperative communications and surveys, CSERC has attempted to assess if there is information in the Center's photo results that could contribute toward a fuller picture of the status of the SNRF. Cameras have shown the presence of coyotes at high elevations within SNRF suitable habitat. Additionally, two coyotes were detected at photo-stations downslope and along the Cooper Peak-Castle Peak ridgeline in August and September of 2018. CDFW has also detected coyotes on their cameras at high elevations on the Inyo and Sierra national forests. The fact that coyotes are proven to be overlapping with the habitat of the SNRF reinforces concerns over the potential for competition with SNRF for prey and also the possibility of coyotes preying upon the SNRF or its young when opportunities allow. (See examples of coyotes at stations set up by CSERC biologists at very high elevations in Appendix B of these comments.)

Coyote presence at photo-detection cameras during the winter season is also confirmed, likely due to diminished snowpack and milder winter conditions. The concern about the movement of coyotes into the high elevations during the winter season is a factor identified for consideration in the listing process:

Based on recent surveys, coyotes are present in the Sonora Pass area at the same elevations as SNRF during the summer months, although the average elevation for coyotes appears to be lower than average elevation for SNRF (Quinn and Sacks 2014, pp. 11, 35). Coyotes also appear to outnumber SNRF in the area (Id. at 12). From 2011 to 2013, genetic tests of scats found in the area considered potentially capable of supporting SNRF identified 31 individual coyotes, but only 24 SNRF (including 6 hybrid pups of SNRF and nonnative males) (Id. at 2, 12). Four coyotes were present for 1 year or longer, and were therefore likely resident (Id. at 12). Several of the coyotes were related to each other, suggesting they were establishing territories and raising pups (Id.). One such breeding pair was located in early April 2013 (during SNRF pup-rearing season) at an elevation of 3,000 m (9,843 ft). (2018 USFWS Species Status Assessment, p. 21).

Also of importance is the Decreased Viability Scenario conducted by USFWS at part of the species assessment:

1. (3) Decreased Viability Scenario (Current conditions worsen in the future):
 - Habitat warms such that coyotes are no longer uncommon.
 - Winter and spring snowpacks decrease such that coyotes are relatively common in most areas of the range and are able to compete successfully with SNRF for leporid prey.
 - Rodent prey available to SNRF significantly decreases, due either to reduced rodent populations, competition from coyotes, or exclusion of SNRF from hunting areas by coyotes.
 - Access to leporid prey becomes difficult due to low snowpack or low leporid population numbers.

- Whitebark pine nut caches become increasingly scarce.
- Population of native SNRF declines below current numbers, either in response to deleterious chance events, or as part of a longer-term decline resulting from inbreeding depression or other stressors.
- A single, small, Sierra SNRF population remains in the center of the range, and that population exhibits decreased resiliency, either in response to chance events or to other stressors.
- Current levels of hybridization increase significantly and tend to swamp out and replace adaptive native alleles.

Under each of the stressors in the future condition analysis we identify which scenario is most likely and why based on the best available information at this time. We indicate our confidence of this assessment of future trend based on the degree of uncertainty an action or event will occur, and if it occurs, the level of habitat or population change that may result (2018 USFWS Species Assessment, p. 30).

Analysis of that scenario and extensive projections on climate trends resulted in the following summary conclusion:

“Summary: Based on these projections, in 50 years we expect average snowpacks in the central Sierras (the current location of the only known Sierra SNRF population) will likely be lowest, regardless of climate change scenario, followed by the southern Sierras and then the northern Sierras. This likely means loss of habitat with snowpacks sufficiently high to exclude most coyotes. The actual extent of such loss is unclear, but based on comparisons of current snowpack levels (Figures 3a through 3c) with projected snowpack levels (Figures 6a through 6f), losses will likely be considerable to extensive under moderate to severe climate change scenarios. Projections for the period beginning in slightly more than 50 years show more snowpack loss in all areas under all but the best case climate change scenario. This should be considered even for 50-year projections because snowpack may begin dropping towards the new levels prior to the end of the 50-year period. The lowest projected average snowpack levels (about 250 mm SWE (9.8 in)) are in the mid Sierras under the worst case climate scenario, slightly after 50 years.

Overall, habitat with sufficient snowpack is likely to decrease significantly, but not completely. This may result in a situation about halfway between the “Status Quo” and “Decreased Viability” scenarios, most likely after 50 years.” (2018 USFWS Species Assessment, pp. 35-36).

The above summary information provided by USFWS in the species assessment further points to diminished snowpack conditions and the increased potential for competition or predation by coyotes potentially becoming worse, rather than better, for the SNRF. We believe that the

quality of the species assessment analysis and the well-founded projection of conditions out 50 years is a projection that strongly supports the listing of the Sierra DPS of SNRF.

Winter Recreation Threats

The presence of coyotes as a competitor or a predatory threat to SNRF is an issue that also can be exacerbated by land management actions on federal lands. As USFWS staff are fully aware, the Stanislaus National Forest's 2018 draft Record of Decision for Over-Snow Vehicle Use would change the existing Stanislaus Forest Plan prohibition against motorized use in Near Natural Semi-Primitive Non-Motorized roadless areas to allow for snowmobiles to travel into the Pacific Valley Near Natural roadless area (adjacent to confirmed CSERC SNRF detections) and the Eagle Near Natural roadless area (which contains extensive areas of suitable SNRF habitat). The species assessment (map 4) shows where snowmobiles are allowed in the Sonora Pass SNRF population area. However, if the Stanislaus Forest Plan is approved, it would significantly expand legal snowmobile use outside of the USFWS 2018 map and into occupied and/or suitable SNRF habitat.

The fact that a current USFS winter recreation management plan's draft Record of Decision specifically removes existing motorized prohibitions allowing legally-authorized snowmobile use in two Inventoried Roadless Areas and a 400-acre open snowmobile area in occupied SNRF habitat, represents a significant threat to the DPS and should be considered by USFWS. Specifically, the species assessment addresses factors limiting prey availability:

Rodent Prey: As discussed above (under the Subalpine habitat and coyote presence discussion at the beginning of Section 4.1), rodent population numbers in subalpine areas have likely increased somewhat due to increased primary productivity. However, there are several factors that may limit their availability to SNRF in specific areas:

- Snowmobile traffic compacts snow, thereby reducing temperature and available oxygen in subnivean spaces and restricting subnivean rodents from those areas or lowering their survival (Neumann and Merriam 1972, pp. 210–211; Schmid 1972, p. 37; CBD 2011, pp. 23–24).
- Snowmobile trails may allow coyotes easier access into areas that would otherwise be difficult to access due to deep snow (Rich 2014a, p. 1).” (2018 Species Status Assessment, USFWS, p. 24).

While there is still limited understanding of the extent and significance of snowmobile and other recreational impact on SNRF habitat—through increased coyote incursion, diminished subnivean rodent and leporid populations, disruption of mating and denning habits, or other factors—it is one of the only activities related to the SNRF that humans currently have the mechanisms and ability to control. Inbreeding, disease, scarcity of whitebark pine, diminished annual snowpack, and other factors are presently outside the control of land managers. But a change in management scenarios that authorizes or allows for motorized snowmobile use in

known occupied or highly suitable habitat for SNRF is a management action that can only serve to increase the variety of risk factors impacting the short- and long-term viability of the species.

Incorporation of New Science

Presentations and updates provided by agency staff at the Sierra Nevada Red Fox Working Group session in Redding on February 7, 2020, contained some of the most recent, best available scientific information related to the SNRF and the status of threats facing the Sierra Nevada DPS. Our organizations are encouraging each of the agencies that had staff present at the workshop to submit any relevant new science information as it pertains to the Sierra Nevada DPS of SNRF. According to staff at Yosemite National Park, the aforementioned detection data from 2011-2019 may be the extent of what the Park has by way of new information. We have not heard whether the U.S. Forest Service will submit comments or input. It is our understanding that CDFW plans to submit formal comments on this listing proposal, and we encourage the full incorporation of these comments into the listing consideration.

The collective research shared by the scientists in attendance at the SNRF working group meeting in Redding showed that detections of SNRF between Ebbetts Pass and the Mono Divide represent isolated distributions associated with the small population size of the species. Accordingly, the risk of genetic isolation remains extremely high. New information further confirms that coyote presence continues to be detected in occupied SNRF areas. Again, while we acknowledge that possible coyote competition with SNRF and predation by coyotes are determined by USFWS to be less of a major threat factor to the SNRF than the small population size and diminished resiliency of the DPS, the incursion of coyotes and other potential habitat pressures cannot be discounted as one of the many significant—possibly even causal—risk factors that justify not only listing the species as endangered, but also the implementing of forward-thinking management scenarios that protect key habitat.

We have provided in Appendix C additional citations to literature that may be pertinent to the threats identified in the proposed rule. Topics covered include:

- Small population size, vulnerability to inbreeding and low reproduction
- Coyotes preying on fox or young
- Winter recreation impacts on subnivean rodents or easing access for coyotes

Conclusion

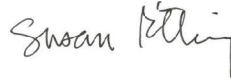
It is the view of our organizations that the latest study results, data, field observations, and genetic analysis of the SNRF continue to validate the 2018 species assessment. Listing can also provide additional resources for research that will identify new scientific information for the species, aiding in recovery. We collectively agree that the best available science confirms the need to list this species as endangered under the Endangered Species Act. Such a decision will strengthen its legal status and lead to the development of a recovery plan to help ensure the survival of this rare forest carnivore.

Thank you for the opportunity to provide these comments. Should you have any questions, please contact Pamela Flick, Defenders California program director, at pflick@defenders.org or 916-442-5746.

Sincerely,



John Buckley
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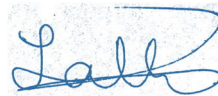
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APPENDIX A

Examples of photo detections – Southwest of Ebbetts Pass – 10/29/2015





Photo detection – Sonora Pass area – 10/2015

APPENDIX B

Examples of coyotes detected at photo-stations at high elevations

Gaylor II – 14 coyote detection days, 40 survey days, 10,644 feet



7-10-2015

Kuna II – 12 coyote detection day , 1 multiple detection, 47 survey days, 10,938 feet



9-15-2015

McCabe I – 7 coyote detection days, 1 multiple detection, 44 survey days, 11,012 feet



9-15-2015

Appendix C

Scientific literature for Sierra Nevada red fox listing determination

March 2020, compiled by Jennie Miller, Senior Scientist, Defenders of Wildlife

Small population size, vulnerability to inbreeding and low reproduction

- Evidence and discussion of introduction and expansion of nonnative red foxes (Lewis et al. 1995; Lewis, Jeffrey C., Kevin L., and Golightly 1999)
- Sacramento Valley red fox shows evidence of hybridization with introduced red foxes, designation of tentative hybrid zone (Sacks et al. 2010)
- Species distribution model (Quinn et al. 2018)
- Genetic structure in Oregon (Quinn et al. 2017)
- Confirmed southernmost occurrence of Sierra Nevada red fox surveyed in 2015-2018 (Siemion et al. 2019)

Coyotes preying on fox or young

- Rural red foxes experienced 40% mortality by coyotes in IL (Gosselink et al. 2007)
- Prey overlap between Sierra Nevada red fox and coyote higher than expected (13 of 28 prey species) (Poisson et al. 2019; note this is an unpublished conference abstract)
- Evidence of multiple fox species avoiding coyote habitat, potentially to minimize overlap with coyotes and risk of interaction with coyotes (kit foxes, Lonsinger et al. 2017; also see citations in Longsinger et al: swift foxes, Thompson and Gese 2007 and San Joaquin kit foxes, Nelson et al 2007) (red foxes, Voigt & Earle 1983) (red foxes, Gosselink et al. 2003)
- Competition for prey may not limit red fox: Little evidence that dietary overlap between coyotes and red foxes is suppressing red fox populations in PA (Dodd & Whidden 2018)

Winter recreation impacts on subnivean rodents or easing access for coyotes

- Snowmobile trail presence good predictor of coyote activity, which could increase interactions or effects on other species (Bunnell et al. 2006)
- The Influence of Snowmobile Trails on Coyote Movements during Winter in High-Elevation Landscapes,
<https://journals.plos.org/plosone/article/file?id=10.1371/journal.pone.0082862&type=printable>
- Ecology of Red Fox (*Vulpes Vulpes*) in the Lassen Peak Region of California, USA,
http://www.carnivoreconservation.org/files/thesis/perrine_2005_phd.pdf
- Snowmobile Activity and Glucocorticoid Stress Responses in Wolves and Elk,
https://s3.amazonaws.com/academia.edu.documents/40336693/Snowmobile_Activity_and_Glucocorticoid_S20151124-17209-acodv8.pdf?response-content-disposition=inline%3B%20filename%3DSnowmobile_Activity_and_Glucocorticoid_S.pdf&X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Credential=AKIAIWOWYYGZ2Y53UL3A%2F20190813%2Fus-east-1%2Fs3%2Faws4_request&X-Amz-Date=20190813T211807Z&X-Amz-Expires=3600&X-Amz-SignedHeaders=host&X-Amz-Signature=1e70f4e4edce0099f824194909cdb45659035a9c837d22e086579b90d9d5bce8
- The effect of snowmobile trails on coyote movements within lynx home ranges,
<https://scholarworks.umt.edu/cgi/viewcontent.cgi?article=7467&context=etd>

- Assessing the cumulative effects of linear recreation routes on wildlife habitats on the Okanogan and Wenatchee National Forests, <https://www.fs.usda.gov/treearch/pubs/6081>
- SELECTION OF WINTER HABITAT BY BOBCATS (LYNX RUFUS) ON THE QUABBIN RESERVATION, MASSACHUSETTS, https://www.originalwisdom.com/wp-content/uploads/bsk-pdf-manager/2019/03/McCord_1974_Selection-of-winter-habitat-by-bobcats-on-Quabbin_Tracking.pdf
- Impacts of snow compaction from human recreation on the biota of snowy regions, <https://search.proquest.com/openview/8b6b8361966f5346ef9125b04bfd3bc4/1?pq-origsite=gscholar&cbl=18750&diss=y>
- Coyote Diet and Movements in Relation to Winter Recreation in Northwestern Wyoming: Implications for Lynx Conservation, <https://digitalcommons.usu.edu/cgi/viewcontent.cgi?article=1775&context=etd>

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