



**The Wildlife Society**  
**Western Section**  
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March 27, 2022

Public Comments Processing  
Attn: FWS-R8-ES-2021-0108  
U. S. Fish and Wildlife Service  
MS: PRB/3W  
5275 Leesburg Pike  
Falls Church, VA 22041-3803

**Subject: Comments on the Federal Listing of Foothill Yellow-legged Frog (*Rana boylei*) Under the federal Endangered Species Act (1973, as amended) (FWS-R8-ES-2021-0108)**

### **Summary of Comments**

The Western Section of the Wildlife Society (TWS) applauds the United States Fish and Wildlife Service (Service) for the proposed listing of the foothill yellow-legged frog (*Rana boylei*) (FYLF). However, we believe the listing as proposed to be insufficient, and we believe that four of the two clades of this species deserve additional listing protection.

### **The Basis for Comments by the Western Section of The Wildlife Society**

TWS was founded in 1937 and is a non-profit professional society representing wildlife biologists, managers, and educators dedicated to excellence in wildlife stewardship through science and education. Our mission is to inspire, empower, and enable wildlife professionals to sustain wildlife populations and habitats through science-based management and conservation.

The Western Section of TWS represents over 1,000 professional wildlife biologists residing in Nevada, California, Hawaii, and Guam. Our members have extensive experience in addressing MBTA compliance for take of migratory birds. Our professional training and experience provide a strong basis for providing comments regarding authorization for incidental take of migratory birds, in particular the effectiveness of current BMPs for avoidance and minimization.

The Western Section's Conservation Affairs Committee (CAC) comprises professional wildlife biologists in California, Nevada, and Hawaii, who review and provide comment on plans, policies, or recommendations affecting conservation of wildlife and habitats within those states. The committee also reviews legislative proposals, administrative regulations, environmental assessments and impacts statements, and other issues affecting wildlife and wildlife habitat

within the Western Section regional area and prepares comments on behalf of the professionals in the Western Section.

### **Summary of Understanding of Proposed Listing**

The Western Section CAC has reviewed the proposed listing of four (4) Distinct Population Segments (DPS) of FYLF under the federal Endangered Species Act (1973, as amended; ESA) (Federal Register 50 CFR, Vol. 86, No. 246, pp 73914 – 73945).

The current listing proposal (Fed Reg op. cit) relies heavily on recent genetic work that concludes that six (6) DPSs, differentiated by watershed boundaries, occur within the range of the species. As currently understood, the *North Coast* DPS occurs coastally from California's Northern Bay Area and the Cascade Range north into Oregon; this DPS includes both the Northern California unit and the Oregon unit. The *North Feather* DPS occurs in the Feather River Drainage generally in Plumas and Butte Counties. The *North Sierra* DPS is in the northern Sierra in Yuba, Sierra, Nevada, and Placer Counties while the *South Sierra* DPS extends from the South Fork American River south to the Tehachapi Mountains. The *Central Coast* DPS occurs from the San Francisco Bay Area south to into the Santa Cruz and Gabilan Mountains and the *South Coast* DPS occurs coastally from the Santa Lucia Mountains south into the Transverse Ranges.

The proposed rule recommends listing two (2) DPSs, *South Sierra* and *South Coast*, as Endangered under the ESA and two (2) DPSs, *North Feather River* and *Central Coast*, as Threatened under the ESA. Under the proposed listing, two (2) remaining DPSs, *North Coast* and *North Sierra*, will not be listed under the ESA.

### **Recommendations and Considerations**

The CAC wholeheartedly supports the listing of FYLF under the ESA. However, we believe the listing as proposed to be insufficient. Despite the heightened concern for this species' future, increased survey effort, and increased protection at the California state level, population extirpations have still amounted to approximately 15% to near 40% *per decade* from 2000 to 2020, range-wide, in all clades (USFWS 2021). To provide a common groundwork, the U.S. Fish and Wildlife Service (Service) is reminded here the definitions of Endangered and Threatened with which we concern ourselves: **“Endangered” means a species is in danger of extinction throughout all or a significant portion of its range. “Threatened” means a species is likely to become endangered within the foreseeable future.** By the Service's own analysis, every one of the six recognized clades should be considered either Threatened or Endangered. Current and historic numerical declines and range contractions due to numerous stressors have severely impacted FYLF *throughout its range* (Table 1).

**Table 1. Percent loss of occupancy for Foothill Yellow-legged Frog across its range (from USFWS 2021).**

Discreet Population Segment	Current Occupancy (records since 2000)	Percent Net Loss and Notes
<i>North Coast</i> (includes both the Northern California unit and the Oregon unit)	75% in Oregon, 68% in California	25% in Oregon, 32% in Northern California. Despite occupancy, relative abundances are low. (USFWS 2021, Pages 130-131). Recruitment low in places (USFWS 2021, Page 133).
<i>North Sierra</i>	70%	30%. Low abundance and limited connectivity between populations (USFWS 2021, Page 136).
<i>North Feather</i>	70%	30%. Abundances largely unknown (USFWS 2021, Page 135).
<i>Central Coast</i>	42%	58%. "Fewer than half of all known occurrences are known to be occupied" (USFWS 2021, Page 141).
<i>South Coast</i>	8%	92%. "Recent observations... are limited to only two creeks... (USFWS 2021, Page 143).
<i>South Sierra</i>	43%	57%. Low abundance (USFWS 2021, Page 139).

We commend the Service for proposing a listing action; however, we believe that *Rana boylei* warrants listing range-wide under the ESA. Proportionally different management regimes may be required for differing DPSs; however, ALL DPSs have had range contractions, declines, and generally face the same suite of threats.

The Service's analysis in the proposed listing depends largely on a Population Viability Analysis (PVA) (Rose et al. 2020), which models three future scenarios ("low change," "mean change," and "high change"). As reported in the Service's own supporting document (USFWS 2021, page 5; Rose et al. 2020 is not available to the public) "*population viability is projected to decrease across the foothill yellow-legged frog's range under all three future scenarios*" (emphasis ours). Allowing decreasing population viability among clades that already have decreased by >30% is neither protection, nor recovery, and does not fit the mandate of the ESA. Diving deeper, *four (4) of the seven (7) units* [breaking the North Coast unit into Northern California and Oregon units] *would be at risk of unit-wide extirpation or functional extirpation under the mean change scenario* (USFWS 2021, page 5). By the Service's definition then, these four units (specifically, North Feather, Central Coast, South Coast, and South Sierra) are currently Endangered and are likely to become extinct. **Therefore, we recommend that the listing proposal be revised to list the *North Feather* and *Central Coast* DPSs as Endangered.**

The other three (3) units (specifically, the Northern California and Oregon units of the North Coast, and North Sierra) have undergone numerical and distributional declines and are projected to continue that trajectory under mean change scenarios. While some threats (e.g., drying and drought, the disease chytridiomycosis, extreme flood events, and the effects of climate change) are more strongly affecting population viability in the three southern DPSs, these threats may become more common in the northern part of the range as climate change stressors amplify (USFWS 2021, page 5). **Therefore, we recommend that the listing proposal be revised to list the *North Coast* and *North Sierra* DPSs as Threatened.**

In our view, further comments are required on the decision not to list the *North Sierra* DPS. It is true that threats presented to frogs within this DPS are generally the same as those faced by other at-risk DPSs. However, two threats are inadequately addressed or not addressed at all in the proposed rule. First, the California moratorium on suction dredging is currently being reconsidered and may soon be rescinded. The *North Sierra* DPS has been disproportionately affected historically by suction dredging, and the threats to FYLF due to suction dredging are well documented and easily predictable: direct mortality of eggs, tadpoles, and young-of-year due to suction action of equipment; removal and alteration of habitat; downstream siltation and water quality impacts; changes to streambed morphology and substrate composition due to increased visitorship and equipment manipulation; and increased recreational access into formerly inaccessible habitat. If suction dredging is again approved, these actions will contribute further to the “death by 1000 cuts” that FYLF already face in this region. We believe this threat needs addressing as a future risk.

The listing proposal does not adequately consider the threat posed by the expansion of *Didymosphenia geminata* (“didymo”) into parts of the area designated as *North Sierra*. Didymo is an invasive diatomaceous algae that can produce a dense, mucilaginous coverage of in-stream substrates. It can be found in the North Fork and Middle Fork American Rivers, and when in bloom, it transforms habitat, closing up interstitial spaces used as refuge by frogs and tadpoles. Additionally, it chokes out nutritional algae and diatoms and is unsuitable for forage by young. We believe that without adequately evaluating the risk from didymo, the analysis of present and future threats to FYLF in the *North Sierra* DPS is inadequate.

In our view, further comments are required on the decision not to list the *North Coast* DPS. While drying is more severe in the southern part of the FYLF range, some areas in the Oregon unit of the *North Coast* DPS are also susceptible to drying (USFWS 2021, page 102), and it is predicted that some southern Oregon occurrences will be lost if drought conditions persist and temperatures increase (M. Parker 2021, in litt., as cited in USFWS 2021), which are reasonably foreseeable to occur under most climate models. Further, while occupancy and connectivity are good in the overall *North Coast* DPS, 72 percent of occupied stream segments have relative risks of decline in the medium or high risk categories, and populations are also being affected by altered hydrology, nonnative species, and illegal cannabis operations. Thus, while these units should continue to be closely monitored for further declines, the ongoing threats coupled with climate change warrant protection of this DPS.

## **Conclusion**

In summary, the CAC of the Western Section of the Wildlife Society supports the listing of FYLF under the ESA. Genetic subdivision is noted within the range of the species, and six (6) clades or DPSs are recognized. Because all DPSs have experienced declines and face known and unknown threats of stable or increasing intensity, two (2) DPSs qualify as Threatened (likely to become Endangered without ESA listing), whereas four (4) DPSs certainly qualify as Endangered (likely to become extirpated without ESA listing).

We recognize that focusing listing on the DPSs that are at greater risk will help funnel scarce regulatory and financial resources towards recovery efforts in those geographies. However, even the USFWS’ assessment for this species states: “While the species is likely to persist into the future beyond 40 years, declining trends are likely to continue, and extirpation of entire genetic clades are possible within 40 years” (USFWS 2021, page 5).

All DPSs face numerous threats, both known and theoretical. All DPSs will almost certainly face additional threats in the future, including increased fire frequency and intensity, altered and

reduced precipitation regimes, increased threats from recreation, increased demand for water delivery, impacts from encroaching urbanization, and suction dredging among other threats. Demands for water will not decrease in the future. Hydroelectricity is a necessary commodity not likely to be curtailed. As such, the Conservation Affairs Committee of the Western Section of the Wildlife Society recommends that the *North Coast* and *North Sierra* DPSs be listed as Threatened, the *North Feather*, *Central Coast*, *South Coast* and *South Sierra* be listed as Endangered; refer to Table 2).

**Table 2. TWS Western Section CAC recommendation for ESA listing status by DPS.**

Discrete Population Segment	ESA Proposed Rule	TWSWS-CAC Recommendation
<i>North Coast</i>	Not Listed	Threatened
<i>North Sierra</i>	Not Listed	Threatened
<i>North Feather</i>	Threatened	Endangered
<i>Central Coast</i>	Threatened	Endangered
<i>South Coast</i>	Endangered	Endangered
<i>South Sierra</i>	Endangered	Endangered

The Western Section CAC thanks you for the opportunity to provide comments regarding the intent of the Service to list the FYLF under the ESA. Please contact Kelly Holland, CWB®, the immediate Past-President and the Conservation Affairs Committee Chair for the Western Section of TWS ([conservation@tws-west.org](mailto:conservation@tws-west.org)), with any follow up questions regarding these comments.

Sincerely,



Kelly Holland, CWB  
 Immediate Past President and Conservation Affairs Committee Chair  
 Western Section, The Wildlife Society

**Literature Cited**

Rose, J.P., S.J. Kupferberg, and B.J. Halstead. 2020. Identifying drivers of population viability for the Foothill Yellow-legged Frog, *Rana boylei*, using time series of egg mass counts. Final U.S. Geological Survey Restricted-File Federal Interagency Report to the Sacramento Fish and Wildlife Office. 105 pp. and supplementary data.

U.S. Fish and Wildlife Service (USFWS). 2021. Species status assessment report for the foothill yellow-legged frog (*Rana boylei*), Version 2.0. October 2021. U.S. Fish and Wildlife Service, Sacramento Fish and Wildlife Office, Sacramento, California.