



## DEPARTMENT OF THE INTERIOR

### Fish and Wildlife Service

#### 50 CFR Part 17

[Docket No. FWS–R8–ES–2021–0009; FF09E21000 FXES11110900000 212]

### Endangered and Threatened Wildlife and Plants; Three Salamander Species Not Warranted for Listing as Endangered or Threatened Species

**AGENCY:** Fish and Wildlife Service, Interior.

**ACTION:** Notification of findings.

**SUMMARY:** We, the U.S. Fish and Wildlife Service (Service), announce findings that three salamander species, the Samwel salamander (*Hydromantes samweli*), Shasta salamander, (*H. shastae*), and Wintu salamander (*H. wintu*), are not warranted for listing as endangered or threatened species under the Endangered Species Act of 1973, as amended (Act). However, we ask the public to submit to us at any time any new information relevant to the status of any of the three species or their habitats.

**DATES:** The findings in this document were made on [INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** Detailed descriptions of the bases and supporting information for these findings is available on the Internet at <http://www.regulations.gov> at Docket No. FWS–R8–ES–2021–0009 or by contacting the person specified under **FOR FURTHER INFORMATION CONTACT**. Please submit any new information, materials, comments, or questions concerning this finding to the appropriate person specified under **FOR FURTHER INFORMATION CONTACT**.

**FOR FURTHER INFORMATION CONTACT:** Jenny Ericson, Field Supervisor, U.S. Fish and Wildlife Service, Yreka Fish and Wildlife Office, 1829 S Oregon St, Yreka, CA

96097; telephone 530–841–3115. If you use a telecommunications device for the deaf (TDD), please call the Federal Relay Service at 800–877–8339.

## **SUPPLEMENTARY INFORMATION:**

### **Background**

Under section 4(b)(3)(B) of the Act (16 U.S.C. 1531 *et seq.*), we are required to make a finding whether or not a petitioned action is warranted within 12 months after receiving any petition for which we have determined contains substantial scientific or commercial information indicating that the petitioned action may be warranted (“12-month finding”). We must make a finding that the petitioned action is: (1) Not warranted; (2) warranted; or (3) warranted but precluded. We must publish a notice of these 12-month findings in the *Federal Register*.

### **Summary of Information Pertaining to the Five Factors**

Section 4 of the Act (16 U.S.C. 1533) and the implementing regulations at part 424 of title 50 of the Code of Federal Regulations (50 CFR part 424) set forth procedures for adding species to, removing species from, or reclassifying species on the Lists of Endangered and Threatened Wildlife and Plants (Lists). The Act defines “species” as including any subspecies of fish or wildlife or plants, and any distinct population segment of any species of vertebrate fish or wildlife which interbreeds when mature (16 U.S.C. 1532(16)). The Act defines “endangered species” as any species that is in danger of extinction throughout all or a significant portion of its range (16 U.S.C. 1532(6)), and “threatened species” as any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range (16 U.S.C. 1532(20)). Under section 4(a)(1) of the Act, a species may be determined to be an endangered species or a threatened species because of any of the following 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.

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, 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.

The Act does not define the term “foreseeable future,” which appears in the statutory definition of “threatened species.” Our implementing regulations at 50 CFR 424.11(d) set forth a framework for evaluating the foreseeable future on a case-by-case basis. The term “foreseeable future” extends only so far into the future as the Service can reasonably determine that both the future threats and the species’ responses to those threats are likely. In other words, the foreseeable future is the period of time in which we can make reliable predictions. “Reliable” does not mean “certain”; it means sufficient to provide a reasonable degree of confidence in the prediction. Thus, a prediction is reliable if it is reasonable to depend on it when making decisions.

It is not always possible or necessary to define foreseeable future as a particular number of years. Analysis of the foreseeable future uses the best scientific and commercial data available and should consider the timeframes applicable to the relevant threats and to the species’ likely responses to those threats in view of its life-history characteristics. Data that are typically relevant to assessing the species’ biological response include species-specific factors such as lifespan, reproductive rates or productivity, certain behaviors, and other demographic factors.

In conducting our evaluation of the five factors provided in section 4(a)(1) of the Act to determine whether the Samwel salamander (*Hydromantes samweli*), Shasta salamander, (*H. shastae*), or Wintu salamander (*H. wintu*) (together referred to as the Shasta Complex salamanders) meet the definition of “endangered species” or “threatened species,” we considered and thoroughly evaluated the best scientific and commercial information available regarding the past, present, and future threats for the three species. We reviewed the petition, information available in our files, and other available published

and unpublished information. Our evaluation included information from recognized experts as well as Federal and State government resource and land management agencies.

We developed a species status assessment (SSA) (Service 2021a, entire) for the Shasta Complex salamanders that contains more detailed biological information, species' needs information, and information on the threats facing the three species and their habitat now and into the future. We also developed a species assessment form (Service 2021b, entire) that contains our analysis of the listing factors and documents our determination that these species do not meet the definition of an endangered species or a threatened species. This supporting information can be found on the Internet at <http://www.regulations.gov> under Docket No. FWS-R8-ES-2021-0009. The following is an informational summary of the finding for the Shasta Complex salamanders and information found in the SSA and species assessment form for the three species. Please see those documents for additional information.

#### Previous Federal Actions

On July 11, 2012, we received a petition from the Center for Biological Diversity to list 53 species of reptiles and amphibians, including the Shasta salamander (*Hydromantes shastae*), as endangered or threatened under the Act (Center for Biological Diversity 2012, entire). On September 18, 2015, we published in the *Federal Register* (80 FR 56423) our 90-day finding that the petition presented substantial scientific or commercial information indicating that listing the Shasta salamander as endangered or threatened may be warranted based on impacts to the species' habitat (Factor A) and other natural or humanmade factors (Factor E). On April 23, 2018, the petitioners (Center for Biological Diversity 2018, entire) supplied us with a publication regarding a taxonomic split of the Shasta salamander into three separate species (Samwel salamander (*Hydromantes samweli*), Shasta salamander (*H. shastae*), and Wintu salamander (*H. wintu*) (Bingham *et al.* 2018, entire)), and requested that we consider this information in

our status review. On November 29, 2018, we received a complaint for not completing the 12-month finding. Per a court approved settlement agreement, we agreed to deliver a 12-month finding for the Shasta salamander to the *Federal Register* by April 30, 2021. This document complies with the settlement agreement.

### **Species Description**

The Shasta salamander was first described in 1953, as a single species (Gorman and Camp 1953, entire). Since that time the scientific community has determined that the Shasta salamander is made up of three separate individual species (Bingham *et al.* 2018, entire). The three species are identified as the Samwel salamander (*Hydromantes samweli*), Shasta salamander (*H. shastae*), and Wintu salamander (*H. wintu*). We refer to the three species in the species assessment form (Service 2021b, entire), the SSA (Service 2021a, entire), and this document as the Shasta Complex salamanders. The three salamanders are lungless web-footed salamanders that breathe through their skin and the mucous membrane in their mouth and throat. The three species are very similar except that the Shasta salamander has a longer third digit on the pes (rear foot). The approximate length of the three species is approximately 2 to 2.5 inches (51 to 64 millimeters). The three species have short, strongly tapered, generally blunt-tipped tails and broad, flattened heads.

### **Taxonomy and Genetic Information**

From 1953 to 2018, the Shasta salamander was recognized as a single species (Gorman and Camp 1953, entire; Gorman 1964, entire; Rovito 2010, entire). However, a high degree of variation in genetic structure and genetic divergence was found after both mitochondrial and nuclear DNA studies of the species were completed (Wake *et al.* 1978, entire; Wake and Papenfuss 2005, entire; Bingham 2007, entire). As such, and as noted above, in 2018 the Shasta salamander was split into three separate species (Bingham *et al.* 2018, entire). Based on this study, there are three divergent lineages made up of five

genetic clades (a group of organisms that evolved from a common ancestor) (Bingham *et al.* 2018, pp. 403, 407). *Hydromantes shastae* and *H. wintu* make up two of the clades, with *H. samweli* having three genetic clades (Bingham *et al.* 2018, p. 408). This information has been published and the split of the Shasta salamander has been accepted by the scientific community. After review of this information, we have determined that the three species are listable entities under the Act.

### **Habitat/Life History**

The three species are strictly terrestrial for their entire lives and must remain moist in order for individuals to absorb oxygen through their skin. Consequently, the three salamanders are surface active only when it is moist and cool. Historically, the three species were thought to occur only in and around limestone rock outcrops or within limestone caves. In the last 25 years, the three species have been found in a broader range of habitats away from limestone, including other types of rock outcrops, and even habitats with no rock outcrop associations, such as areas with thick vegetative litter (Lindstrand 2000, pp. 259–261; Nauman and Olson 2004, pp. 35–38; Lindstrand *et al.* 2012, pp. 236–241).

### **Range/Distribution**

The historical range of the three species is restricted to unglaciated and non-volcanized forested areas within the lower McCloud River, Pit River, Sacramento River, and Squaw Creek watersheds in Shasta County, California, with Samwel salamander extending slightly further west. The absence of glaciation and volcanic activity has maintained the limestone and other rock outcrops and subsurface characteristics of the area occupied by the three species. Although current survey efforts have identified the distribution of the three species within their respective ranges, the exact distribution and abundance of the three species within the larger range of suitable geologic habitat around and near Shasta Lake is unknown, as surveys in such areas are difficult to obtain given

the physical restrictions of accessing the terrain and difficulty of detecting individuals.

The current range of the three species is similar to their historical range with likely some loss due to the construction of Shasta Dam and subsequent inundation from Shasta Lake in the 1950s.

### **Evaluation of Status**

We have carefully assessed the best scientific and commercial information available regarding the past, present, and future threats to the Samwel salamander, Shasta salamander, and Wintu salamander, and we evaluated all relevant factors under the five listing factors, including any regulatory mechanisms and conservation measures addressing these threats and the cumulative impact of these threats. Our analysis identified the threats from habitat loss, degradation, and modification due to vegetation management and wildfire (Factor A) and the effects of increased temperature and reduced moisture from climate change (Factor E) as the main threats currently facing the three species. We also identified the additional threat of the proposed action of raising Shasta Dam and the subsequent removal and inundation of habitat for the three species (Factor E).

Existing conservation measures for the species and their habitats include State and Federal protections and conservation measures. The Shasta salamander was listed by the State of California as a threatened species under the California Endangered Species Act (CESA) before it was split into three separate species. The State has not officially recognized the split; however, the State listing provides measures to protect and conserve all three species. For example, any road construction or maintenance actions associated with timber harvest plans or other roadways managed by Caltrans, the counties, or other private landowners undergo environmental compliance review with the State under CESA and the California Environmental Quality Act, to ensure that impacts to species listed as threatened by the State are mitigated. The three species are also managed by the



U.S. Forest Service and Bureau of Land Management as sensitive species and currently receive protection through conservation measures and best management practices under the Northwest Forest Plan's Survey and Manage program and Sensitive Species programs. These measures reduce or eliminate impacts to rock outcrops, limestone areas, and known salamander occurrence sites during road construction and maintenance activities as well as any vegetation management actions.

After review of the threats identified above and cumulative effects facing the species, as well as existing conservation measures, we conclude that habitat loss or disturbance from various threats (e.g., vegetation management activities, wildfire, climatic changes) within the range of the Samwel, Shasta, and Wintu salamanders have likely impacted individuals of each species. However, the magnitude and extent of these impacts up to the present time have not impacted the resiliency, representation, or redundancy for each species or resulted in a decline in the overall distribution or general demographic condition of any of the three species such that they are in danger of extinction now throughout all of their ranges.

In determining potential future threats facing the three species, we evaluated various climate change projections using downscaled data for interior northern California, which includes the ranges of the three species. Our timeframe for review looked out approximately 15, 30, and 50 years based on the threat information identified below and climate change data. This was our timeframe for our threats analysis of future conditions for the three species to determine if they were likely to become endangered within the foreseeable future (i.e., if they meet the Act's definition of "threatened species") throughout all of their ranges.

In our analysis of potential future conditions, we analyzed the future conditions related to vegetation management, future wildfire conditions, and projected climate change effects such as variability of precipitation events and timing, increased

temperatures, reduced snowpack, and prolonged drought. We also identified the additional threat of the proposed action of raising Shasta Dam and the subsequent removal and inundation of habitat for the three species.

We anticipate that vegetation management activities and wildfire will have a similar degree of impact into the future as they do currently, and that they will not result in impacts to the three species at a level such that they would meet the Act's definition of "threatened species." Although the potential raising of Shasta Dam would affect individuals and inundate or remove additional habitat for the three species, the extent of the potential loss of known detection sites and habitat areas that can support individuals is very limited relative to the overall number of detection sites and remaining available suitable habitat in each species' range.

We expect that existing regulatory mechanisms and conservation measures will continue to help ameliorate or reduce impacts of threats to the species and will protect Shasta Complex salamanders and their habitats now and into the foreseeable future (50 years) such that their resiliency, representation, and redundancy will support their ability to sustain populations in the wild over time.

We also reviewed whether there were any significant portions of the three species' ranges that may meet the definition of endangered or threatened. In our analysis, we did not find any portion of the Samwel, Shasta, or Wintu salamanders' ranges where the threats identified above are currently acting on the three species at a biologically meaningful scale such that the species may be endangered, or are likely to act on the species into the future such that they may be threatened. Therefore, no portion of the three species' ranges can provide a basis for determining that any one of the three species is in danger of extinction now or likely to become so in the foreseeable future in a significant portion of its range.

## **Finding**

Our review of the best available scientific and commercial information indicates that the Samwel salamander, Shasta salamander, and Wintu salamander do not meet the definition of an endangered species or a threatened species in accordance with sections 3(6) and 3(20) of the Act. Therefore, we find that listing the Samwel salamander, Shasta salamander, and Wintu salamander as endangered or threatened species under the Act is not warranted at this time. A detailed discussion of the basis for this finding can be found in the SSA (Service 2021a, entire) and species assessment form (Service 2021b, entire).

### **Request for New Information**

We request that you submit any new information concerning the taxonomy of, biology of, ecology of, status of, or threats to the Samwel salamander, Shasta salamander, or Wintu salamander to the Yreka Fish and Wildlife Office (see **FOR FURTHER INFORMATION CONTACT**), whenever it becomes available. New information will help us monitor these three species and make appropriate decisions about their conservation and status. We encourage Federal, State, and local agencies and stakeholders to continue cooperative monitoring and conservation efforts for the three species.

### **References Cited**

A list of the references cited in this petition finding is available on the Internet at <http://www.regulations.gov> at Docket No. FWS-R8-ES-2021-0009 or upon request from the person specified under **FOR FURTHER INFORMATION CONTACT**.

### **Authors**

The primary authors of this document are the staff members of the Species Assessment Team, Ecological Services Program.

### **Authority**

The authority for this action is section 4 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*).

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**Martha Williams**  
*Principal Deputy Director,  
Exercising the Delegated Authority of the Director,  
U.S. Fish and Wildlife Service.*

[FR Doc. 2021-09489 Filed: 5/4/2021 8:45 am; Publication Date: 5/5/2021]