

## **Recovery Plan for Insect and Plant Taxa from the Santa Cruz Mountains in California**

**Original Approved:** 1998

**Original Prepared by:** Ventura Fish and Wildlife Office

### **DRAFT AMENDMENT**

We have identified information that indicates the need to amend recovery criteria for this species since the recovery plan was completed. In this proposed modification, we synthesize the adequacy of the existing recovery criteria, show amended recovery criteria, and describe the rationale supporting the proposed recovery plan modification. The proposed modification is shown as an appendix that supplements the recovery plan, superseding only section II.A. (pp. 45-48) for *Chorizanthe robusta* var. *hartwegiana* (Scotts Valley spineflower) of the recovery plan.

**For  
U.S. Fish and Wildlife Service  
Pacific Southwest Region  
Ventura, CA**

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### **BACKGROUND INFORMATION**

Recovery plans should be consulted frequently, used to initiate recovery activities, and updated as needed. A review of the recovery plan and its implementation may show that the plan is out of date or its usefulness is limited and therefore warrants modification. Keeping recovery plans current ensures that the species benefits through timely, partner-coordinated implementation based on the best available information. The need for, and extent of, plan modifications will vary considerably among plans. Maintaining a useful and current recovery plan depends on the scope and complexity of the initial plan, the structure of the document, and the involvement of stakeholders.

An amendment involves a substantial rewrite of a portion of a recovery plan that changes any of the statutory elements. The need for an amendment may be triggered when, among other possibilities: (1) the current recovery plan is out of compliance with regard to statutory requirements; (2) new information has been identified, such as population-level threats to the species or previously unknown life history traits, that necessitates new or refined recovery actions and/or criteria; or (3) the current recovery plan is not achieving its objectives. The amendment replaces only that specific portion of the recovery plan, supplementing the existing recovery plan, but not completely replacing it. An amendment may be most appropriate if significant plan improvements are needed, but resources are too scarce to accomplish a full recovery plan revision in a short time.

Although it would be inappropriate for an amendment to include changes in the recovery program that contradict the approved recovery plan, it could incorporate study findings that

enhance the scientific basis of the plan or that reduce uncertainties as to the life history, threats, or species' response to management. An amendment could serve a critical function while awaiting a revised recovery plan by: (1) refining and/or prioritizing recovery actions that need to be emphasized, (2) refining recovery criteria, or (3) adding a species to a multispecies or ecosystem plan. An amendment can, therefore, efficiently balance resources spent on modifying a plan against those spent on managing implementation of ongoing recovery actions.

## **METHODOLOGY USED TO COMPLETE THE RECOVERY PLAN AMENDMENT**

This amendment was prepared by the Ventura Fish and Wildlife Office. We used information from our files, the California Natural Diversity Database maintained by the California Department of Fish and Game, and information from species experts. The amended criteria will be peer reviewed in accordance with the OMB Peer Review Bulletin following the publication of the Notice of Availability.

## **ADEQUACY OF RECOVERY CRITERIA**

Section 4(f)(1)(B)(ii) of the Endangered Species Act (Act) requires that each recovery plan shall incorporate, to the maximum extent practicable, "objective, measurable criteria which, when met, would result in a determination...that the species be removed from the list." Legal challenges to recovery plans (see *Fund for Animals v. Babbitt*, 903 F. Supp. 96 (D.D.C. 1995)) and a Government Accountability Audit (GAO 2006) also have affirmed the need to frame recovery criteria in terms of threats assessed under the five listing factors.

### **Recovery Criteria**

See previous version of criteria in the recovery plan for *Chorizanthe robusta* var. *hartwegiana* (Scotts Valley spineflower) on pages 45-48. The original recovery plan can be found [here](#).

## **SYNTHESIS**

*Chorizanthe robusta* (robust spineflower) is a small annual plant in the buckwheat family (Polygonaceae). Two varieties are recognized (Reveal and Morgan 1989): *Chorizanthe robusta* var. *robusta* (robust spineflower) and *Chorizanthe robusta* var. *hartwegii* (Scotts Valley spineflower). The species, inclusive of both varieties, was listed as endangered in 1994 (Service 1994).

*Chorizanthe robusta* var. *hartwegii* is a narrow endemic restricted to Scotts Valley, Santa Cruz County, California (Service 2009). The variety grows in colonies in wildflower fields on patches of exposed bedrock (Santa Cruz mudstone, Purisima sandstone) overlain with a thin layer of soil in fragmented islands of annual grasslands (Reveal and Morgan 1989, Service 1994). The geographic range comprises approximately 1.3 square kilometers (0.5 square mile), with three populations on four properties: Salvation Army land, Scotts Valley High School land, the Glenwood Open Space Preserve, and the Polo Ranch. The total occupied area is less than 0.4 hectare (1 acre) (Service 2002). In our 2009 5-Year Review, we determined that, in light of the observed decline in numbers of individuals and the extirpation of some colonies since 1992, the abundance of *Chorizanthe robusta* var. *hartwegii* is decreasing.

## **AMENDED RECOVERY CRITERIA**

Recovery criteria serve as objective, measurable guidelines to assist in determining when an endangered species has recovered to the point that it may be downlisted to threatened or that the protections afforded by the Act are no longer necessary and *Chorizanthe robusta* var. *hartwegii* (Scotts Valley spineflower) may be delisted. Delisting is the removal of a species from the Federal Lists of Endangered and Threatened Wildlife and Plants. Downlisting is the reclassification of a species from endangered to threatened. The term “endangered species” means any species (species, sub-species, or DPS) which is in danger of extinction throughout all or a significant portion of its range. The term “threatened species” means any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

We provide both downlisting and delisting criteria for the *Chorizanthe robusta* var. *hartwegii* which will supersede those included in the Recovery Plan for Insect and Plant Taxa from the Santa Cruz Mountains in California as follows:

### **Current recovery criteria (from original recovery plan)**

The interim objective for Scotts Valley spineflower is to avert extinction by establishing conservation easements, restricting activities to those compatible land uses with the plant or acquiring all parcels of private land supporting these species.

The Scotts Valley spineflower may be downlisted when all four parcels of private land that support the species have permanent conservation easements or have been acquired. Conservation measures for the Scotts Valley spineflower are included in a Habitat Conservation Plan with the City of Scotts Valley. Population numbers are stable or increasing.

Delisting of this species may not be feasible due to limited range and limited conservation opportunities.

### **Amended recovery criteria**

Delisting may be warranted when the current downlisting criteria have been met and the species exhibits sufficient resiliency, redundancy, and representation to support long-term viability.

When the downlisting criteria have been met for the species, it can be considered for delisting if:

- (1) Threats are reduced or eliminated so that populations are capable of persisting without significant human intervention, or perpetual endowments are secured for management necessary to maintain the continued existence of the species;
- (2) An *ex situ* seedbank is maintained in a Center for Plant Conservation-affiliated botanic garden. While sufficient seedbank in the soil would typically provide a strategy for the taxon to persist through several years of short- or medium-term drought, it may not be sufficient to persist through long-term drought. Therefore, an *ex situ* seedbank would provide assurance that a population could be reseeded, should long-term drought – or other stochastic events – make it necessary; and

- (3) All existing populations are stable or increasing in the wild for at least 10 years. We expect above-ground population size to fluctuate annually based on response to amount and timing of rainfall (e.g. see Fox et al. 2005). Therefore, a period of 10 years should be long enough to include most of the variability in rainfall that occurs in this region (Zedler & Black 1989; NOAA 2018).

All classification decisions consider the following five factors: (1) is there a present or threatened destruction, modification, or curtailment of the species' habitat or range; (2) is the species subject to overutilization for commercial, recreational scientific or educational purposes; (3) is disease or predation a factor; (4) are there inadequate existing regulatory mechanisms in place outside the ESA (taking into account the efforts by States and other organizations to protect the species or habitat); and (5) are other natural or manmade factors affecting its continued existence. When delisting or downlisting a species, we first propose the action in the *Federal Register* and seek public comment and peer review. Our final decision is announced in the *Federal Register*.

### **Rationale for Recovery Criteria**

We have amended the recovery criteria for *Chorizanthe robusta* var. *hartwegii* to include delisting criteria that incorporate the biodiversity principles of representation, resiliency, and redundancy (Schaffer and Stein 2000) and threats addressed under the five factors. The amended criteria were developed based on the Service's current understanding of the species needs and requirements. This understanding includes information gathered since the original recovery plan was published, such as more recent information about population status and trends, along with an updated understanding of the threats acting on the species. The criteria presented are based on the reduction of threats to the species and include a temporal aspect to ensure that the species is resilient to expected variation within a reasonable time frame.

### **LITERATURE CITED**

- Fox, L.R, H.N. Steele, K.D. Holl, and M.H. Fusari. 2005. Constrasting demographies and persistence of rare annual plants in highly variable environments. *Plant Ecology*.
- Zedler, P.H. and C. Black. 1989. Observations on the creation of artificial habitat for species preservation. Presentation at: Endangered Plant Program Workshop on restoration and creation of vernal pools, Sacramento CA February 14-15, 1989. See pp 3-5, and figures 1 and 2.
- National Oceanic and Atomostic Administration (NOAA). 2018. Climate Monitoring. U.S. Climate Extremes Index. Graph of Cold Season PDSI for the West: <https://www.ncdc.noaa.gov/extremes/cei/> Accessed May 2018.
- Schaffer, M. L., and B. A. Stein. 2000. Safeguarding our precious heritage (Chapter 11), in B.A. Stein, L.S. Kutner, and J.S. Adams editors, *Precious heritage: the status of biodiversity in the United States*. Oxford University Press, New York: 301-321.