

5-YEAR REVIEW

***Poa atropurpurea* (San Bernardino bluegrass)**

GENERAL INFORMATION

Species: San Bernardino bluegrass (*Poa atropurpurea*), a plant species

Date listed under the Endangered Species Act: September 14, 1998 (Service 1998)

Classification: Endangered

Recovery Plan or Outline: There is no recovery plan for San Bernardino bluegrass.

Recovery Priority Number: 2

Critical Habitat Designation: Service 2008. On August 14, 2008, the U.S. Fish and Wildlife Service (Service) designated approximately 2,489 acres (ac) [1,007 hectares (ha)] of critical habitat for San Bernardino bluegrass in San Bernardino and San Diego Counties (Service 2008, p. 47706). The final rule designated eight critical habitat units for on Federal, State, and private lands (Service 2008, pp. 47720, 47734).

State of California classification: None

BACKGROUND

Under the Endangered Species Act of 1973, as amended (Act; 16 U.S.C. 1531 *et seq.*), the U.S. Fish and Wildlife Service (Service), referred to as “we” in this document, maintain lists of endangered and threatened wildlife and plant species (referred to as the List) in the Code of Federal Regulations (CFR) at 50 CFR 17.11 (for wildlife) and 17.12 (for plants). Section 4(c)(2)(A) of the Act requires us to review each listed species' status at least once every 5 years.

Most recent status review: Service 2020. *Poa atropurpurea* (San Bernardino bluegrass) 5-Year Review: Summary and Evaluation. Prepared by the Carlsbad Fish and Wildlife Office, Carlsbad, California. 26 pp.

Federal Register notice announcing this status review: On August 17, 2023, we published a Federal Register notice announcing initiation of the 5-year review of this species, and the opening of a 60-day comment period to receive information (Service 2023a, pp. 56042–56044). We did not receive any comments about San Bernardino bluegrass.

REVIEW ANALYSIS

Species Overview and Habitat: San Bernardino bluegrass is a plant species in the grass family (Poaceae). The species is a dioecious¹, perennial grass with creeping rhizomes (Soreng 2012, entire). This species grows in montane meadow habitat in the San Bernardino Mountains (San Bernardino County), Palomar Mountains (San Diego County), and Laguna and Cuyamaca Mountains (San Diego County).

¹ Individuals produce either male or female flowers.

ASSESSMENT

Information Acquired Since the Last Status Review

This 5-year review was conducted by the Service's Carlsbad Fish and Wildlife Office. We solicited information for this review from the public and interested parties through a Federal Register notice on August 23, 2023. We also conducted a literature search and reviewed information in our files.

SUMMARY OF NEW INFORMATION SINCE 2020

Occurrence Status

In 2020, there were 29 occurrences of *Poa atropurpurea* across the species' range (Service 2020, p. 2). Twenty-seven occurrences were extant or presumed extant, one was vague, and one was extirpated. There has been no change in occurrence number or status since 2020.

Ongoing Research

In 2021, California Botanic Garden received Section 6 grant funding to study population genomics of five listed plant species, including San Bernardino bluegrass. The project will also secure new seed collections, develop propagation protocols, and study the species' mating system and life history (Fraga 2023, p. 1). Propagation efforts and genomic analysis are ongoing (Fraga 2024a, p. 2; 2024b, p. 2).

In 2021, we funded a study to characterize the hydrology of up to six meadows in the San Bernardino Mountains. So far, a piezometer network to monitor water table levels has been installed at three meadows occupied by San Bernardino bluegrass, and data analysis is ongoing (Jenkins 2023).

SERVICE CONSULTATIONS INVOLVING SAN BERNARDINO BLUEGRASS

In 2023, we issued a biological opinion on a U.S. Forest Service (Forest Service) project to manage vegetation on the Cleveland National Forest with prescribed fire and other manual methods (Service 2023b, pp. 2–4). A total of 9 ac (3.6 ha) of designated critical habitat is within the treatment area (Service 2023b, pp. 10–11). Conservation measures for San Bernardino bluegrass include pre- and post-burn monitoring and avoidance measures (Service 2023b, pp. 6, 12). We determined that the proposed action was not likely to jeopardize San Bernardino bluegrass or adversely modify critical habitat (Service 2023b, p. 16).

We also issued a 2023 biological opinion on a landscape restoration project for the North Big Bear area on the San Bernardino National Forest (Service 2023c, pp. 1, 15–17). Within meadow systems, the project includes low-severity prescribed burns, conifer thinning, and using natural materials to restore channels (Service 2023c, pp. 4–7, 10, 19, 21). Meadow-specific conservation measures include avoidance and monitoring during project implementation, in addition to general conservation measures (Service 2023c, pp. 22–27, 29). Due to conservation measures and

anticipated habitat improvements, we determined that the proposed action was not likely to jeopardize San Bernardino bluegrass or adversely modify critical habitat (Service 2023c, pp. 55–57).

CONCLUSION

San Bernardino bluegrass remains extant or presumed extant at 27 occurrences within 24 meadows. Our 2020 5-year review remains a current assessment of the occurrence status and threat or stressor presence, scope, and magnitude. Therefore, we conclude that San Bernardino bluegrass remains an endangered species and recommend no status change.

New Recovery Priority Number: We have updated this species’ recovery priority number from 2 to 8. This change is being made because San Bernardino bluegrass faces a moderate degree of threat, which means that the species will not face extinction if recovery is temporarily held off, although there may be continual population decline or threats to habitat.

RECOMMENDATIONS FOR FUTURE ACTIONS

The following actions will help recover San Bernardino bluegrass by conserving habitat and occurrences, ameliorating threats to habitat and individuals, and supporting research opportunities:

1. Conserve San Bernardino bluegrass occurrences, meadow habitat, and hydrology.
 - a. Work with local, State, and Federal partners to acquire occupied and suitable habitat, and other habitat necessary for ecological processes to maintain meadow habitat. Identify and leverage funding (for example, from Traditional Section 6).
 - b. Provide private landowners with information about San Bernardino bluegrass habitat and explore voluntary conservation opportunities.
2. Adaptively manage habitat to maintain, enhance, or restore habitat, reduce threats, and maintain population viability over time. Identify restoration opportunities and support partners in efforts to plan and implement meadow restoration.
3. Evaluate climate change adaptation frameworks (for example, Resist-Accept-Direct and others) to develop and implement management strategies for San Bernardino bluegrass.
4. Support research to resolve questions about San Bernardino bluegrass life history, ecology, and habitat.
5. Conserve and manage genetic diversity.
 - a. Continue to conserve genetic diversity off-site (*ex situ*) by collecting and conserving seed in conservation seed banks.
 - b. Recommend genetic management strategies using existing frameworks (e.g., Ottewell *et al.* 2016).

- c. Implement additional genetic management strategies if appropriate.
6. Survey suitable meadow habitat for new occurrences, or occurrences that are currently presumed extant or possibly extirpated.
7. Evaluate conservation translocation or reintroduction to maintain or enhance population size and genetic diversity, following best management practices (e.g., Center for Plant Conservation 2019). Plan and implement conservation translocations if appropriate.

REFERENCES CITED

- Center for Plant Conservation. 2019. Best plant conservation practices to support species survival in the wild. Center for Plant Conservation, Escondido, CA, 245 pages.
- Fraga, N. 2023. Quarterly Report #4: April 1 to June 30, 2023, Genetic assessment and ex-situ conservation of five federally listed plant species endemic to southern California. Grant Agreement number Q2186005. California Botanic Garden, 2 pages.
- Fraga, N. 2024a. Quarterly Report #7: October 1 to December 31, 2023, Genetic assessment and ex-situ conservation of five federally listed plant species endemic to southern California. Grant Agreement number Q2186005. California Botanic Garden, 2 pages.
- Fraga, N. 2024b. Quarterly Report #8: January 1 to March 31, 2024, Genetic assessment and ex-situ conservation of five federally listed plant species endemic to southern California. Grant Agreement number Q2186005. California Botanic Garden, 2 pages.
- Jenkins, H. 2023. Monitoring the hydrology of threatened meadow ecosystems in the San Bernardino Mountains, FY2023 performance report. University of Redlands, 25 pages.
- Ottewell, K.M., D.C. Bickerton, M. Byrne, A.J. Lowe, and C. Burridge. 2016. Bridging the gap: a genetic assessment framework for population-level threatened plant conservation prioritization and decision-making. *Diversity & Distributions* 22:174–188.
- Soreng, R.J. 2012. *Poa atropurpurea*. Jepson eFlora. Website viewed August 12, 2013. http://ucjeps.berkeley.edu/cgi-bin/get_IJM.pl?key=11145.
- [Service] U.S. Fish and Wildlife Service. 1998. Endangered and threatened wildlife and plants; final rule to determine endangered or threatened status for six plants from the mountains of southern California. *Federal Register* 63:49006–49022.
- [Service] U.S. Fish and Wildlife Service. 2008a. Endangered and threatened wildlife and plants; designation of critical habitat for *Poa atropurpurea* (San Bernardino bluegrass) and *Taraxacum californicum* (California taraxacum); final rule. *Federal Register* 73:47706–47767.
- [Service] U.S. Fish and Wildlife Service. 2020. 5-year review, *Poa atropurpurea* (San Bernardino bluegrass). Carlsbad Fish and Wildlife Office, Department of the Interior. 26 pages.
- [Service] U.S. Fish and Wildlife Service. 2023a. Endangered and threatened wildlife and plants; initiation of 5-year status reviews of 47 species in California, Nevada, and Oregon. *Federal Register* 88:56042–56044.
- [Service] U.S. Fish and Wildlife Service. 2023b. Biological Opinion regarding the reintroduction of managed fire into oak woodlands on the Cleveland National Forest, California. Carlsbad Fish and Wildlife Office, Department of the Interior. 22 pages.
- [Service] U.S. Fish and Wildlife Service. 2023c. Streamlined Biological Opinion on the activities for the North Big Bear Landscape Restoration in the San Bernardino National Forest, California. Carlsbad Fish and Wildlife Office, Department of the Interior. 67 pages.

FIELD OFFICE APPROVAL:

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Approve

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