

5-YEAR REVIEW

San Joaquin woolly-threads (*Monolopia [=Lembertia] congdonii*)

GENERAL INFORMATION:

Species: San Joaquin woolly-threads (*Monolopia [=Lembertia] congdonii*)

Date listed: July 19, 1990

FR citation(s): 55 FR 29361

Classification: Endangered

State Listing:

San Joaquin woolly-threads is not listed as threatened or endangered by the State of California.

BACKGROUND:

Most recent status review:

U.S. Fish and Wildlife Service (Service). 2010. *Monolopia (=Lembertia) congdonii* (San Joaquin woolly-threads) 5-Year Review: Summary and Evaluation. U.S. Fish and Wildlife Service, Sacramento, California. Finalized June 2010. 32 pp.

FR Notice citation announcing this status review:

U.S. Fish and Wildlife Service (Service). 2019. Endangered and Threatened Wildlife and Plants; Initiation of 5-Year Status Reviews of 58 Species in California, Nevada, and the Klamath Basin of Oregon. Federal Register 84:36116–36118. Published July 26, 2019.

Critical Habitat Designation:

No critical habitat has been designated.

ASSESSMENT:

Information acquired since the last status review:

This 5-year review was conducted by the U.S. Fish and Wildlife Service's (Service) Sacramento Fish and Wildlife Office. Data for this review were solicited from interested parties through a Federal Register notice announcing this review and the opening of a 60-day public comment period on July 26, 2019 (84 FR 36116). We did not receive any information about this species from the public in response to the notice. We also contacted State and Federal agencies, species experts, universities, and other partners to request any data or information we should consider in our review. Additionally, we conducted a literature search, a review of information in our files, and obtained data from the California Natural Diversity Database (Diversity Database).

Distribution

The overall species distribution remains the same as described in our 2010 review (Service 2010). Historically, San Joaquin woolly-threads was reported in seven counties: San Benito, Fresno, Kings, Tulare, Kern, San Luis Obispo, and Santa Barbara. By the time of listing (1990), the species had been extirpated from Tulare County. In the final rule we stated that 19 populations of San Joaquin woolly-threads were extant (Service 1990). At the time of our 2010

5-year review, there were 66 Diversity Database occurrences listed as presumed extant, spread across Fresno, Kern, Kings, San Benito, San Luis Obispo, and Santa Barbara counties. Additional occurrences of San Joaquin woolly-threads have been added to the Diversity Database since our 2010 review (Diversity Database 2020), but do not significantly extend the range and distribution of the species. Table 1 below summarizes the number of occurrences over time. Currently, there are 87 extant and presumed extant Diversity Database occurrences, and 24 extirpated and possibly extirpated occurrences.

Table 1. Number of extant occurrences of San Joaquin woolly-threads (*Monolopia congdonii*) by county. Data from Diversity Database (2020) and Service (1990, 2010).

	Time of listing (1990)	2010 Status Review	Current
Fresno	4	20	29
Kern	5	7	11
Kings	1	19	19
San Benito	2	2	9
San Luis Obispo	5	15	17
Santa Barbara	2	3	2
Total	19	66	87

Abundance

The Bureau of Land Management has established long-term monitoring of 29 sub-occurrences throughout the species' range (Bureau of Land Management 2020). However, it is difficult to determine trends in population sizes because emergence is variable from year to year and there is not enough evidence to show how closely this variation is tied to annual precipitation or other environmental factors (Bureau of Land Management 2020). The sub-occurrences being monitored have declined in size in the past five years, despite above-average rainfall in 2017 and 2019 (Bureau of Land Management 2020).

Genetics

Several genetic studies, in partnership with the Bureau of Land Management, have been conducted since our last review. This research was done to determine if occurrences of San Joaquin woolly-threads can be grouped together based on genetic groupings (and location). The researchers concluded that this species has four to seven genetic units and they recommended the movement of genes (via transplantation or seeding) between these units should be avoided because it could result in a loss of genetic diversity (Bainbridge *et al.* 2017). The four main units are the Northern Subregion, the Coalinga Subregion, the Southern San Joaquin Valley Subregion, and the Carrizo/Cuyama Subregion (Bainbridge *et al.* 2017, p. 31, Figure 14).

Threats

At the time of listing, the primary threats to the species were identified as destruction and adverse modification of habitat due to agricultural land conversion and urbanization, uncontrolled grazing, and competition with nonnative grasses. Threats to the species identified at

the time of the 2010 5-year review include: agricultural land conversion and urbanization, oil and gas extraction and conveyance, solar power developments, off-road vehicle use, inappropriate grazing regimes, competition from nonnative grasses, nitrogen deposition, trampling by livestock and soil compaction, and climate change (Service 2010). There is no evidence that the status of these threats has changed. Currently, the primary threats to San Joaquin woolly-threads throughout its range include: habitat loss and fragmentation due to agricultural and urban development, oil, gas, and other mining exploration, competition with nonnative grasses, and climate change (Diversity Database 2020). As described in the last 5-year review, climate change has the potential to alter the timing and synchronicity of ecosystem processes, including the germination, growth, and pollination of San Joaquin woolly-threads. Climate change will likely affect the structure, composition, and productivity of plant communities (Service 2010).

Development projects that are subject to sections 7 and 10 of the federal Endangered Species Act (Act) typically include habitat compensation, which can reduce the severity of overall habitat loss typically associated with these projects. Habitat compensation can occur via a variety of mechanisms, including the purchase of credits at approved conservation banks, through permittee responsible mitigation, and through the development of habitat conservation plans. However, there are currently no conservation banks or permittee-responsible mitigation that cover this species.

Conservation

Habitat Conservation Plans

Habitat Conservation Plans are planning documents required as part of an application for an incidental take permit. They describe the anticipated effects of the proposed taking; how those impacts will be minimized, or mitigated; and how the Habitat Conservation Plan is to be funded. Habitat Conservation Plans can apply to both listed and non-listed species, including those that are candidates or have been proposed for listing. Regional Habitat Conservation Plans develop large-scale conservation strategies within a specific region that are designed to conserve functional ecological systems and the covered species that depend on them. Such Habitat Conservation Plans aim to avoid a fragmented conservation landscape by working with local land use authorities and a designated implementing entity to conserve, enhance, and manage a preserve system. Project-level Habitat Conservation Plans are designed to fully offset the impacts associated with the permitted activity by contributing to a larger conservation design.

Being included as a covered species under a Habitat Conservation Plan can result in habitat being set aside and managed for the species as mitigation for impacts associated with covered activities, such as planned urban development, within the Habitat Conservation Plan permit area. In addition to mitigation, avoidance, minimization, and other conservation measures (e.g. monitoring, seasonal work windows, habitat management, etc.) are implemented. Habitat Conservation Plans can also utilize banks, in-lieu fee programs, or other mechanisms to preserve habitat in perpetuity and contribute to a regional conservation strategy.

The following are Habitat Conservation Plans that include this species and the year the permit for the Habitat Conservation Plan was issued: PG&E San Joaquin Valley Operations & Maintenance Habitat Conservation Plan 2007, Nuevo-Torch 1999, Kern Water Bank 1997, and

Chevron Pipeline 1996. More information about Habitat Conservation Plans that include San Joaquin woolly-threads as a covered species can be found at:

<https://ecos.fws.gov/ecp0/profile/speciesProfile?sId=3746>

Recovery Permits

Recovery permits, also referred to as 10(a)(1)(A) permits, allow scientists to take listed species as a means to ultimately contribute to the recovery of the listed species. The data acquired from some actions covered under recovery permits (e.g., occurrence, abundance, distribution, etc.) allow the Service to make informed decisions for the species that will enhance their survival and recovery. Recovery permits can be issued for activities that directly aid the recovery of a species, such as seed collecting, reintroductions, habitat restoration, removal or reduction of threats, and educational programs. The Service's recovery permitting program aids in the conservation of listed species by ensuring permittees have adequate field experience and qualifications for conducting activities with the target listed species and, for most species, ensures that permittees are following standardized protocols while surveying. The recovery permitting application process ensures that scientific proposals are crafted using the recommended actions laid out in the Recovery Plan for the target species. There is currently no protocol survey guidance for San Joaquin woolly-threads; however, there are minimum qualifications to obtain a recovery permit for the species. Minimum qualifications can be found at:

<https://www.fws.gov/sacramento/es/Permits/>

New information acquired through the recovery permitting program, in partnership with the Bureau of Land Management, is presented above.

Recovery Criteria

The San Joaquin woolly threads' recovery strategy is described in the Recovery Plan for Upland Species of the San Joaquin Valley, California (Service 1998). The downlisting and delisting criteria for the San Joaquin woolly-threads include:

Downlisting

1. Secure and protect 95% of occupied habitat on public land from incompatible uses.
2. Management Plan approved and implemented for all protected areas identified as important to continued survival.
3. Population monitoring in specified recovery areas shows stable or increasing populations through one precipitation cycle.

Delisting

1. Secure and protect specified recovery areas from incompatible uses:
 - a. Two hundred and sixty hectares (640 acres) or more of occupied habitat in the Lost Hills;
 - b. One or more other sites on the San Joaquin Valley floor of 260 hectares (640 acres) or more.

2. Management Plan approved and implemented for all protected areas identified as important to continued survival.
3. Population monitoring in specified recovery areas shows no decline after downlisting. If declining, determine cause and reverse trend.

The recovery criteria analysis in the 2010 5-year review still remains valid (Service 2010). As described in the 2010 5-year review, none of the recovery criteria have been fully met.

Conclusion:

After reviewing the best available scientific information, we conclude that San Joaquin woolly-threads (*Monolopia congdonii*) remains an endangered species. Although there has been an increase in the number of occurrences reported in the Diversity Database since the time of listing and the 2010 5-year review, these new sightings do not significantly extend the range and distribution of the species, and many of the previously identified occurrences have not been visited in some time. In addition, most of the occurrences that are identified as extant in the Diversity Database have not been regularly surveyed, so their current status is unknown. Therefore, due to the uncertainty of the status of many of the occurrences throughout the species' range, we recommend no change in the species' status. However, because the number of occurrences distributed throughout the range has increased, we acknowledge the results of future range-wide surveys may indicate a potential change in status for San Joaquin woolly-threads. As described below, we recommend a comprehensive evaluation of these occurrences to validate the status of the species at these locations, which would provide a stronger assessment for our next status review.

RECOMMENDATIONS FOR FUTURE ACTIONS:

The following recommendations for future actions are from the 2010 5-year review (Service 2010), scientific literature, and as a result of discussions with species experts.

1. Protect existing habitat in the San Joaquin Valley for San Joaquin woolly-threads.
2. A comprehensive evaluation should be completed for all known occurrences (both extant and extirpated). The site-specific evaluation should include, at minimum, whether the species is present, the estimated population/occurrence size, and an in-depth analysis of threats at that location.
3. Implement and/or continue yearly surveys utilizing a standardized methodology to determine trends in the range-wide status of the species as well as population/occurrence abundance.
4. Continue studies that advance the understanding of the species' propagation requirements, knowledge of the physical and chemical elements of the soil required for successful re-establishment, the presence and role of mutualistic soil fungi, the species and role of pollinators, genetics, and seed dispersal mechanisms.
5. Conduct research to determine the degree or intensity of threat from livestock grazing to the plant and its habitat. Include the variables of cattle stocking rate, relative weight or size of animals, numbers, and cattle sheltering or shade selection behavior.
6. Analyze the potential for habitat degradation due to climate change and implement appropriate measures to ameliorate these threats.

Field Supervisor, Sacramento Fish and Wildlife Office

Approve **MICHAEL SENN** Digitally signed by MICHAEL SENN
Date: 2020.08.26 15:32:18 -07'00'

LITERATURE CITED

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- [Diversity Database] California Natural Diversity Database. 2020. Natural Heritage Division. California Department of Fish and Wildlife, State of California. Element Occurrence Reports for *Monolopia congdonii*. Unpublished cumulative data current to January 2020.
- [Service] U.S. Fish and Wildlife Service. 1990. Endangered and threatened wildlife and plants; determination of endangered status for five plants from the Southern San Joaquin Valley. Federal Register 55: 29361-29370. July 19, 1990.
- [Service] U.S. Fish and Wildlife Service. 2010. *Monolopia* (= *Lembertia*) *congdonii* (San Joaquin woolly-threads) 5-Year Review: Summary and Evaluation. U.S. Fish and Wildlife Service, Sacramento, California. Finalized June 2010. 32 pp.