

FRANKLIN'S BUMBLE BEE (*Bombus franklini*)

October 2022



Photo 1 – Franklin's bumble bee Photo Credit: Peter Schroeder

Status

State: On September 30, 2022, the Franklin's bumble bee was given Candidate status under the California Endangered Species Act (CESA). Candidate species are given protection under CESA until a determination is made on their listing status.

Federal: On September 23, 2021, the Franklin's bumble bee was federally listed as Endangered under the Federal Endangered Species Act.

Species Information and considerations for timber harvest planning

Species Information

Franklin's bumble bee is thought to have the most limited distribution of all known North American bumble bee species. This species is believed to be restricted to the Klamath Mountain region of southern Oregon and Northern California, which includes portions of Siskiyou and Trinity Counties in California. Elevations where it has been observed range from 540 ft. in the northern part of its range, to over 7,800 ft. in the southern part of its range. Despite continued intensive search efforts in these areas through 2019, there have been no confirmed observations of the Franklin's bumble bee since 2006.

The Franklin's bumble bee has not been studied but are thought to, like other similar bee species, require a diverse supply of flowers that bloom throughout the species life cycle, from spring to autumn. These resources would typically be found in open (non-forested) meadows in proximity to seeps and other wet meadow environments.

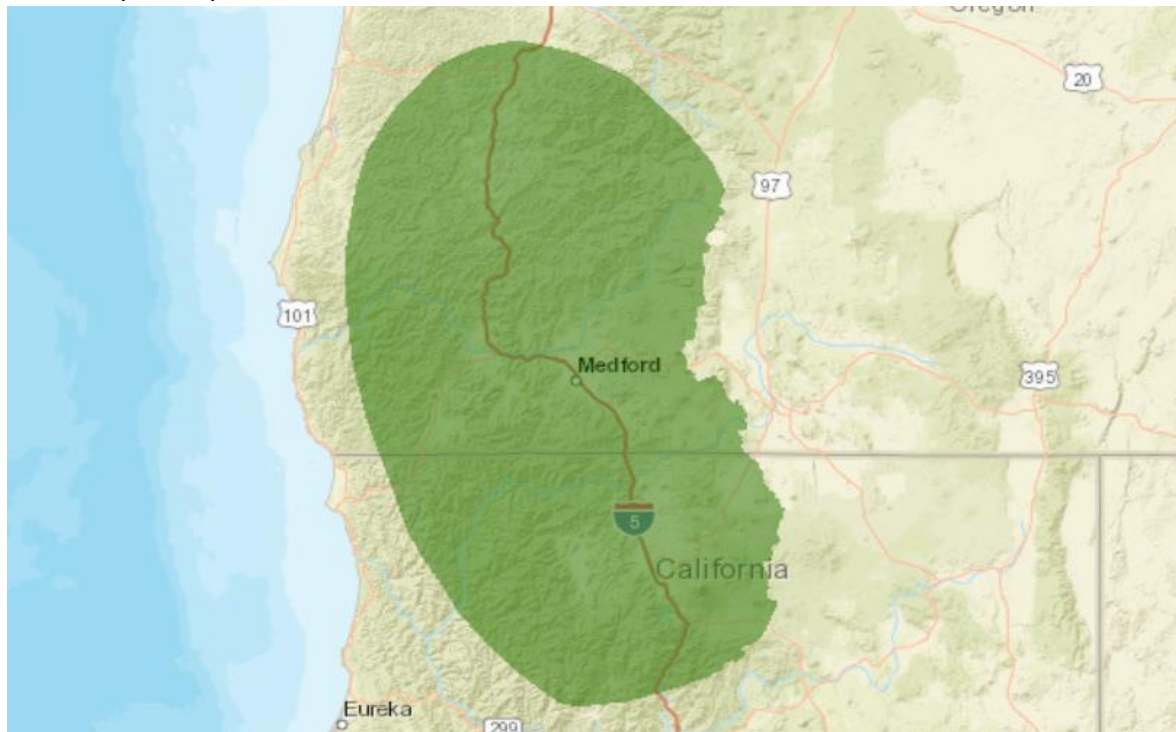
Colonies of Franklin's bumble bee have an annual cycle, initiated each spring when solitary queens emerge from hibernation and seek suitable nest sites. Colonies contain workers along

with the founding queen. The flight season of Franklin's bumble bee is from mid-May to the end of September, a few individuals have been encountered in October. At the end of the colony cycle, all the workers and the males die along with the founding queen; only the inseminated hibernating females are left to carry on the genetic lineage into the following year.

Threats

Pathogens in combination with pesticides, as well as pathogens in combination with the effects of small population size, may have hastened and amplified the decline of the Franklin's bumble bee to a greater degree than any one of the three threats would cause on its own. Other threats to this, and other bumble bee species include: landscape scale habitat alteration that reduces diverse floral availability and access to nesting and overwintering sites which includes urbanization and conversion to agricultural uses, fire suppression leading to forest density increase and encroachment into open areas, toxic effects and habitat loss due to herbicide, grazing, competition with managed bees, disease, pesticides, insecticides (including neonicotinoids), fungicides, population dynamics, and climate change.

Map 1 – Estimated current range of the Franklin's bumble bee, from US Fish and Wildlife Service species profile.

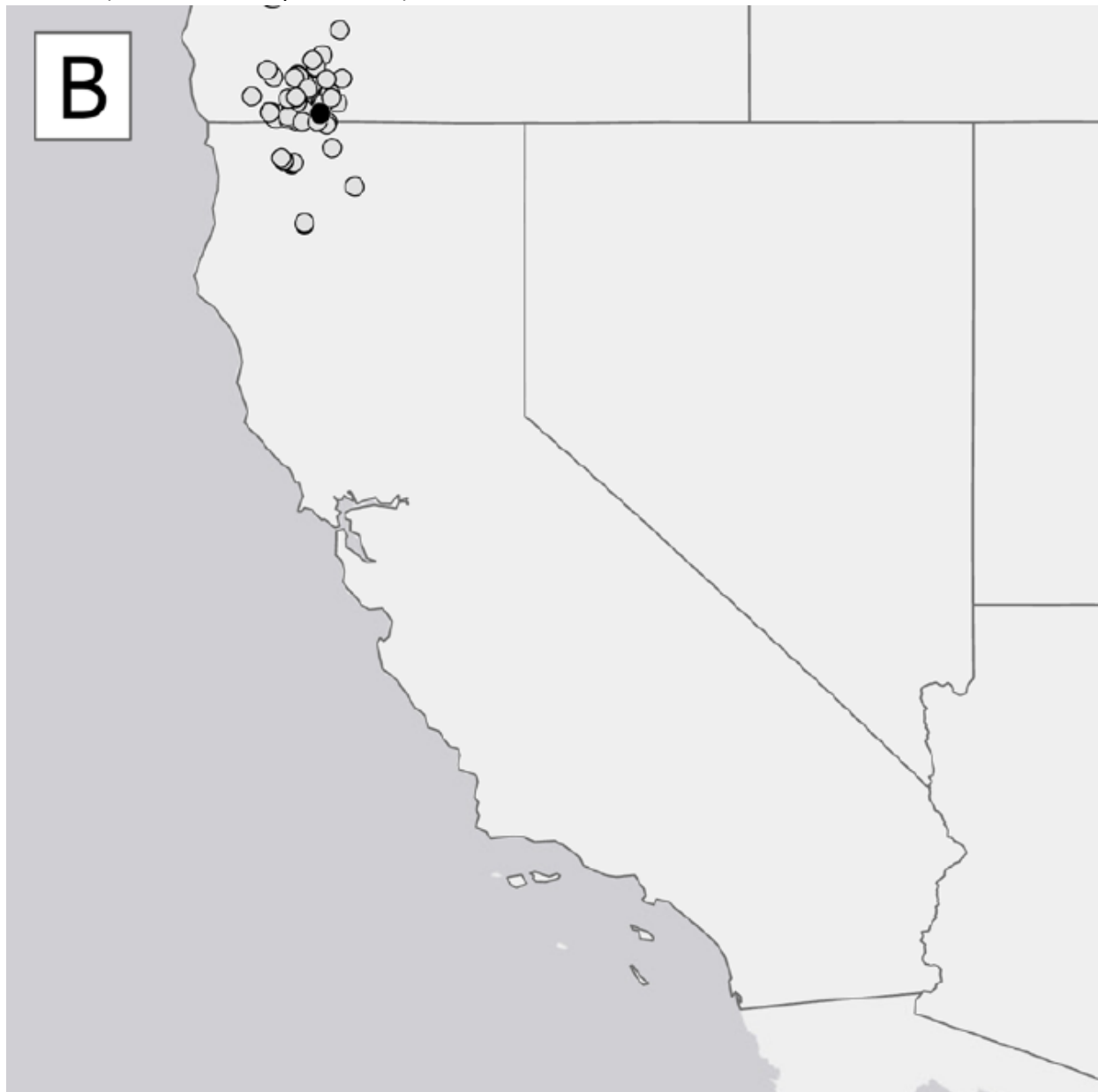


Surveys

Historical observations and occurrence data for Franklin's bumble bee prior to 1998 include opportunistic observations, student collections, and museum specimens, as well as the collections and notes of interested parties, natural resource managers, and university staff. A more intensive and targeted search effort for the species began in 1998, in areas thought to

have the highest likelihood of Franklin's bumble bee presence. There was initial success at finding a higher abundance of the species than ever previously reported; in one year (1998), 98 Franklin's bumble bees were observed (mostly from two sites). However, in subsequent years, searchers found fewer and fewer Franklin's bumble bees, and none have been found since the last sighting of a single individual in Oregon in 2006. Despite continued intensive search efforts in these areas through 2019, there have been no confirmed observations of the Franklin's bumble bee since 2006.

Map 2 – Franklin's bumble bee detections between 2003-2009 (filled circles) and historic detections, prior to 2003 (open circles). Map from: Richardson 2019 and The Xerces Society et al. 2019 (Hatfield and Jepson 2021).



Information above compiled from: Federal Register / Vol. 86, No. 161 / Tuesday, August 24, 2021. [Franklin's Bumble Bee Fed. Register Vol. 86 No. 161 and A Petition to the State of California Fish and Game Commission - The Xerces Society](#) and sources cited therein.

Photo 2 – Habitat for the Franklin’s bumble bees. Photo Credit: Jess Burns



Considerations for timber harvest planning

For projects within the range of the Franklin’s bumble bee, the species should be addressed within the timber harvesting document. Given that the Franklin’s bumble bee needs a diverse supply of flowers throughout the colony’s flight period, open meadows and other wet areas are considered the bees most important habitat type for their life cycle. Since meadows and wet areas are afforded protection measures under the FPRs, it is not expected that habitat modification will result. Discuss all standard, and any additional protection measures that would minimize negative effects to meadows and wet areas. Timber harvesting that promotes open areas mixed in forested areas, or restores meadows from encroaching conifers, have the potential to provide a benefit to the species by increasing the abundance of flowering plants. Include discussion on any potential benefits to the species that may result from the proposed project.

Herbicide use that reduces the abundance of diverse floral resources has been listed as a potential threat to bumble bees. If herbicide use is proposed, discuss any resource protection measures that will be used to mitigate any negative impacts on diverse floral availability including season and extent of use.

References

Endangered and Threatened Wildlife and Plants; Endangered Species Status for Franklin's Bumble Bee; 86 Fed. Reg. 47221 (August 24th, 2021).

Hatfield, G. R. and S. Jepsen. 2021. A conservation conundrum: protecting bumble bees under the California Endangered Species Act. The Xerces Society for Invertebrate Conservation, Portland, OR.

Additional Information

[Petitions to List Species Under the California Endangered Species Act](#)

<https://ecos.fws.gov/ecp/species/7022>

[Xerces Society Species Account](#)

[Factors affecting bee communities in forest openings and adjacent mature forest | Treerearch \(usda.gov\)](#)

[The Pacific Northwest Bumble Bee Atlas: Summary and Species Accounts | Xerces Society](#)

[Postharvest Bee Diversity is high but declines rapidly with stand age in regenerating douglas fir forests -Rivers and Betts 2021 Forest Science \(oregonstate.edu\)](#)

[Wild bee distribution near forested landscapes is dependent on successional state | Forest Ecosystems](#)

[Forest-bee-pollinators – Oregon Department of Forestry](#)

[Importance of Forests in Bumble Bee Biology and Conservation | BioScience | Oxford Academic \(oup.com\)](#)

[Western bumble bee: Declines in United States and range-wide information gaps | U.S. Geological Survey \(usgs.gov\)](#)

[IUCN Assessments for North American Bombus spp. for the North American IUCN Bumble Bee Specialist Group \(researchgate.net\)](#)

[Bumble Bees of the Western United States - USFS](#)

[IUCN Red List - Species Information and Assessment](#)

[Research in Progress – Evaluating the response of native pollinators to fuel-reduction treatments in managed conifer forests, Oregon State University.pdf](#)