



## Frequently Asked Questions

### *Final Rule adding Franklin's bumble bee to the Endangered Species Act*

#### **What action is being taken by the U.S. Fish and Wildlife Service?**

The Service is listing the Franklin's bumble bee (*Bombus franklini*) as endangered under the Endangered Species Act. We also determined that designating critical habitat for Franklin's bumble bee is not prudent (see below *Why is Critical Habitat not being designated?*).

#### **Why is the Service listing Franklin's bumble bees as endangered?**

After carefully assessing the past, present, and future threats to Franklin's bumble bee, we determined this species is in danger of extinction throughout all of its range.

A small population size and a restricted range, combined with a haplodiploid genetic system (where females develop from fertilized eggs and males from unfertilized eggs) have reduced the ability of the Franklin's bumble bee to withstand environmental variation, catastrophic events, and changes in physical and biological conditions. This makes the Franklin's bumble bee vulnerable even without further external stressors (e.g., pathogens, competition from other species, insecticide exposure) acting upon the species.

## **What has caused the loss of Franklin's bumble bees?**

Although the definitive source of the decline is unknown, the range-wide decline of Franklin's bumble bee is undisputed. In this case, habitat loss is not the cause of decline; rather, it is likely a combination of multiple stressors (i.e., pathogens, low genetic diversity, competition from other species, pesticides) acting cumulatively and synergistically on the bee.

Known pathogens exist and have infected closely related species within the Franklin's bumble bee's range. Though we have no direct evidence that pesticide use contributed to the decline of Franklin's bumble bee, confirmed effects to other closely related *Bombus* species suggest that exposure to pesticides was likely a factor in the decline of Franklin's bumble bee.

## **Where is Franklin's bumble bee found?**

The Franklin's bumble bee's range is limited to an approximately 13,000 square mile area of the Klamath Mountain region of southern Oregon and northern California. They have been found at elevations between 540 feet and 7,800 feet in Douglas, Jackson, and Josephine counties in southern Oregon, and Siskiyou and Trinity counties in northern California.

## **What is the life cycle of the Franklin's bumble bee?**

Franklin's bumble bee is eusocial, meaning they live in colonies made up of one queen and her offspring (sterile female workers and males) that cooperate in caring for the young. They typically nest underground in abandoned rodent burrows or other holes that offer resting and sheltering places, food storage, nesting, and room for the colony to grow.

Solitary mated queens emerge from hibernation in the spring to seek suitable nest sites to establish their colonies. Initially the queen collects nectar and pollen from flowers to support the production of her eggs. In the early stages of colony development, she collects all the food and cares for the larvae. As the colony grows, workers take over food collection, defending the colony, constructing the nest, and caring for larvae while the queen continues to lay eggs that have been fertilized with sperm she has stored since mating the previous fall. Colonies may have between 50-400 workers. The flight season of Franklin's bumble bee is from mid-May to the end of September. Towards the end of the colony life cycle, fertile males and new queens are produced and leave the colony to find mates. At the end of the colony cycle, all the workers and the males die along with the founding queen; only the inseminated hibernating females (gynes) are left to carry on the genetic lineage into the following year.

Franklin's bumble bees require a constant and diverse supply of flowers that bloom throughout the colony's life cycle, from spring to autumn. They nectar on a variety of flowers/blooms and are considered a generalist forager. Nectar plants are typically found

in open meadows near seeps and other wet environments. They can forage up to 6.2 miles, but the bees typically disperse within 1.86 miles or less from their colony.

### **What can be done to reduce or eliminate threats to this species?**

Franklin's and other bumble bee species benefit from planting bee-friendly flowers and herbs in gardens that provide pollen and nectar throughout their flight season (mid-May through the end of September, and sometimes into early October).

We encourage landowners to limit herbicide use and consider phasing out the use of neonicotinoid pesticides, which can harm Franklin's and other bee species. Neonicotinoids are taken up by the vascular system of plants, so bees are exposed to this poison when feeding on plant nectar and pollen, long after the product has been applied and even when the products are used as seed coatings.

### **What is being done to locate this species?**

Historically, the species has always been rare to locate and has one of the narrowest distributions of any *Bombus* species in the world. Even so, the abundance and distribution of Franklin's bumble bee has declined significantly. Prior to 1998, search efforts for the species were varied in timing, scope, intensity, and methodology. During the more intensive surveys from 1998 until the last observation in 2006, Franklin's bumble bee was observed at 11 sites, including seven locations where it had not been previously documented.

Despite continued intensive search efforts through 2019, there have been no confirmed observations of Franklin's bumble bee since 2006. We will continue to work closely with the Bureau of Land Management, the Forest Service, and scientific experts to survey for this elusive bee.

### **Can I help locate this species? What do I do if I think I see one in the wild?**

If you think you see a rare bumble bee in the wild, you can share the information with Bumble Bee Watch (<https://www.bumblebeewatch.org>), a citizen-science project sponsored by the Xerces Society and other partners. Bumble Bee Watch is a collaborative effort to track and conserve North America's bumble bees. This citizen science project allows for individuals to:

1. Upload bumble bee photos, identify those bumble bees and have identifications verified by experts.
2. Help researchers determine the status and conservation needs of bumble bees.
3. Help locate rare or endangered populations of bumble bees.
4. Learn about bumble bees, their ecology, and ongoing conservation efforts.
5. Connect with other citizen scientists.

**Since they have not been seen in 12 years, could this species be extinct? If not, when would you consider them extinct?**

The Service uses the following standard for extinction, from 50 CFR 424.11(d)(1): Unless all individuals of the listed species had been previously identified and located, and were later found to be extirpated from their previous range, a sufficient period of time must be allowed to indicate clearly that the species is extinct.

Franklin's bumble bees have always been rare with a small range, and search efforts for them have been inconsistent in timing, frequency, scope, and methodology. Significant high-quality, potential habitat areas have never been surveyed for Franklin's bumble bee, including higher elevation, remote, and wilderness locations. Given the patchy and ephemeral distribution of this species, it is possible that future surveys will find Franklin's bumble bees again.

Over the past 122 years, at least 351 species deemed extinct have been rediscovered. Those species had not been seen on average for 61 years before being rediscovered (some were not seen for 3 years, and others for as many as 331 years). Substantial effort is needed to find rare species with small populations like Franklin's bumble bee.

**Are other bee species facing similar problems as Franklin's bumble bees?**

Many bee species are declining at a significant rate. Although causes for the declines are not fully understood, some theories include: competition with nonnative honey bees, low genetic diversity, the introduction of nonnative microorganisms that can cause disease, and pesticide use.

**Have other bees been listed under the ESA?**

Eight other bee species are on the Endangered Species List, including the rusty patched bumble bee (*Bombus affinis*) and seven Hawaiian species.

**Why is Critical Habitat not being designated?**

It is not prudent to designate critical habitat for the Franklin's bumble bee because they are habitat generalists, foraging on a variety of nectar sources, and we do not have recent locations of known presence to guide critical habitat identification. Since the species appears to have adequate habitat within their historical range, we determined that habitat loss or alteration is not considered a significant threat to Franklin's bumble bee at this time.

**I live within the range of Franklin's bumble bee. Why should this matter to me?**

Approximately 500 species of bees, including nearly 30 species of bumble bees, live in Oregon, and over 1,600 species of native bees are found in California, including 26 bumble bee species. Many of these bees pollinate the diverse native plants, gardens, and

crops grown in each state. Stressors affecting other bumble bee species are likely factors causing the decline of Franklin's bumble bee. Protecting native bees from these stressors will help ensure adequate and diverse pollinators throughout Oregon and California.

**I don't live within the range of Franklin's bumble bee. Why does this matter to me?**

Approximately 35 percent of the world's crops — amounting to \$577 billion worth of crops per year — depend on pollinators, and many pollinators are native bees like Franklin's bumble bee. Protecting native bees will help ensure our native plants, gardens, and crops will continue to have an adequate supply of pollinators.

**Can I comment on this rule?**

When Franklin's bumble bee was proposed as endangered on August 13, 2019, a 60-day comment period was opened to allow the public to review, comment, and provide additional information. The Service received 53 comments and all are addressed in the final rule.

For more information about Franklin's bumble bee and to access links to the federal register notices, visit <http://www.fws.gov/oregonfwo/>.