



BILLING CODE 4333–15

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

[Docket No. FWS–R1–ES–2018–0044; 4500030113]

RIN 1018–BD25

Endangered and Threatened Wildlife and Plants; Endangered Species Status for Franklin’s Bumble Bee (*Bombus franklini*)

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Proposed rule.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), propose to list the Franklin’s bumble bee (*Bombus franklini*), an invertebrate species from Douglas, Jackson, and Josephine Counties in Oregon, and Siskiyou and Trinity Counties in California, as an endangered species under the Endangered Species Act of 1973, as amended (Act). We find that disease and other natural or manmade factors are likely the primary threats to the species within its habitat. If made final, this rule would add this species to the Federal List of Endangered and Threatened Wildlife and apply the protections of the Act to this species.

In this proposed rule, we determine that designating critical habitat for the Franklin’s bumble bee is not prudent, because the Franklin’s bumble bee is a habitat generalist, and the present or threatened destruction, modification, or curtailment of habitat is not a threat to Franklin’s bumble bee. Consequently, the designation of critical habitat would not be beneficial to the Franklin’s bumble bee.

DATES: We will accept comments received or postmarked on or before **[INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**. Comments submitted electronically using the Federal eRulemaking Portal (see **ADDRESSES**, below) must be received by 11:59 p.m. Eastern Time on the closing date. We must receive requests for public hearings, in writing, at the address shown in **FOR FURTHER INFORMATION CONTACT** by **[INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

ADDRESSES: You may submit comments by one of the following methods:

(1) *Electronically:* Go to the Federal eRulemaking Portal:

<http://www.regulations.gov>. In the Search box, enter FWS-R1-ES-2018-0044, which is the docket number for this rulemaking. Then, click on the Search button. On the resulting page, in the Search panel on the left side of the screen, under the Document Type heading, click on the Proposed Rules link to locate this document. You may submit a comment by clicking on “Comment Now!”

(2) *By hard copy:* Submit by U.S. mail or hand-delivery to: Public Comments Processing, Attn: FWS-R1-ES-2018-0044; U.S. Fish and Wildlife Service, MS: BPHC, 5275 Leesburg Pike, Falls Church, VA 22041-3803.

We request that you send comments only by the methods described above. We will post all comments on <http://www.regulations.gov>. This generally means that we will post any personal information you provide us (see **Information Requested**, below, for more information).

FOR FURTHER INFORMATION CONTACT: Paul Henson, Field Supervisor, U.S. Fish and Wildlife Service, Oregon Fish and Wildlife Office, 2600 SE 98th Ave, Suite 100,

Portland, OR 97266; telephone 503-231-6179. Persons who use a telecommunications device for the deaf (TDD) may call the Federal Relay Service at 800-877-8339.

SUPPLEMENTARY INFORMATION:

Information Requested

We intend that any final action resulting from this proposed rule will be based on the best scientific and commercial data available and be as accurate and as effective as possible. Therefore, we request comments or information from other concerned governmental agencies, Native American tribes, the scientific community, industry, or any other interested parties concerning this proposed rule. We particularly seek comments concerning:

(1) Franklin's bumble bee's biology, range, and population trends, including:

- (a) Biological or ecological requirements of the species, including habitat requirements for feeding, breeding, and sheltering;
- (b) Genetics and taxonomy;
- (c) Historical and current range, including distribution patterns;
- (d) Historical and current population levels, and current and projected trends; and
- (e) Past and ongoing conservation measures for the species, its habitat, or both.

(2) Our analysis of the current status of Franklin's bumble bee. As discussed below (see **Background** below, for more information), based on the lack of observations of Franklin's over the last 13 years it is possible that the species is extinct. We will be analyzing any new information on this question before making a final determination; if we determine that the best available information indicates that the species is likely

extinct, we will withdraw this proposed rule. Thus, we are seeking any information regarding the persistence or extinction of the species within its historical range including:

(a) Verifiable reports or evidence of Franklin's bumble bee occurrence in its range; or

(b) any information that may indicate extinction of the species.

(3) Factors that may affect the continued existence of the species, which may include habitat modification or destruction, overutilization, disease, predation, the inadequacy of existing regulatory mechanisms, or other natural or manmade factors.

(4) Biological, commercial trade, or other relevant data concerning any threats (or lack thereof) to this species and existing regulations that may be addressing those threats.

(5) Additional information concerning the historical and current status, range, distribution, and population size of this species, including the locations of any additional populations of this species.

You may submit your comments and materials concerning this proposed rule by one of the methods listed in **ADDRESSES**. We request that you send comments only by the methods described in **ADDRESSES**.

Please include sufficient information with your submission (such as scientific journal articles or other publications) to allow us to verify any scientific or commercial information you include. All comments submitted electronically via <http://www.regulations.gov> will be presented on the website in their entirety as submitted. For comments submitted via hard copy, we will post your entire comment—including

your personal identifying information—on <http://www.regulations.gov>. You may request at the top of your document that we withhold personal information such as your street address, phone number, or e-mail address from public review; however, we cannot guarantee that we will be able to do so.

Comments and materials we receive, as well as supporting documentation we used in preparing this proposed rule, will be available for public inspection on <http://www.regulations.gov>, or by appointment, during normal business hours, at the U.S. Fish and Wildlife Service, Oregon Fish and Wildlife Office (see **FOR FURTHER INFORMATION CONTACT**).

Please note that submissions merely stating support for or opposition to the action under consideration without providing supporting information, although noted, will not be considered in making a determination, as section 4(b)(1)(A) of the Act (16 U.S.C. 1531 et seq.) directs that determinations as to whether any species is an endangered or threatened species must be made “solely on the basis of the best scientific and commercial data available.” In making a final decision on this proposal, we will take into consideration the comments and any additional information we receive during the public comment period. Such communications could lead to a final rule that differs from this proposal, including a withdrawal of this proposal.

Public Hearing

Section 4(b)(5) of the Act provides for one or more public hearings on this proposal, if requested. Requests must be received by the date specified in **DATES** and sent to the address shown in **FOR FURTHER INFORMATION CONTACT**. We will schedule public hearings on this proposal, if any are requested, and announce the dates,

times, and places of those hearings, as well as how to obtain reasonable accommodations, in the *Federal Register* and local newspapers at least 15 days before the hearing.

Peer Review

In accordance with our joint policy on peer review published in the *Federal Register* on July 1, 1994 (59 FR 34270), we sought the expert opinions of 10 appropriate and independent specialists regarding the scientific basis for this proposed rule; nine agreed to provide review. The purpose of peer review is to ensure that our listing and critical habitat determinations are based on scientifically sound data, assumptions, and analyses. The peer reviewers have expertise in Franklin's bumble bee or *Bombus* biology and habitat, and their comments helped inform our determinations. We invited comment from the peer reviewers during the analysis of the status of the species and the creation of the species status assessment report (SSA Report; U.S. Fish and Wildlife Service 2018); these comments will be available along with other public comments in the docket for this proposed rule.

Previous Federal Actions

We were petitioned to list Franklin's bumble bee as endangered under Act on June 23, 2010, by the Xerces Society for Invertebrate Conservation and Dr. Robbin Thorp, Professor Emeritus from the University of California (Xerces Society and Thorp 2010, p. 2). On September 13, 2011, we announced in the *Federal Register* (76 FR 56381) that the petition presented substantial information indicating that this species may be warranted for listing, and announced the initiation of a status review for the species. This action constitutes our 12-month finding on the 2010 petition to list the Franklin's bumble bee.

Background

A thorough review of the taxonomy, life history, and ecology of Franklin's bumble bee is presented in the Franklin's Bumble Bee Species Status Assessment report (SSA Report; U.S. Fish and Wildlife Service 2018) on <http://www.regulations.gov> under Docket No. FWS-R1-ES-2018-0044. Franklin's bumble bee is thought to have the most limited distribution of all known North American bumble bee species (Plowright and Stephen 1980, p. 479; Xerces Society and Thorp 2010, p. 6), and one of the most limited geographic distributions of any bumble bee in the world (Frison 1922, p. 315; Williams 1998, p. 129). Stephen (1957, p. 81) recorded the species from the Umpqua and Rogue River Valleys in Oregon. Thorp *et al.* (1983, p. 8) also recorded it from northern California and suggested its restriction to the Klamath Mountain region of southern Oregon and northern California. Elevations where it has been observed range from 162 meters (m) (540 feet (ft)) in the northern part of its range, to over 2,340 m (7,800 ft) in the southern part of its range. All confirmed specimens have been found in an area about 306 kilometers (km) (190 miles (mi)) to the north and south, and 113 km (70 mi) east to west, between 122° to 124° west longitude and 40° 58' to 43° 30' north latitude in Douglas, Jackson, and Josephine Counties in southern Oregon, and Siskiyou and Trinity Counties in northern California (Thorp 1999, p. 3; Thorp 2005, p. 1; International Union for Conservation of Nature 2009, p. 1).

Franklin's bumble bee was first observed in 1917 and first described in 1921, and limited occurrence and observation data exists for Franklin's bumble bee prior to 1998. The species has been found on many privately owned sites as well as municipal, State and federally owned land. Historical observations and occurrence data for Franklin's

bumble bee prior to 1998 include randomly reported observations, student collections, and museum specimens, as well as the collections and notes of interested parties, natural resource managers, and university staff (Xerces Society and Thorp 2010, pp. 34–40). 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, 98 bees in 1998 (mostly from 2 sites). However, in subsequent years searchers found fewer and fewer bees, and no Franklin's bumble bees have been found since the last sighting of a single individual in Oregon in 2006. The variations in timing, scope, intensity, and methodology of search efforts (including those since 1998) and the lack of observations since 2006 prevent the identification of any population trends. Many of the occurrence records just provide point data for an occurrence, with no details on the size of the area searched or whether or not the record reflected a comprehensive search of an area. Many records also lack details on the level of survey effort per location (number of searchers, hours of search effort per day, number of days per search effort).

The lack of systematic surveys across the historical range of the species over time prevents us from using occurrence records to extrapolate reasonable estimates of species abundance or distribution or concluding that the species is extinct; even though none have been seen since 2006, Franklin's bumble bee populations could potentially persist undetected. The areas chosen for survey were selected due to a combination of abundance of floral resources throughout the colony cycle, relatively recent historical occurrence of the species, and accessibility to surveyors. However, the surveyed area represents a relatively small percentage of the historical range of the Franklin's bumble bee; therefore,

it is possible the species may persist in other areas of the range. There are numerous instances of species rediscovered after many years, even decades, of having been believed extinct (e.g., Scheffers *et al.* 2011, entire). As one example of such a case, Fender's blue butterfly (*Icaricia icarioides fenderi*) of Oregon was believed extinct after the last recorded observation in 1937, until it was rediscovered in 1989, 52 years later (Hammond and Wilson 1992, p. 175; Hammond and Wilson 1993, p. 2). Recent approaches to evaluating extinction likelihood place increased emphasis on the extensiveness and adequacy of survey effort (Keith *et al.* 2017, p. 321; Thompson *et al.* 2017, p. 328), and caution against declaring a species as extinct in the face of uncertainty (Akçakaya *et al.* 2017, p. 339).

The specific life-history characteristics and behavior of this rare species have not been studied; much of the information presented in the SSA Report (U.S. Fish and Wildlife Service 2018) is inferred from information on *Bombus* in general and some closely related species (western bumble bee (*B. occidentalis*), rusty patched bumble bee (*B. affinis*), and yellow-faced bumble bee (*B. vosnesenskii*), among others). The report also relied heavily on information from species experts.

Franklin's bumble bee is a primitively eusocial (highly social) bumble bee, living in colonies made up of a queen and her offspring (males and workers). Like other eusocial *Bombus* species, Franklin's bumble bee typically nests underground in abandoned rodent burrows or other cavities that offer resting and sheltering places, food storage, nesting, and room for the colony to grow (Plath 1927, pp. 122–128; Hobbs 1968, p. 157; Thorp *et al.* 1983, p. 1; Thorp 1999, p. 5). The species may also occasionally nest on the ground (Thorp *et al.* 1983, p. 1) or in rock piles (Plowright and

Stephen 1980, p. 475). It has even been found nesting in a residential garage in the city limits of Medford, Oregon (Thorp 2017, pers. comm.).

Colonies of Franklin's bumble bee have an annual cycle, initiated each spring when solitary queens emerge from hibernation and seek suitable nest sites (Thorp 2017, pers. comm.). Colonies may contain from 50 to 400 workers along with the founding queen (Plath 1927, pp. 123–124; Thorp *et al.* 1983, p. 2; Macfarlane *et al.* 1994, p. 7). Two colonies of Franklin's bumble bee that were initiated in the laboratory and set out to complete development in the field, contained over 60 workers by early September, and likely produced over 100 workers by the end of the season (Plowright and Stephen 1980, p. 477). The flight season of Franklin's bumble bee is from mid-May to the end of September (Thorp *et al.* 1983, p. 30); a few individuals have been encountered in October (Southern Oregon University Bee Collection records, *in* Xerces Society and Thorp 2010, Appendix 1, p. 39). At the end of the colony cycle, all the workers and the males die along with the founding queen; only the inseminated hibernating females (gyenes) are left to carry on the genetic lineage into the following year (Duchateau and Velthuis 1988).

As with all *Bombus* species, Franklin's bumble bee has a unique genetic system called the haplodiploid sex determination system. In this system, unfertilized (haploid) eggs become males that carry a single set of chromosomes, and fertilized (diploid) eggs become females that carry two sets of chromosomes. This system may result in lower levels of genetic diversity than the more common diploid-diploid sex determination system, in which both males and females carry two sets of chromosomes. Haplodiploid organisms may be more prone to population extinction than diploid-diploid organisms, due to their susceptibility to low population levels and loss of genetic diversity (U.S. Fish

and Wildlife Service 2018, p. 37). Inbreeding depression in bumble bees can lead to the production of sterile diploid males (Goulson *et al.* 2008, p. 11.7) and negatively affects bumble bee colony size (Herrman *et al.* 2007, p. 1167), which are key factors in a colony's reproductive success.

As one of the rarest *Bombus* species, Franklin's bumble bees are somewhat enigmatic, and a specific habitat study for the species has not been completed. Such a study was initiated in 2006, when the Franklin's bumble bee was last seen, but could not continue due to the subsequent absence of the species (Thorp 2017, pers. comm.). However, some general habitat associations of *Bombus* are known. Like all bumble bees, the Franklin's bumble bee requires a constant and diverse supply of flowers that bloom throughout the colony's life cycle, from spring to autumn (Xerces Society and Thorp 2010, p. 11); these resources would typically be found in open (non-forested) meadows in proximity to seeps and other wet meadow environments. The nectar from flowers provides carbohydrates, and the pollen provides protein. Franklin's bumble bee may have a foraging distance of up to 10 km (6.2 mi) (Thorp 2017, pers. comm.), but the species' typical dispersal distance is most likely 3 km (1.86 mi) or less (Hatfield 2017, pers. comm.; Goulson 2010, p. 96). Franklin's bumble bee have been observed collecting pollen from lupine (*Lupinus* spp.) and California poppy (*Eschscholzia californica*), and collecting nectar from horsemint or nettle-leaf giant hyssop (*Agastache urticifolia*) and mountain monardella (*Monardella odoratissima*) (Xerces Society and Thorp 2010, p. 11). Franklin's bumble bee may also collect both pollen and nectar from vetch (*Vicia* spp.) as well as rob nectar from it (Xerces Society and Thorp 2010, p. 11).

In summary, Franklin's bumble bee has been found in a wide array of sheltered and exposed habitat types at a broad elevational range, and the species appears to be a generalist forager. Our certainty regarding the Franklin's bumble bee's habitat needs is limited to (1) floral resources for nectaring throughout the colony cycle, and (2) relatively protected areas for breeding and shelter. The habitat elements that Franklin's bumble bee appears to prefer to fulfill those needs mentioned above are relatively flexible, plentiful, and widely distributed.

Summary of Biological Status and Threats

The Act directs us to determine whether any species is an endangered species or a threatened species because of any factors affecting its continued existence. We completed a comprehensive assessment of the biological status of the Franklin's bumble bee and prepared a report of the assessment (i.e., the SSA Report), which provides a thorough account of the species' overall viability. We define viability here as the likelihood of the species to persist over the long term and, conversely, to avoid extinction. Below, we summarize the conclusions of that assessment, which can be accessed on <http://www.regulations.gov> at Docket No. FWS-R1-ES-2018-0044.

3-R Analysis

To assess the Franklin's bumble bee's viability, we used the three conservation biology principles of resiliency, representation, and redundancy, or the 3-Rs (Smith *et al.* 2018). Briefly, resiliency supports the ability of the species to withstand environmental and demographic stochasticity (for example, wet or dry, warm or cold years); representation supports the ability of the species to adapt over time to long-term changes in the environment (for example, climate changes); and redundancy supports the ability

of the species to withstand catastrophic events (for example, droughts, hurricanes). In general, the more redundant, representative, and resilient a species is, the more likely it is to sustain populations over time, even under changing environmental conditions. Using these principles, we identified the species' ecological requirements for survival and reproduction at the individual, population, and species levels, and described the beneficial and risk factors influencing the species' viability. To assess resiliency and redundancy, we evaluated the change in Franklin's bumble bee occurrences (populations) over time. To assess representation (as an indicator of adaptive capacity) of the Franklin's bumble bee, we evaluated the spatial extent of occurrences over time. We evaluated the change in resiliency, representation, and redundancy from the past until the present; however, due to the lack of observations of the species since 2006, we did not project anticipated future states of these conditions.

Our analyses indicate that the resiliency, redundancy, and representation of the Franklin's bumble bee have all declined since the late 1990s. Historically, the species has always been rare 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 (U.S. Fish and Wildlife Service 2018, pp. 10–14); the species has not been observed since 2006, despite an intensive survey effort in select portions of the historical range. Search efforts for the species have been varied in timing, scope, intensity, and methodology. During the more intensive surveys from 1998 until the last observation in 2006, the Franklin's bumble bee was observed at 14 locations, including 8 locations where it had not been previously documented. In 1998, 98 bees were found among 11 locations. Searchers found fewer and fewer bees after that year even though

they continued extensive searches in multiple locations with the highest likelihood of finding the species. Twenty bees were located in 1999, nine individuals were observed in 2000, and one individual was observed in 2001. Although 20 Franklin's bumble bees were observed in 2002, only 3 were observed in 2003 (all at a single locality), and a single worker bee was observed in 2006. Despite continued intensive search efforts in these areas through 2017, there have been no confirmed observations of the Franklin's bumble bee since 2006. Data allow us to estimate 43 potential populations of the species since records have been kept. From 1998 to 2006, 14 potential populations could be identified. Since 2006, no populations have been located.

The vulnerability resulting from the Franklin's bumble bee's haplodiploid genetic system, as well as the loss in the abundance and spatial extent of its populations, suggest the resiliency, representation, and redundancy of the Franklin's bumble bee have all declined significantly since the late 1990s. The losses in both the number of populations and their spatial extent render the Franklin's bumble bee vulnerable to extinction even without further external stressors (e.g., pathogens and insecticide exposure) acting upon the species.

As part of our status assessment of the Franklin's bumble bee, we looked at potential stressors affecting the species' viability. Our full assessment of the stressors can be found in the SSA Report (U.S. Fish and Wildlife Service 2018). In accordance with section 4(a)(1) of the Act, in reviewing the status of the species to determine if it meets the definition of endangered or of threatened, we determine whether a species is an endangered species or a threatened species because of any of the following five factors:

(A) The present or threatened destruction, modification, or curtailment of its habitat or

range; (B) overutilization for commercial, recreational, scientific, or educational purposes; (C) disease or predation; (D) the inadequacy of existing regulatory mechanisms; and (E) other natural or manmade factors affecting its continued existence.

Potential stressors that we analyzed for the Franklin's bumble bee generally fit into three groups that correspond with Factors A (habitat loss and fragmentation), C (pathogens), or E (pesticide use, competition with nonnative bees, and effects of small population size). No potential stressors of the Franklin's bumble bee correspond with Factor B. There has never been any indication that the Franklin's bumble bee was at risk of overutilization for commercial, recreational, scientific, or educational purposes, and we did not find any new information to suggest this has changed. Existing regulatory mechanisms (Factor D) are discussed below in the context of how they help to reduce or ameliorate stressors to the Franklin's bumble bee.

Influence Factors Related to Destruction, Modification or Curtailment of Habitat

The 2010 petition identified destruction, degradation, and conversion of habitat as a threat to the Franklin's bumble bee. In our 90-day finding on the 2010 petition (76 FR 56381; September 13, 2011), we noted that the petitioners provided substantial information on threats to the Franklin's bumble bee from the destruction, modification, or curtailment of habitat, primarily due to the potential impacts of natural or prescribed fire. Because the loss and degradation of habitat has been shown to reduce both diversity and abundance in other *Bombus* species (Potts *et al.* 2010, pp. 348–349), our SSA Report (U.S. Fish and Wildlife Service 2018) looked at the potential stressor of habitat loss and fragmentation (from natural or prescribed fire, agricultural intensification, urban development, livestock grazing, and the effects of climate change).

Although conversion of natural habitat appears to be the primary cause of bumble bee habitat loss throughout the world (Goulson *et al.* 2015, p. 2; Kosior *et al.* 2010, p. 81), many researchers believe it is unlikely to be a main driver of the recent, widespread North American bee declines (Szabo *et al.* 2012, p. 236; Colla and Packer 2008, p. 1388; Cameron *et al.* 2011, p. 665). Our certainty regarding the Franklin's bumble bee's habitat needs is limited to (1) floral resources for nectaring throughout the colony cycle, and (2) relatively protected areas for breeding and shelter. Furthermore, the available information regarding locations where the species has been found indicates that the Franklin's bumble bee is a generalist forager and the species' specific needs and preferences for these habitat elements are relatively flexible, plentiful, and widely distributed. While we can say that *Bombus* species in general might prefer protected meadows with an abundance of wildflowers, the Franklin's bumble bee has been found in a wide array of sheltered and exposed habitat types at elevations ranging from 540 ft (162 m) to 7,800 ft (2,340 m).

Natural or Prescribed Fire

Fire caused by both natural and human-caused factors has been an important change on the landscape in the range of the Franklin's bumble bee. Because fire reduces natural succession of forests through the burning of encroaching woody plants, fire is a primary factor in the maintenance of grassland and meadow habitat that can support *Bombus* species (Shultz and Crone 1998, p. 244; Huntzinger 2003). With the increase in human development came fire suppression to limit damage to manmade structures. Fire suppression allows woody encroachment to occur, and the diverse landscape created by fire (open areas mixed within forested areas) is slowly being replaced by increasing areas

of denser forested habitat; the open areas that facilitated the growth of diverse understory plant communities are being reduced from their historical condition (Ruchty 2011, p. 26). Conifer species now cover some of the area that was previously open meadow habitat in the range of the Franklin's bumble bee (Panzer 2002; Shultz and Crone 1998, p. 244). Although this loss of habitat by fire suppression may have limited the availability and diversity of floral resources, as well as nest and overwintering habitat for the Franklin's bumble bee, healthy meadow habitat remains in areas where the Franklin's bumble bee was previously found (Godwin 2017, pers comm.; Colyer 2017, pers. comm.), and it is unlikely that loss of habitat from fire suppression was a factor in the decline of the species.

Increased fuel loads from fire suppression heighten the potential for catastrophic, large-scale, and high temperature wildfires. Any *Bombus* colonies in the path of this type of fire would be at risk of extirpation. Wildfire may have extirpated some historical populations of the Franklin's bumble bee, but we have no information suggesting that any known Franklin's bumble bee occurrence sites were in the path of catastrophic wildfires at the time the sites were occupied. Controlled burning became a management tool for reducing potential fuel loads for wildfire; controlled burning is carried out by Federal land management agencies including the U.S. Forest Service and Bureau of Land Management in the range of the Franklin's bumble bee. The effects of fire on invertebrates depends greatly on the biology of the specific taxa (Gibson *et al.* 1992), and in the case of the Franklin's bumble bee, controlled burns could certainly cause death of individual bees and negative effects to a colony. However, we have no information to indicate that controlled burns were a factor in the decline of the Franklin's bumble bee.

Agricultural Intensification

Agricultural intensification can result in habitat loss for bumble bees, as these practices often result in the planting of monocultures that tend to provide floral resources for a limited period of time, rather than throughout the colony's life cycle. Agricultural intensification can negatively impact wild bees by reducing floral resource diversity and abundance (U.S. Fish and Wildlife Service 2018, p. 32). Agricultural intensification was determined to be a primary factor leading to the local extirpation and decline of bumble bees in Illinois (Grixti *et al.* 2009, p. 75). An increased use of herbicides often accompanies development and agricultural intensification, and the widespread use of herbicides in agricultural, urban, and even natural landscapes has led to decreases in flowering plants (Potts *et al.* 2010, p. 350).

Within the historical range of the Franklin's bumble bee, total acres in agricultural cropland decreased in all three counties in Oregon (Douglas, Jackson, and Josephine) by greater than 50 percent from 1997 to 2012 (U.S. Department of Agriculture—National Agriculture Statistics Service 2017, pers. comm.; U.S. Fish and Wildlife Service 2018, p. 33). While the total number of acres of agricultural cropland is not synonymous with agricultural intensification (specifically, the expansion of monocultures), a decrease in total acres of agriculture leads us to conclude that agricultural intensification was not likely a factor in the decline of the Franklin's bumble bee. We have no documentation in our files or any direct evidence that agricultural intensification has contributed to the decline of the Franklin's bumble bee. Approximately 42 percent of sites where Franklin's bumble bee have been reported (18 of 43) occur on federally owned land, primarily U.S. Forest Service and Bureau of Land Management land; very little habitat

on these lands has been permanently altered or lost through agricultural intensification (U.S. Fish and Wildlife Service 2018, p. 32).

Urban Development

Ongoing urbanization contributes to the loss and fragmentation of natural habitats. Urban gardens and parks provide habitat for some pollinators including bumble bees (Frankie *et al.* 2005; McFrederick and LeBuhn 2006), but they tend not to support the species richness of bumble bees that can be found in nearby undeveloped landscapes (Xerces Society and Thorp 2010, p. 13), or that which was present historically (McFrederick and LeBuhn 2006). However, Franklin's bumble bee and western bumble bee have both been observed in urban areas of Ashland, Oregon, and in residential areas of Medford, Oregon. Furthermore, approximately 42 percent of the sites where Franklin's bumble bee have been reported (18 of 43) occur on federally owned land, primarily U.S. Forest Service and Bureau of Land Management land, and very little habitat on these lands has been permanently altered or lost through development.

Generally good habitat conditions currently exist throughout the known historical *B. franklini* locations and all of the recent focused survey areas, with the notable exceptions being the creation of Lake Applegate upon the completion of Applegate Dam in the fall of 1980 and a report of soil modification on a portion of the Gold Hill site. The Applegate Dam project inundated two historical *B. franklini* locations (Copper and 2 miles north of Copper), with historical observations from 1963 and 1968 (Xerces Society and Thorp 2010, p. 13; Thorp, pers. comm. 2017). It is not known if Franklin's bumble bees were still in the area and using the habitat at the time of the inundation. The Petition noted that in 2004, soil had been excavated and deposited in a portion of the Gold Hill

area (Xerces Society and Thorp 2010, p. 13). The last observation of Franklin's bumble bee at Gold Hill was in the year 2000, and the site was revisited 14 times over the next three years with no observations of Franklin's bumble bee. In both of these cases, we don't know if the species was still using the habitat in the area by the time the activities took place. We have no documentation in our files or any direct evidence that these incidents or urbanization or development in the range of Franklin's bumble bee contributed to the decline of the species.

Livestock Grazing

Livestock grazing occurs on public land in much of the historical range of the Franklin's bumble bee. Overgrazing by sheep between 1890 and 1920 resulted in trampling vegetation and denuding soils, and grazing is currently evident today in the continuing erosion of the granitic soils of the McDonald Basin, Siskiyou Gap, Mt. Ashland, and the Siskiyou Crest (LaLande 1995, p. 31; T. Atzet 2017, pers. comm.). Several studies on the impacts of livestock grazing on bees suggest an increase in the intensity of livestock grazing affects the species richness of bees (U.S. Fish and Wildlife Service 2018, p. 35). In contrast, grazing, especially by cattle, can play a key positive role in maintaining the abundance and species richness of preferred bumble bee forage (Carvell 2002, p. 44). Evidence of livestock grazing was observed interspersed within abundant floral resources in Franklin's bumble bee habitat during several recent targeted survey efforts (Brooks 1997, pers. comm.; U.S. Fish and Wildlife Service 2016; U.S. Fish and Wildlife Service 2017; Trail 2017, pers. comm.). We have no new information that the timing, location, intensity, or duration of grazing has changed, with the exception of the Cascade-Siskiyou National Monument, where most grazing has been retired (Colyer

2018, pers. comm.). The lack of specific information on the impacts of livestock grazing on the Franklin's bumble bee limits our ability to connect the activity to any specific species' response. Therefore, we do not consider livestock grazing a threat to the Franklin's bumble bee.

Effects of Climate Change

Specific impacts of climate change on pollinators are not well understood; most of the existing information on climate change impacts to pollinators comes from studies on butterflies. Studies specifically relating to bumble bees are scant, and we found no climate change information specific to the Franklin's bumble bee. Changes in temperature and precipitation, and the increased frequency of storm events, can affect pollinator population sizes directly, by affecting survival and reproduction (Intergovernmental Panel on Climate Change 2013, entire; Bale *et al.* 2002, p. 11; Roland and Matter 2016, p. 22). These climatic changes can also affect populations indirectly, by altering resource availability and species interactions (U.S. Fish and Wildlife Service 2018, p. 36).

Some studies suggest that pollinators are responding to climate change with recent latitudinal and elevational range shifts such that there is spatial mismatch among plants and their pollinators; while this has been demonstrated in butterflies, it may be less of a factor for bumble bees (U.S. Fish and Wildlife Service 2018, p. 36). As generalist foragers, bumble bees do not require synchrony with a particular plant species, although some bumble bee populations are active earlier in the season than in the past (Bartomeus *et al.* 2011, p. 20646). Bumble bee abundance for three species of *Bombus* in the Rocky Mountains increased when floral resources were available for more days, and the number

of days where floral resources were available increased with greater summer precipitation and later snowmelt dates (Ogilvie *et al.* 2017, p. 4). Several of the targeted Franklin's bumble bee and western bumble bee survey reports between 2015 and 2017 include mention of widespread hot, dry climate affecting timing and abundance of floral resources during the surveys (Bureau of Land Management 2015; Trail 2017, pers. comm.). Although the Ogilvie *et al.* study and the survey reports suggest potential indirect effects of climate change on *Bombus*, we have no information to indicate that the effects of climate change were connected to the decline of the Franklin's bumble bee; numerous *Bombus* species persist in areas considered to maintain good quality habitat for the Franklin's bumble bee (Pool 2014, entire; Colyer 2016, entire).

Summary

Although habitat loss has had negative effects on bumble bees, we conclude it is unlikely to be a main driver of the decline of the Franklin's bumble bee. Habitat appears generally intact and in good condition throughout the known, historical locations of the Franklin's bumble bee and all of the recent focused survey areas (with notable exceptions of the historical habitat lost by the creation of Lake Applegate in the fall of 1980 and soil modification that occurred on a portion of the Gold Hill site in 2004). In our assessment, we found no information to suggest the destruction, degradation, and conversion of habitat was a significant factor in the decline of the Franklin's bumble bee (U.S. Fish and Wildlife Service 2018, pp. 35–37), and we have no information to suggest that habitat destruction or modification will increase in intensity to the point where it will be a primary stressor to the species in its range in the near future.

Influence Factors Related to Disease or Predation

A number of diseases are known to naturally occur in bumble bee populations. These include the protozoan parasite *Crithidia bombi* (*C. bombi*), the tracheal mite *Locustacarus buchneri*, the microsporidium (parasitic fungus) *Nosema bombi* (*N. bombi*), as well as deformed wing virus. Pathogens and parasites are widespread generalists in the host genus, but affect species differently according to host susceptibility and tolerance to infection (Kissinger *et al.* 2011, p. 221; Malfi and Roulston 2014, p. 18). The host species' life history plays a role in the virulence of a given pathogen; for instance, parasites may have relatively smaller effects on species with shorter colony life cycles and smaller colony sizes (Rutrecht and Brown 2009, entire).

Pathogen spillover is a process whereby parasites and pathogens spread from commercial bee colonies to native bee populations (Colla *et al.* 2006, p. 461; Otterstatter and Thompson 2008, p. 1). The decline of certain *Bombus* species from the mid-1990s to present, particularly species in the subgenus *Bombus sensu stricto* (including Franklin's bumble bee), was contemporaneous with the collapse of commercially bred western bumble bee (raised primarily to pollinate greenhouse tomato and sweet pepper crops beginning in the late 1980s) (Szabo *et al.* 2012, pp. 232–233). This collapse was attributed to infections of *N. bombi*.

Nosema bombi has been detected in native bumble bees in North America, and has been found to be a part of the natural pathogen load. The fungus has been reported in Canada since the 1940s (Cordes *et al.* 2011, p. 7) and appears to have a broad host range in North American (Kissinger *et al.* 2011, p. 222). Infections of the pathogen primarily occur in the malpighian tubules (small excretory or water regulating glands), but also in fat bodies, nerve cells, and sometimes the trachea (Macfarlane *et al.* 1995). *Bombus*

colonies can appear to be healthy but still carry *N. bombi* and transmit it to other colonies, most likely when spores are fed to larvae and then infected adults drift into non-natal colonies (U.S. Fish and Wildlife Service 2018, p. 25).

The effect of pathogens on bumble bees varies from mild to severe (Macfarlane *et al.* 1995; Rutrecht *et al.* 2007, p. 1719; Otti and Schmid-Hempel 2008, p. 577). Bumble bees infected with *Nosema bombi* may have crippled wings, and queens may have distended abdomens and be unable to mate (Otti and Schmid-Hempel 2007, pp. 122–123). Malfi and Roulston (2014, p. 24) found that *N. bombi* infections are more frequent and more severe in rare species, and the species with the highest percentages of infected individuals were rare species. Furthermore, the effects of pathogen infection on bumble bees may be amplified by other stressors on the landscape. Nutritional stress may compromise the ability of bumble bees to survive parasitic infections, as evidenced by a significant difference in mortality in bumble bees on a restricted diet compared to well-fed bees infected with *C. bombi* (Brown *et al.* 2000, pp. 424–425).

A virulent strain of *N. bombi* from the buff-tailed bumble bee (*B. terrestris*) may have spread to the eastern bumble bee (*B. impatiens*) and western bumble bee prior to their shipment back into the United States, and once in this country, the commercially reared colonies may have spread the virulent strain to wild populations of Franklin's bumble bee (Xerces Society and Thorp 2010, p. 14). In work partially funded by the Service, the University of Illinois conducted surveys for parasites and pathogens in bumble bee populations of the Pacific Northwest and Midwest between 2005 and 2009. The goal was to assess *Bombus* populations for presence and prevalence of pathogens, particularly microsporidia, in an effort to provide baseline data to assess disease as a

potential factor in the decline of the Franklin's bumble bee, western bumble bee, and American bumble bee (*B. pensylvanicus*) (Solter *et al.* 2010, p. 1). The highest prevalence of *N. bombi* was found in western bumble bee, with 26 percent of collected individuals infected. *Crithidia bombi* infections of western bumble bee were 2.8 percent overall. No Franklin's bumble bees were collected during the study. However, Mt. Ashland, Oregon, was one of only three sites in the Pacific Northwest study area where *N. bombi* infections were found in multiple *Bombus* species (the indiscriminate cuckoo bumble bee (*B. insularis*) and black-notched bumble bee (*B. bifarius*)) (Solter *et al.* 2010, pp. 3–4). Although Cordes *et al.* (2011, p. 7) found a new allele in *N. bombi*, the recent study by Cameron *et al.* (2016) found no evidence of an exotic strain of *N. bombi*. While we have no evidence of direct effects of a virulent strain of *N. bombi* on the Franklin's bumble bee, *N. bombi* has been detected in closely related species in the range of the Franklin's bumble bee. Furthermore, *N. bombi* infections in rare species like the Franklin's bumble bee are more frequent, are more severe, and seem to affect a higher percentage of individuals of the species.

In summary, known pathogens occur within the historical range of the Franklin's bumble bee, and we have evidence of several pathogens infecting closely related species within that range that have also likely affected the Franklin's bumble bee. Although we have no direct evidence of pathogens playing a role in the decline of the Franklin's bumble bee, the disappearance of the Franklin's bumble bee occurred soon after a period of potential exposure to introduced pathogens, particularly *N. bombi*, which is known to have a more severe impact on rare species like the Franklin's bumble bee. Decline of other closely related pollinators has been associated with these pathogens, and it is highly

likely pathogens have had some negative influence on the health of Franklin's bumble bee populations.

Influence Factors Related to Other Natural or Manmade Factors

Pesticide Use

Exposure to pesticides can occur to bumble bees from direct spray or drift, or from gathering or consuming contaminated nectar or pollen (Johansen and Mayer 1990; Morandin *et al.* 2005, p. 619). Lethal and sublethal effects on bumble bee eggs, larvae, and adults have been documented for many different pesticides under various scenarios (U.S. Fish and Wildlife Service 2018, p. 28). Documented sub-lethal effects to individual bumble bees and colonies include reduced or no male production, reduced or no egg hatch, reduced queen production, reduced queen longevity, reduced colony weight gain, reduced brood size, reduced feeding, impaired ovary development, and an increased number of foragers or foraging trips or duration (interpreted as risky behaviors) (U.S. Fish and Wildlife Service 2018, p. 28). Studies have also found evidence of adverse impacts to bumble bee habitat associated with pesticides due to changes in vegetation and the removal or reduction of flowers needed to provide consistent sources of pollen, nectar, and nesting material (U.S. Fish and Wildlife Service 2018, p. 28). Declines in bumble bees in parts of Europe have been at least partially attributed to the use of pesticides (Williams 1986, p. 54; Kosior *et al.* 2007, p. 81).

Although the use of land for agricultural purposes has traditionally involved the use of pesticides and other products toxic to bees, one particular class of insecticides known as neonicotinoids have been strongly implicated in the decline of honey bees (*Apis* spp.) worldwide, and implicated in the decline of several *Bombus* species including

rusty patched bumble bee, buff-tailed bumble bee, and eastern bumble bee (Pisa *et al.* 2015, p. 69; Goulson 2013, pp. 7–8; Colla and Packer 2008, p. 10; Lundin et al. 2015, p. 7). Neonicotinoids are a broad class of insecticides based on nicotine compounds used in a variety of agricultural applications; they act as a neurotoxin, affecting the central nervous system of insects by interfering with the receptors of the insects' nervous system, causing overstimulation, paralysis, and death. The neonicotinoid family of insecticides includes acetamiprid, clothianidin, imidacloprid, nitenpyram, nithiazine, thiacloprid, and thiamethoxam. In the range of the Franklin's bumble bee (Jackson, Douglas, and Josephine Counties in Oregon, as well as Trinity and Siskiyou Counties in California), the first reported use of imidacloprid was in 1996, thiamethoxam in 2001, and clothianidin in 2004. The use of neonicotinoid pesticides continued in the range of the species through 2006, when the last observation of the Franklin's bumble bee was recorded. Total estimated neonicotinoid applications increased from 53.35 pounds per acre (lbs/ac) (24.19 kilograms per hectare)(kg/ac) in 1996 to 1,144.128 lbs/ac (518.86 kg/ha) in 2014; however, the exponential growth of neonicotinoid applications started in 2011, 5 years after the last observation of the species. The vast majority of neonicotinoids are used as seed treatments on grains and other field crops (Oregon Department of Agriculture 2018, pers. comm.).

No studies have investigated the effects of pesticide use on the Franklin's bumble bee, and no discoveries have been documented of any Franklin's bumble bees injured or killed by pesticides. The Franklin's bumble bee is a habitat generalist and is not known to have a close association with agricultural lands; therefore, it may have less exposure to pesticides than some other *Bombus* species. However, pesticide use occurs in the range

of the Franklin's bumble bee. The similarity in foraging traits that the Franklin's bumble bee has with both honey bees and the other *Bombus* species (e.g., generalist foragers collecting pollen from similar food sources) allows us to infer that the Franklin's bumble bee would suffer exposure to and impacts from pesticides in similar measure to other *Bombus* species when the Franklin's bumble bee is in areas where pesticides are applied.

Effects of Small Population Size

The Franklin's bumble bee is rare and has always had very small populations (relative to other similar, native bumble bees in the western United States), and likely has low genetic diversity due to the haplodiploidy genetic system it shares with all *Bombus* species (Zayed 2009, p. 238). These factors make the species more vulnerable to habitat change or loss, parasites, diseases, stochastic events, and other natural disasters such as droughts (Xerces Society and Thorp 2010, p. 20). Between 1998 and 2006, the number of Franklin's bumble bee observations went from a high of 98 at 11 locations, to a lone individual in 2006. No observations of the Franklin's bumble bee have occurred since 2006, despite an increase in the survey effort. Diploid male production has been detected in naturally occurring populations of bumble bees, and recent modeling work has shown that diploid male production may initiate a rapid extinction vortex (a situation in which genetic traits and environmental conditions combine to lead a species to extinction) (Goulsen *et al.* 2008, p. 11.8). Because of inbreeding and the production of sterile males, the haplodiploid genetic system makes bumble bees very vulnerable when populations get small (Colla 2018, pers. comm.). Although we have no direct evidence that small population size or a rapid extinction vortex contributed to the decline of the species, the genetic system and historically small population size of the Franklin's bumble bee likely

heightened the species' vulnerability to other stressors in the environment; we, therefore, consider the effects of small population size a threat to the species.

Competition with Nonnative Bees

The European honey bee (*Apis mellifera*) was first introduced to eastern North America in the early 1620s and into California in the early 1850s (Xerces Society and Thorp 2010, p. 21). The resource needs of the European honey bee and native *Bombus* species may overlap, resulting in the potential for increased competition for resources (Thomson 2004, p. 458; Thomson 2006, p. 407). Decreased foraging activity and lowered reproductive success of *Bombus* colonies have been noted near European honey bee hives (Evans 2001, pp. 32–33; Thomson 2004, p. 458; Thomson 2006, p. 407). Additionally, the size of workers of native *Bombus* species were noticeably reduced where European honey bees were present, which may be detrimental to *Bombus* colony success (Goulson and Sparrow 2009, p. 177). It is likely that the effects discussed in these studies are local in space and time, and most pronounced where floral resources are limited and large numbers of commercial European honey bee colonies are introduced (Xerces Society and Thorp 2010, p. 21). We could not find information to indicate that any area of Franklin's bumble bee habitat in the range of the species has limited floral resources and large numbers of European honey bees. We have no information related to the specific placement of commercial honey bee colonies in or near Franklin's bumble bee habitat. Furthermore, European honey bees have been present without noticeable declines in *Bombus* populations over large portions of their ranges (Xerces Society and Thorp 2010, p. 21), and we have no new information that connects competition from European honey bees to the decline of the Franklin's bumble bee.

There is potential for nonnative commercially raised bumble bees to naturalize and outcompete native bumble bees for limited resources such as nesting sites and forage areas. Five commercially reared eastern bumble bee workers and one queen were captured in the wild near greenhouses where commercial bumble bees are used, suggesting this species may have naturalized outside of its native range. In this study, the eastern bumble bee, which has a native range in eastern North America, was detected in western Canada (Ratti and Colla 2010, pp. 29–31). A study in Japan found that nonnative buff-tailed bumble bee colonies, founded by bees that had escaped from commercially produced colonies, had more than four times the mean reproductive output of native bumble bees (Matsumura *et al.* 2004, p. 93). A study in England found that commercially raised buff-tailed bumble bee colonies had higher nectar-foraging rates and greater reproductive output than a native subspecies of the buff-tailed bumble bee (Ings *et al.* 2006, p. 940). Colonies of eastern bumble bee were imported to pollinate agricultural crops and strawberries in Grants Pass, Oregon, in the range of the Franklin's bumble bee (Xerces Society and Thorp 2010, p. 18).

Although nonnative *Bombus* species in the range of Franklin's bumble bee could outcompete Franklin's bumble bee for floral resources and nesting habitat, we could not find any information to definitively connect competition with nonnative bumble bees to the decline of the Franklin's bumble bee. Furthermore, invertebrate surveys in Franklin's bumble bee habitat continue to show evidence of healthy populations of other native *Bombus* species unaffected by competition from nonnative bees (Pool 2014, entire; Colyer 2016, entire).

Summary

We find that several natural and other human-caused factors contributed to the decline of the Franklin's bumble bee. While it is unlikely that pesticides alone can account for the decline of the Franklin's bumble bee, documented effects of pesticides on closely related *Bombus* species suggest pesticide use was likely a factor in the decline of the Franklin's bumble bee. The haplodiploid genetic system of the Franklin's bumble bee, combined with its historically small population size, was also likely a factor in the decline of the species. Although nonnative *Bombus* species in the range of the Franklin's bumble bee could outcompete the Franklin's bumble bee for floral resources and nesting habitat, we could not find any information connecting competition with nonnative bumble bees to the decline of the Franklin's bumble bee. Additionally, surveys in Franklin's bumble bee habitat continue to show evidence of healthy populations of other native *Bombus* species unaffected by competition from nonnative bees.

Synergistic and Cumulative Effects

It is likely that several risk factors are acting cumulatively and synergistically on many *Bombus* species, including the Franklin's bumble bee (Goulson *et al.* 2015, p. 5), and the combination of multiple stressors is likely more harmful than a stressor acting alone (Gill *et al.* 2012; Coors and DeMeester 2008; Sih *et al.* 2004). There is recent evidence that the interactive effects of pesticides and pathogens could be particularly harmful for bumble bees (U.S. Fish and Wildlife Service 2018, p. 39). Nutritional stress may compromise the ability of bumble bees to survive parasitic infections (Brown *et al.* 2000, pp. 424–425). Bumble bees with activated immunity may have metabolic costs, such as increased food consumption (Tyler *et al.* 2006, p. 2; Moret and Schmid-Hempel 2000, pp. 1166–1167). Additionally, exposure to pesticides may increase with increased

food consumption in infected bees (Goulson *et al.* 2015, p. 5). Activating immunity impairs learning in bumble bees (Riddell and Mallon 2006; Alghamdi *et al.* 2008, p. 480). Impaired learning is thought to reduce the ability of bees to locate floral resources and extract nectar and pollen, therefore exacerbating nutritional stresses (Goulson *et al.* 2015, p. 5). Further, evidence of the relationship between low genetic diversity and disease susceptibility was discussed in Cameron *et al.* (2011b, p. 665), who stated that declining North American species with low genetic diversity have higher prevalence of the pathogen *N. bombi*. In summary, we, therefore, find that 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 factors would cause on its own.

Existing Regulatory Mechanisms and Conservation Efforts

Surveys conducted by Dr. Robbin Thorp, other private individuals, University classes and researchers, the U.S. Forest Service, and Bureau of Land Management have significantly contributed to the existing information on Franklin's bumble bee. However, other than those search efforts, we are aware of no conservation efforts or beneficial actions specifically taken to address the threats to the Franklin's bumble bee. Oregon does not include invertebrates on their State endangered species list (Oregon Department of Fish and Wildlife 2018) and California has no bee species included on its list of Threatened and Endangered Invertebrates (California Department of Fish and Wildlife 2018). California has the Franklin's bumble bee listed on its list of Terrestrial and Vernal Pool Invertebrates of Conservation Priority but has no required actions or special protections associated with the listing (California Department of Fish and Wildlife 2017,

p. 10). The Franklin's bumble bee is on the species index for the U.S. Forest Service and Bureau of Land Management Interagency Special Status/Sensitive Species Program (ISSSSP). Although the Federal agencies do include the species in survey efforts and conduct general meadow enhancement activities, there are no actions resulting from the ISSSSP classification that address known threats to the Franklin's bumble bee (Interagency Special Status/Sensitive Species Program 2018).

General awareness of colony collapse disorder and increase of conservation efforts for pollinators in general has likely had limited, indirect effects on policies and regulations. The U.S. Forest Service is working to include a section in all biological evaluations to address the effects from agency actions on pollinators. In addition, the Rogue River-Siskiyou National Forest is currently implementing projects and mitigations to create and enhance pollinator habitat (Colyer 2018, pers. comm.). The Oregon Department of Agriculture restricts some potential sources of *N. bombi* from entering the State for agricultural uses, including commercially produced colonies of eastern bumble bee; only *Bombus* species native to Oregon are allowed for commercial pollination purposes (Oregon Department of Agriculture 2017, p. 5). However, California allows, with appropriate permits, the importation of eastern bumble bee, and other species such as the blue orchard bee (*Osmia lignaria*) for greenhouse pollination (California Department of Food and Agriculture 2017), making the potential for pathogen spillover from non-native bees higher in California

Some local municipalities in Oregon enacted legislation against aerial pesticide applications but none in the range of the Franklin's bumble bee (Powell 2017, p. 1; City of Portland 2015, p. 2). However, in the 2017 legislative session, Oregon passed an

Avoidance of Adverse Effects on Pollinating Insects law (Oregon Revised Statutes (ORS) 634.045) that is providing enhanced training of licensed and unlicensed pesticide applicators in the State (Melathopoulos 2018, pers. comm.), and could thereby reduce effects of pesticides on pollinators including Franklin's bumble bee.

In January 2017, the U.S. Environmental Protection Agency's Office of Pesticide Programs published their *Policy to Mitigate the Acute Risk to Bees from Pesticide Products*, which recommended new labeling statements for pesticide products including warnings for pesticides with a known acute toxicity to bees (Tier 1 pesticides), including neonicotinoids (specifically including imidacloprid, clothianidin, and thiamethoxam) (U.S. Environmental Protection Agency 2017, p. 31). In addition, the Environmental Protection Agency is working with State and Tribal agencies to develop and implement local pollinator protection plans, known as Managed Pollinator Protection Plans (MP3s). The Environmental Protection Agency is promoting MP3s to address potential pesticide exposure to bees at and beyond the site of the application. However, States and Tribes have the flexibility to determine the scope of pollinator protection plans that best responds to pollinator issues in their regions. For example, State and Tribal MP3s may address pesticide-related risks to all pollinators, including managed bees and wild insect and non-insect pollinators (U.S. Environmental Protection Agency 2018).

The U.S. Fish and Wildlife Service implemented a ban on the use of neonicotinoids on all lands in the National Wildlife Refuge System in 2014 (U.S. Fish and Wildlife Service 2014); however, no refuge lands occur within the range of the Franklin's bumble bee. None of these aforementioned measures has appreciably reduced

or fully ameliorated threats to the Franklin's bumble bee, as evidenced by the species' acute and rangewide decline.

Summary of Status

The significant decrease in abundance and distribution of the Franklin's bumble bee to date has greatly reduced the species' ability to adapt to changing environmental conditions and to guard against further losses of adaptive diversity and potential extinction due to catastrophic events. It also substantially reduced the ability of the Franklin's bumble bee to withstand environmental variation, catastrophic events, and changes in physical and biological conditions. Coupled with the increased risk of extirpation due to the interaction of reduced population size and the species' haplodiploid genetic system, the Franklin's bumble bee may lack the resiliency required to sustain populations into the future, even without further exposure to pathogens and pesticides.

Determination

Section 4 of the Act and its implementing regulations at 50 CFR part 424 set forth the procedures for adding species to the Federal Lists of Endangered and Threatened Wildlife and Plants. Under section 4(b)(1)(a), the Secretary is to make endangered or threatened determinations required by subsection 4(a)(1) solely on the basis of the best scientific and commercial data available to him after conducting a review of the status of the species and after taking into account conservation efforts by States or foreign nations. The standards for determining whether a species is endangered or threatened are provided in section 3 of the Act. An endangered species is any species that is "in danger of extinction throughout all or a significant portion of its range." A threatened species is

any species that is “likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.”

We have carefully assessed the best scientific and commercial information available regarding the past, present, and future threats to the Franklin’s bumble bee. Our assessment did not find habitat loss or modification (Factor A) to be the cause of the decline of the Franklin’s bumble bee, and we have no information to suggest that habitat destruction or modification will increase in intensity in the near future. There is no indication that the Franklin’s bumble bee was at risk of overutilization for commercial, recreational, scientific, or educational purposes (Factor B). Known pathogens occur within the historical range of the Franklin’s bumble bee, and we have evidence of several pathogens (Factor C) infecting closely related species within that range. Although we do not have direct evidence of pathogens playing a role in the decline of the Franklin’s bumble bee, the disappearance of the Franklin’s bumble bee occurred soon after a period of introduction of new pathogens. Furthermore, documented effects to other closely related species lead many species experts to suspect the effects of pathogens had some connection to the decline of the Franklin’s bumble bee. We evaluated existing regulatory mechanisms (Factor D) and conservation measures and their effects on the stressors and the status of the Franklin’s bumble bee; we found that the existing regulatory mechanisms or conservation measures in place do not appreciably reduce or ameliorate the existing threats to the species, as evidenced by the species’ acute and rangewide decline. Although we have no direct evidence that pesticide use contributed to the decline of the Franklin’s bumble bee, confirmed effects to other closely related *Bombus* species suggest that pesticide use (Factor E) was likely a factor in the decline of the

Franklin's bumble bee. Additionally, given the historically small population size (Factor E) of the Franklin's bumble bee and its haplodiploid genetic system, it is more vulnerable to extirpation than other species, and it is likely the genetic system and the rarity of this species contributed to the decline of the Franklin's bumble bee (Factor E).

The combination of multiple stressors is typically more harmful than a stressor acting alone, and it is likely that several of the stressors mentioned above acted cumulatively and synergistically on the Franklin's bumble bee. 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 factors caused on its own. Although the ultimate source of the decline is unknown, the acute and rangewide decline of the Franklin's bumble bee is undisputable.

The Act defines an endangered species as any species that is "in danger of extinction throughout all or a significant portion of its range" and a threatened species as any species "that is likely to become endangered throughout all or a significant portion of its range within the foreseeable future." We find that the Franklin's bumble bee is presently in danger of extinction throughout all of its range based on the severity and immediacy of threats currently affecting the species.

The threats of pathogens, pesticides, and small population size are ongoing and rangewide; they will continue to act individually and in combination to decrease the resiliency, redundancy, and representation of the Franklin's bumble bee. The risk of extinction is high because the species has not been found since 2006, and the suspected threats to the species persist. Therefore, on the basis of the best available scientific and

commercial information, we propose to list the Franklin's bumble bee as endangered in accordance with sections 3(6) and 4(a)(1) of the Act. We find that a threatened species status is not appropriate for the Franklin's bumble bee because of the extreme loss of abundance of the species, because the threats are occurring rangewide and are not localized, and because the threats are ongoing and expected to continue into the future.

Under the Act and our implementing regulations, a species may warrant listing if it is endangered or threatened throughout all or a significant portion of its range. Because we have determined that the Franklin's bumble bee is in danger of extinction throughout its range, we find it unnecessary to proceed to an evaluation of potentially significant portions of the range. Where the best available information allows the Services to determine a status for the species rangewide, that determination should be given conclusive weight because a rangewide determination of status more accurately reflects the species' degree of imperilment and better promotes the purposes of the statute. Under this reading, we should first consider whether listing is appropriate based on a rangewide analysis and proceed to conduct a "significant portion of its range" analysis if, and only if, a species does not qualify for listing as either endangered or threatened according to the "all" language. We note that the court in *Desert Survivors v. Department of the Interior*, No. 16-cv-01165-JCS, 2018 WL 4053447 (N.D. Cal. Aug. 24, 2018), did not address this issue, and our conclusion is therefore consistent with the opinion in that case.

Although this species has not been found since 2006, we conclude it is premature at this time to determine that the species is extinct absent a more thorough survey effort. We invite public comment on the probability of extinction for this species and will revisit

this conclusion as appropriate with respect to available information for the final determination. We recommend expanded future survey efforts to help verify the status of this species.

Available Conservation Measures

Conservation measures provided to species listed as endangered or threatened species under the Act include recognition, recovery actions, requirements for Federal protection, and prohibitions against certain practices. Recognition through listing results in public awareness, and conservation by Federal, State, Tribal, and local agencies; private organizations; and individuals. The Act encourages cooperation with the States and other countries and calls for recovery actions to be carried out for listed species. The protection required by Federal agencies and the prohibitions against certain activities are discussed, in part, below.

The primary purpose of the Act is the conservation of endangered and threatened species and the ecosystems upon which they depend. The ultimate goal of such conservation efforts is the recovery of these listed species, so that they no longer need the protective measures of the Act. Subsection 4(f) of the Act calls for the Service to develop and implement recovery plans for the conservation of endangered and threatened species. The recovery planning process involves the identification of actions that are necessary to halt or reverse the species' decline by addressing the threats to its survival and recovery. The goal of this process is to restore listed species to a point where they are secure, self-sustaining, and functioning components of their ecosystems.

Recovery planning includes the development of a recovery outline shortly after a species is listed and preparation of a draft and final recovery plan. The recovery outline

guides the immediate implementation of urgent recovery actions and describes the process to be used to develop a recovery plan. Revisions of the plan may be done to address continuing or new threats to the species, as new substantive information becomes available. The recovery plan also identifies recovery criteria for review of when a species may be ready for reclassification from endangered to threatened (“downlisting”) or removal from the List of Endangered and Threatened Wildlife or List of Endangered and Threatened Plants (“delisting”), and methods for monitoring recovery progress. Recovery plans also establish a framework for agencies to coordinate their recovery efforts and provide estimates of the cost of implementing recovery tasks. Recovery teams (composed of species experts, Federal and State agencies, nongovernmental organizations, and stakeholders) are often established to develop recovery plans. When completed, the recovery outline will be available on our website (<http://www.fws.gov/endangered>), or from our Oregon Fish and Wildlife Office (see **FOR FURTHER INFORMATION CONTACT**).

Implementation of recovery actions generally requires the participation of a broad range of partners, including other Federal agencies, States, Tribes, nongovernmental organizations, businesses, and private landowners. Examples of recovery actions include habitat restoration (e.g., restoration of native vegetation), research, captive propagation and reintroduction, and outreach and education. The recovery of many listed species cannot be accomplished solely on Federal lands because their range may occur primarily or solely on non-Federal lands. To achieve recovery of these species requires cooperative conservation efforts on private, State, and Tribal lands. If this species is listed, funding for recovery actions will be available from a variety of sources, including Federal

budgets; State programs; and cost share grants for non-Federal landowners, the academic community, and nongovernmental organizations. In addition, pursuant to section 6 of the Act, the States of Oregon and California would be eligible for Federal funds to implement management actions that promote the protection or recovery of the Franklin's bumble bee. Information on our grant programs that are available to aid species recovery can be found at: <http://www.fws.gov/grants>.

Although the Franklin's bumble bee is only proposed for listing under the Act at this time, please let us know if you are interested in participating in recovery efforts for this species. Additionally, we invite you to submit any new information on this species whenever it becomes available and any information you may have for recovery planning purposes (see **FOR FURTHER INFORMATION CONTACT**).

Section 7(a) of the Act requires Federal agencies to evaluate their actions with respect to any species that is proposed or listed as an endangered or threatened species and with respect to its critical habitat, if any is designated. Regulations implementing this interagency cooperation provision of the Act are codified at 50 CFR part 402.

Section 7(a)(4) of the Act requires Federal agencies to confer with the Service on any action that is likely to jeopardize the continued existence of a species proposed for listing or result in destruction or adverse modification of proposed critical habitat. If a species is listed subsequently, section 7(a)(2) of the Act requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of the species or destroy or adversely modify its critical habitat. If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency must enter into consultation with the Service.

Federal agency actions within the species' habitat that may require conference or consultation or both as described in the preceding paragraph include: Management and any other landscape-altering activities on Federal lands administered by the U.S. Forest Service and Bureau of Land Management; issuance of section 404 Clean Water Act (33 U.S.C. 1251 et seq.) permits by the U.S. Army Corps of Engineers; and construction and maintenance of roads or highways by the Federal Highway Administration.

The Act and its implementing regulations set forth a series of general prohibitions and exceptions that apply to endangered wildlife. The prohibitions of section 9(a)(1) of the Act, codified at 50 CFR 17.21, make it illegal for any person subject to the jurisdiction of the United States to take (which includes harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect; or to attempt any of these) endangered wildlife within the United States or on the high seas. In addition, it is unlawful to import; export; deliver, receive, carry, transport, or ship in interstate or foreign commerce in the course of commercial activity; or sell or offer for sale in interstate or foreign commerce any listed species. It is also illegal to possess, sell, deliver, carry, transport, or ship any such wildlife that has been taken illegally. Certain exceptions apply to employees of the Service, the National Marine Fisheries Service, other Federal land management agencies, and State conservation agencies.

We may issue permits to carry out otherwise prohibited activities involving endangered wildlife under certain circumstances. Regulations governing permits are codified at 50 CFR 17.22. With regard to endangered wildlife, a permit may be issued for the following purposes: for scientific purposes, to enhance the propagation or survival of the species, and for incidental take in connection with otherwise lawful activities.

There are also certain statutory exemptions from the prohibitions, which are found in sections 9 and 10 of the Act.

It is our policy, as published in the *Federal Register* on July 1, 1994 (59 FR 34272), to identify to the maximum extent practicable at the time a species is listed, those activities that would or would not constitute a violation of section 9 of the Act. The intent of this policy is to increase public awareness of the effect of a proposed listing on proposed and ongoing activities within the range of the species proposed for listing. Based on the best available information, the following actions would be unlikely to result in a violation of section 9 of the Act if they are authorized and carried out in accordance with applicable law; this list is not comprehensive:

- (1) Recreation, specifically skiing at Mt. Ashland, and use of the Pacific Crest Trail;
- (2) Timber sales; and
- (3) Livestock grazing.

Based on the best available information, the following actions may potentially result in a violation of section 9 of the Act if they are not authorized in accordance with applicable law; this list is not comprehensive:

- (1) Unauthorized handling or collecting of the Franklin's bumble bee;
- (2) The unauthorized release of biological control agents that attack any life stage of the Franklin's bumble bee, including the unauthorized use of herbicides, pesticides, or other chemicals in habitats in which the Franklin's bumble bee is known to occur; and

(3) Unauthorized release of nonnative species or native species that carry pathogens, diseases, or fungi that are known or suspected to adversely affect the Franklin's bumble bee where the species is known to occur.

Questions regarding whether specific activities would constitute a violation of section 9 of the Act should be directed to the Oregon Fish and Wildlife Office (see **FOR FURTHER INFORMATION CONTACT**).

Critical Habitat

Background

Critical habitat is defined in section 3 of the Act as:

(1) The specific areas within the geographical area occupied by the species, at the time it is listed in accordance with the Act, on which are found those physical or biological features

(a) Essential to the conservation of the species, and

(b) Which may require special management considerations or protection; and

(2) Specific areas outside the geographical area occupied by the species at the time it is listed, upon a determination that such areas are essential for the conservation of the species.

Our regulations at 50 CFR 424.02 define "geographical area occupied by the species" as: An area that may generally be delineated around species' occurrences, as determined by the Secretary of the Interior (i.e., range). Such areas may include those areas used throughout all or part of the species' life cycle, even if not used on a regular basis (e.g., migratory corridors, seasonal habitats, and habitats used periodically, but not solely by vagrant individuals).

Conservation, as defined under section 3 of the Act, means to use and the use of all methods and procedures that are necessary to bring an endangered or threatened species to the point at which the measures provided pursuant to the Act are no longer necessary. Such methods and procedures include, but are not limited to, all activities associated with scientific resources management such as research, census, law enforcement, habitat acquisition and maintenance, propagation, live trapping, and transplantation, and, in the extraordinary case where population pressures within a given ecosystem cannot be otherwise relieved, may include regulated taking.

Critical habitat receives protection under section 7 of the Act through the requirement that Federal agencies ensure, in consultation with the Service, that any action they authorize, fund, or carry out is not likely to result in the destruction or adverse modification of critical habitat. The designation of critical habitat does not affect land ownership or establish a refuge, wilderness, reserve, preserve, or other conservation area. Such designation does not allow the government or public to access private lands. Such designation does not require implementation of restoration, recovery, or enhancement measures by non-Federal landowners. Where a landowner requests Federal agency funding or authorization for an action that may affect a listed species or critical habitat, the consultation requirements of section 7(a)(2) of the Act would apply, but even in the event of a destruction or adverse modification finding, the obligation of the Federal action agency and the landowner is not to restore or recover the species, but to implement reasonable and prudent alternatives to avoid destruction or adverse modification of critical habitat.

Under the first prong of the Act's definition of critical habitat, areas within the geographical area occupied by the species at the time it was listed are included in a critical habitat designation if they contain physical or biological features (1) which are essential to the conservation of the species and (2) which may require special management considerations or protection. For these areas, critical habitat designations identify, to the extent known using the best scientific and commercial data available, those physical or biological features that are essential to the conservation of the species (such as space, food, cover, and protected habitat). In identifying those physical or biological features within an area, we focus on the specific features that support the life-history needs of the species, including but not limited to, water characteristics, soil type, geological features, prey, vegetation, symbiotic species, or other features. A feature may be a single habitat characteristic, or a more complex combination of habitat characteristics. Features may include habitat characteristics that support ephemeral or dynamic habitat conditions. Features may also be expressed in terms relating to principles of conservation biology, such as patch size, distribution distances, and connectivity.

Under the second prong of the Act's definition of critical habitat, we can designate critical habitat in areas outside the geographical area occupied by the species at the time it is listed, upon a determination that such areas are essential for the conservation of the species. We will determine whether unoccupied areas are essential for the conservation of the species by considering the life-history, status, and conservation needs of the species. This will be further informed by any generalized conservation strategy, criteria, or outline that may have been developed for the species to provide a substantive

foundation for identifying which features and specific areas are essential to the conservation of the species and, as a result, the development of the critical habitat designation. For example, an area currently occupied by the species but that was not occupied at the time of listing may be essential to the conservation of the species and may be included in the critical habitat designation.

Section 4 of the Act requires that we designate critical habitat on the basis of the best scientific data available. Further, our Policy on Information Standards Under the Endangered Species Act (published in the *Federal Register* on July 1, 1994 (59 FR 34271)), the Information Quality Act (section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001 (Pub. L. 106-554; H.R. 5658)), and our associated Information Quality Guidelines, provide criteria, establish procedures, and provide guidance to ensure that our decisions are based on the best scientific data available. They require our biologists, to the extent consistent with the Act and with the use of the best scientific data available, to use primary and original sources of information as the basis for recommendations to designate critical habitat.

Prudency Determination

Section 4(a)(3) of the Act, as amended, and implementing regulations (50 CFR 424.12), require that, to the maximum extent prudent and determinable, the Secretary shall designate critical habitat at the time the species is determined to be an endangered or threatened species. Our regulations (50 CFR 424.12(a)(1)) state that the designation of critical habitat is not prudent when one or both of the following situations exist:

(1) The species is threatened by taking or other human activity, and identification of critical habitat can be expected to increase the degree of threat to the species, or

(2) Such designation of critical habitat would not be beneficial to the species. The regulations also provide that, in determining whether a designation would not be beneficial, the factors the Service may consider include but are not limited to: Whether the present or threatened destruction, modification, or curtailment of a species' habitat or range is not a threat to the species, or whether any areas meet the definition of "critical habitat" (50 CFR 424.12(a)(1)(ii)).

As discussed above in the threats analysis, there is currently no imminent threat of take attributed to collection or vandalism identified under Factor B for this species, and identification and mapping of critical habitat is not expected to initiate any such threat. In the absence of finding that the designation of critical habitat would increase threats to a species, we next determine whether such designation of critical habitat would be beneficial to the Franklin's bumble bee. For the reasons discussed below, we have determined that designating critical habitat would not be beneficial.

Designating Habitat Would Not Be Beneficial to the Species

The Franklin's bumble bee was widely distributed throughout its range and considered flexible with regards to habitat requirements. We know that the Franklin's bumble bee needs (1) floral resources for nectaring throughout the colony cycle, and (2) relatively protected areas for breeding and shelter. In addition, because the best available scientific information indicates that the Franklin's bumble bee is a generalist forager, its habitat preferences and needs are relatively plentiful and widely distributed. While *Bombus* species in general might prefer protected meadows with an abundance of wildflowers, the Franklin's bumble bee has been found in a wide array of habitat types, from foraging in montane meadows in a remote wilderness area of California to nesting

in a residential garage in the city limits of Medford, Oregon. The species has a broad elevational range from 162 m (540 ft) to 2,340 m (7,800 ft); elevation does not appear to limit the species' dispersal capabilities.

Some general habitat associations of *Bombus* are known; however, as one of the rarest *Bombus* species, the Franklin's bumble bee is somewhat enigmatic and a specific habitat study for the Franklin's bumble bee has not been completed. Such a study was initiated in 2006, when the Franklin's bumble bee was last seen, but could not continue due to the subsequent absence of the species. Therefore, we cannot, with specificity, articulate the physical or biological features essential to the conservation of the Franklin's bumble bee, or determine whether or not any area would meet the definition of critical habitat for the Franklin's bumble bee.

Since it was first identified in 1921, the Franklin's bumble bee appears to have always been a rare species limited in abundance. In fact, the species has perhaps the most limited range of any *Bombus* species in the world. Nonetheless, Franklin's bumble bee habitat is not in short supply, and habitat loss is not a threat to the species. With the exception of the inundation of two historical Franklin's bumble bee locations by the construction of Applegate dam and a report of soil modification on a portion of the Gold Hill site four years after the last occurrence of Franklin's bumble bee in the area, no noticeable destruction, modification, or curtailment of habitat or range can be identified in areas where the species had been previously located. No significant destruction or modification of Franklin's bumble bee habitat can be attributed to natural fire, prescribed fire, agricultural intensification, urban development, livestock grazing, or the effects of climate change. Additionally, as discussed above, the Franklin's bumble bee has been

documented using a wide variety of habitat throughout its range. Because habitat for the Franklin's bumble bee is not limiting, and because the bee is considered to be flexible with regards to its habitat, the availability of habitat does not limit the conservation of the Franklin's bumble bee now, nor will it in the foreseeable future.

In the Service and National Marine Fisheries Service's response to comments on the February 11, 2016, final rule (81 FR 7414) revising the critical habitat regulations, the Services expressly contemplated a fact pattern where designating critical habitat may not be beneficial to the species: "[I]n some circumstances, a species may be listed because of factors other than threats to its habitat or range, such as disease, and the species may be a habitat generalist. In such a case, on the basis of the existing and revised regulations, it is permissible to determine that critical habitat is not beneficial and, therefore, not prudent" (81 FR 7425). This is the fact pattern we are presented with in the case of the Franklin's bumble bee. In view of the foregoing, we conclude that present or threatened destruction, modification, or curtailment of habitat is not a threat to the Franklin's bumble bee; rather, disease and other manmade factors are likely the primary threat to the species within its habitat. Therefore, in accordance with 50 CFR 424.12(a)(1), we determine that critical habitat is not beneficial and, therefore, not prudent for the Franklin's bumble bee.

Required Determinations

Clarity of the Rule

We are required by Executive Orders 12866 and 12988 and by the Presidential Memorandum of June 1, 1998, to write all rules in plain language. This means that each rule we publish must:

- (1) Be logically organized;

- (2) Use the active voice to address readers directly;
- (3) Use clear language rather than jargon;
- (4) Be divided into short sections and sentences; and
- (5) Use lists and tables wherever possible.

If you feel that we have not met these requirements, send us comments by one of the methods listed in **ADDRESSES**. To better help us revise the rule, your comments should be as specific as possible. For example, you should tell us the numbers of the sections or paragraphs that are unclearly written, which sections or sentences are too long, the sections where you feel lists or tables would be useful, etc.

National Environmental Policy Act (42 U.S.C. 4321 et seq.)

We have determined that environmental assessments and environmental impact statements, as defined under the authority of the National Environmental Policy Act (NEPA; 42 U.S.C. 4321 *et seq.*), need not be prepared in connection with listing a species as an endangered or threatened species under the Endangered Species Act. We published a notice outlining our reasons for this determination in the *Federal Register* on October 25, 1983 (48 FR 49244).

Government-to-Government Relationship with Tribes

In accordance with the President's memorandum of April 29, 1994 (Government-to-Government Relations with Native American Tribal Governments; 59 FR 22951), Executive Order 13175 (Consultation and Coordination With Indian Tribal Governments), and the Department of the Interior's manual at 512 DM 2, we readily acknowledge our responsibility to communicate meaningfully with recognized Federal Tribes on a government-to-government basis. In accordance with Secretarial Order 3206

of June 5, 1997 (American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act), we readily acknowledge our responsibilities to work directly with tribes in developing programs for healthy ecosystems, to acknowledge that tribal lands are not subject to the same controls as Federal public lands, to remain sensitive to Indian culture, and to make information available to tribes.

References Cited

A complete list of references cited in this proposed rule is available on the Internet at <http://www.regulations.gov> under Docket No. FWS-R1-ES-2018-0044 and upon request from the Oregon Fish and Wildlife Office (see **FOR FURTHER INFORMATION CONTACT**).

Authors

The primary authors of this proposed rule are the staff members of the Oregon Fish and Wildlife Office and Pacific Region Office in Portland, Oregon.

List of Subjects in 50 CFR Part 17

Endangered and threatened species, Exports, Imports, Reporting and recordkeeping requirements, Transportation.

Proposed Regulation Promulgation

Accordingly, we propose to amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as set forth below:

PART 17—ENDANGERED AND THREATENED WILDLIFE AND PLANTS

1. The authority citation for part 17 continues to read as follows:

AUTHORITY: 16 U.S.C. 1361-1407; 1531-1544; and 4201-4245, unless otherwise noted.

2. Amend § 17.11(h) by adding an entry for “Bumble bee, Franklin’s” to the List of Endangered and Threatened Wildlife in alphabetical order under INSECTS to read as follows:

§ 17.11 Endangered and threatened wildlife.

* * * * *

(h) * * *

Common name	Scientific name	Where listed	Status	Listing citations and applicable rules
* * * * *				
INSECTS				
* * * * *				
Bumble bee, Franklin’s	<i>Bombus franklini</i>	Wherever found	E	[<i>Federal Register</i> citation when published as a final rule]
* * * * *				

Dated: January 31, 2019.

Margaret E. Everson,

Principal Deputy Director,

U.S. Fish and Wildlife Service,

Exercising the Authority of the Director,

U.S. Fish and Wildlife Service.

Editorial Note: This document was received for publication by the Office of the Federal Register on August 7, 2019.

