Federal Docket No. FWS-R8-ES-2019-0083

90-DAY FINDING ON A PETITION TO LIST THE MOJAVE POPPY BEE (PERDITA MECONIS) UNDER THE ENDANGERED SPECIES ACT AND CONCURRENTLY DESIGNATE CRITICAL HABITAT

Petitioned action being requested:

☒ List as an Endangered or a Threatened species
☐Reclassify (uplist) from a Threatened to an Endangered species

Petitioned entity:

☒ Species
☐Subspecies
☐DPS of vertebrates
☐Subset of listed entity (species, subspecies, DPS, etc.)

Background

Section 4(b)(3)(A) of the Endangered Species Act (Act) requires that we make a finding on whether a petition to list, delist, or reclassify a species presents substantial scientific or commercial information indicating that the petitioned action may be warranted. Our standard for substantial scientific or commercial information within the Code of Federal Regulations (CFR) with regard to a 90-day petition finding is "information in support of the petition's claims such that a reasonable person conducting an impartial scientific review would conclude that the action proposed in the petition may be warranted" (50 CFR 424.14(h)(1)(i)).

Petition History

On October 17, 2018, we received a petition dated October 17, 2018, from the Center for Biological Diversity, requesting that the Mojave poppy bee (*Perdita meconis*) be listed as endangered and that critical habitat be designated for this species under the Act. The petition clearly identified itself as such and included the requisite identification information for the petitioner, required at 50 CFR 424.14(c). This finding addresses the petition.

Evaluation of a Petition to List the Mojave poppy bee as an Endangered Species Under the Act

Species and Range

Does the petition identify an entity that may be eligible for listing to an endangered species (i.e., is the entity a species, subspecies, or DPS)?

☒ Yes
☐ No

If yes, list common name (scientific name); and describe the current and historical range of the species.

Species: Mojave poppy bee (*Perdita meconis*)

Range: The Mojave poppy bee is an oligolectic (a specialized pollinator) bee species in the Andrenidae family currently known to be extant in Clark County, Nevada. The Mojave poppy bee was observed in Washington County, Utah; Mohave County, Arizona; and San Bernardino County, California in past decades; however, there are no recent surveys to determine the status of the bee in those areas. The range of oligolectic bees are limited to the distribution of plants they feed from; however, these plants are not typically restricted to the range of their oligolectic pollinators (Michener 1979, p. 278). The range of the Mojave poppy bee is dependent upon the distribution of its food sources, the Las Vegas bear-poppy (*Arctomecon californica*), dwarf bear-poppy (*Arctomecon humilis*), prickly poppies (*Argemone* sp.), and on other uncertain aspects of its life history (Griswold 2006, pp. 68–69) (e.g., dispersal patterns, nesting requirements, etc.). Our understanding of the historic range of the Mojave poppy bee is based on collections made between 1980 and 1989 in the eastern Mojave Desert in San Bernardino County, California; Mohave County, Arizona; Clark County, Nevada; and Washington County, Utah (Griswold 1993, pp. 184 and 187; Griswold 2018, entire).

Information on the status of the current range of the Mojave poppy bee varies for each state with most recent surveys and studies occurring in Nevada and Utah. The current range of the Mojave poppy bee reflects a retraction from its historic range in Washington County, Utah, where it was not observed at historic locations during surveys occurring over four years (2012, 2014, 2016, and 2017) and is considered extirpated (Portman et al 2018b, p. 600; see Factor A and Factor E for discussion of extirpation in Utah). In Nevada, Portman et al. (2018a, p. 6) reported that 5 of 6 revisited Mojave poppy bee populations were extant 22 years after last surveyed in 1995 as reported by Hickerson (1998). Portman et al. (2018a, p. 3, Table 2) also report that two new sites were discovered in Nevada during their surveys in 2017. In California and Arizona, Mojave bee presence was last confirmed in 1993 and 1995 respectively (Griswold 2018, entire). No information is presented in the petition or present in our files to indicate if surveys or collections have occurred between then and now that would inform the current understanding of the status of the species in California and Arizona.

Section 4 of the Act (16 U.S.C. 1533) and its implementing regulations (50 CFR part 424) set forth the procedures for determining whether a species is an "endangered species" or a "threatened species." The Act defines an endangered species as a species that is "in danger of extinction throughout all or a significant portion of its range," and a threatened species as a species that is "likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range." The Act requires that we determine whether any species is an "endangered species" or a "threatened species" because of any of the following 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; or
(E) Other natural or manmade factors affecting its continued existence.

These factors represent broad categories of natural or human-caused actions or conditions that could have an effect on a species' continued existence. In evaluating these actions and conditions, we look for those that may have a negative effect on individuals of the species, as well as other actions or conditions that may ameliorate any negative effects or may have positive effects.

We use the term "threat" to refer in general to actions or conditions that may be negatively affecting, or are reasonably likely to negatively affect, individuals of a species. The term "threat" includes actions or conditions that have a direct impact on individuals, as well as those that affect individuals indirectly through alteration of their habitat or required resources (stressors). The term "threat" may encompass—either together or separately—the source of the action or condition or the action or condition itself.

However, the mere identification of any threat does not necessarily mean that the species may meet the statutory definition of an "endangered species" or a "threatened species." In determining whether a species may meet either definition, we must evaluate all identified threats by considering the expected response by the species, and the effects of the threats—in light of those actions and conditions that will ameliorate the threats—on an individual, population, and species level.

Information in the Petition

Factor A–Present or threatened destruction, modification or curtailment of the species habitat or range

1. Does the petitioner claim the entity warrants listing because of the present or threatened destruction, modification, or curtailment of the species habitat or range?
   ☒ Yes
   ☐ No

   a. If the answer to 1 is yes:
      Identify the activity(ies) that the petitioner claims result(s) in present or threatened destruction, modification or curtailment of the species habitat or range such that listing may be warranted.

      - Urbanization
      - Habitat fragmentation
      - Grazing
      - Recreation
      - Gypsum mining

   b. If the answer to 1 is yes:

Do the sources cited in the petition provide substantial information to support the claim? Include consideration of existing regulatory mechanisms or conservation efforts identified in the petition or from other readily available information that may ameliorate the threats.

☒ Yes for Grazing, Recreation and Gypsum mining

☒ No for Urbanization and Habitat fragmentation

Urbanization

The petition claims that urbanization in Washington County, Utah and Clark County, Nevada has led to habitat loss and population decline of the Mojave poppy bee. The petition further claims that urbanization is an imminent threat to the Mojave poppy bee since Washington County and Clark County are two of the fastest growing regions in the nation (Davidson 2018a, pp.1–2, Brean 2018a, p.1). However, all of the occurrences of Mojave poppy bee populations that we are aware of are on federally administered lands or in protected status areas (e.g., Mojave National Preserve, Lake Mead NRA), and the petition does not provide any information indicating that these populations are imminently threatened by planned future urban developments. We do not have any information in our files regarding planned urban developments in areas occupied by Mojave poppy bee. Therefore, we do not consider the information provided on the impacts of urbanization on Mojave poppy bee habitat as presenting substantial scientific or commercial information indicating that the petitioned action may be warranted.

Habitat fragmentation

The petition notes that the Mojave poppy bee displays a metapopulation dynamic, and claims that the species is threatened by increasing habitat fragmentation because remaining habitat patches are too far apart for successful dispersal (Brook et al. 2008 pp. 454–456; Kuussaari et al. 2009 p. 565). The petition reflects that the maximum dispersal distance of the Mojave poppy bee is unknown, but then provides a generalization that the maximum foraging distance is probably 300–400 meters, based on the species size and physiological traits. We have no information in our files to support the petition's assertion about dispersal distances. The Mojave poppy bee appears to have historically occupied isolated habitat patches, and the petition does not provide any references indicating that currently occupied habitat areas are any more isolated than previously occupied sites, or that currently occupied habitat areas are projected to become more isolated in the future. Therefore, we find that the information provided on the impacts of habitat fragmentation on the Mojave poppy bee does not present substantial scientific or commercial information indicating the petitioned action may be warranted.

Grazing

The petition notes that cattle grazing greatly contributed to the extirpation of the Mojave poppy bee in Utah and continues to threaten remaining populations because cows directly consume and reduce populations of host plants ("Bureau of Land Management Emails" 2018 pp. 1, 12–13, 24), plus consume other blooming

plant species which increases competition for floral resources (Portman et al. 2018a pp.15–16). The petition also notes that domestic livestock and wild burro grazing occurs in occupied habitat areas, such as the Mojave National Preserve (Abella et al. 2016 p. 75) and the Lake Mead National Recreation Area (Abella 2008 p. 810), and that illegal cattle grazing occurs on National Park Service lands around Lake Mead (Bureau of Land Management 2014; Ellis and Martinez 2014 p. 1; Yachnin 2017 p. 1). Finally, the petition notes that grazing facilitates establishment of invasive plant species (Brooks 2009 pp. 105–106), since grazers spread nonnative seed (Abella 2008 p. 813 and 817) and deposited feces result in the creation of microhabitats favorable to nonnative plants (Brooks 2009 p. 113), which contributes to habitat loss and degradation in areas occupied by the Mojave poppy bee. Therefore, we find that the petition presents substantial information regarding the impacts of grazing on the Mojave poppy bee indicating that the petitioned action may be warranted.

Recreation

The petition claims the ground nesting Mojave poppy bee is threatened by recreational activities, particularly off-road vehicle use, since it can cause soil compaction (Sardinas and Kremen 2014 p. 164), increased erosion and alteration of the soil biotic community (Lei 2009 p. 159), destruction of the host plant seed bank (Harper and Van Buren 2004 p. 488), and loss of cryptogamic soil crusts which leads to the reduction of nitrogen and other elements essential for Mojave poppy bee progeny development and population growth (Harper and Van Buren 2004 pp. 482–483; Wiesenborn 2010 p. 5). The petition also claims that off road vehicles increase dust particles in occupied habitat areas (Goossens and Buck 2009 pp. 118, 134), which can cause direct bee mortality (Edwards and Schwartz 1981 p. 715) and loss of host plant habitat (Harper and Van Buren 2004 p. 489). Finally, the petition claims that recreational use is increasing in occupied habitat areas (National Park Service 2018c pp. 1–2) and that one of the Mojave poppy bee's host plants, the Las Vegas bearpoppy (*Arctomecon californica*), has been impacted in areas of high off road vehicle use (The Nature Conservancy 2007 p. 62). While some occurrences of this species may be on lands where recreation is managed or limited, recreational use may be impacting the Mojave poppy bee in some areas and we will investigate that further during our status review.

Gypsum mining

The petition claims that gypsum mining in Clark County threatens the Mojave poppy bee via destruction of bee and host plant habitat, and increased dust that desiccates bees and reduces pollen availability, leading to increased mortality. The petition also claims that the BLM recently approved (May 2018) a 92.5 hectare (228.5 acre) expansion of the Lima Nevada Gypsum Mine, which is located near habitat areas currently occupied by the Mojave poppy bee (Bureau of Land Management 2018 p. 17). We are not aware of the exact location of the proposed mine expansion, nor do we have any information to indicate which bee populations in the area may be affected or to what extent; however, given that the existing mine is in close proximity to habitat supporting Mojave poppy bee host

plants, it is likely that occupied habit will be impacted by any expansion of the mine. The petition further claims that the gypsum mining will result in direct mortality of Mojave poppy bee individuals, and destroy adjacent bee and host plant habitat areas (Bureau of Land Management 2018 p. 17, 22, 25). No mention of Mojave poppy bee is made in the BLM's discussion of the gypsum mine, nor are any ameliorative measures related to the bee discussed, so any expansion of the mine could result in detrimental impacts to the bee's habitat. Therefore, we find that the petition provides substantial information regarding the impacts of gypsum mining on the Mojave poppy bee indicating that the petitioned action may be warranted.

Factor B–Overutilization for commercial, recreational, scientific, or educational purposes

2. Does the petitioner claim the entity warrants listing because of overutilization for commercial, recreational, scientific, or educational purposes?
   ☒ Yes
   ☐ No

   a. If the answer to 2 is yes:
      Identify the purpose(s) for which the petitioner claims the entity is being overutilized such that listing may be warranted (check all that apply):
      ☒ Commercial
      ☒ Recreational
      ☒ Scientific
      ☒ Educational
      ☐ Other:

   b. If the answer to 2 is yes:
      Do the sources cited in the petition provide substantial information to support the claim? Include consideration of existing regulatory mechanisms or conservation efforts identified in the petition or from other readily available information that may ameliorate the threats.
      ☐ Yes
      ☒ No

      The petition claims that overutilization for commercial, recreation, scientific, or education purposes could pose a serious threat but provides no references, data, or similar to support the claim. Although a small number of collection records exist, we are not aware of any additional information or studies that suggest that overutilization is a serious threat. Therefore, we find that the petition does not present substantial information regarding the effects of overutilization indicating that the petitioned action may be warranted.

Factor C–Disease or predation

3. Does the petitioner claim the entity warrants listing because of disease or predation?
   ☒ Yes
   ☐ No

   a. If the answer to 3 is yes:
      Identify which occurrence the petitioner claims is the reason that listing may be warranted (check all that apply)
      ☒ Disease
      ☐ Predation

   b. If the answer to 3 is yes:
      Do the sources cited in the petition provide substantial information to support the claim? Include consideration of existing regulatory mechanisms or conservation efforts identified in the petition or from other readily available information that may ameliorate the threats.
      ☐ Yes
      ☒ No

      Disease
      The petition cites information claiming that deformed wing virus and black queen cell virus can be transferred from honey bees to bees in other families, including Andrenid bees, and that the virus replicates in those native bee genera (Tehel et al. 2016 pp. 18–19), but no information is provided regarding the potential for viral transmission specifically to Mojave poppy bee. Furthermore, the petition claims that honey bees are increasing throughout the Mojave Desert where Mojave poppy bees occur, which will lead to increased disease threats for the species, but does not provide any references, data or similar to support these claims. While disease transmission has been documented amongst other species, the petition does not present any specific information indicating that disease is having a negative effect on the Mojave poppy bee nor that disease risk is increasing. Therefore, we find that the petition does not present substantial information regarding the effects of disease indicating that the petitioned action may be warranted.

Factor E–Other natural or manmade factors affecting the species' continued existence

4. Does the petitioner claim the entity warrants listing because of other natural or manmade factors affecting its continued existence?
   ☒ Yes
   ☐ No

   a. If the answer to 4 is yes:
      Identify the other natural or manmade factors that the petitioner claims is the reason that listing may be warranted.

- Loss of genetic diversity and production of diploid males
- Loss of pollination mutualism
- Exploitative competition (including biological invasions)
- Climate change

b. If the answer to 4 is yes:
Do the sources cited in the petition provide substantial information to support the claim? Include consideration of existing regulatory mechanisms or conservation efforts identified in the petition or from other readily available information that may ameliorate the threats.

☒ Yes for exploitative competition (including biological invasions)
☒ No for loss of genetic diversity and production of diploid males, loss of pollination mutualism, and climate change

Loss of genetic diversity and production of diploid males
The petition claims that loss of genetic diversity caused by fragmentation, lack of connectivity, and subsequent population isolation is a threat to the Mojave poppy bee. The petition claims that the threat from loss of genetic diversity is a result of inbreeding depression, lower effective population size, and diploid male production. As previously discussed under Factor A, we find that the petition did not present substantial information provided on the impacts of habitat fragmentation and lack of connectivity indicating that the petitioned action may be warranted. The petition cites literature on studies and reviews of other bee species or bees generally to support its claim that loss of genetic diversity is a threat to the Mojave poppy bee (Packer et al. 2005, pp. 195–202; Zayed and Packer 2005, pp. 10742–10746; Zayed 2009, pp. 237–262; and Davis et al 2010, pp. 4922–4935). The petition cites Portman et al. (2018b, p. 602), who suggest that reduced genetic variation is a potential factor that could have been involved with the extirpation of the Mojave poppy bee at the Beehive Dome site in Utah, though genetics was not the subject of their study. Claims that loss of genetic diversity is a threat to the Mojave poppy bee are speculative because there have been no genetic studies of the Mojave poppy bee nor is there information in our files or presented in the petition to support claims that populations have become unnaturally isolated. Therefore, we find that the petition does not present substantial information regarding the loss of genetic diversity due to population isolation and the production of diploid males indicating that the petitioned action may be warranted.

Loss of pollination mutualism
The petition claims that human activity (e.g., urbanization, see Factor A above), habitat fragmentation (see Factor A above), biological invasions (reviewed below), and climate change (reviewed below) contribute to loss of pollination mutualism, and that this is a threat to the Mojave poppy bee. The petition cites references providing general reviews of mutualisms and accounts of honey bee

(*Apis mellifera*) interactions with plants (Barthell et al. 2001, pp. 1870–1883; Kiers et al. 2010, pp. 1459–1474; Aizen et al. 2014, pp. 322–328; Traveset and Richardson 2014, pp. 89–113) in areas outside the range of the Mojave poppy bee. Since we consider loss of pollination mutualism to be a result of other factors acting on components of a species' pollination ecology, not as something that occurs in and of itself, we have made findings about each individual relevant factor.

Exploitative competition (including biological invasions)
The petition claims that exploitative competition from nonnative honey bees is a threat to the Mojave poppy bee, citing many sources in this claim related to impacts outside and coinciding with the range of the Mojave poppy bee (Goulson 2003, pp. 1–26; Dupont et al. 2004, pp. 301–311; Thompson 2004, pp. 458–470; Rabe et al. 2005; Harrison et al. 2006, pp. 1110–1122; Kono and Kohn 2015, pp. 1–15; Cane and Tepedino 2017, pp. 205–210; Henry and Rodet 2018, pp. 1–10). The petition claims that the threat of competition to the Mojave poppy bee from Africanized honey bees (*Apis mellifera scutellata*) and their hybrids with European honey bees (*Apis mellifera ligustica*) increases as honey bee distribution broadens and abundance increases. The petition claims that honey bees affect native bees by forcing longer movements and increased flight times to acquire reduced amounts of pollen food resources. The petition claims that Mojave poppy bees cannot forage at greater distances or switch host plants.

During the last three decades, studies in Nevada and Utah examined the Mojave poppy bee, honey bee, and floral resources used by them. These studies concluded that there may be changes to the abundance of Mojave poppy bees associated with grazing impacts (See Factor A) to floral resource availability and competition from honey bees (Hickerson 1998, pp. 9–52; Griswold 2006, entire; Portman et al. 2018a, p. 1–10; and Portman et al. 2018b, pp 593–606). Portman et al. (2018a, p. 7) hypothesized that in Utah, honey bee competition with the Mojave poppy bee may increase in areas where floral diversity is reduced from grazing and honey bees subsequently use floral resources more often which Mojave poppy bees are dependent upon.

At some Mojave poppy bee locations in Nevada, honey bees associated with Las Vegas bear-poppies observed as early as 1995 by Hickerson (1998, Table 2.9) were confirmed to still be present in 2017 by Portman et al. (2018a, Table 2). Studies cited in the petition by Portman et al. (2018a, pp. 1–10; 2018b, pp. 593–606) indicate that honey bees continue to be present in the range of the Mojave poppy bee and that negative impacts from competition may occur and increase through more complex trophic relationships caused by grazing in occupied areas. As an oligolectic bee, the Mojave poppy bee is restricted to use of its host plants (Portman et al. 2018, p. 594) and potentially susceptible to competition. Therefore, we find that the petition does present substantial information regarding

the effects of exploitative competition indicating that the petitioned action may be warranted.

Climate change
The petition claims that climate change is a threat to the Mojave poppy bee indirectly from changes to precipitation patterns that negatively affect floral host resources, and directly from increasing temperature effects to mating, reproductive success, and survival. The petition claims that temporal changes in precipitation patterns could cause the Mojave poppy bee populations to become isolated and increase competition for reduced pollen resources. The petition cites general literature overviews and studies of projected climate change effects globally and in the Mojave Desert (Brooks 2009, pp. 101–124; Smith 2009, pp. 31–56; Iknayan and Beissinger 2018, pp. 8597–8602; and IPPC 2018, pp. 1–33) and studies of other bee species responses to temperature and precipitation (Danforth 1999, pp. 1985–1994; and CaraDonna et al. 2018, pp. 2345–2356). The petition does not cite, nor do we have in our files, information that identifies or predicts impacts to the Mojave poppy bee or the floral resources it depends upon from predictions of climate change.

We do not have in our files, nor does the petition present, substantial information to indicate that climate change is a threat to the Mojave poppy bee or the floral resources it depends on; therefore, there is no substantial information related to climate change indicating that the petitioned action may be warranted.

Factor D–Inadequacy of existing regulatory mechanisms

Factor D is considered in light of the other factors discussed above, not in a vacuum. The discussion of the claims under each factor above included a summary of information provided in the petition and contained other readily available information regarding how activities identified in the petition negatively affect the status of the bee and the extent to which existing regulatory mechanisms may ameliorate the threats such that the petitioned entity may or may not warrant listing or uplisting.

5. Does the petitioner claim that the entity warrants listing/uplisting because of the inadequacy of existing regulatory mechanisms?

☒ Yes
☐ No

If the answer to question 5 is yes:
Identify the threats that the petitioner claims are not adequately addressed by existing regulatory mechanisms.

The petition states that the Mojave poppy bee warrants listing because of inadequate regulatory mechanisms. The petitioner's claim, however, appears to be based in part on a lack of regulation or protections that would specifically apply to the species or address threats this species is facing. For example, the petition mentions that there are

no regulatory mechanisms that address illegal livestock grazing or recreation impacting the Mojave poppy bee and its habitat. However, a lack of protections is not the same as inadequacy of existing regulatory mechanisms.

The petition does discuss currently existing regulatory mechanisms and their effectiveness. For example, the designation of the species as a high priority evaluation species under the Clark County multi-species Habitat Conservation Plan (MSHCP, Clark County Department of Comprehensive Planning 2000a p. 185) and a BLM sensitive species does not prevent action(s) that might harm the species, requiring only that the effects of the actions be analyzed. The petition also claims that designation of the Rainbow Gardens Area of Critical Environmental Concern (ACEC) has not prevented gypsum mining from occurring in the area, which threatens Mojave poppy bee and host plant habitat (Bureau of Land Management 2018 p. 17). Furthermore, the petition claims that although host plant species are protected at the Federal, State and County level, protection and management plans have been ineffective in protecting these species (The Nature Conservancy 2007 p. 60). Therefore, the existing regulatory mechanisms may be inadequate to provide the necessary protections to prevent habitat loss and degradation, as well as prevent further decline of Mojave poppy bee populations.

Cumulative Effects

When we have a substantial finding, we do not assess cumulative effects, and we address cumulative effects of threats in the 12-month finding. We only assess the cumulative effects of purported threats included in the petition if we find the petition does not present substantial information indicating the petitioned action may be warranted because of any one of the Factors (A, B, C, D, or E) individually.

6. If none of the answers to 1b, 2b, 3b, 4b, or 5 is "Yes," then we must consider whether there is substantial information indicating that the synergistic or cumulative effects of the threats may affect the entity such that it may warrant listing/uplisting. Do the sources cited in the petition provide substantial information indicating that the threats they have identified may have synergistic or cumulative effects such that the entity may warrant listing?

☐ Yes
☐ No

Petition Finding

We reviewed the petition, sources cited in the petition, and other readily available information. We considered the factors under section 4(a)(1) and assessed the effect that the threats identified within the factors—as may be ameliorated or exacerbated by any existing regulatory mechanisms or conservation efforts—may have on the species now and in the foreseeable future. We considered a "threat" as any action or condition that may be known to or

is reasonably likely to negatively affect individuals of a species. This includes those actions or conditions that may have a direct impact on individuals, as well as those that may affect individuals through alteration of their habitat or required resources. The mere identification of "threats" is not sufficient to compel a finding that listing may be warranted. We find that the petition presents substantial scientific or commercial information indicating that listing the Mojave poppy bee (*Perdita meconis*) as an endangered species may be warranted based on factors A and E, and because existing regulatory mechanisms may be inadequate to ameliorate the threats impacting the species.

Specific Requests for Information

The Service would particularly like to request any additional information regarding:

(1) The species' biology, dispersal distance, and nesting requirements;
(2) Survey results (including absences) for bee species in the southwestern USA (e.g., bee fauna inventories);
(3) Information on the current distribution, range extent, and population trends for the Mojave poppy bee, the host plant, and honey bees; and
(4) Information on potential stressors.

Federal Register summary paragraph.

The Mojave poppy bee (*Perdita meconis*) is an oligolectic (a specialized pollinator) bee species currently found in Clark County, Nevada. The range of the Mojave poppy bee is dependent upon the distribution of its food sources, the Las Vegas bear-poppy (*Arctomecon californica*), dwarf bear-poppy (*Arctomecon humilis*), prickly poppies (*Argemone* sp.), and on other unknown aspects of its life history (e.g., dispersal patterns, nesting requirements, etc.). The historic range of the Mojave poppy bee is in the eastern Mojave Desert in San Bernardino County, California; Mohave County, Arizona; Clark County, Nevada; and Washington County, Utah; however, the current range of the Mojave poppy bee has been reduced from its historic range. In 2017, researchers concluded that the bee had been extirpated from its habitat in Washington County, Utah. In California and Arizona, Mojave poppy bee presence has not been detected since 1993 and 1995, respectively.

On October 17, 2018, we received a petition dated October 17, 2018, from the Center for Biological Diversity, requesting that the Mojave poppy bee be listed as endangered and that critical habitat be designated for this species under the Act. The petition clearly identified itself as such and included the requisite identification information for the petitioner, required at 50 CFR 424.14(c). This finding addresses the petition.

We reviewed the petition, sources cited in the petition, and other readily available information. We considered the factors under section 4(a)(1) and assessed the effect that the threats identified within the factors—as may be ameliorated or exacerbated by any existing

regulatory mechanisms or conservation efforts—may have on the species now and in the foreseeable future. We considered a "threat" as any action or condition that may be known to or is reasonably likely to negatively affect individuals of a species. This includes those actions or conditions that may have a direct impact on individuals, as well as those that may affect individuals through alteration of their habitat or required resources. The mere identification of "threats" is not sufficient to compel a finding that listing may be warranted. We find that the petition presents substantial scientific or commercial information indicating that listing the Mojave poppy bee as an endangered species may be warranted based on factors A and E, and because existing regulatory mechanisms may be inadequate to ameliorate the threats impacting the species.

Author

The primary authors of this notice are the staff members of the Southern Nevada Fish and Wildlife Office, U.S. Fish and Wildlife Service.

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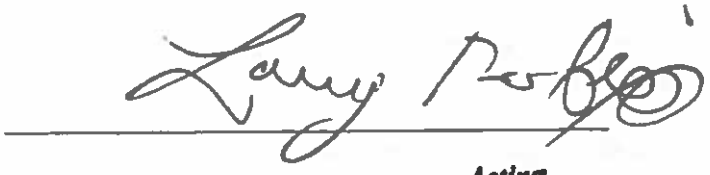
Date: _____



Acting

Paul Souza
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U.S. Fish and Wildlife Service

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