

CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

California Endangered Species Act



Petition Evaluation for Pajaro Manzanita (*Arctostaphylos pajaricensis*)

Report to the Fish and Game Commission
June 2026

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LIST OF ABBREVIATIONS, ACRONYMS, AND TERMS

CESA – California Endangered Species Act

CNDDB – California Natural Diversity Database

CNPS – California Native Plant Society

Commission – California Fish and Game Commission

CRPR – California Rare Plant Rank

Department – California Department of Fish and Wildlife

var. – variety

EXECUTIVE SUMMARY

This petition evaluation for Pajaro manzanita (*Arctostaphylos pajaroensis*) has been prepared by the California Department of Fish and Wildlife (Department) in response to the petition to list Pajaro manzanita as threatened under the California Endangered Species Act (CESA). The purpose of this petition evaluation is to provide a recommendation to the Fish and Game Commission (Commission) on whether the petition provides sufficient information to indicate the petitioned action may be warranted.

Pajaro manzanita is an evergreen shrub in the heath family (Ericaceae) that blooms December through March. The petition describes Pajaro manzanita as being known from 28 occurrences in the northern-central Central Coast and southern San Francisco Bay Area and occurring in maritime chaparral on sandy substrates. The petition provides an abundance estimate for seven occurrences with population sizes ranging from one to 1,000 plants with most of the seven occurrences having 20 or fewer plants. The petition also provides information to suggest a declining population trend. The petition lists several threats to Pajaro manzanita including agricultural and developed land uses, disruptions to post-fire recovery, vegetation management to reduce fire risks, climate change, and sudden oak death. The petition mentions that extinction of the species may occur because: most occurrences are threatened and the severity of some threats is increasing; the species has a small range with a small number of occurrences that are also small in area, fragmented, or contain few individuals; and most sites occupied by the species are unprotected and not managed for the conservation of the species. Existing management efforts were reviewed and suggestions for future management actions were discussed in the petition. Information sources and a distribution map were also provided in the petition.

The Department has determined that the petition does not sufficiently address each of the required petition components listed in Fish and Game Code section 2072.3 and California Code of Regulations, title 14, section 670.1, subdivision (d)(1):

- Life history
- Range
- Distribution
- Detailed distribution map
- Kind of habitat necessary for survival
- Abundance
- Population trend
- Factors affecting the ability to survive and reproduce
- Degree and immediacy of threat

- Impact of existing management efforts
- Suggestions for future management
- Availability and sources of information

In completing its petition evaluation, the Department considered the information in the petition and other relevant information the Department possesses. The Department has determined that there is not sufficient scientific information to indicate that the petitioned action to list Pajaro manzanita as threatened under CESA may be warranted. Therefore, the Department recommends that the Commission reject the petition for further consideration pursuant to CESA.

1 INTRODUCTION

1.1 Petition Evaluation Overview

This petition evaluation serves as the basis for the California Department of Fish and Wildlife's (Department) recommendation to the California Fish and Game Commission (Commission) on whether the petition to list Pajaro manzanita (*Arctostaphylos pajaroensis*) as threatened under the California Endangered Species Act (CESA) should be accepted and considered. The recommendation is based on the sufficiency of scientific information in the petition, as well as other relevant information that was reviewed by the Department during the evaluation period.

A petition to list a species under CESA must include "information regarding the population trend, range, distribution, abundance, and life history of a species, the factors affecting the ability of the population to survive and reproduce, the degree and immediacy of the threat, the impact of existing management efforts, suggestions for future management, and the availability and sources of information. The petition shall also include information regarding the kind of habitat necessary for species survival, a detailed distribution map, and any other factors that the petitioner deems relevant" (Fish & G. Code, § 2072.3; Cal. Code Regs., tit. 14, § 670.1, subd. (d)(1)).

Once a petition is submitted to the Commission, the Department has 90 days (120 days with extension) to prepare a petition evaluation that assesses each of the petition components and makes a recommendation to the Commission as to whether there is sufficient scientific information to indicate that the petitioned action to list the species under CESA may be warranted (Fish & G. Code, § 2073.5, subds. (a)-(b)). Once completed by the Department, the petition evaluation is delivered to the Commission and placed on the agenda for receipt at the next available meeting of the Commission. At that time, the petition evaluation will be made available to the public for a 30-day public comment period prior to the Commission taking any action on the petition. The Commission then considers the petition, the Department's petition evaluation and recommendation, written comments received, and oral testimony, and will then make a finding at the next available meeting of the Commission as to whether the petition provides "sufficient information to indicate that the petitioned action may be warranted" (Fish & G. Code, § 2074.2, subd. (e)(2)). The standard for accepting a petition for consideration and assessing sufficiency of information is addressed in *Center for Biological Diversity v. California Fish and Game Commission* (2008) 166 Cal.App.4th 597.

If the Commission determines that the petitioned action may be warranted, the species becomes a candidate for CESA listing and proceeds to the status review stage of the CESA listing process. The Department then prepares a peer-reviewed report that advises

the Commission on whether the petitioned action is warranted, based upon the best scientific information available (Fish & G. Code, § 2074.6). Finally, the Commission determines whether the petitioned action to list the species as threatened or endangered is warranted, based on the Department's status review and other information in the administrative record (Fish & G. Code, § 2075.5).

1.2 CESA Petition History

On August 29, 2025, Dr. John C. Hunter submitted a petition to the Commission to list Pajaro manzanita as threatened under CESA. On September 8, 2025, the Commission referred the petition to the Department for evaluation. At its meeting on October 8, 2025, the Commission officially acknowledged receipt of the petition. At its meeting on December 10, 2025, the Commission granted the Department's request for a 30-day extension of the period to review the petition and prepare this petition evaluation.

1.3 Federal Status

Pajaro manzanita has no status under the Federal Endangered Species Act (16 U.S.C. § 1531 et seq.). In 1993, the U.S. Fish and Wildlife Service provided notice that it was possibly appropriate to propose listing Pajaro manzanita as endangered or threatened, but sufficient data was not then available to support a listing proposal (58 Fed.Reg. 51144 (Sep. 30, 1993)).

1.4 Additional Species Status Designations

1.4.1 NatureServe Conservation Status Ranks

NatureServe's conservation status ranks consist of a global conservation status rank (global rank, G rank) describing the status of a given species over its entire distribution, and a subnational conservation status rank (subnational rank, S rank) describing the status of a given subspecies or variety over its state distribution (Master et al. 2012). NatureServe has assigned Pajaro manzanita a global rank of G1 and a subnational rank of S1, indicating that the species is critically imperiled both globally and within California with a very high risk of extinction due to one or more of the following: very restricted range, very few populations or occurrences, very steep declines, very severe threats, or other factors (CNDDB 2020, 2025).

1.4.2 California Rare Plant Rank

The California Native Plant Society (CNPS) works in collaboration with botanical experts throughout the state, including Department biologists, to assign rare plants a California Rare Plant Rank (CRPR) reflective of their rarity status (CNDDB and CNPS

2020). CNPS has assigned Pajaro manzanita a CRPR of 1B.1 (CNPS 2025). Plants with a CRPR of 1B are considered rare, threatened, or endangered throughout their range with the majority endemic to California (CNDDB and CNPS 2020). The threat code extension of “.1” indicates that the species is seriously threatened in California with over 80% of occurrences threatened and a high degree and immediacy of threat (CNDDB and CNPS 2020).

2 SPECIES DESCRIPTION AND TAXONOMY

Pajaro manzanita is a member of the heath family (Ericaceae). It is an erect, evergreen shrub that is 1 to 4 m (3 to 13 ft) tall (Parker et al. 2023). Leaves are overlapping, ovate (egg-shaped) to triangular-ovate, 2 to 4 cm (0.8 to 1.6 in) long, and 1 to 2 cm (0.4 to 0.8 in) wide (Parker et al. 2023). The underside of the leaf is light green and without hairs except for the midvein which has non-glandular hairs, while the upper side of the leaf is dark blue-green and covered with a whitish or bluish waxy or powdery film (Parker et al. 2023). Leaf bases are lobed and clasping and leaf margins are tinged with red (Parker et al. 2023).

Like all manzanita species, Pajaro manzanita flowers have petals fused into an urn-shape and are white to pink in color. There are five sepals (outermost whorl of flower parts) below the fused petals (Parker et al. 2023). Flowers are arranged in clusters called inflorescences and inflorescences hang down when they are young (Parker et al. 2023). Beneath the inflorescences are leaf-like structures called bracts that are 5 to 10 mm (0.2 to 0.4 in) long, lance-linear in shape with a long-tapered sharp tip, and without hairs (Parker et al. 2023). Fruits are 6 to 8 mm (0.2 to 0.3 in) wide, berry-like, and shaped as spheres that have been flattened on the top and bottom (Parker et al. 2023).

Pajaro manzanita stems have gray, shredding bark on older stems and generally short, non-glandular hairs on twigs and young inflorescences (Kauffmann et al. 2021; Parker et al. 2023). One characteristic of many manzanita species is the presence of a basal burl (woody growth) which allows the species to resprout after fire (Kauffmann et al. 2021). Pajaro manzanita does not have a basal burl, meaning that when a fire burns a Pajaro manzanita population, Pajaro manzanita plants are unable to resprout and rely solely on their seed bank in the soil to germinate and replenish the population (Parker et al. 2023).

Pajaro manzanita was first collected as Anderson’s manzanita (*Arctostaphylos andersonii*) by Harley Chandler in 1899 (CCH 2025). Pajaro manzanita was described as a variety of Anderson’s manzanita (*A. andersonii* var. *pajaroensis*) in 1939 and elevated to a full species (*A. pajaroensis*) in 1940 (Adams 1940; Parker et al. 2009). The currently accepted name for Pajaro manzanita is *Arctostaphylos pajaroensis* (Parker et al. 2023).

3 SUMMARY OF PETITION COMPONENTS

Pursuant to Fish and Game Code section 2072.3 and California Code of Regulations, title 14, section 670.1, subdivision (d)(1), the Department evaluated whether the petition contained information on each of the following petition components:

- Life history
- Range
- Distribution
- Detailed distribution map
- Kind of habitat necessary for survival
- Abundance
- Population trend
- Factors affecting the ability to survive and reproduce
- Degree and immediacy of threat
- Impact of existing management efforts
- Suggestions for future management
- Availability and sources of information

The Department did not receive new information from the public during the petition evaluation period (Fish & G. Code, § 2073.4). Pursuant to Fish and Game Code section 2073.5, the Department evaluated the petition to determine whether there is, or is not, sufficient information to indicate that the petitioned action may be warranted. A summary of the relevant information from the petition for each of the petition components is presented below. For each petition component, the Department has also presented an assessment of the information provided in the petition and a summary of any relevant information in the Department's possession. Overall sufficiency of the petition is determined by looking at the information in the petition as a whole and is further discussed in the "Sufficiency of Scientific Information and Recommendation to the Commission" section of this petition evaluation. In this petition evaluation, the Department has grouped similar petition components together and renamed components to create a more cohesive and readable document.

3.1 Life History

This section summarizes the information in the petition regarding the species' life history (Fish & G. Code, § 2072.3; Cal. Code Regs., tit. 14, § 670.1, subd. (d)(1)). Section E on pages 6 and 7 of the petition provides information on the life history of Pajaro manzanita.

The petition provides a physical description of Pajaro manzanita, with descriptions of its habit, stems, leaves, flowers, and fruits. The petition contrasts Pajaro manzanita with the physical properties of a similar species, Anderson's manzanita (*A. andersonii*). The petition describes Pajaro manzanita as an evergreen shrub that blooms December through March and is pollinated by insects. The petition also states that seeds are dispersed by mammals and seeds can remain dormant in the soil for multiple years. The petition describes how Pajaro manzanita is killed by fire, but the species depends on post-fire establishment of new individuals.

3.1.1 Department Assessment

The Department considers the information provided in the petition on the life history of Pajaro manzanita to be adequate for assessing this petition component.

3.2 Range and Distribution

This section summarizes the information in the petition regarding the species' range and distribution and provides a detailed distribution map (Fish & G. Code, § 2072.3; Cal. Code Regs., tit. 14, § 670.1, subd. (d)(1)). A species' range for the purposes of CESA and this petition evaluation is the species' range within California (Cal. Forestry Assn. v. Cal. Fish and Game Com. (2007) 156 Cal.App.4th 1535, 1551). Range describes the general geographical area in which a species occurs. Distribution describes the actual sites where individuals and populations of the species occur within the species' range. Section B on page 4 of the petition provides information on the range of Pajaro manzanita. Section C on page 4 of the petition provides information on its distribution. Section L, Figure 2 on page 23 of the petition provides a distribution map, which has been provided as Figure 1 of this petition evaluation.

The petition describes Pajaro manzanita as a California endemic in the northern-central Central Coast and southern San Francisco Bay Area. The petition states that Pajaro manzanita's range comprises approximately 1,163 square kilometers (449 square miles), and that it occurs in Monterey, San Benito, and Santa Cruz counties at elevations of 30 to 760 meters (100 to 2,495 feet). The petition states that Pajaro manzanita is known from 28 sites that were documented between 1935 and 2013, with four of those occurrences likely extirpated. Eighteen occurrences are noted in the petition as being nonspecific occurrences in which the precise location and boundaries of the species have not been documented. The petition also mentions that Pajaro manzanita may occupy a few additional, undocumented sites.

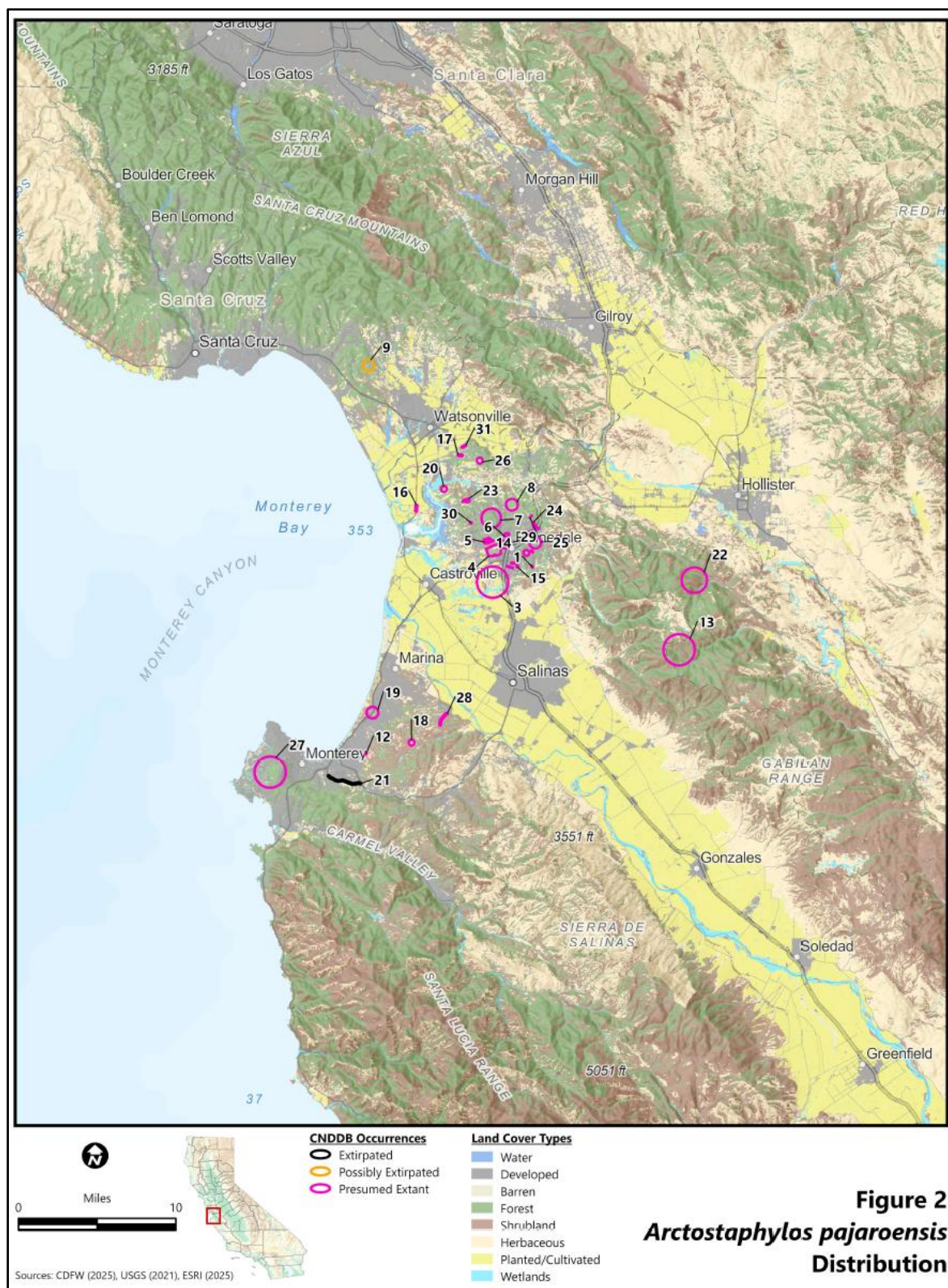


Figure 1. Map of the range and distribution of Pajaro manzanita as provided in Figure 2 of the petition. Occurrences from the California Natural Diversity Database (CNDDDB) are labeled with CNDDDB occurrence numbers. Some occurrences consist of multiple polygons.

3.2.1 Department Assessment

Range and distribution of Pajaro manzanita are presented in the petition based primarily on data from the California Natural Diversity Database (CNDDDB); however, no discussion is provided on the completeness of the information presented including whether the CNDDDB data represents the complete range and distribution of the species, whether additional information on range and distribution is available for the species that is not reflected in the CNDDDB data, or whether any survey efforts have been made to confirm or ascertain the full range and distribution of the species. Without further discussion explaining why the information provided in the petition is a scientifically defensible assessment of the range and distribution of the species, the Department is unable to properly determine whether the petition provides a reasonable explanation of the range and distribution of the species, or whether other petition components that rely on knowing the range and distribution of the species have been properly assessed.

The Department has some additional, readily available information from the CNDDDB not presented in the petition. The CNDDDB has 23 unprocessed online field survey forms for the species which appear to be updates to one existing occurrence. While this additional, readily available information contributes to our current knowledge of the range and distribution of Pajaro manzanita, this information does not compensate for deficiencies in data in the petition for these topics. The information presented in the petition, considered alongside readily available information from the Department, is not adequate for assessing the range and distribution of Pajaro manzanita.

3.3 Habitat

This section summarizes the information in the petition regarding the kind of habitat necessary for species survival (Fish & G. Code, § 2072.3; Cal. Code Regs., tit. 14, § 670.1, subd. (d)(1)). Section F on page 8 of the petition provides information on the kind of habitat necessary for Pajaro manzanita survival.

The petition states that Pajaro manzanita occurs in maritime chaparral on sandy substrates. The petition mentions that at some sites, the chaparral is bordering or in a mosaic with coastal sage scrub or coast live oak woodland. The petition also includes a list of plant species that grow with Pajaro manzanita.

3.3.1 Department Assessment

The Department considers the information provided in the petition on the kind of habitat necessary for Pajaro manzanita survival to be adequate for assessing this petition component.

3.4 Abundance and Population Trend

This section summarizes the information in the petition regarding the species' abundance and population trend (Fish & G. Code, § 2072.3; Cal. Code Regs., tit. 14, § 670.1, subd. (d)(1)). Section D on page 5 and 6 of the petition provides information on the abundance of Pajaro manzanita. Section A on pages 3 and 4 of the petition provides information on the population trend of Pajaro manzanita.

The petition summarizes information on the abundance of Pajaro manzanita at seven CNDDDB occurrences with population sizes ranging from one to 1,000 plants at each occurrence; most of the occurrences have 20 or fewer plants. The petition mentions that cover data was collected in 2001 at several sites which indicated there were hundreds to thousands of Pajaro manzanita shrubs. The petition states that recent, range-wide monitoring of Pajaro manzanita has not been conducted and, thus, a rigorous estimate of the total number of plants cannot be made. The petition estimates the area of occupied habitat to be less than 202 hectares (499 acres) based on CNDDDB polygon data.

The petition states that, based on information from the CNDDDB and land cover mapping from the U.S. Geological Survey, Pajaro manzanita has had a decreasing population trend because of loss and degradation of occupied habitat at 12 or more of the 28 sites where the species has been observed. The petition lists four occurrences that are either extirpated, possibly extirpated, or have a fair viability in the CNDDDB and reports nine occurrences that are either likely extirpated or likely experiencing degradation or loss of habitat based on land cover mapping. The petition states that the species may have had additional, undocumented habitat losses, population reductions, or both that occurred before the distribution of Pajaro manzanita was well documented.

3.4.1 Department Assessment

Abundance of Pajaro manzanita is provided in the petition based primarily on population estimates reported in the CNDDDB; however, no discussion is provided on the completeness of the information including whether there have been efforts to estimate population sizes at all occurrences, whether the population estimates are historical or recent, and whether the population estimates are based on complete or partial surveys of the occurrences. The petition also mentions that cover data has been collected at several sites (with hundreds to thousands of Pajaro manzanita shrubs at each site) but it is unclear where these sites are located which makes this data difficult for the Department to assess in relation to sufficiency of information for overall species abundance. Area of occupied habitat is estimated in the petition as an indicator of abundance using CNDDDB polygon data which the Department considers to be an inappropriate use of CNDDDB data. CNDDDB polygons are typically mapped to include a

buffer that represents the locational accuracy of the data and therefore should not be used to determine area occupied by the species.

Population trend of Pajaro manzanita is determined in the petition to be declining based on: 1) the number of CNDDDB occurrences that are designated as extirpated, possibly extirpated, or with a fair population viability, 2) the use of CNDDDB polygon data overlaid on land cover mapping to report the extent of any overlap between the CNDDDB polygon data with development or agriculture, and 3) the historical and ongoing changes to maritime chaparral habitat. No discussion is provided in the petition on the completeness of the information, including whether any recent efforts have been made to update information on the presence and condition of Pajaro manzanita occurrences or whether population declines at some occurrences have resulted in a decline throughout the species' range. The petition uses CNDDDB polygon data overlaid on land cover mapping to report on the extent of overlap between CNDDDB polygons with development or agriculture to determine additional occurrences that may be experiencing a declining population trend. CNDDDB polygons are typically mapped to include a buffer that represents the locational accuracy of the data, and the petition does not indicate if development or agriculture shown on aerial imagery overlapped with the portion of the CNDDDB polygon that was previously occupied by the species or within areas that were once appropriate habitat for the species. In addition, the statements in the petition about changes to maritime chaparral habitat likely causing additional, undocumented habitat losses, population reductions, or both to Pajaro manzanita are too general and do not specifically identify impacts to habitat likely to have contained Pajaro manzanita.

The Department has some additional, readily available information from the CNDDDB not presented in the petition. The CNDDDB has 23 unprocessed online field survey forms for the species which appear to be updates to one existing occurrence; these forms include abundance information. While this additional, readily available information contributes to our current knowledge on the abundance of Pajaro manzanita, this information does not compensate for deficiencies in data in the petition for these topics. The information presented in the petition, considered alongside readily available information from the Department, is not adequate for assessing the abundance and population trend of Pajaro manzanita

3.5 Threats

This section summarizes the information in the petition regarding the factors affecting the ability of the species to survive and reproduce, and the degree and immediacy of threats (Fish & G. Code, § 2072.3; Cal. Code Regs., tit. 14, § 670.1, subd. (d)(1)). Section G on pages 8 through 13 of the petition provides information on factors affecting the ability of Pajaro manzanita to survive and reproduce (threats). Section H on pages 13

through 15 of the petition provides information on the degree and immediacy of threats to Pajaro manzanita.

The petition lists several prominent range-wide threats to Pajaro manzanita: agricultural and developed land uses, disruptions to post-fire recovery, vegetation management to reduce fire risks, climate change, and sudden oak death. The petition also mentions that improper burning regime, non-native plants, recreational use including off-road vehicle activity, and road/trail construction/maintenance have been observed by botanists as additional threats affecting occurrences based on CNDDDB data.

The petition describes agricultural and developed land uses as major threats to Pajaro manzanita because these land uses have been directly eliminating, fragmenting, and increasing threats to the remaining habitat. The petition notes that according to the CNDDDB and the interpretation of land cover mapping in the petition showing agriculture and development in relation to CNDDDB occurrences of Pajaro manzanita, all specifically mapped occurrences have likely experienced loss or degradation of habitat due to agriculture and development, and more than a third of nonspecifically mapped occurrences are impacted or threatened by agriculture and development.

The petition states that Pajaro manzanita is highly vulnerable to extirpation after a fire. The petition describes how fire kills Pajaro manzanita and the species depends on post-fire recruitment of new individuals from seed stored in the soil to replenish the population. The petition notes that competition from other plants, weather, herbivory, and human activities could all impact post-fire recovery of Pajaro manzanita occurrences. The petition states that managing vegetation to reduce wildfire risks to lives and property threatens Pajaro manzanita by removing woody vegetation from wildlife-urban interfaces and facilitating the spread of invasive plant species.

The petition states that climate change directly and indirectly threatens Pajaro manzanita by altering growing conditions, water availability, and frequency and intensity of disturbances. The petition also notes that climate change can alter interactions of the plant with pollinators, dispersers, fungal symbionts, seed predators, herbivores, and competitors. The petition states that the magnitude of climate change impacts on Pajaro manzanita is uncertain but may be substantial, particularly because of the species' limited range, rarity, habitat specificity, and distribution in relatively small and isolated areas that will be exposed to dramatic changes. The petition notes that sudden oak death, caused by the pathogen *Phytophthora ramorum*, may also threaten Pajaro manzanita but the disease has not yet been reported for the species.

The petition states that without additional management actions, there is a moderate to high likelihood that Pajaro manzanita will become extinct. The petition mentions that this may occur because: most occurrences are threatened and the severity of some

threats is increasing; the species has a small range with a small number of occurrences that are also small in area, fragmented, or contain few individuals; and most sites occupied by the species are unprotected and not managed for the conservation of the species.

3.5.1 Department Assessment

Factors affecting the ability of Pajaro manzanita to survive and reproduce, and the degree and immediacy of threats, are presented in the petition based on occurrence level threat data reported in the CNDDDB and threat data from other sources. Threats listed in the CNDDDB can be representative of various types of threat data, including current threats, future threats, past threats, threats affecting a small portion of the site, threats in one year but not another, etc. The petition also presents climate change and sudden oak death as threats to Pajaro manzanita that are not listed in the CNDDDB. None of these threats are described in adequate detail in relation to Pajaro manzanita and the petition does not provide information on the degree and immediacy of these threats for the species.

The petition uses CNDDDB polygon data overlaid on land cover mapping to see if there is any overlap between the CNDDDB polygon data with development or agriculture to determine additional occurrences that may be experiencing threats. CNDDDB polygons are typically mapped to include a buffer that represents the locational accuracy of the data, and the petition does not indicate if development or agriculture shown on aerial imagery overlapped with the portion of the CNDDDB polygon that was previously occupied by the species or within areas that were once appropriate habitat for the species. Further discussion is needed on the use of aerial imagery to provide an accurate reflection of the degree of threat that development and agriculture are currently having on Pajaro manzanita.

The petition also mentions a small range, small number and size of occupied sites, few individuals, and lack of protection and management, as additional reasons why Pajaro manzanita is likely to be extirpated from much of its range or become extinct. The petition has not shown that Pajaro manzanita distribution and number of sites have been fully assessed and has not accurately represented the size of the occupied sites. The petition also does not discuss what the unprotected lands with Pajaro manzanita are being used for and how that land use is threatening, or potentially threatening, the species.

While much of the threat information in the petition is not presented in enough detail to ascertain how the threats are directly impacting Pajaro manzanita, the petition also provides information on the effect of fire on Pajaro manzanita. The petition mentions that fire kills Pajaro manzanita, but post-fire recovery is essential for the species to

recruit new individuals from seed stored in the soil. The petition describes how short intervals between fires, postfire competition from invasive plants, fuel reduction treatments, and firebreak creation could threaten the species.

The Department considers the discussion of specific threats to Pajaro manzanita from disruptions to post-fire recovery and vegetation management to reduce fire risks as adequate information for the factors affecting the ability of Pajaro manzanita to survive and reproduce (threats). However, the discussion of the degree and immediacy of these threats to Pajaro manzanita in the petition is not adequate and the Department does not have additional, readily available information to compensate for deficiencies in data for this topic.

3.6 Existing Management

This section summarizes the information in the petition regarding the impact of existing management efforts on the species (Fish & G. Code, § 2072.3; Cal. Code Regs., tit. 14, § 670.1, subd. (d)(1)). Section I on pages 15 through 17 of the petition provides information on the impact of existing management efforts on Pajaro manzanita.

The petition states that management of Pajaro manzanita has been very limited, has not sufficiently addressed threats to the species, and consequently has not resulted in significant conservation of the species. The petition describes the impact of several management categories including legal protection, preservation and seed banking, management and monitoring, restoration, and surveys and research.

The petition describes Pajaro manzanita as having no legal protections but notes that the species has a CRPR of 1B.1 and should be treated as a special-status species during environmental review under the California Environmental Quality Act. The petition also notes that Pajaro manzanita has been designated by the Bureau of Land Management as a sensitive species and impacts to the species should be considered during environmental review under the National Environmental Policy Act.

The petition states that 14% of occurrences of Pajaro manzanita are on land managed for biodiversity. The petition mentions that seeds of Pajaro manzanita have been collected and placed in long-term storage at the University of California, Santa Cruz.

The petition notes that three occurrences of Pajaro manzanita are on lands that are managed to maintain habitats, and that land managers routinely implement avoidance and minimization measures for the habitats. The petition mentions that none of the Pajaro manzanita occurrences are the subject of systematic, formal monitoring.

The petition states that no efforts have been made to restore or create habitat occupied by Pajaro manzanita. The petition discusses how surveys have not been conducted to

confirm the continued existence of Pajaro manzanita at all occurrences and surveys have not been conducted to more precisely map nonspecific occurrences of Pajaro manzanita. The petition states that research has been conducted on change in vegetation structure and composition in the absence of fire for maritime chaparral containing Pajaro manzanita, but research has not been conducted on the species' genetic diversity, pollination, dispersal, seed bank dynamics, and seedling establishment. The petition notes that manzanita species in general have been extensively studied and studies on the ecology of other manzanita species provide some understanding of Pajaro manzanita's ecology.

3.6.1 Department Assessment

The Department considers the information provided in the petition on impact of existing management efforts on Pajaro manzanita to be adequate for assessing this petition component.

3.7 Future Management

This section summarizes the information in the petition regarding suggestions for future management (Fish & G. Code, § 2072.3; Cal. Code Regs., tit. 14, § 670.1, subd. (d)(1)). Section J on pages 17 and 18 of the petition provides suggestions for future management of Pajaro manzanita.

The petition provides a list of suggestions for future management including:

- list the species under CESA and prepare a recovery plan for it,
- include the species as a focal species in regional conservation investment strategies and as a covered species in natural community conservation plans,
- preserve occupied sites in perpetuity,
- develop and implement site-specific monitoring and management plans,
- manage extant populations to prevent the spread of invasive species and eradicate existing infestations,
- design compatible fuel reduction treatments,
- implement measures to prevent impacts from recreational activities,
- establish a memorandum of understanding with transportation agencies involved with maintenance activities that have the potential to affect occupied habitat,
- coordinate and share information among organizations working to conserve the species,
- coordinate with and support private landowners implementing conservation practices in occupied habitat,
- restore degraded, occupied habitat,

- establish additional populations, and
- conduct surveys to improve data on distribution and abundance.

3.7.1 Department Assessment

The Department considers the information provided in the petition on suggestions for future management of Pajaro manzanita to be adequate for assessing this petition component.

3.8 Availability and Sources of Information

This section summarizes the information in the petition regarding availability and sources of information (Fish & G. Code, § 2072.3; Cal. Code Regs., tit. 14, § 670.1, subd. (d)(1)). Section K on pages 18 through 21 of the petition provides the sources of information used in the Pajaro manzanita petition. Digital copies of references cited were also provided to the Commission and Department.

3.8.1 Department Assessment

The Department received digital copies of references cited in the petition and considers this to be adequate to address the availability and sources of information mentioned in the petition for Pajaro manzanita.

4 OTHER RELEVANT INFORMATION AVAILABLE TO THE DEPARTMENT

Pursuant to Fish and Game Code section 2073.5, the Department also evaluates petitions in relation to other relevant information the Department possesses or receives. The Department evaluated readily available information relating to Pajaro manzanita that is available from the Department's document library and the CNDDDB, including data housed in the CNDDDB's unprocessed data layer. Regional Department staff were contacted to determine if additional information on the species was readily available and in the possession of Department staff. Any relevant information from these sources is mentioned within the "Department Assessment" section for each petition component.

To the extent the Department was able to review other relevant information in its possession as it relates to the petition, the Department concluded that none of the additional information compensates for data deficiencies in the petition. If the Commission accepts the petition for consideration, regardless of the Department's recommendation, all reasonable attempts will be made by the Department to notify affected and interested parties and to solicit data and comments on the petitioned action (Fish & G. Code, § 2074.4). At that time, the Department will commence a review of the

status of the species and produce a written peer-reviewed report, based upon the best scientific information available to the Department, which indicates whether the petitioned action is warranted (Fish & G. Code, § 2074.6).

5 SUFFICIENCY OF SCIENTIFIC INFORMATION AND RECOMMENDATION TO THE COMMISSION

The Department evaluated the petition components set forth in Fish and Game Code section 2072.3 and California Code of Regulations, title 14, section 670.1, subdivision (d)(1) for sufficiency of information pursuant to Fish and Game Code section 2073.5. Based upon the information contained in the petition and other relevant information, the Department determined there is not sufficient information to indicate that the petitioned action may be warranted (Fish & G. Code § 2073.5).

In this petition evaluation, the Department has assessed the information in the petition for each petition component individually; however, sufficiency of the petition as a whole is ultimately determined by looking at all petition components taken together. The Department considers scientifically defensible information on range and distribution to be critical for determining sufficiency of the petition. For Pajaro manzanita, the Department has determined that information is lacking for the following petition components: range, distribution, abundance, population trend, and the degree and immediacy of threats. Due to the lack of adequate information on these petition components, the Department does not consider the information in the petition to be sufficient as a whole for assessing whether listing Pajaro manzanita under CESA may be warranted and recommends the Commission reject the petition and not consider it further under CESA.

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