

Elkhorn Slough Ecological Reserve Eucalyptus Removal 2015-2025

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PROJECT LOCATION: ELKHORN SLOUGH NATIONAL ESTUARINE RESEARCH RESERVE
ESNERR contact: Andrea Woolfolk

This document is a Mitigated Negative Declaration for a proposed eucalyptus removal project to restore coastal oak woodland, prairie and scrub on the Elkhorn Slough National Estuarine Research Reserve.

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PROJECT DESCRIPTION

Project title: Elkhorn Slough Ecological Reserve Eucalyptus Removal

Lead agency name & address: California Department of Fish and Wildlife, 1234 East Shaw Avenue, Fresno, California 93710

Contact person & phone number:

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ESNERR: Andrea Woolfolk (831) 728-2822

Project location: Elkhorn Slough National Estuarine Research Reserve (ESNERR), 1700 Elkhorn Road, Watsonville, CA 95076, about 3 miles east of Moss Landing, Monterey County, California.

Project sponsor's name & address: California Department of Fish and Wildlife, 1234 East Shaw Avenue, Fresno, California 93710

Applicable Land Use plan designation: North County Land Use Plan (Coastal)

Zoning: Resource Conservation (Coastal Zone)

Background

The Elkhorn Slough National Estuarine Research Reserve (ESNERR) is also designated as a 1,700 acre California Department of Fish and Wildlife (CDFW) Ecological Reserve. CDFW Ecological Reserves are acquired and managed to conserve areas for the protection of rare plants, animals and habitats, and to provide areas for education and scientific research. ESNERR is one of 28 National Estuarine Research Reserves, protected for long-term research, water quality monitoring, education, and coastal stewardship across the country. Each of these Reserves is the result of the National Oceanic Atmospheric Administration (NOAA) partnering with a local agency. The local partner at the Elkhorn Slough is the California Department of Fish and Wildlife. ESNERR is located on the southeast side of Elkhorn Slough, an estuary in Monterey County, California (**Figure 1**).



Figure 1. Project vicinity map

Historically dominated by coastal prairie, coastal scrub, freshwater meadows and coast live oak woodlands, ESNERR uplands now include almost 50 acres of the invasive non-native eucalyptus tree, *Eucalyptus globulus* and approximately one acre of *Eucalyptus camaldulensis* spread out over 13 groves. Eucalyptus trees were planted on the property before the 1930s, most likely for use as timber and, in some locations, as a wind break. Four of the 13 remaining eucalyptus groves directly threaten native oak woodlands and freshwater ponds known to serve as habitat for listed and special status species, including the Santa Cruz long-toed salamander, *Ambystoma macrodactylum croceum*, (State and Federally listed as Endangered), and the California red-legged frog, *Rana draytonii* (Federally listed as Threatened).

Research done by ESNERR staff and graduate students has shown 1) that without control, local eucalyptus groves expand, displacing adjacent habitat, including native oaks, 2) that native

amphibians are more abundant in local oak woodlands than adjacent eucalyptus stands, and 3) that eucalyptus growing near ESNERR ponds utilize more water than nearby oaks (ESNERR, unpublished data). Without intervention, the four eucalyptus groves proposed for removal are expected to displace adjacent oak habitat and to draw down groundwater near ponds, reducing the amount of groundwater available to keep ponds wet during the amphibians' breeding period. Continued drying of breeding habitat before the larvae have metamorphosed (mid-August for native amphibians of concern) would result in a significant loss of habitat function and a decrease in native biodiversity.

Eucalyptus removal would not only protect existing natural resources, but would also allow ESNERR staff to restore oak woodland, scrub and coastal prairie previously lost to eucalyptus.

Project Description

The proposed Eucalyptus Removal Project would be implemented over the course of 10 years. It includes the removal of up to 1,150 small eucalyptus trees (< 36" dbh) and 75 large eucalyptus trees (\geq 36" dbh) from four groves: 1) Hummingbird Island, 2) South Marsh, 3) Cattail Swale, and 4) Five Fingers (**Figure 2**). The groves vary in size from 1.3 to 8.2 acres. The nine remaining eucalyptus groves are not proposed for removal under this project.

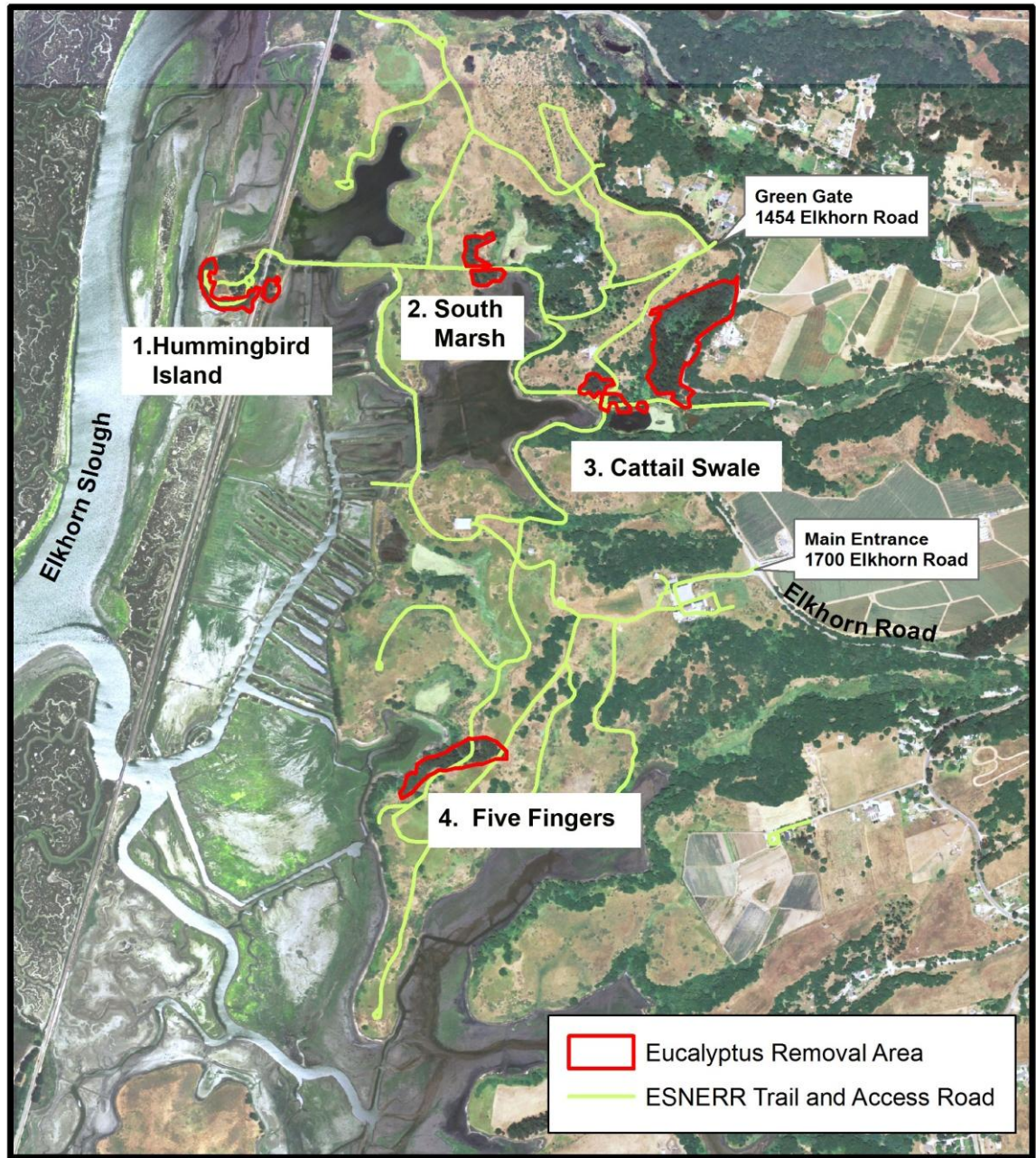


Figure 2. Location of eucalyptus groves slated for removal

This project would occur on land owned by the California Department of Fish and Wildlife, within the Elkhorn Slough National Estuarine Research Reserve located 3 miles east of Moss Landing, California. ESNERR is one of 28 National Estuarine Research Reserves administered by the National Oceanic and Atmospheric Association (NOAA). Funding from NOAA supports the ESNERR staff who manage the coast live oak woodland, scrub, coastal prairie and freshwater habitats associated with this plan.

Project Activities and Schedule

Eucalyptus would be removed between August 1 and November 1 of each year, beginning in 2015 and ending in 2025. This time frame, designed to avoid disturbance to nesting birds and migrating amphibians and reptiles, encompasses 10 seasons of potential tree removal.

Site Preparation and Staging Areas

The targeted eucalyptus groves are all accessible by existing dirt roads. Where necessary, dirt roads leading to two of the four sites (Cattail Swale and Five Fingers) may be reinforced with gravel. Staging areas would be located adjacent to the eucalyptus groves slated for removal, and would be created by mowing weedy vegetation in upland habitats dominated by non-native plants.

Tree Removal

Trees would be cut and felled in place with chainsaws. All stumps would be treated with herbicide as soon as possible after cutting to prevent re-growth. Herbicides used will be determined by a written recommendation by the CDFW Integrated Pest Management Advisor, and may include glyphosate or triclopyr ester applied at rates allowed by the label. Herbicide would be applied directly to cut stumps by qualified personnel and under the supervision of an employee who has obtained their Qualified Applicator Certificate issued by the California Department of Pesticide Regulation (DPR-certified applicator). Trees next to roads and utility lines would be climbed by trained personnel and cut from the top down until they can be safely taken down. On each of the four sites, one to twenty five trees would be killed standing and left as snags. The number of snags left will be dependent upon availability of larger trees and the location of the trees. Snags remain an important resource for wildlife and are part of a healthy woodland system. Snags deteriorate at a natural rate with branches falling slowly over the years leaving the main snag standing. The oldest known eucalyptus killed and left standing in this way locally is more than 20 years old and the snag still stands. Because the branches do fall off and can pose a hazard, the dead trees left standing would not be within falling distance of utility lines, trails or roads.

Once a tree has been felled, the contractor would then chip all small branches and scatter chips on-site to a depth no greater than 6 inches. A brush chipper on tracks is able to climb hills and move to the brush to ensure an even scattering of chips. If the amount of chips spread exceeds 6 inches, the rest of the chips would be chipped into a truck and removed from the site. Large branches and logs would be bucked into lengths ready for loading.

On all sites except Hummingbird Island, the logs and large branches would be loaded and hauled away on trucks by the contractor. The use of a tractor with a bucket or a grapple loader may be necessary. The western portion of Hummingbird Island has no motor vehicle access to the west side

of the railroad tracks. Large logs would be cut, stacked, and left on site. Smaller branch material would be chipped and scattered in the area to no more than 6" in depth. Piles of chips may be produced and used for trail reinforcement and habitat restoration on the island. Logs may also be used to line trails or become seating areas. On the east side of Hummingbird Island (east of the railroad tracks), the cut logs can be hauled to the nearby levee and loaded into a small truck or vehicle and transported over to the staging area, just on the east side of the levee, where they can be loaded into a larger vehicle and removed.

Erosion control

Hummingbird Island and South Marsh groves are on gently sloping lands with average slopes of 3 percent or less (derived from USGS 1:24k digital elevation models using Spatial Analyst, ArcGIS 10). The Five Fingers and Cattail eucalyptus groves are on moderate slopes with an average slope of 11 percent for Five Fingers (minimum=4 percent, maximum=15 percent slope), and an average slope of 9 percent for Cattail (minimum=2 percent, maximum=16 percent slope). At these sites, erosion is not expected based on the following prevention procedures. These procedures are also numbered mitigation measures in the erosion section.

- 1) All stumps shall be left in the ground with the roots, though dead, holding soil in place.
- 2) Small branches and leaves shall be mulched and scattered in place to no more than 6" in depth. This vegetative material on the surface acts as a buffer between heavy rain and the soil.
- 3) Any existing vegetation (except cape ivy, periwinkle, eucalyptus seedlings, and other non-native invasive species) shall not be removed, although some may be unavoidably damaged or destroyed in the tree removal process. The roots of this vegetation shall serve as a binder to hold the soil in place. All sites have existing native vegetation in the understory.
- 4) Any exposed soil in the project areas shall be broadcast with a mixture of native and annual barley seed at a rate of 50 pounds per acre and covered with a layer of rice straw.

Revegetation

ESNERR has decades of experience restoring sites by replanting, including revegetation of a 13-acre former eucalyptus grove removed in the early 1990s. ESNERR staff surveyed the plant composition under the four eucalyptus groves proposed for removal and expect that all groves would have natural revegetation that would include both native and non-native plant recruitment.

This expectation is based on two reference sites. The first is a 13 acre eucalyptus grove removed in the 1990s within the ESNERR boundary that is currently returning to coast live oak woodland. In this site, thousands of acorns, shrubs and forbs were planted, but many native species that were not deliberately planted have colonized the site as well. A diverse native plant community has resulted, from the planting efforts and from an existing native seed bank and animals bringing in seeds. The second site is the Cattail Swale eucalyptus grove. Germination and re-colonization of an existing native seedbank occurred after the removal of a thick cape ivy understory, opening up space and producing a rich assemblage of coast live oak woodland habitat and several native herb species not previously recorded on the ESNERR plant list.

Replanting will be necessary if the remaining density of coast live oak trees is less than two trees per 100 square meters. The dominant plant species used for revegetation will be coast live oak (*Quercus agrifolia*). Local native propagules from the watershed will be used for propagation and replanting. Other species for revegetation will be chosen based on the nearest and most similar reference site. Volunteers will be an integral part of propagation, planting, monitoring and maintenance. All plants will be propagated at the ESNERR greenhouse and nursery. Planting will take place in the rainy season between November and March and will be monitored for survival and health over the period of three years. Adjustments for future plantings will be made based on monitoring results. The following is criteria for the adjustment of future planting. 1) If a planted species has more than 75% mortality after one year, that species will cease to be used in revegetation efforts. 2) If planting and eucalyptus tree removal efforts do not yield at least 25% native cover in tree removal areas after three years, other revegetation methods will be employed after soil testing. Plantings will be maintained by watering and weeding. Plants will be watered the first summer if necessary. Weeds around the plantings will be removed manually or with herbicide for at least three years. Herbicide use is as follows: cape ivy, 2% RoundUp Pro (active ingredient: glyphosate) and 0.5% R-11; periwinkle, 2% RoundUp Pro and 0.5% R-11; eucalyptus resprouts, 30% Garlon 4 (active ingredient: triclopyr ester) with 70% Hasten.

Herbicide Toxicology

Glyphosate

Regarding the toxicological risk posed by the use of glyphosate products in this project, there appears to be little chance of significant risk to non-target aquatic organisms (i.e. fish, amphibians and aquatic invertebrates). Evidence of this can be found in a risk assessment scenario developed for the U.S. Forest Service in 2011 (SERA 2011a). This assessment involved a formulated glyphosate product containing a high toxicity surfactant that was applied directly to water under typical conditions at the maximum use rate of 8 lbs acid equivalent/acre. This resulted in peak glyphosate concentrations estimated to be approximately 0.6 mg/L. Glyphosate concentrations in this range are lower than the acute 96-h LC₅₀¹ values for both sensitive invertebrate and sensitive fish species. Further, this worst-case scenario does not take in to account many mitigative factors that would be expected under project conditions. For example, concentrations of the herbicide and its associated surfactant will be significantly lower because the herbicide will not be applied directly to water. In addition, the scenario assumes the maximum use rate will be used and does not take into account factors such as dilution, degradation or sequestering by soil or sediment that would reduce herbicide and surfactant concentrations and bioavailability. When these factors are taken in to account, the risk to non-target aquatic fauna is substantially reduced and is considered negligible.

Triclopyr Ester

Regarding the toxicological risk posed by the use of triclopyr ester products in this project, there appears to be little chance of significant risk to non-target aquatic organisms (i.e. fish, amphibians and aquatic invertebrates). Evidence of this can be found in a risk assessment scenario developed for the U.S. Forest Service in 2011 (SERA 2011b). This assessment involved a formulated triclopyr ester product applied adjacent to a waterway under typical conditions at the maximum use rate of 8 lbs acid equivalent (ae)/acre. This resulted in peak triclopyr concentrations estimated to be approximately 0.0004 mg ae/L. Triclopyr concentrations in this range are lower than the calculated no observable adverse effect levels (NOAEL) for sensitive fish, amphibian and invertebrate species

¹ LC₅₀ or Lethal Concentration 50 is a standard measure of toxicity and is the dose required to kill half of a sample population.

by a factor of at least 112. This conservative scenario does not take in to account several mitigative factors that would be expected during actual project conditions. For example, the USFS model involved both aerial drift and herbicide movement in surface water flow after significant rainfall. The cut stump method that will be used during this project produces negligible drift. Additionally, herbicide movement via surface water flow could be substantially lower than the amount used in the USFS model, if rainfall is low or non-existent. The scenario also assumes that the maximum herbicide use rate will be used and does not take in to account factors such as dilution, degradation or sequestering by soil or sediment that could reduce herbicide concentration and bioavailability. Finally, the USFS model does not take into account the relatively rapid degradation of triclopyr ester to the much-less toxic triclopyr acid that would occur in soil and water. When these factors are taken in to account, the risk to non-target aquatic fauna is substantially reduced and is considered negligible.

With regards to the oil diluent product Hasten, the product contains ethylated corn, canola, and soybean oil combined with sorbitan alkylethoxylate ester as a nonionic surfactant. The product's 96-h LC₅₀ value for rainbow trout has been reported to be 74 mg/L, which places it in the U.S. EPA's slightly toxic range for fish (Curran 2003). Compared to the triclopyr ester, Hasten is less toxic to sensitive aquatic fauna by a factor of at least 813. (74 mg/L / 0.091 mg/L) and should not contribute significantly to the aquatic toxicity of the herbicide/oil diluent mixture.

Setting and surrounding land uses

The proposed project is located in the Elkhorn Slough watershed, situated 90 miles south of San Francisco and 20 miles north of Monterey. ESNERR is a 1,700 acre CDFW Ecological Reserve, as well as a National Estuarine Research Reserve, protected for long-term research, water quality monitoring, education and coastal stewardship. Five miles of trails are open to the public Wednesday through Sunday. ESNERR's habitats include maritime chaparral, coastal prairie, coastal scrub, live oak woodlands, grasslands, freshwater ponds, salt marsh, mudflats, and tidal creeks. Surrounding land uses include agriculture (primarily strawberries and other row crops), cattle grazing, rural residences and the small town of Las Lomas.

Coastal prairie, oak woodland, and freshwater ponds adjacent to the four proposed tree removal sites characterize the immediate project setting. Elkhorn Elementary School is located approximately 2 miles southeast of the proposed project location.

Other public agencies whose approval may be required:

- U.S. Fish and Wildlife Service (USFWS): USFWS staff has reviewed the draft Coastal Development Permit application for this project, and has indicated that the project may be permitted under ESNERR's existing permit TE-082546-4. To be included as part of the existing permit, avoidance measures for federal special status species (Santa Cruz long-toed salamander and California red-legged frog) would need to be appropriate, and USFWS would need to grant final authorization. Federal Endangered Species Act (ESA) compliance would be required for potential effects on wildlife species federally-listed as threatened or endangered.
- Monterey County and California Coastal Commission, Central Coast District: A Coastal Development Permit would be required for activities within California's coastal zone. An application for this permit is being developed for Monterey County, with significant input from Monterey County Planning staff. Monterey County would be responsible for coordinating coastal permitting responsibilities with the California Coastal Commission.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a “Potentially Significant Impact” as indicated by the checklist on the following pages.

- | | | |
|---|--|---|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Agriculture Resources | <input type="checkbox"/> Air Quality |
| <input checked="" type="checkbox"/> Biological Resources | <input checked="" type="checkbox"/> Cultural Resources | <input checked="" type="checkbox"/> Geology / Soils |
| <input checked="" type="checkbox"/> Hazards/Hazardous Materials | <input checked="" type="checkbox"/> Hydrology / Water Quality | <input type="checkbox"/> Land Use / Planning |
| <input type="checkbox"/> Mineral Resources | <input checked="" type="checkbox"/> Noise | <input type="checkbox"/> Population / Housing |
| <input type="checkbox"/> Public Services | <input type="checkbox"/> Recreation | <input type="checkbox"/> Transportation/Traffic |
| <input type="checkbox"/> Utilities / Service Systems | <input checked="" type="checkbox"/> Mandatory Findings of Significance | |
| <input checked="" type="checkbox"/> Greenhouse Gas Emissions | | |

Some proposed applications that are not exempt from CEQA review may have little or no potential for adverse environmental impact related to most of the topics in the Environmental Checklist, and/or potential impacts may involve only a few limited subject areas. These types of projects are generally minor in scope, located in a non-sensitive environment, and are easily identifiable and without public controversy. For the environmental issue areas where there is no potential for significant environmental impact (and are not checked above), there is no potential for significant environmental impact to occur from construction or maintenance of the proposed project. This finding can be made using the project description, environmental setting, or other information as supporting evidence, which is provided in the Environmental Checklist below. For those environmental issue areas where there is potential for significant environmental impact (checked above), mitigation measures have been identified in this document that would reduce impacts to a less than significant level.

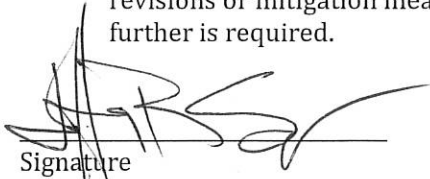
LEAD AGENCY DETERMINATION

On the basis of this initial evaluation:

- I find that the proposed project COULD NOT have a significant effect on the environment, and a **NEGATIVE DECLARATION** would be prepared.
- I find that although the proposed project could have a significant effect on the environment, there would not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A **MITIGATED NEGATIVE DECLARATION** would be prepared.
- I find that the proposed project MAY have a significant effect on the environment, and an **ENVIRONMENTAL IMPACT REPORT** is required.
- I find that the proposed project MAY have a “potentially significant impact” or “potentially significant unless mitigated” impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on

attached sheets. An **ENVIRONMENTAL IMPACT REPORT** is required, but it must analyze only the effects that remain to be addressed.

[] I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an **earlier EIR or NEGATIVE DECLARATION** pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.



Signature

Jeffrey R. Single

Printed name

11-24-14

Date

Regional Manager

Title

EVALUATION OF ENVIRONMENTAL EFFECTS

The Environmental Checklist and discussion that follow are based on sample questions provided in the CEQA Guidelines (Appendix G of the California Code of Regulations, Title 14, Division 6, Chapter 3), which focus on various individual concerns within 16 different broad environmental categories, such as air quality, cultural resources, land use, and traffic (and arranged in alphabetical order). The Guidelines also provide specific direction and guidance for preparing responses to the Environmental Checklist. Each question in the Checklist essentially requires a “yes” or “no” reply as to whether or not the project would have a potentially significant environmental impact of a certain type, and, following a Checklist table with all of the questions in each major environmental heading, citations, information and/or discussion that supports that determination.

The Checklist table provides, in addition to a clear “yes” reply and a clear “no” reply, two possible “in-between” replies, including one that is equivalent to “yes”, but with changes to the project that the proponent and the Lead Agency have agreed to that result in a “no” reply; and another “no” reply that requires a greater degree of discussion, supported by citations and analysis of existing conditions, threshold(s) of significance used, and project effects resulting in a “no” reply. Each possible answer to the questions in the Checklist, and the different type of discussion required, are discussed below:

Potentially Significant Impact. Checked if a discussion of the existing setting (including relevant regulations or policies pertaining to the subject) and project characteristics with regard to the environmental topic demonstrates, based on substantial evidence, supporting information, previously prepared and adopted environmental documents, and specific criteria or thresholds used to assess significance, that the project would have a potentially significant impact of the type described in the question.

Less Than Significant With Mitigation. Checked if the discussion of existing conditions and specific project characteristics, also adequately supported with citations of relevant research or documents, determine that the project clearly would or is likely to have particular physical impacts that would exceed the given threshold or criteria by which significance is determined, but that with the incorporation of clearly defined mitigation measures into the project, that the project applicant or proponent has agreed to, would be avoided or reduced to less-than-significant levels.

Less Than Significant Impact. Checked if a more detailed discussion of existing conditions and specific project features, also citing relevant information, reports or studies, demonstrates that, while some effects may be discernible with regard to the individual environmental topic of the question, the effect would not exceed a threshold of significance, which has been established by the Lead or a Responsible Agency. The discussion may note that due to the evidence that a given impact would not occur or would be less than significant, no mitigation measures are required.

No Impact. Checked if brief statements (one or two sentences) or cited reference materials (maps, reports or studies) clearly show that the type of impact could not be reasonably expected to occur due to the specific characteristics of the project or its location (e.g., the project falls outside the nearest fault rupture zone, or is several hundred feet from a 100-year flood zone, and relevant citations are provided). The referenced sources or information may also show that the impact simply does not apply to projects like the one involved. A

response to the question may also be "No Impact" with a brief explanation of adequately supported project-specific factors or general standards (e.g., the project would not expose sensitive receptors to pollutants, based on a basic screening of the specific project).

The discussions of the replies to the Checklist questions must take account of the whole action involved in the project, including off-site as well as on-site effects, both cumulative and project-level impacts, indirect and direct effects, and construction as well as operational impacts. Except when a "No Impact" reply is indicated, the discussion of each issue must identify:

the significance criteria or threshold, if any, used to evaluate each question; and

the mitigation measure identified, if any, to reduce the impact to less than significant, with sufficient description to briefly explain how the mitigation measure would reduce the effect to a less than significant level.

Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration (Section 15063(c)(3)(D) of the Guidelines). In this case, a brief discussion should identify the following:

Earlier Analysis Used. Identify and state where they are available for review.

Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.

Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures, which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the proposed project.

EVALUATION OF ENVIRONMENTAL IMPACTS

AESTHETICS

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista.			X	
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.			X	
c) Substantially degrade the existing visual character or quality of the site and its surroundings.			X	
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.			X	

Comments:

a-c) ESNERR is part of the scenic Elkhorn Slough which is characterized by channels, wetlands, and surrounding open space and agriculture. The project sites appear as protected undeveloped areas dominated by grasses and trees, both native coast live oaks and exotic eucalyptus trees, surrounded by tidal wetlands and nearby freshwater ponds. Other features visible in and around the project area include trails, levees, culverts, overhead power lines and support towers.

There are six residences situated within 1,000 feet of one of the proposed eucalyptus removal sites (Cattail), but in all cases other trees (oaks and/or eucalyptus not proposed for removal) stand between the project site and the private parcels (**Figure 7**). It is possible that several residences higher in the eastern hills have a view of the four sites. However, the hilly topography and forested lands are likely to prevent clear views of the project sites.

ESNERR trails are open to the public and are extensively used. All four sites proposed for eucalyptus removal are easily viewed from the ESNERR public trail system. However, the actual project activities (e.g. cutting, hauling, etc.) would take place primarily on Mondays and Tuesdays when the Reserve is closed to the public and construction activities will not disturb visitors.

Most of the ESNERR property is set back east from Highway 1 (a scenic highway) approximately 2 miles and not easily visible from Highway 1 vehicle and bicycle traffic. Kayaks accessing the main channel of the Slough either from Moss Landing Harbor or Kirby Park off Elkhorn Road have a clear vista of the Reserve east of the main channel.

Elkhorn Road borders ESNERR on the east. The Northern Pacific Railroad passes through the Reserve on the west (**Figure 2**). The proposed Cattail Swale removal site is directly adjacent to Elkhorn Road and the project is easily viewed from passing vehicles. The proposed Hummingbird Island removal site can be viewed from the railroad tracks to the west. The proposed South Marsh and Five Fingers removal sites are not easily viewed from roads or railroads.

Tree Removal Impacts

During tree removal, some views of the project sites from ESNERR trails, kayaks, and surrounding vistas would be partially altered by cranes and other equipment (brush chippers small tractor, chip truck, bucket truck, grapple loader truck). Tree removal activities would also be visible from trails around Elkhorn Slough. This impact on visual resources would be temporary (3 months per year up to ten years for project completion) and the staging areas would be restored to pre-project conditions after project construction is complete. As a result, visual impacts during project construction are considered *less than significant*.

Long-term Impacts

Once the eucalyptus trees are removed from the project sites, local vistas would change.

At the Hummingbird Island site (**Figure 3**), Elkhorn Slough's main channel and tidal wetlands, currently obscured by standing eucalyptus, would be visible from ESNERR trails (**Figure 4**), and native grasslands, coastal scrub, oaks and Monterey cypress on the Island would be visible by boaters on Elkhorn Slough. This site is not visible from public roads.

At South Marsh (**Figure 5**), the removal of eucalyptus would improve views from ESNERR's South Marsh trail of one freshwater pond and tidal wetlands currently hidden behind the trees. This site is not visible by boaters on the slough or from public roads.

At Cattail Swale, the removal of eucalyptus is expected to reveal small but mature oaks currently growing in the understory of tall eucalyptus trees (**Figure 6**). Because oaks line the opposite side of Elkhorn Road, views are not expected to change significantly for neighbors across the street from ESNERR (**Figure 7**). The removal of eucalyptus would increase the visibility of grasslands and oaks from ESNERR's South Marsh Trail (**Figure 8**). This project site is not readily visible from boaters on Elkhorn Slough.

At Five Fingers, the removal of eucalyptus would increase visibility of a freshwater pond and tidal wetlands on ESNERR's Five Finger Trail (**Figure 9**). This site is visible from the main channel of Elkhorn Slough, and removal of eucalyptus would increase views of ESNERR's oak trees and grasslands.

Though eucalyptus removal will change the view and could be considered negative by those who enjoy looking at eucalyptus trees, the overall visual effect at the proposed sites will be of a scenic nature, revealing views of Elkhorn Slough and its wetlands, native trees, and other natural resources. Therefore the long-term visual impacts are considered *less than significant*.

d) Removal of eucalyptus trees would not result in any additional nighttime glare. Although the project would remove daytime shade at the project locations, the resulting daytime light would be

the same as adjacent natural areas. As a result, the proposed project would have a ***less than significant*** visual impact from light and/or glare.

A.



B.



**Figure 3. View of Hummingbird Island from ESNERR trail, looking west.
A) Existing view. B) View after removal of eucalyptus.**

A.



B.



**Figure 4. View from public trail on Hummingbird Island, looking west.
A) Existing view. B) View after removal of eucalyptus.**

A.



B.



**Figure 5. View from public trail at South Marsh, looking west.
A) Existing view. B) View after removal of eucalyptus.**

A.



B.



**Figure 6. View of Cattail Swale from Elkhorn Road, looking north.
A) Existing view. B) View after removal of eucalyptus.**

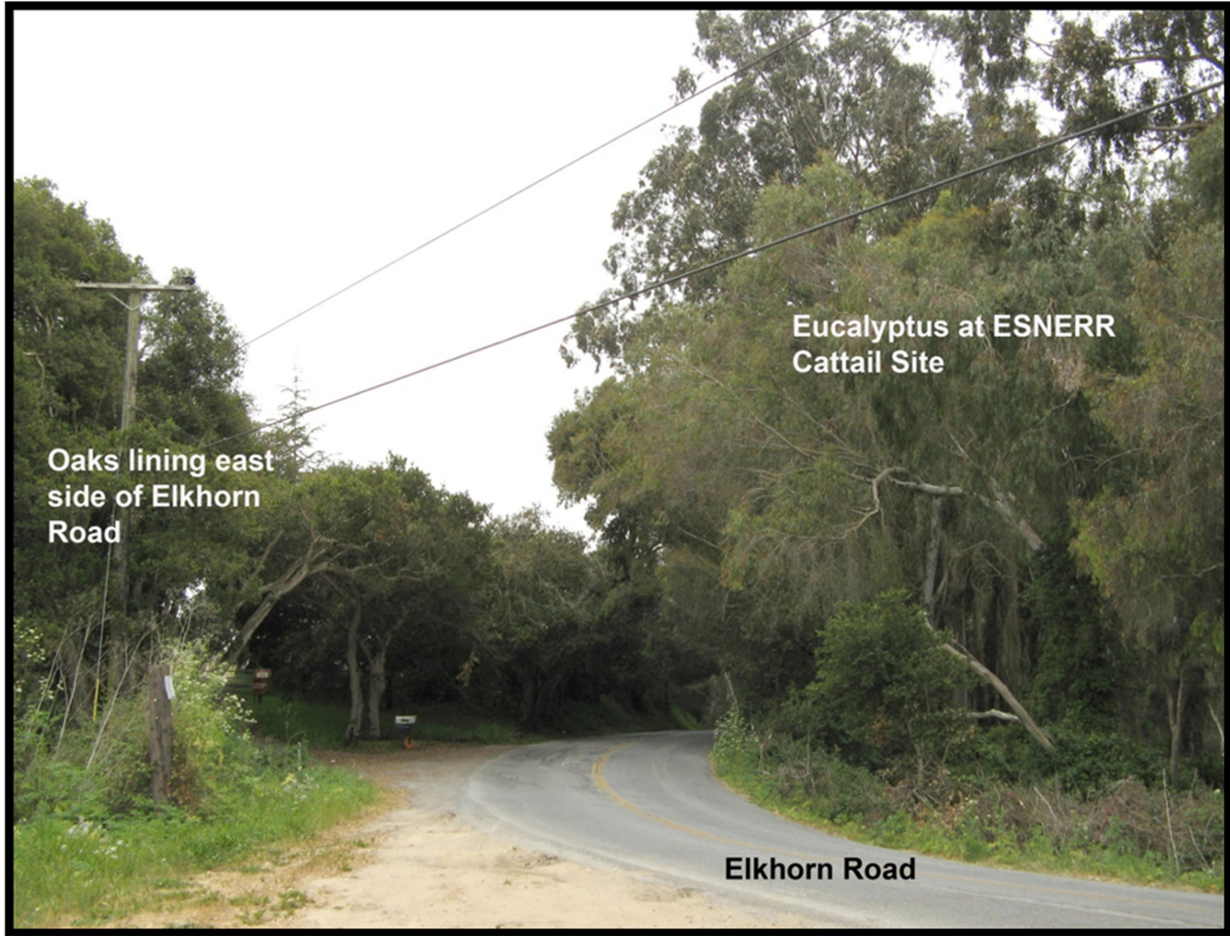


Figure 7. Oaks growing on the eastern edge of Elkhorn Road, shielding view of eucalyptus from neighboring homes.

A.



B.



**Figure 8. View of Cattail Swale site from public trail, looking northwest.
A) Existing view. B) View after removal of eucalyptus.**

A.



B.



**Figure 9. View from Five Fingers, looking west.
A) Existing view. B) View after removal of eucalyptus.**

AGRICULTURE AND FOREST RESOURCES

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection (CAL FIRE) regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use.				X
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract.				X
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)) or timberland (as defined by Public Resources Code section 4526)?				X
d) Result in the loss of forest land or conversion of forest land to non-forest use?				X
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use.				X

Comments

a, b, e) Based upon a review of the Map of Important Farmlands and Map of Agricultural Preserves prepared for Monterey County, no impact would occur to agricultural resources because there is

currently no Farmland, as defined by the California Natural Resources Agency, within the proposed project area. The proposed project location is not protected under a California Land Conservation (Williamson Act) contract. Three out of the four proposed project sites are not zoned for agriculture; the fourth site (Hummingbird Island) has a joint zoning designation of Resource Conservation (Coastal Zone), Agricultural Conservation (Coastal Zone) and Coastal Agriculture Preserve (Coastal Zone). The majority of this parcel is made up of tidal wetlands, and only the Island is upland. It has been part of ESNERR since 1980, and it is set aside for resource conservation. Farmland adjacent to the larger Elkhorn Slough would not be affected by the proposed project. Thus, **no impact** would occur to agriculture resources.

c, d) Monterey County does not have a specific forest land zoning designation, but the sites do fall within the Public Resources Code section 12220(g) definition of “forest land”: land that can support 10-percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits. The proposed project is specifically designed to remove exotic trees to improve the growth of native oak trees and freshwater habitat on ESNERR. Therefore, the removal of eucalyptus is not in conflict with Code 12220(g). The proposed project sites do not contain “timberland” as defined by Code 4526, because ESNERR land is not available “for growing a crop of trees of any commercial species used to produce lumber and other forest products.” This project would promote native forest land over the long term and would not result in the loss of timberland. Thus, there would be **no impact** to forest resources.

AIR QUALITY

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan.				X
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation.				X
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)?				X

d) Expose sensitive receptors to substantial pollutant concentrations?	X
e) Create objectionable odors affecting a substantial number of people?	X

Comments

a-c) The project area is located within Monterey County and the Monterey Bay Unified Air Pollution Control District (MBUAPCD). The MBUAPCD’s jurisdiction is the North Central Coast Air Basin composed of Monterey, Santa Cruz and San Benito counties. The most recently adopted air quality plan is the 2008 Air Quality Management Plan, which includes strategies for MBUAPCD to reach attainment for the State’s 8-hour ambient air quality standards (MBUAPCD 2008).

The Monterey County General Plan (Monterey County 2010) governs land use in the project area and recognizes the need to provide for growth and to maintain good air quality by taking proper actions to achieve desired standards of air quality. The proposed project would be consistent with the current land use designation for the project area within Monterey County (i.e. Resource Conservation [Coastal Zone]), and the General Plan is consistent with the strategies identified in the 2008 Air Quality Management Plan.

The proposed project would not conflict with or obstruct implementation of the applicable air quality plan and would have **no impact** on this environmental factor.

d, e) The proposed work would occur outdoors, in well-ventilated conditions in areas removed from human habitation. There would be **no impact** to sensitive receptors, nor creation of objectionable odors.

BIOLOGICAL RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.		X		

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.	X	
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.	X	
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.	X	
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.	X	
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.		X

Approach to Evaluating Biological Resources

This section describes potential impacts that may occur to biological resources in the project area as a result of tree removal. This section also describes avoidance, minimization and mitigation measures that will be implemented to avoid potential impacts and describes the beneficial impacts of the eucalyptus removal on biological resources on ESNERR. The results of this assessment are based on a review of relevant databases, ESNERR biological survey reports and site visits.

The 2014 California Natural Diversity Database (CNDDB) for the U.S. Geological Survey (USGS) 7.5-minute Prunedale quadrangle was searched to determine what special-status plant and wildlife species may have the potential to occur within and adjacent to the proposed project area. This information was combined with species lists from the ESNERR Final Management Plan 2007-2011

(ESNERR 2006) and the September 2014 Special Animals List derived from the CNDDDB (CDFW 2014).

A comprehensive list of special-status plant and animal species with the potential to occur in the vicinity of the project area is provided (**Appendix I**) and depicts special-status species occurrence data from CDFW's CNDDDB (CNDDDB 2014) for the project area and ESNERR's Management Plan.

Direct and indirect impacts on existing biological resources were evaluated by comparing the quantity and quality of habitats present in the project area under existing conditions to anticipated conditions during and after the proposed eucalyptus removal. For this evaluation, direct impacts on biotic resources were assessed based on the potential for the species or their habitat to be disturbed during tree removal. Direct impacts include temporal disturbance to species, habitat conversion of mature eucalyptus stands to young oak woodland, coastal scrub or coastal prairie habitat resulting from tree cutting, vehicle access and travel to project sites, staging activities, noise disturbance associated with use of chainsaws and chippers, and general human presence in and around the project area during tree removal.

Biological Resources Background

The four eucalyptus removal sites are located on ESNERR. In the past, ESNERR's uplands were dominated by coastal prairie, coastal scrub, maritime chaparral, freshwater meadows and oak woodlands. Beginning in the mid- to late-1800s, coast live oaks and shrubs were cleared in many parts of the eastern Elkhorn Slough watershed for firewood, timber and to open space for agricultural use. In the late 1800s and early 1900s, eucalyptus trees were popular due to their rapid growth. They were planted in great numbers in coastal California, both for use as timber and as wind breaks, converting historical prairie, shrublands and oak forests to dense monospecific stands of non-native eucalyptus. Historical ecology work done by ESNERR staff, comparing surveys conducted in the mid-1800s to current aerials indicates that approximately 10% of the watershed's historical oaks have been replaced by non-native eucalyptus and pine trees. Another 30% have been lost to land clearing for development and agriculture prior to the designation of the Reserve (ESNERR Management Plan 2006).

Preliminary data from ESNERR researchers indicate that eucalyptus transpire approximately twice as much as adjacent coast live oaks. This suggests that ESNERR eucalyptus use more water than oaks, and put added pressure on already stressed underground water reserves in the region. Therefore, removing the eucalyptus could potentially increase the amount of water available to Reserve ponds that support two listed amphibians, the California red-legged frog and the Santa Cruz long-toed salamander, and one State species of concern, the western pond turtle.

Biological surveys done for amphibians and reptiles in local eucalyptus groves and adjacent coast live oak woodlands found significantly more of these animals, and more amphibian/reptile species richness in oak woodland than in eucalyptus stands (Fork et al, *in review*). Therefore, it is anticipated that the recovery of oak woodlands after eucalyptus removal would increase the amount of habitat available to amphibians and reptiles on ESNERR land.

Special-Status Species

For the purposes of this Initial Study, the term “special-status species” refers to all plants or animals listed as threatened, endangered, or proposed for listing under the Federal ESA or the California Endangered Species Act (CESA); plants listed as rare under the California Native Plant Protection Act; plants considered by the California Native Plant Society to be “rare, threatened, or endangered in California”; species that meet the definition of rare or endangered under CEQA; animals fully protected in California; animals included on CDFW’s September 2014 Special Animals List, and nesting raptors protected in California. A more detailed explanation of each of these categories of special-status classifications is provided in **Appendix II** (CNDDDB report and map) of this document.

In evaluating the occurrence potential of special-status species in the project area, biologists considered relevant literature, knowledge of regional biota, existing data from regional experts, and observations made during the field investigations as analysis criteria.

Special-Status Plants

There are no special-status plants within the eucalyptus removal footprint. A single Pajaro manzanita (*Arctostaphylos pajaroensis*), listed as a CNPS 1b plant (see Appendix 1), is growing approximately 50 feet south of the Cattail Swale site, and coastal salt marsh vegetation, dominated by pickleweed is found in tidal wetlands down-slope of the project sites. Neither the lone manzanita nor any adjacent coastal salt marsh occurs within the project footprint. **Appendix I** includes a summary of special-status plant species with potential to occur in the Prunedale quadrangle according to the CNDDDB 2014 database, and the reason each species would not occur in the eucalyptus removal project area.

Special-Status Wildlife

The region currently supports a variety of vegetation communities and aquatic habitats that are essential for the dispersal, refuge, breeding and foraging activities of common and special-status wildlife species. **Appendix I** includes a summary of the special-status wildlife species in the CNDDDB database and ESNERR Management Plan (2006) that have the potential to occur in the region, and the reason each species would or would not occur in the project areas. This search identified 13 special-status wildlife species that may potentially occur in the project area (**Appendix I**, Table 2).

The following special-status wildlife species, or potential habitat for these species, may be affected by the proposed project:

Monarch butterfly (*Danaus plexippus*) (no Federal or State listing status)

Santa Cruz long-toed salamander (*Ambystoma macrodactylum croceum*) (Federally listed as endangered, State listed as Endangered, fully protected by the State)

California red-legged frog (*Rana draytonii*) (Federally listed as threatened, California species of concern)

Western pond turtle (*Emys (Clemmys) marmorata*) (no Federal listing, California species of concern)

White-tailed kite (nesting) (*Elanus leucurus*) (fully protected by the State)

Double-crested cormorant (rookery site) (*Phalacrocorax auritus*) (included on the California Department of Fish and Wildlife Watch List)

Salinas harvest mouse (*Reithrodontomys megalotis distichilis*) (no Federal or State listing status)

Southern sea otter (*Enhydra lutris nereis*) (Federally listed as threatened, protected under the Marine Mammal Protection Act, fully protected by the State)

Harbor seal (*Phoca vitulina*) (no Federal or State listing status, protected under the Marine Mammal Protection Act)

Comments:

a) The project's potential effects on special-status species and their habitats are discussed by species type below.

Special-Status Plants Species

There are no special-status plants within the eucalyptus removal footprint. However the Pajaro manzanita grows adjacent to the Cattail Swale site.

Erosion control measures will be implemented at each site to ensure minimal to no impacts to special-status plant species and assemblages down-slope of project sites due to soil erosion. Therefore, impacts will be ***less than significant with mitigation***.

See BIO mitigation measures 1, 2, 3, and 4.

Special Status Wildlife Species

Insects

Monarch butterflies (*Danaus plexippus*, no federal or state listing status) are known to roost in eucalyptus trees on ESNERR's property at Seal Bend, more than 1.5 miles from the nearest project site. While the species is not known to roost in any of the proposed project sites, the eucalyptus do potentially provide suitable roosting habitat. Because the current 21 acre roosting area at ESNERR's Seal Bend would be unaffected, and because another 13 acres of remaining eucalyptus grove will be left uncut and would provide alternative suitable habitat, there would be ***no impact*** on this species.

Amphibians and reptiles

Three special-status amphibian and reptile species inhabit areas near two proposed project sites: South Marsh and Cattail Swale. The California red-legged frog and the Santa Cruz long-toed salamander both occur in these areas and have bred in freshwater ponds at the Cattail Swale site, and the California red-legged frog and western pond turtle occur near the South Marsh site. No impact will occur to these species due to the mitigation measures ESNERR staff will take before and during project activities.

Oak woodland habitat is associated with greater abundance and diversity of special status amphibian and reptile species than adjacent eucalyptus groves (Fork et al, *in review*). The proposed eucalyptus removal project and subsequent recovery of native plant assemblages is expected to have a beneficial impact on these species in nearby freshwater systems where they breed. Impacts to special-status amphibians and reptiles would be ***less than significant with mitigation***.

See BIO mitigation measures 5, 6, 7, 8, 9, and 10.

Birds

Elkhorn Slough is recognized as a Globally Important Bird Area by the American Bird Conservancy. More than 265 bird species (73 percent of the California total) have been recorded in the Elkhorn Slough area. Eggs and nests of all birds are protected under Section 3503, and additionally for raptors under 3503.5, of the California Fish and Game Code, as well as under the Federal Migratory Bird Treaty Act.

The upland communities host an important portion of the diverse bird assemblage. Native birds nesting in the oaks and oak understory include, but are not limited to, white-tailed kites; sharp-shinned hawks; red-shouldered hawks; Cooper's hawks; Anna's and Allen's hummingbirds; Nuttall's, hairy, and downy woodpeckers; chestnut-backed chickadees; oak titmice; Pacific-slope flycatchers; American crows; Hutton's vireos; western scrub jays; Bewick's wrens; spotted towhees; song sparrows and dark-eyed juncos.

Other bird species that may nest in eucalyptus groves in Elkhorn Slough include the great blue heron, great egret, double-crested cormorants, red-tail hawk and the great horned owl. Smaller bird species cannot be confirmed to nest in eucalyptus due to the inability to find the nests. No rookeries or raptor nests been observed in the eucalyptus groves proposed for removal.

Special-status bird species with the potential to nest in the project area, but not necessarily in eucalyptus trees, include the white-tailed kite (fully protected by the State) and the double-crested cormorant (included on the CDFW Watch List).

At ESNERR oak woodlands provide nesting habitat for the white-tailed kite. Eucalyptus groves do provide rookery habitat for the double-crested cormorant, although the nesting locations vary with each season. Cormorants have not been documented to nest in the eucalyptus trees proposed for removal. Impacts to special-status bird species will be ***less than significant with mitigation***.

See BIO mitigation measures 5, 6, 7, 9, and 10.

Mammals

The Salinas harvest mouse has been found in ESNERR upland habitats, including pickleweed marsh, grasslands, coastal scrub, non-native poison hemlock stands and oak woodlands. It has not been documented in ESNERR eucalyptus woodlands. According to CDFW (Bolster 1998), it is unclear if the Salinas harvest mouse is truly distinct from interior upland *R. m. longicaudus* populations, or if this form should be removed from the CDFW's Watch List. Because the Salinas harvest mouse does not require eucalyptus woodland for habitat, and because known habitat would expand once the eucalyptus stands are removed, this project would have ***no impact*** on this species.

Southern sea otters occupy Elkhorn Slough estuarine habitat year-round, and currently researchers monitor Elkhorn otters approximately 10 hours a day, 7 days a week, including a daily check from Hummingbird Island. Sea otters have not been observed hauling out or resting in the tidal wetlands adjacent to tree removal areas. The researchers report, on average, the presence of one otter/week in the tidal channel approximately 150 feet west of Hummingbird Island during high tides, and infrequent sightings (once/month) of another single otter in the water east of Hummingbird Island when people are not present on the adjacent public hiking trail. About 6 sea otters have been observed using the tidal channel and salt marsh approximately 900+ feet west of Hummingbird

Island along the west bank of the Slough, but only in early morning hours (Eby and Scoles pers. comm. 2014).

Harbor seals are not federally listed under the Endangered Species Act, but are protected under the Marine Mammal Protection Act (MMPA) (although they are not listed as "depleted" under the MMPA). There is no designated critical habitat for harbor seals. Harbor seals inhabit Elkhorn Slough year-round and occur individually or in groups. They usually occupy areas just beyond the mouth of Elkhorn Slough in the Moss Landing North Harbor and in the lower portion of Elkhorn Slough extending up to Parsons Slough and Rubis Creek. Harbor seals have not been observed hauling out or resting in the tidal wetlands adjacent to tree removal areas. Marine mammal researchers report a seal in the tidal channel approximately 150 feet west of Hummingbird Island about once a week, and there is a single report of seals hauling out in the tidal wetlands along the west bank of the Slough, approximately 1,000 feet west of Hummingbird Island (Eby and Scoles pers. comm. 2014).

The marine mammal researchers report they do not observe much change in behavior by sea otters or harbor seals when motor boats or duck hunters are in their presence in the Slough's main channel (Eby and Scoles pers. comm. 2014). Because sea otters and harbor seals are not expected to occur in the project area, the proposed project would have ***a less than significant impact with mitigation*** on local policies or ordinances protecting biological resources.

See BIO mitigation measures 5, and 6."

b, c) The project's potential effects on sensitive natural communities including wetlands, are described by community type below.

Habitats

Intertidal Mudflat and Subtidal Habitat

No direct or indirect impacts of the project are expected to occur in subtidal or intertidal mudflat habitats. No project activities would occur in these areas. The Five Fingers site is located upslope of a narrow subtidal branch of Elkhorn Slough that may provide suitable fish and shellfish habitat. Because of erosion control mitigation measures that would be implemented, this habitat would not be directly or indirectly affected by erosion or water quality. There would be ***a less than significant impact with mitigation*** of the project on subtidal or intertidal mudflat habitats and the species that inhabit them with the mitigation measures described.

See BIO mitigation measures 2, 3, and 4.

Coast live oak woodlands

This project maintains and potentially expands native oak woodlands where they are currently threatened by encroaching non-native eucalyptus. The project also enhances and restores environmentally sensitive habitats, including adjacent freshwater habitat and oak woodlands previously displaced by eucalyptus plantations. This project is aligned with ESNERR's commitment to protecting and restoring key coast live oak woodland habitats. Coast live oak woodlands provide habitat for hundreds of wildlife species, including many mammals and a wide range of birds. By removing eucalyptus, ESNERR would regain a percentage of lost coast live oak woodland habitat. ESNERR will implement measures to prevent the spread of the pathogen that causes Sudden Oak Death (SOD) from entering the Reserve during all project activities. To date, the introduction of SOD has been successfully prevented on the Reserve by employing a protocol whereby all visitors clean

shoes and stroller tires before walking the trails. Impacts to coast live oak woodlands will be ***less than significant with mitigation*** measures.

See BIO mitigation measure 11.

Freshwater habitats

The removal of eucalyptus will enhance two key freshwater habitats on the Reserve. Preliminary data from Reserve researchers indicate that eucalyptus transpire approximately twice as much as adjacent coast live oaks. This suggests that Reserve eucalyptus use more water than oaks, and may put added pressure on already stressed underground water reserves in the region. Therefore, removing the eucalyptus could potentially increase the amount of water available to Reserve ponds that support two listed amphibians, the California red-legged frog and the Santa Cruz long-toed salamander, and one Species of Special Concern, the Western pond turtle. Project activities such as parking and stockpiling will not occur in freshwater wetlands.

See BIO mitigation measures 2, 3, and 4.

Salt Marsh Habitat

Tidal wetlands dominated by pickleweed are found down-slope of the project sites. Project activities such as parking, transportation and stockpiling will not occur in wetland areas, and wetland habitat will not be directly impacted by project activities. Any indirect impacts due to soil erosion will be prevented based on the erosion control mitigation measures that will be implemented. There would be ***a less than significant impact with mitigation*** on wetland habitats with the mitigation measures described.

See BIO mitigation measures 2, 3, 4, and 12.

d) The eucalyptus stands proposed for removal are not documented to function as corridors for wildlife movement, and 34 acres of uncut eucalyptus on ESNERR properties would remain available for nesting birds. Connectivity of coast live oak woodland habitat and associated wildlife movement will be enhanced by the project. This project will eventually increase the acreage of coast live oak woodland, coastal prairie and scrub habitat on the Reserve by approximately 12 acres. After the eucalyptus groves are removed, the young restoration sites consisting of oak woodland, coastal prairie and scrub species will provide continuity with adjacent native habitat.

Hummingbird Island: The grove proposed for removal at this site is an isolated and narrow band of eucalyptus with little understory vegetation that does not function as a known wildlife corridor. Post removal, the revegetated plant assemblage is likely to provide connectivity between the immediate surrounding coast live oak and prairie communities. These communities are healthy and are characterized by mature coast live oak trees as well as native grasses such as *Stipa sp.* and *Leymus triticoides*.

South Marsh: Once the eucalyptus trees are removed, the oaks underneath would not have light competition and would grow more rapidly. Based on previous experience restoring native plants in eucalyptus removal areas on the Reserve, it is expected that accumulated duff will break down over a period of several years leaving space for the native seed bank and existing native understory

plants to grow. Non-native invasive plants would be systematically removed. After eucalyptus removal the site would provide continuity with surrounding coast live oak woodland.

Cattail Swale: Once the eucalyptus trees are removed, light would reach the oaks underneath and they would grow more rapidly. Based on previous experience with Reserve eucalyptus removal and restoration, it is expected that accumulated duff and wood chips would break down over a period of several years leaving space for the native seed bank and existing native understory plants to grow. Non-native invasive plants would be systematically removed. After eucalyptus removal the site would provide continuity with coast live oak woodland directly within and adjacent to this site.

Five Fingers: The removal of the eucalyptus trees would allow light to reach native vegetation present in the understory. The west side of the site is bordered by healthy coast live oak woodland. With eucalyptus removal, it is expected that the existing oaks would fill in and continue to colonize the area. The east side may be restored to coastal prairie, since this is the dominant habitat type this portion is bordered by, and is the dominant native vegetation type currently under this portion of the eucalyptus.

See BIO mitigation measure 13.

e) The project does not conflict with any policies or ordinances protecting biological resources. The California Public Resources Code Section 21083.4 states that “as part of the determination made pursuant to Section 21080.1, a county shall determine whether a project within its jurisdiction may result in a conversion of oak woodlands that would have a significant effect on the environment.” This project would not convert oak woodlands and, instead is designed to prevent the conversion of existing oak woodlands to exotic eucalyptus groves. Furthermore, where tall eucalyptus outcompete small but mature oaks, eucalyptus removal is expected to result in recruitment of new oak seedlings, and the eventual expansion of oak woodlands on ESNERR into their historical, natural range.

The Monterey County Coastal Implementation Plan (Part 2 North County) defines Environmentally Sensitive Habitats Areas (ESHA) as including education, research, and wildlife reserves. Because the project area is within the boundaries of the Elkhorn Slough National Estuarine Research Reserve, the total project area is located in an ESHA. The Monterey County Coastal Implementation Plan (Part 2 North County) section on general development standards in ESHAs, states that “activities for watershed restoration may be allowed within environmentally sensitive habitats if it has been determined through the biological survey that the impacts of development would not harm the habitat’s long term maintenance.” This proposed project would restore upland habitat and local groundwater on ESNERR, increasing the watershed’s extent of native habitat and improving conditions for three special status species. Therefore, this project enhances the ESHA’s long-term sustainability and would decrease the need for maintenance by ESNERR staff.

This same section also calls for “the use of native species consistent with and found in the project area.” As its main goal, this project is designed to increase native species found in the project area. Where native plants do not recruit naturally in eucalyptus removal areas, ESNERR staff would replant with native vegetation propagated from seeds collected on ESNERR. ESNERR staff would use nearby intact native habitats as references sites to determine which native species are appropriate for revegetation efforts.

Finally, this section states that activities “which would affect rare, threatened and endangered birds shall be regulated by conditions of project approval to protect habitats of the birds during their

breeding and nesting season.” The proposed project would have ***a less than significant impact with mitigation*** on local policies or ordinances protecting biological resources.

See BIO mitigation measures 5, 6, 7, 8, 9, 10, and 11.

f) There are no Habitat Conservation Plans or Natural Community Conservation Plans that apply to the project area or vicinity. Elkhorn Slough is part of, and managed in accordance with, several other management plans and programs, including the following:

1. The Elkhorn Slough National Estuarine Research Reserve Final Management Plan 2007-2011 (ESNERR 2006)
2. Elkhorn Slough Watershed Conservation Plan (Scharffenberger et al. 1999)
3. Salinas Valley Integrated Regional Water Management Plan (RMC 2006)
4. Monterey County North County Land Use Plan (Monterey County 1982); and
5. California's Wildlife Action Plan (CDFG 2007)

Implementation of the proposed project would be consistent with the conservation goals set forth under these plans, and would have ***no impact*** on the existing plans.

MITIGATION MEASURES FOR BIOLOGICAL RESOURCES

BIO-1 – ESNERR staff shall flag the single Pajaro manzanita prior to tree removal activities and ensure the flagging remains throughout the duration of the project. ESNERR staff shall inform the tree removal personnel of the location of the Pajaro manzanita.

BIO-2 - All stumps shall be left in the ground with the roots, though dead, holding soil in place.

BIO-3 - Any existing vegetation (except cape ivy, periwinkle, eucalyptus seedlings, and other non-native invasive species) shall not be removed, although some may be unavoidably damaged or destroyed in the tree removal process. The roots of this vegetation shall serve as a binder to hold the soil in place. All sites have existing native vegetation in the understory. ESNERR staff shall be on-site to ensure that only eucalyptus trees will be felled and removed.

BIO-4 - Any exposed soil in the project areas shall be broadcast with a mixture of native and annual barley seed at a rate of 50 pounds per acre and covered with a layer of rice straw. ESNERR staff with the help of volunteers shall scatter the seed and straw upon completion of the tree removal activities and before the first rain of the season.

BIO-5 – At least 15 days prior to the onset of activities, ESNERR shall submit the name(s) and credentials of biologists who would conduct activities specified in the following mitigation measures to the USFWS. No project activities shall begin until ESNERR staff receive written approval from USFWS that the biologist is qualified to conduct the work. This is a requirement of the USFWS permit.

BIO-6 - Prior to any tree removal activities, the USFWS - approved biological monitor shall conduct a worker education training program for all personnel involved in tree removal activities. The education training shall include: 1) the project boundaries; 2) the special-status species that may be present, their habitat, and proper identification; 3) required avoidance measures that shall be incorporated into the project; and 4) proper procedures if a special-status species is encountered in

an area that would be impacted. Brochures, books and briefings may be used in the training session, provided that a qualified person is on hand to answer any questions.

BIO-7 – A USFWS – approved biological monitor shall remain onsite during tree removal activities, Prior to tree removal activities each day, the USFWS - approved biological monitor shall survey all work areas for special status species. If a Santa Cruz long-toed salamander, California red-legged frog or Western pond turtle is observed during these surveys or any time during tree removal activities the biological monitor shall relocate them to the nearest appropriate habitat.

BIO-8 – All logs in all proposed eucalyptus tree removal sites in contact with the ground prior to initial tree removal activities shall not be removed from the sites due to the possibility of harboring a special-status species.

BIO-9 - In order to protect special-status species, tree removal activities shall be completed between August 1 and November 1. Should ESNERR staff demonstrate a need to conduct activities outside this period, the USFWS shall be contacted to obtain authorization for such activities.

BIO-10 - 2.7 acres of eucalyptus shall remain uncut at the South Marsh site to serve as alternative suitable habitat. Furthermore, the 21 acre eucalyptus grove, a known heron, egret, and cormorant rookery site at ESNERR's Seal Bend property, shall be left uncut as habitat.

BIO-11 - ESNERR staff shall instruct tree removal personnel to use the California Oak Mortality Task Force's Best Management Practices Guidelines for Forestry before entering the Ecological Reserve. This shall include cleaning debris from machinery, vehicles, and shoes; disinfecting machinery, vehicles, and shoes with Lysol before entering ESNERR if travelling from known SOD infestation site; conducting operations during the dry season; and utilizing paved and rocked roads and landings to the extent possible.

BIO-12 - ESNERR staff shall flag the salt marsh habitat prior to tree removal activities and ensure the flagging remains throughout the duration of tree removal. ESNERR staff shall inform the tree removal personnel of the location of the salt marsh habitat.

BIO-13 – ESNERR staff shall remove all eucalyptus resprouts and saplings within the project areas using manual or chemical methods for three years following initial eucalyptus tree removal. The California Invasive Plant Council's (Cal-IPC) high rated invasive weeds shall be removed from the project areas using manual or chemical methods for three years following initial eucalyptus tree removal.

CULTURAL RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in 15064.5.				X
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to 15064.5.		X		
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.				X
d) Disturb any human remains, including those interred outside of formal cemeteries.				X

Background

A cultural resources investigation for the Parsons Slough sill project (Vinnedge Environmental Consulting, 2010) a project recently implemented on ESNERR in close proximity to this project, was prepared by Holman & Associates in January 2010 (Holman & Associates 2010) in order to satisfy environmental requirements specified in CEQA and its guidelines (Title 14 California Code of Resources, Section 15064.5) and Section 106 of the National Historic Preservation Act (NHPA). An archaeological literature review at the Northwest Information Center (NWIC) was conducted by Holman & Associates to obtain information about recorded historic and/or prehistoric sites in and around the area of potential effect for the Parsons Slough sill project, and previous archaeological surveys that had been conducted in the general vicinity of ESNERR. A total of three surveys were identified. In 2001, David Chavez and Jan Hupman conducted a study in affiliation with the Union Pacific Railroad bridge replacement project, which was restricted to the vicinity of the railroad bridge at Parsons Slough (outside of the area of potential affect for this project), with negative findings. In 1992, Rob Edwards and Charr Smith completed a survey for sites of historical interest within a small section of the reserve with negative findings. The third, and most relevant, study is described below.

Literature Review

In 1982, a study was conducted on sites of historical interest for the 980 acre Elkhorn Slough Estuarine Sanctuary (the former name of ESNERR), a parcel that included all four of the project areas and the potential areas of affect. The study provided CDFW with an inventory of both historic

and prehistoric sites inside the recently consolidated ESNERR lands, with the intent of developing recommendations for the preservation of those resources and providing indications of their research potential.

A comprehensive visual inspection was completed of the entire 980 acre preserve, recording three historic sites and a total of twelve previously unrecorded archaeological sites. Two major classes or types of archaeological sites could be identified within ESNERR, based on their surficial characteristics: 1) moderate to large occupation sites on marine terraces, and 2) special use sites or “camps” adjacent to the historic water line.

The twelve archeological sites documented in the study were recorded with the State of California. These archaeological sites are mostly characterized by shell remains including both estuarine and marine species, as well as fragments of bone and stone debris. Five of the sites appear to represent long-term habitation areas and have strong possibility of containing human burials and ritual paraphernalia of important religious or emotional significance to living Native Americans and others, in addition to their scientific significance. The other seven appear to be mostly special use areas rather than village sites and are not expected to contain human remains or significant artifactual materials. The exposed and relatively shallow surficial nature shared by these archaeological sites have made them vulnerable to erosion and other disturbances. The project site is not within the archaeological sites documented in the study.

The study also documented three sites of historical significance within ESNERR: the Elkhorn Dairy Farm, the Meyer-Buck Lodge, and the Empire Gun Club. Since the time of the study the Empire Gun Club has been dismantled and removed. The remaining structures from the Elkhorn Dairy Farm continue to function as a cultural and educational resource, and the Meyer-Buck Lodge remains a functional building for ESNERR staff. They are not within the project site.

A fairly comprehensive survey of the archaeology and prehistory of Elkhorn Slough was prepared by Terry Jones in 2002 (Jones 2002). This survey includes a discussion of the regional archaeological context, and utilizes information gained from the large number of studies that have been done up to the present in Elkhorn Slough, including references about the paleoenvironment as reconstructed through fish studies, palynological studies, and bioarchaeological studies. The Jones overview identifies the scientific importance of even the simplest of the archaeological resources found inside ESNERR – the single use resource procurement areas described as small shell mounds right at the water’s edge. This review also details the Holocene environmental changes at Elkhorn Slough up to the present, discussing the types of sites that have been found and those that haven’t to date – namely resource locations that are currently buried underwater or under soil deposits along the current edges of Elkhorn Slough.

Comments:

a, c, and d) The proposed project would not affect paleontological resources because it would not excavate or otherwise affect materials below recent sediments. The project sites are not on or directly upslope of archaeological sites and parking, transportation and stockpiling would avoid sensitive historical areas. Therefore it would have **no impact** on paleontological resources.

b) The project sites are not within the known archeological sites. There is the potential that archeological artifacts could be found. This would be a **less than significant impact with mitigation**.

MITIGATION MEASURES FOR CULTURAL RESOURCES

CUL-1 – Should any potential artifact be found, all work shall stop until an expert can be called in to determine significance and provide appropriate protection measures.

GEOLOGY AND SOILS

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
<p>a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:</p> <p>i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.</p> <p>ii) Strong seismic ground shaking.</p> <p>iii) Seismic-related ground failure, including liquefaction.</p> <p>iv) Landslides.</p>				<p>X</p> <p>X</p> <p>X</p> <p>X</p>
<p>b) Result in substantial soil erosion or the loss of topsoil.</p>		X		
<p>c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse.</p>		X		

d) Be located on expansive soil, as defined in Table 181-B of the Uniform Building Code (1994), creating substantial risks to life or property.	X
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water.	X

Comments:

a) The Monterey Bay region overlies a large mass of Cretaceous granitic rocks termed the Salinian Block. Since the early Miocene, the Salinian Block has been carried northward on the Pacific Plate along the active transform plate boundary between the Pacific and North American tectonic plates. The relative motion between the two plates is described as right-lateral strike-slip. This motion is accommodated by the seismically active San Andreas Fault System.

The closest faults to the project area are the Zayante-Vergeles Fault (9.2 kilometers [km] distant), the Rincondada Fault (15 km distant), and the San Andreas Fault (15 km distant). The project area is not located within an Alquist-Priolo Earthquake Fault Zone and there is no known evidence of active or potentially active faults crossing under the project area.

According to the 1998 California Building Code, the project area is located in Seismic Zone 4. Soils are primarily fine sandy loams, as characterized in the 1972 survey of Monterey soils.

The California Division of Mines and Geology listed the San Gregorio Fault as having the potential for a significant magnitude earthquake (moment magnitude [M_w] of 6.0 or greater). USGS estimates a 21 percent probability of an earthquake with an M_w of 6.7 or greater occurring in San Andreas Fault before 2032 (The Working Group on Northern California Earthquake Potential 2003).

The proposed project would not expose people or structures to potential substantial adverse effects due to seismic ground-shaking, liquefaction, or landslides because it does not entail installation of any structures and would not be associated with changes in temporary or permanent human presence. The relatively gentle slopes of the terrain at the project sites (ranging from 2%-16%) are not subject to land-sliding or other slope failure hazards. There would be **no impact** to this environmental factor.

b, c) Substantial soil erosion and/or unstable soil conditions resulting from the eucalyptus removal project is unlikely at all sites. Eucalyptus stumps and existing vegetative understory that currently stabilize soils would be left in place. The terrain at the removal sites is not conducive to substantial erosion. Adjacent vegetation outside of the removal sites would also capture any minor localized discharge. Additional erosion control measures would prevent or minimize potential effects associated with the possible release of sediment from upland areas. There would be **a less than significant impact with mitigation** to topsoil stability.

See GEO mitigation measures 1, 2, AND 3.

d) The project would not be subject to hazard from expansive soil conditions because there will be no construction of structures. **No impact** would occur.

e) No septic systems are proposed as part of the project. **No impact** would occur.

MITIGATION MEASURES FOR GEOLOGY AND SOILS

GEO-1 - All stumps shall be left in the ground with the roots, though dead, holding soil in place.

GEO-2 - Any existing vegetation (except cape ivy, periwinkle, eucalyptus seedlings, and other non-native invasive species) shall not be removed, although some may be unavoidably damaged or destroyed in the tree removal process. The roots of this vegetation shall serve as a binder to hold the soil in place. All sites have existing native vegetation in the understory. ESNERR staff shall be on-site to ensure that only eucalyptus trees are removed.

GEO-3 - Any exposed soil in the project areas shall be broadcast with a mixture of native and annual barley seed at a rate of 50 pounds per acre and covered with a layer of rice straw. ESNERR staff with the help of volunteers shall scatter the seed and straw upon completion of tree removal and before the first rain of the season.

GREENHOUSE GAS EMISSIONS

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			X	
b) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?				X

Comments

(a,b) In order to estimate greenhouse gas emissions, assumptions were made regarding timing, method of removal and the volume of trees to be removed, each described below. Due to both the relatively short time frame that equipment would be used and the small number of machines to be used, there will be **a less than significant impact** on carbon emissions.

Approach to evaluating greenhouse gas emissions

Timing

The project will remove trees over a 10 year period starting in 2015, assuming one grove removed in any one year. The removal would take place during a four month window, from August through November.

Multiple approaches could be taken in completion of this work. The method used in this analysis was chosen based on the belief that it is the most standardized approach within the industry and

therefore representative of the actual work to be performed.

The approach is assumed to consist of workers with chainsaws dropping trees to the grove floor. Workers with chainsaws would buck up the felled trees into manageable sizes. Trees would then be hauled by a tracked log skidder to a temporary landing, where they would be chipped and loaded by a whole tree chipper into trucks and hauled off to the disposal site. It was assumed that the crew and equipment performing the work would consist of the following:

<u>Equipment Type</u>	<u>Quantity</u> <u>Equipment Operators</u>	
Chainsaws	3	3
Skidder	1	1
Whole Tree Chipper	1	2
Haul Trucks	4	4
Fuel Truck	1	1

Work days and hours were set at five days per week, eight hours per day. The four groves are located in rural areas. Access for equipment is adequate, however the size of the equipment would be limited by unimproved narrow, winding roads. Due to these site restrictions it was assumed that 40 cubic yard (CY) capacity trucks would be the maximum size that could access the sites. The disposal site was assumed to be twenty miles from the worksite. Likewise, worker commutes were assumed to be twenty miles.

Tree Volume

The production rate for tree removal varies greatly with the size and location of the trees to be removed. The volume of trees to be removed was estimated for each grove by multiplying the number of trees per grove by the average chipped tree volume. The chipped tree volume was developed using a standard volume table for blue gum along California's central coast (Pillsbury et al., 1989). The table provided the gross tree volume (defined as the volume of tree from outside of bark to a two inch top) for trees of various diameters at breast height (DBH) and heights. It was assumed that the groves were evenly distributed in DBH and height, so the average volume was taken for all trees in the table between six and thirty four inches DBH with a height of ninety feet or greater. The tree canopy was estimated by adding 10% to the average gross volume. Finally, to determine the chipped volume a bulking factor of 2.5 was applied. The average chipped tree volume was calculated to be 21.7 cubic yards.

Production Rates

Rate of removal is limited by the chipping and hauling operation. Given the site constraints, specified equipment and crew size it is as estimated that roughly nineteen trees could be fallen, chipped and removed from the site per day.

Analysis of greenhouse emissions

Emission analysis looked at off-site emissions resulting from worker commute, vender trips (fueling) and off-road emissions due to tree removal activities. Off-site emissions were calculated using project specific number of trips, standard mileage distance assumptions and emission rates developed by the South Coast Air Quality Management District for on-road vehicles and heavy-heavy-duty vehicles (using EMFAC2007 version 2.3). Off-road emission calculations used the Off-Road Equipment Emission Factors provided in CalEEMod. Emission factors for 2012 were used exclusively in this analysis.

The analysis was "validated" by running the CalEEMod Model Version 2011.1.1. The model was used as a check on the specific methodologies and assumptions used in the analysis and not used for the analysis itself since it is set up for more standardized construction projects such as site development and building construction.

Results of greenhouse emissions analysis

Based on the analysis, the removal of the four eucalyptus groves will result in a total of 264.84 metric tons of carbon dioxide equivalent (CO2e). Compared to the current annual inventory of 427,000,000 metric tons in California, this represents 0.00006 percent of that inventory. The emissions per grove are presented in the table below, and details are provided in Appendix III.

Tree Removal Emissions		
Year	Grove	CO2e
2015	Cattail	131.55
2016	Five Fingers	42.27
2017	South Marsh	30.96
2018	Hummingbird	60.06
Total		264.84

HAZARDS AND HAZARDOUS MATERIALS

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.		X		
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.		X		
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within a quarter mile of an existing or proposed school.				X

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 ("Cortese List," prepared by the California Integrated Waste Management Board) and, as a result, would it create a significant hazard to the public or the environment.	X
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area.	X
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area.	X
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.	X
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.	X

Comments:

a, b) The project will include the application of glyphosate and/or triclopyr ester herbicide to treat stumps after the tree removal phase and during the maintenance phases of the project, as described below. Herbicides can impact bed sediments in surface waters if it moves off site with runoff. Erosion control measures will be implemented to drastically reduce or eliminate soil runoff. Herbicides will be applied with a paint brush, not a spray nozzle, avoiding the issue of drift into nearby aquatic habitats.

After cutting, all eucalyptus stumps would be treated selectively with herbicide as soon as possible. All sites would be monitored every three months for at least three years for eucalyptus re-sprouts

and seedlings and Cal-IPC high rated invasive species. Re-sprouts will be treated with herbicide by ESNERR staff under the supervision of a DPR-certified pesticide applicator. ESNERR staff have more than a decade of experience in the safe application of herbicides for invasive plant abatement. The herbicide would be transported, stored and handled appropriately, and would not result in a public hazard. A spill response plan would be available as printed on the Material Safety Data Sheet (MSDS) located with the herbicide near the project location. ***Less than significant impact with mitigation*** would occur.

See HAZ mitigation measures 1, 2, 3, 4, and 9.

c) The project area is not within 0.25 mile of a school. ***No impact*** would occur.

d) The project area is not listed on the “Cortese List” of hazardous materials sites (<http://www.envirostor.dtsc.ca.gov>). ***No impact*** would occur.

e) The project area is not located within 2 miles of a public airport or under a current airport land use plan. The closest public airport is located in Watsonville, approximately 10 miles north of the project area. ***No impact*** would occur.

f) A private airstrip is located near Long Valley Spur, 1.75 miles east of the closest project area. The proposed project would not result in a safety hazard for people residing or working in the project area because it would not involve any obstructions to aircraft flight paths. ***No impact*** would occur.

g) The project areas are not located on a busy thoroughfare, would not increase traffic, and would not block any transportation routes; therefore, the proposed project would not interfere with an emergency response or evacuation plan. ***No impact*** would occur.

h) Although tree cutting can increase the risk of fire in the short term, fire prevention regulations significantly reduce that risk. Over the long term the fire hazard would be reduced by the removal of highly flammable fuel and the maintenance of access for fire equipment. Therefore, ***no impact*** would occur.

See HAZ mitigation measures 5, 6, 7, and 8.

MITIGATION MEASURES FOR HAZARDS AND HAZARDOUS MATERIAL

HAZ-1 - All stumps shall be left in the ground with the roots, though dead, holding soil in place.

HAZ-2 - Any existing vegetation (except cape ivy, periwinkle, eucalyptus seedlings, and other non-native invasive species) shall not be removed, although some may be unavoidably damaged or destroyed in the tree removal process. The roots of this vegetation shall serve as a binder to hold the soil in place. All sites have existing native vegetation in the understory. ESNERR staff shall be on-site to ensure that only eucalyptus trees will be removed.

HAZ-3 - Any exposed soil in the project areas shall be broadcast with a mixture of native and annual barley seed at a rate of 50 pounds per acre and covered with a layer of rice straw. ESNERR staff with the help of volunteers shall scatter the seed and straw upon completion of tree removal and before the first rain of the season.

HAZ-4 - Herbicide shall not be located or stored where it could spill into water bodies or storm drains, or where it could cover aquatic or riparian vegetation. Large quantities of herbicide shall not be at the project location sites.

Spill Prevention and Response

1. Herbicide shall be handled only by a Qualified Applicator or employee trained by a Qualified Applicator.
2. Equipment and materials for cleanup of spills shall be available on site.
3. In the event of a spill, all project activities shall cease until cleanup of the spilled materials is complete.
4. All spills and leaks shall be cleaned up immediately and disposed of properly.
5. Prior to entering the work site, all field personnel shall be appropriately trained in spill prevention, hazardous material control. Cleanup of accidental spills shall be performed by only the onsite Qualified Applicator or employee directly under the supervision of a Qualified Applicator.
6. Field personnel shall implement measures to ensure that hazardous materials are properly handled and the quality of water resources is protected by all reasonable means.
7. Herbicide application/spill prevention kits shall always be in close proximity when using herbicide. All field personnel shall be advised of these locations and trained in their appropriate use. Herbicide application kits include herbicide labels, Material Safety Data Sheets (which include specific information on accidental release measures), extra personal protective gear, and cat litter and water for spill cleanup.
8. For Roundup Pro, the MSDS requires the following action for an accidental release. These measures shall be followed in the event of a spill:
 - a. Small Quantities - flush spill area with water
 - b. Large Quantities -
 - i. Absorb in earth, sand or absorbent material (cat litter/saw dust will be available on site)
 - ii. Dig up heavily contaminated soil
 - iii. Collect in containers for disposal (appropriate containers and disposal methods are identified in MSDS)
 - iv. Flush residues with small quantities of water
 - v. Minimize use of water to prevent environmental contamination.
9. For Garlon 4, the Material Safety Data Sheet (MSDS) requires the following action for an accidental release. These measures shall be followed in the event of a spill:
 - a. Small Quantities -
 - i. Absorb with materials such as clay, dirt, or sand and sweep up.
 - ii. Collect in suitable and properly labeled containers.
 - b. Large Quantities -
 - i. Contact Dow AgroSciences

HAZ-5 – Construction crews shall not be allowed to smoke on ESNERR property. ESNERR staff shall instruct crews of this rule and enforce it during construction.

HAZ-6 – ESNERR shall hire crews whose construction equipment meets legal fire-safe specifications.

HAZ-7 – For fire safety, chainsaw operators shall have a fire extinguisher or shovel available. A 5-gallon backpack water sprayer and 10 gallons of water shall be available on site.

HAZ-8 – A fire plan shall be printed and kept on-site with the herbicide spill response plan. The plan shall include proper protocol to contain a small fire until firefighting personnel arrive from the nearest fire station, 4.7 miles from the Reserve located at 301 Elkhorn Rd., Royal Oaks, CA.

HAZ-9 – Vehicles and equipment shall not be re-fueled or repaired in the project areas.

HYDROLOGY AND WATER QUALITY

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements.		X		
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level.				X
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site.				X
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.				X
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.				X
f) Otherwise substantially degrade water quality.		X		

g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map.	X
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows.	X
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.	X
j) Result in inundation by seiche, tsunami, or mudflow.	X

a) This project does not violate any water quality standards or waste discharge requirements. No discharge of waste water or toxic substances will occur with mitigation measures, therefore the impact will be ***less than significant impact with mitigation***.

See WQ mitigation measure 4.

b-e) The proposed project is expected to have beneficial impacts on two ecologically important freshwater sites that support threatened and endangered amphibian populations. ESNERR researchers have documented that the eucalyptus groves transpire more water than oak groves. The removal of eucalyptus stands is predicted to relieve pressure on already stressed underground water reserves, further increasing the amount of subterranean water and making it available to ESNERR ponds that support special status amphibians and reptiles, and to native plant assemblages. Top soils and existing topography would remain largely undisturbed, therefore ***no impact*** to surface water or runoff would occur.

f) The proposed project would not adversely impact water quality. Project activities do not entail the extraction or discharge of water, and there are no streams or rivers in the project sites. Therefore a ***less than significant impact with mitigation*** to water quality would occur.

See WQ mitigation measures 1, 2, 3, and 4.

g-j) The proposed project would not involve any new housing or structures and would not expose people or structures to significant risk of loss, injury, or death involving flooding or inundation by tsunami waves. The project would have ***no impact*** on water inundation hazards.

MITIGATION MEASURES FOR HYDROLOGY AND WATER QUALITY

WQ-1 - All stumps shall be left in the ground with the roots, though dead, holding soil in place.

WQ-2 - Any existing vegetation (except cape ivy, periwinkle, eucalyptus seedlings, and other non-native invasive species) shall not be removed, although some may be unavoidably damaged or

destroyed in the tree removal process. The roots of this vegetation shall serve as a binder to hold the soil in place. All sites have existing native vegetation in the understory. ESNERR staff shall be on-site to ensure that only eucalyptus trees will be removed.

WQ-3 - Any exposed soil in the project areas shall be broadcast with a mixture of native and annual barley seed at a rate of 50 pounds/acre and covered with a layer of rice straw. ESNERR staff with the help of volunteers shall scatter the seed and straw upon completion of tree removal and before the first rain of the season.

WQ-4 – Herbicide shall not be located or stored where it could spill into water bodies or storm drains, or where it could cover aquatic or riparian vegetation. Large quantities of herbicide shall not be at the project location sites.

Spill Prevention and Response

1. Herbicide shall be handled only by a Qualified Applicator or employee trained by a Qualified Applicator.
2. Equipment and materials for cleanup of spills shall be available on site.
3. In the event of a spill, all project activities shall cease until cleanup of the spilled materials is complete.
4. All spills and leaks shall be cleaned up immediately and disposed of properly
5. Prior to entering the work site, all field personnel shall be appropriately trained in spill prevention, hazardous material control. Cleanup of accidental spills shall be performed by only the onsite Qualified Applicator or employee directly under the supervision of a Qualified Applicator.
6. Field personnel shall implement measures to ensure that hazardous materials are properly handled and the quality of water resources is protected by all reasonable means.
7. Herbicide application/spill prevention kits shall always be in close proximity when using herbicide. All field personnel shall be advised of these locations and trained in their appropriate use. Herbicide application kits include herbicide labels, MSDS (which include specific information on accidental release measures), extra personal protective gear, and cat litter and water for spill cleanup.
8. For Roundup Pro, the MSDS requires the following action for an accidental release. These measures shall be followed in the event of a spill:
 - a. Small Quantities - flush spill area with water
 - b. Large Quantities -
 - i. Absorb in earth, sand or absorbent material (cat litter/saw dust will be available on site)
 - ii. Dig up heavily contaminated soil
 - iii. Collect in containers for disposal (appropriate containers and disposal methods are identified in MSDS)
 - iv. Flush residues with small quantities of water
 - v. Minimize use of water to prevent environmental contamination.
9. For Garlon 4, the MSDS requires the following action for an accidental release. These measures shall be followed in the event of a spill:
 - a. Small Quantities -
 - i. Absorb with materials such as clay, dirt, or sand and sweep up.
 - ii. Collect in suitable and properly labeled containers.
 - b. Large Quantities -
 - i. Contact Dow AgroSciences

LAND USE AND PLANNING

Would the project	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Physically divide an established community.				X
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.				X
c) Conflict with any applicable habitat conservation plan or natural community conservation plan.				X

Comments:

a) The project sites are owned and managed by the CDFW as part of ESNERR. Implementation of the proposed project would result in the restoration of the native habitats and would not physically divide an established community. **No impact** would occur.

b) The proposed project would not conflict with any land use plan or policy. The proposed project has been designed to be consistent with all management plans governing the project area, as well as resource protection laws, which will be verified during the permit application review process that will be overseen by the agencies with respective jurisdiction over these resources. Given that the proposed project would not conflict with any of these management plans or resource policies, **no impact** would occur.

c) The proposed project is not within the boundaries of, nor would it conflict with a Natural Communities Conservation Plan or Habitat Conservation Plan. Land use within the project area would not change as a result of the project. No land use plan or general plan amendments would be required for this project. Therefore, **no impact** would occur.

MINERAL RESOURCES

Environmental Factors and Focused Questions for Determination of Environmental Impact	YES: Potentially Significant Impact	NO: Less Than Significant With Mitigation	NO: Less Than Significant Impact	NO: No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state.				X
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.				X

Comments:

a, b) No significant deposits of mineral resources are present in the project areas and the areas are not identified as significant for mineral resources by any federal, state, or local plans. In addition, there will be no change to the use of these sites. **No impact** would occur.

NOISE

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.		X		
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.		X		
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.				X

d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.	X
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels.	X
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels.	X

Comments:

a, b, d) Noise sensitive receptors typically include occupants of residences, schools, religious facilities, hospitals, rest homes, and parks. Sensitive noise receptors in the general vicinity of the Reserve are limited to homes/residences, as well as recreational users who visit the Reserve on Wednesdays through Sundays. Tree removal activities that require loud equipment use (e.g., chain saws and wood chippers) would occur mainly on Mondays and Tuesdays when the Reserve is closed to recreational visitors, however, work may also occur Wednesday through Sunday if necessary.

The closest homes to each project site are: South Marsh (375 meters/1230 ft.), Cattail Swale (215 meters/705 ft.), Five Fingers (750 meters/ 2500 ft.), Hummingbird Island (900 meters/2900 ft.).

To describe noise environments and to assess impacts on noise-sensitive areas, a frequency weighting measure, which simulates human perception, is commonly used. It has been found that A-weighting of sound levels best reflects the human ear’s reduced sensitivity to low frequencies, and correlates well with human perceptions of the annoying aspects of noise. The A-weighted decibel scale (dBA)⁵ is cited in most noise criteria. Decibels are logarithmic units that conveniently compare the wide range of sound intensities to which the human ear is sensitive. Table 2 identifies typical ranges of decibel levels for common sounds heard in the environment.

Table 2. Typical Noise Levels

Noise Level (dBA):	Activity
90+	Gas lawn mower at 3 ft, jet flyover at 1,000 ft, rock band
80-90	Diesel truck at 50 ft at 50 mph, food blender at 3 ft; garbage disposal at 3 ft
70-80	Gas lawn mower at 100 ft, noisy urban area (day), vacuum cleaner at 10 ft
60-70	Commercial area, heavy traffic at 300 feet, normal speech at 3 ft
50-60	Quiet urban daytime, dishwasher in next room, large business office
40-50	Quiet urban nighttime, theater, large conference room (background)
30-40	Quiet suburban nighttime, library

Noise Level (dBA):	Activity
20-30	Quiet rural nighttime, bedroom at night, concert hall (background)
10-20	Broadcast / recording studio
0	Lowest threshold of human hearing

The assessment of the potential impacts of construction noise on sensitive noise receptors is based on a comparison of anticipated noise levels relative to the Monterey County Municipal Code (Section 10.60.030), which states that construction-related (short-term) noise should be managed to reduce impacts on adjacent land uses, and prohibits construction noise levels from exceeding 85 decibels (A-weighted) (dBA) at 50 feet. This prohibition does not apply to aircraft, or to machines, mechanisms, devices, or contrivances operated in excess of 2,500 feet from any occupied dwelling unit (Monterey County 2009). This is because noise levels would typically dissipate below audible changes beyond that distance. Two of our proposed project sites (Hummingbird Island and Five Fingers), fall outside this noise prohibition.

Between a noise source and a receptor, the perceived loudness or intensity changes due to distance, topography, vegetation, water bodies, and structures. Changes may increase or decrease the perceived loudness. The closer a receptor is to a noise source the louder the noise seems; for every doubling of distance from a source the intensity drops by about 6 dB over hard surfaces and about 5 dB over water. Topography, vegetation, and structures can change noise intensity and noise intensity decreases by about 9 dB for every doubling of distance over dirt surfaces.

According to the National Ag Safety Database (www.nasdonline.org) a typical chainsaw at five feet is 120 dBA. A typical chipper-shredder at five feet is 104 dBA. Wearing ear protection, with ratings of up to 30 dBA noise reduction, would reduce both pieces of loud machinery into the range of safety for machine operators. The closest residence potentially impacted by the ambient noise created by the proposed project is 705 ft from the project area. At ten feet, the chainsaw noise would be reduced to 121 dBA. At 20 ft., 112 dBA. At 80 ft., 94 dBA. At 320 ft., 76 dBA. At 640 ft., 67 dBA. The attrition of noise over dirt means that by the time the sound of the loudest machinery reaches the outside of a residence, it will be less than the sound of a typical commercial area (see Table 2).

A less than significant impact with mitigation to noise level and vibration exposure will occur.

See Noise Mitigation Measures 1 and 2.

c) No permanent increase in ambient noise would result from the proposed project. ***No impact*** would occur.

e) The project area is not located within 2 miles of a public airport or in an area with an airport land use plan. Project activities would not expose people residing or working in the project area to excessive noise levels. ***No impact*** would occur.

f) The project area is located 1.75 miles west of a private airstrip. Project activities would not subject additional people to aircraft noise. ***No impact*** would occur.

MITIGATION MEASURES FOR NOISE

NOISE-1 – All machinery operators shall wear protective devices against noise. ESNERR staff shall inspect construction crews to ensure the proper protection is being worn. ESNERR staff shall have earplugs on-site.

NOISE-2 – Contractors shall limit the use of noisy machinery to the hours between 8am and 6pm. Noisy machine work shall occur mainly when ESNERR is closed to the public, but may occur on any day of the week.

POPULATION AND HOUSING

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure).				X
b) Displace substantial numbers of existing housing units, necessitating the construction of replacement housing elsewhere.				X
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.				X

Comments:

a – c) The proposed project would neither create an additional demand for housing nor displace any people from existing housing. The proposed project would not add any housing to vacant, residentially zoned parcels, nor would any housing be demolished. Project activities would be handled by locally based temporary contracted workers and existing ESNERR staff. These contracted jobs would not result in long-term employment or population growth and, therefore, would not affect the demand for housing nor the availability of housing in the local area or region. Similarly, ongoing and long-term maintenance of the project sites would be tasked to existing ESNERR staff. **No impact** would occur.

PUBLIC SERVICES

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services: Fire protection.				X
Police protection.				X
Schools.				X
Parks.				X
Other public facilities.				X

Comments:

a) The proposed project is not expected to create any temporary or long-term demands on public services. There would be no new fire protection, police, school, or other public facilities constructed to serve the proposed project, and the project would have **no impact** on these resources.

RECREATION

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.				X

b) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.	X
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Comments:

a, b) The proposed project will not increase the use of existing recreational facilities or require the construction or expansion of recreational facilities.

TRANSPORTATION AND TRAFFIC

Environmental Factors and Focused Questions for Determination of Environmental Impact	YES: Potentially Significant Impact	NO: Less Than Significant With Mitigation	NO: Less Than Significant Impact	NO: No Impact
a) Exceed the capacity of the existing circulation system, based on applicable measures of effectiveness (as designated in a general plan policy, ordinance, etc.), taking into account all relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?				X
b) Conflict with an applicable congestion management program, including but not limited to, level of service standards and travel demand measures and other standards established by the county congestion management agency for designated roads or highways.				X
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.				X

d) Substantially increase hazards due to a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment).	X
e) Result in inadequate emergency access.	X
f) Result in inadequate parking capacity.	X
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks).	X

Comments:

a – e) The proposed project would not require more than 10 additional vehicles to access ESNERR on a given work day, less than 10% of typical vehicular traffic to the reserve. As the work will occur primarily on days the reserve is closed to the public, the vehicular traffic to the reserve will continue to be considerably less than it is on open days. Due to this minimal increase in vehicular access, **no impact** to congestion, access or other transportation will occur.

f) The proposed project would **not impact** the available parking capacity at ESNERR, as work would occur mainly during times that the Reserve is closed to the public and parking capacity greatly exceeds staff needs. Parking will also be available at work/staging sites, which will prevent the need for parking in established lots for public use.

g) Introduction of construction vehicles to the area would not conflict with any adopted policies, plans, or programs supporting alternative transportation. Therefore the project would have **no impact** on alternative transportation.

UTILITIES AND SERVICE SYSTEMS

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board.				X

b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.	X
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.	X
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed.	X
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments.	X
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs.	X
g) Comply with federal, state, and local statutes and regulations related to solid waste.	X

Comments:

a – c) The proposed project would not generate any wastewater. As such, it would not exceed any wastewater treatment requirements, require construction of new wastewater treatment or storm water drainage facilities, or result in the expansion of existing facilities. **No impact** would occur.

d) The proposed project would not have any demand for water. **No impact** would occur.

e) The proposed project would not increase demand associated with wastewater treatment facilities because it would not generate any wastewater. **No impact** would occur.

f-g) The proposed project will not generate solid waste for the landfill. Logs become the property of the tree removal company and will be used for firewood, flooring products, and/or bio fuel. **No impact** to landfills will occur.

MANDATORY FINDINGS OF SIGNIFICANCE

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major Periods of California history or prehistory?	X			
b) Does the project have impacts that are individually limited, but cumulatively considerable? "Cumulatively the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?				X
c) Does the project have environmental effects which would cause substantial adverse effects on human beings, either directly or indirectly?				X

Comments:

a) Successful implementation of the eucalyptus removal project is expected to enhance the natural habitat, which would benefit and conserve State and Federally listed species and special status resources that occur on the ESNERR. The project is consistent with the Department’s mission to manage California’s diverse fish, wildlife, and plant species and the habitats on which they depend, for their ecological values and for their use and enjoyment by the public. As detailed in previous sections of this study, the project impacts would result in **less than significant impacts with**

mitigation with the implementation of the avoidance, minimization, and mitigation measures identified in this initial study.

b) A review of cumulative impacts was recently conducted for the Elkhorn Slough Reserve's Parsons Slough sill project (Vinnedge Environmental Consulting, 2010). In their investigation the authors found that the great majority of the past, present, and probable future projects were wetland/subtidal and berthing development projects that would be located in and around the town of Moss Landing. The proposed project would have no potential for cumulative impacts with these projects as most of the effects of the proposed project would be in the Reserve's uplands, which none of the other projects would affect. Several additional restoration projects have been planned, approved, or recently implemented in the project area. The proposed restoration projects in the Elkhorn Slough watersheds may have similar temporary construction impacts to those of the proposed project, but would not overlap in time or location. The proposed project would not contribute substantively to any cumulative adverse environmental impacts, and there would be **no impact**.

c) As described in this initial study, the proposed project would not result in health risks, impacts to recreation, or substantial emissions of air pollutants. It would have no effects to utilities or services. Noise impacts would be short-term and reduced to less than significant levels by restrictions on timing of activities requiring heavy equipment. The proposed project would have **no impact** on environmental factors that could cause substantial adverse effects on human beings, either directly or indirectly.

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APPENDICES

APPENDIX I List of Special Status Plants and Wildlife

APPENDIX II CNDDDB Report and Map of Occurrences

APPENDIX III Greenhouse Gas Emissions Memorandum, Ducks Unlimited

Appendix I

Special-Status Plant Species and Wildlife Species with Potential to Occur in the Elkhorn Slough Ecological Reserve Eucalyptus Removal Project Area, Monterey County

**Elkhorn Slough Ecological Reserve Eucalyptus Removal Project:
Special Status Species and Habitats**

- **None** indicates that the area contains a complete lack of suitable habitat, the local range for the species is restricted, and/or the species is extirpated in this region.
- **Not Expected** indicates situations where suitable habitat or key habitat elements may be present but may be of poor quality or isolated from the nearest extant occurrences. Habitat suitability refers to factors such as elevation, soil chemistry and type, vegetation communities, microhabitats, and degraded/significantly altered habitats.
- **Possible** indicates the presence of suitable habitat or key habitat elements that potentially support the species.
- **Present** indicates the target species was either observed directly or its presence was confirmed by diagnostic signs (i.e. tracks, scat, burrows, carcasses, castings, prey remains, etc.) during field investigations.

Table 1 Special-Status Plant Species with Potential to Occur in the Eucalyptus Project Area, Monterey County (based on CNDDB 2014 Prunedale Quadrangle and ESNERR Final Management Plan 2007-2001)

Common Name Scientific Name	Listing Status (Federal/State)	General Habitat	Potential for Occurrence in Project Area
Federal or State Listed Species			
Monterey Spineflower <i>Chorizanthe pungens var pungens</i>	FT / -	Sandy Sites in: Maritime Chaparral Cismontane Woodland Coastal Dunes Coastal Scrub Valley and Foothill Grassland	Not expected: this species is known to grow in regional openings in dune scrub, maritime chaparral and riparian areas, but it has not been documented growing on ESNERR. It is not expected to be found in the significantly altered habitat of eucalyptus stands.
Seaside Bird's-beak <i>Cordylanthus rigidus ssp. littoralis</i>	- / CE	Sandy, Often Disturbed Sites in: Closed-cone Coniferous Forest Maritime Chaparral Cismontane Woodland Coastal Dunes Coastal Scrub	Not expected: this species has not been documented growing on ESNERR.
Santa Cruz Tarplant <i>Holocarpha macradenia</i>	FT / CE	Often on Clay Sites in: Coastal Prairie Coastal Scrub	None: lacks suitable vegetation associations.

Common Name Scientific Name	Listing Status (Federal/State)	General Habitat	Potential for Occurrence in Project Area
Yadon's Piperia <i>Piperia yadonii</i>	FE / -	Occurs on Sandy Sites in: Coastal Bluff Scrub Closed-cone Coniferous Forest Maritime Chaparral	None: This species is confined to three habitats: 1) maritime chaparral, 2) Monterey pine forest, and 3) Monterey cypress forest. Project sites lack suitable vegetation associations, and this species has not been documented on ESNERR.

California Native Plant Society Listed and Locally Rare Species

Hooker's manzanita <i>Arctostaphylos hookeri</i> ssp. <i>hookeri</i>	CNPS 1B.2	Chaparral	None: lacks suitable vegetation associations.
Pajaro manzanita <i>Arctostaphylos</i> <i>pajaroensis</i>	CNPS 1B.1	Chaparral	Not expected: a single Pajaro manzanita grows on the edge of oak woodland about 50 feet south of a project site, but this species has not been documented in ESNERR eucalyptus stands.
Congdon's tarplant <i>Centromadia parryi</i> ssp. <i>congdonii</i>	CNPS 1B.2	Grassland	None: lacks suitable vegetation associations.
Eastwood's goldenbush <i>Ericameria fasciculata</i>	CNPS 1B.1	Maritime chaparral	None: lacks suitable vegetation associations.
Fragrant fritillary <i>Fritillaria liliacea</i>	CNPS 1B.2	Coastal prairie or native bunchgrass grasslands, frequently on serpentine-derived soils	None: lacks suitable vegetation associations.
Choris' popcornflower <i>Plagiobothrys</i> <i>chorisianus</i> var. <i>chorisianus</i>	CNPS 1B.2	Coastal Prairie, Chaparral, Northern Coastal Scrub, wetland-riparian	Not expected: This species has not been documented growing on ESNERR. It is not expected to be found in the significantly altered habitat of eucalyptus stands.
Pine Rose <i>Rosa pinetorum</i>	CNPS: 1B.2	Yellow pine forest, red fir forest, between 2000 and 6500 feet	None: lacks suitable vegetation associations.

Source: CNDDDB 2014; ESNERR 2006, Calflora

STATUS CODES:

FEDERAL

FE = Listed as Endangered by the USFWS

FT = Listed as Threatened by the USFWS

FC = Candidate for Federal listing

STATE

CE = Listed as Endangered by the State of California

CT = Listed as Threatened by the State of California

CALIFORNIA NATIVE PLANT SOCIETY (CNPS STATUS)

- 1A – Plants presumed extinct in California
- 1B – Plants rare, threatened, or endangered in California and elsewhere
- 2 – Plants rare, threatened, or endangered in California, but more common elsewhere
- 3 – Plants about which we need more information – a review list
- 4 – Plants of limited distribution – a watch list

CNPS THREAT CODE EXTENSIONS:

- .1 -- Seriously endangered in California.
- .2 -- Fairly endangered in California.
- .3 -- Not very endangered in California.

Table 2 Special-Status Wildlife Species with Potential to Occur in the Eucalyptus Project Area, Monterey County

Common Name Scientific Name	Listing Status (Federal/State)	General Habitat	Potential for Occurrence in Project Area
INVERTEBRATES			
Monarch butterfly <i>Danaus plexippus</i>	- / -	Winter roost sites extend along the coast from northern Mendocino to Baja California, Mexico. Host plant is milkweed (<i>Asclepius</i> spp). Fall migration occurs from August through October. Overwintering roosts in California commonly occur on Eucalyptus tree.	Possible. Known from ESNERR eucalyptus stand at Seal Bend (Moss Landing Quadrangle), but the Seal Bend site is not slated for tree removal –it will remain uncut as habitat for monarchs and nesting birds. This species has not been documented using other ESNERR eucalyptus stands for overwintering habitat.
California brackish water snail <i>Tryonia imitator</i>	- / -	Coastal lagoons, estuaries and salt marshes in permanently submerged areas in a wide range of sediment types and salinities.	None: lacks suitable habitat.
AMPHIBIANS			
California Tiger Salamander <i>Ambystoma californiense</i>	FT / CT, SSC	Freshwater ponds and wetlands, brackish and salt marshes, annual grasslands and grassy understory of valley-foothill hardwood forests. Breed in underground refuges, usually ground squirrel burrows, and vernal pools.	Not expected. Despite many biological surveys for amphibians on ESNERR, this species has not been documented on the Reserve.
Santa Cruz Long-Toed Salamander <i>Ambystoma macrodactylum croceum</i>	FE / CE, FP	Wet meadows, coastal woodlands and chaparral near ponds and freshwater marshes. Breeds in shallow, temporary freshwater ponds.	Possible. This species has been documented in a freshwater pond and oak woodlands immediately south of the Cattail project site. It has not been documented in ESNERR eucalyptus stands.

Common Name Scientific Name	Listing Status (Federal/State)	General Habitat	Potential for Occurrence in Project Area
California red-legged frog <i>Rana draytonii</i>	FT / SSC	Lowlands or foothills in or near sources of water with shrubby or emergent riparian vegetation.	Possible. This species has been documented in ESNERR freshwater ponds and uplands surrounding the project sites. It has not been documented in ESNERR eucalyptus stands.
REPTILES			
Western pond turtle <i>Emys (Clemmys) marmorata</i>	- / SSC	A moderate sized freshwater turtle that inhabits permanent or nearly permanent bodies of water and low gradient slow moving streams below 6,000 feet elevation.	Possible. This species has been documented in ESNERR freshwater ponds and uplands surrounding the project sites. It has not been documented in ESNERR eucalyptus stands.
BIRDS			
Western Burrowing Owl <i>Athene cunicularia hypugaea</i>	- / SSC	Grasslands with burrows. The overriding characteristics of suitable habitat appear to be burrows for roosting and nesting and relatively short vegetation with only sparse shrubs and taller vegetation	None. No suitable habitat in project sites. Known from grasslands 2 miles south of site.
White-tailed Kite (nesting) <i>Elanus leucurus</i>	- / FP	Nest placed near top of dense oak, willow, or other tree stand; Breeding begins in February; sometimes double-brooded.	Possible. This species occurs on ESNERR, but uses coast live oaks for nesting on the property.
Double-crested Cormorant (nesting colony) <i>Phalacrocorax auritus</i>	- / WL	Aquatic habitats such as lakes, artificial impoundments, slow-moving rivers, lagoons, estuaries, swamps, seacoasts and coastal cliffs.	Possible. Suitable nesting habitat. This species is known to nest in an ESNERR eucalyptus stand at Seal Bend, but this site is not slated for removal - it will remain uncut as habitat for monarchs and nesting birds. The South Marsh project site has been used as nesting habitat in the past, but it was abandoned several years ago. Eucalyptus trees immediately to the east of South Marsh will remain uncut, to provide suitable nesting habitat in the future. This species has also been noted to roost, but not nest, in eucalyptus at the Hummingbird Island project site.
California Clapper Rail <i>Rallus longirostris obsoletus</i>	FE / CE, FP	Saltwater and brackish marshes traversed with tidal sloughs. Associated with abundant growths of pickleweed.	None. Last recorded in the area in 1972. Restricted to salt marsh habitats in San Francisco Bay.

Common Name Scientific Name	Listing Status (Federal/State)	General Habitat	Potential for Occurrence in Project Area
MAMMALS			
Salinas harvest mouse <i>Reithrodontomys megalotis distichilis</i>	- / -	Fresh and brackish water wetlands and adjacent uplands.	Possible. Known from ESNERR uplands, but it has not been documented in ESNERR eucalyptus woodlands.
Southern sea otter <i>Enhydra lutris nereis</i>	FT, MMPA / FP	An aquatic mustelid that inhabits shallow nearshore waters with rocky or sandy bottoms that support large populations of benthic invertebrate prey.	Not Expected. Inhabit Elkhorn Slough but otters have not been observed hauled out in project areas. Occasional otters (1 individual/week or less) have been observed in transit in tidal channels west and east of Hummingbird Island.
Harbor seal <i>Phoca vitulina</i>	MMPA / -	Marine mammal found in temperate coastal habitats. Uses rocks, reefs, beaches, and drifting glacial ice as haul-out and pupping sites. Found near shore in estuaries or protected waters, but may range far out to sea in deep pelagic waters or up freshwater rivers and into lakes.	Not Expected. Inhabit Elkhorn Slough but seals have not been observed hauled out in project areas. Occasional harbor seals (approximately 1 time/week) have been observed in tidal channels west (but not east) of Hummingbird Island.

Source: CNDDDB 2014, ESNERR Management Plan (2006)

STATUS CODES:

FEDERAL

FE = Listed as Endangered

FT = Listed as Threatened

DL = Delisted

MMPA = Marine Mammal Protection Act

EPA = Bald Eagle and Golden Eagle Protection Act

STATE

CE = Listed as Endangered by the State of California

CT = Listed as Threatened by the State of California

FP = California Fish and Wildlife Fully Protected

SSC = California Fish and Wildlife Species of Special Concern

WL = California Fish and Wildlife Watch List

Appendix II

California Natural Diversity Database Occurrence Reports and Map



Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database



Map Index Number: 20311

EO Index: 8659

Key Quad: Prunedale (3612176)

Element Code: AAAAA01082

Occurrence Number: 1

Occurrence Last Updated: 2010-02-23

Scientific Name: *Ambystoma macrodactylum croceum*

Common Name: Santa Cruz long-toed salamander

Listing Status: **Federal:** Endangered

Rare Plant Rank:

State: Endangered

Other Lists: CDFW_FP-Fully Protected

CNDDDB Element Ranks: **Global:** G5T1T2

State: S1S2

General Habitat:

WET MEADOWS NEAR SEA LEVEL IN A FEW RESTRICTED LOCALES IN SANTA CRUZ AND MONTEREY COUNTIES.

Micro Habitat:

AQUATIC LARVAE PREFER SHALLOW (<12 INCHES) WATER, USING CLUMPS OF VEGETATION OR DEBRIS FOR COVER. ADULTS USE MAMMAL BURROWS.

Last Date Observed: 2006-05-18

Occurrence Type: Natural/Native occurrence

Last Survey Date: 2006-05-18

Occurrence Rank: Poor

Owner/Manager: PVT

Trend: Decreasing

Presence: Presumed Extant

Location:

NORTHERN CORNER OF MORO COJO SLOUGH, AT THE INTERSECTION OF CASTROVILLE, DOLAN, AND SHAFFI ROADS, MOSS LANDING.

Detailed Location:

LARVAE ABUNDANT UNDER TYPHA MATS WHEN FIRST DISCOVERED IN 1978 IN THE NW CORNER OF THE SLOUGH. NONE FOUND IN 1989 SURVEY (FEB TO JUN).

Ecological:

HABITAT IS AN EPHEMERAL POND/SLOUGH, DOMINATED BY WILLOWS, CATTAILS, AND SPIKE RUSH; SURROUNDED ON THREE SIDES BY STEEP, GRASSY HILLS WITH SCATTERED OAKS.

Threats:

THREATENED BY OVERGRAZING (HORSES) AND TRENCHING IN UPLAND AREAS.

General:

FOUND AS EARLY AS 1979. SITE APPEARED TO BE EXTANT IN 1988; NO SALAMANDERS OBSERVED DUE TO TIME OF YEAR (MID-DEC). NONE FOUND IN 1989. 3 LARVAE WERE CAPTURED/RELEASED ON 18 MAY 2006; 8 MORE LARVAE, IDENTIFIED AS AMBYSTOMA SP, ALSO CAPTURED.

PLSS: T13S, R02E, Sec. 15 (M)

Accuracy: nonspecific area

Area (acres): 94

UTM: Zone-10 N4072635 E612920

Latitude/Longitude: 36.79281 / -121.73433

Elevation (feet): 35

County Summary:

Quad Summary:

Monterey

Prunedale (3612176)

Sources:

- BOL88F0004 BOLSTER, B. - FIELD SURVEY FORM FOR AMBYSTOMA MACRODACTYLUM CROCEUM 1988-03-12
- BOW85R0001 BOWEN, C. - AN INITIAL FIELD INVESTIGATION OF THE LIFE HISTORY, HABITAT, ECOLOGICAL REQUIREMENTS OF THE RARE AND ENDANGERED, ATRIPLEX TULARENSIS. 1985-XX-XX
- DAY06F0002 DAYTON, G.H. (MOSS LANDING MARINE LAB) - FIELD SURVEY FORM FOR AMBYSTOMA MACRODACTYLUM CROCEUM 2006-05-18
- REE78R0001 REED, R.J. - POPULATION STUDY OF THE SANTA CRUZ LONG-TOED SALAMANDER AT VALENCIA LAGOON. CALIFORNIA DEPT. OF FISH AND GAME. 1978-XX-XX
- RUT89F0004 RUTH, S.B. - FIELD SURVEY FORM FOR AMBYSTOMA MACRODACTYLUM CROCEUM 1989-04-01
- RUT89U0002 RUTH, S.B. - LETTER FROM STEPHEN B. BUTH, PHD, TO USFWS ON 1989 SURVEY FOR AMBYSTOMA MACRODACTYLUM CROCEUM (SANTA CRUZ LONG-TOED SALAMANDER) 1989-XX-XX
- SUM89R0001 SUMMERS, A. (MOSS LANDING MARINE LAB) - HABITAT SURVEY FOR THE SANTA CRUZ LONG-TOED SALAMANDER 1989-XX-XX
- TAL80R0001 TALENT, L.G. & C.L. TALENT - A POPULATION OF THE ENDANGERED SANTA CRUZ LONG-TOED SALAMANDER FROM MONTEREY COUNTY. CALIF FISH & GAME 66(3):184-186. 1980-07-XX



Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database



Map Index Number: 47467

EO Index: 47467

Key Quad: Prunedale (3612176)

Element Code: AAAAA01082

Occurrence Number: 12

Occurrence Last Updated: 2008-02-15

Scientific Name: *Ambystoma macrodactylum croceum*

Common Name: Santa Cruz long-toed salamander

Listing Status: **Federal:** Endangered

Rare Plant Rank:

State: Endangered

Other Lists: CDFW_FP-Fully Protected

CNDDB Element Ranks: **Global:** G5T1T2

State: S1S2

General Habitat:

WET MEADOWS NEAR SEA LEVEL IN A FEW RESTRICTED LOCALES IN SANTA CRUZ AND MONTEREY COUNTIES.

Micro Habitat:

AQUATIC LARVAE PREFER SHALLOW (<12 INCHES) WATER, USING CLUMPS OF VEGETATION OR DEBRIS FOR COVER. ADULTS USE MAMMAL BURROWS.

Last Date Observed: 2007-10-11

Occurrence Type: Natural/Native occurrence

Last Survey Date: 2007-10-11

Occurrence Rank: Fair

Owner/Manager: PVT, NORTH MONTEREY COUNTY HS

Trend: Unknown

Presence: Presumed Extant

Location:

UPPER MORO COJO SLOUGH, SE OF CASTROVILLE BOULEVARD, NW OF HIGHWAY 156, AND SOUTH OF MERIDIAN ROAD, NE OF CASTROVILLE.

Detailed Location:

ONE ARIZONA TIGER SALAMDER (AMBYSTOMA TIGRINUM) ALSO CAPTURED AT THIS SITE (1990).

Ecological:

HABITAT CONSISTS THE UPPER END OF MORO COJO SLOUGH; SURROUNDED BY GRADED ANNUAL GRASSLAND AND RUDERAL GROWTH, STRAWBERRY FIELDS, OAK WOODLANDS AND ENCROACHING DEVELOPMENT. WETLAND IN FAIRLY GOOD SHAPE; THREATS MOST LIKELY TO UPLAND HABITAT.

Threats:

THREATENED BY DEVELOPMENT, PESTICIDE RUN-OFF, AND HORSE/CATTLE GRAZING.

General:

2 JUVENILES AND 2 GRAVID FEMALES CAPTURED BETWEEN 13 JAN-17 FEB 1990. 1 ADULT AND 9 SUB-ADULTS CAPTURED DURING A 2006 DRIFT FENCE STUDY. 5 JAN 2007: 3 ADULTS, 10 JUVENILES. 12 LARVAE, APR 2007. 7 JUV, MAY 2007. OCT 2007: 5 ADULTS, 20 JUV.

PLSS: T13S, R02E, Sec. 22 (M)

Accuracy: nonspecific area

Area (acres): 116

UTM: Zone-10 N4071197 E613440

Latitude/Longitude: 36.77979 / -121.72872

Elevation (feet): 10

County Summary:

Monterey

Quad Summary:

Prunedale (3612176)

Sources:

- ABA90R0001 ABA CONSULTANTS - SANTA CRUZ LONG-TOED SALAMANDER SURVEY IN UPPER MORO COJO SLOUGH, MONTEREY COUNTY, CA. 1990-05-01
- DAY07F0006 DAYTON, G. (MOSS LANDING MARINE LAB) - FIELD SURVEY FORM FOR AMBYSTOMA MACRODACTYLUM CROCEUM 2007-04-21
- MOR06F0016 MORI, B. - FIELD SURVEY FORM FOR AMBYSTOMA MACRODACTYLUM CROCEUM 2006-11-14
- MOR07F0017 MORI, B. - FIELD SURVEY FORM FOR AMBYSTOMA MACRODACTYLUM CROCEUM 2007-01-05
- MOR07F0018 MORI, B. - FIELD SURVEY FORM FOR AMBYSTOMA MACRODACTYLUM CROCEUM 2007-05-07
- MOR07F0020 MORI, B. - FIELD SURVEY FORM FOR AMBYSTOMA MACRODACTYLUM CROCEUM 2007-10-11



Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database



Map Index Number: 52999

EO Index: 52999

Key Quad: Prunedale (3612176)

Element Code: AAAAAA01082

Occurrence Number: 15

Occurrence Last Updated: 2009-03-13

Scientific Name: *Ambystoma macrodactylum croceum*

Common Name: Santa Cruz long-toed salamander

Listing Status: **Federal:** Endangered

Rare Plant Rank:

State: Endangered

Other Lists: CDFW_FP-Fully Protected

CNDDB Element Ranks: **Global:** G5T1T2

State: S1S2

General Habitat:

WET MEADOWS NEAR SEA LEVEL IN A FEW RESTRICTED LOCALES IN SANTA CRUZ AND MONTEREY COUNTIES.

Micro Habitat:

AQUATIC LARVAE PREFER SHALLOW (<12 INCHES) WATER, USING CLUMPS OF VEGETATION OR DEBRIS FOR COVER. ADULTS USE MAMMAL BURROWS.

Last Date Observed: 2009-01-23

Occurrence Type: Natural/Native occurrence

Last Survey Date: 2009-01-23

Occurrence Rank: Fair

Owner/Manager: DFG-ELKHORN SLOUGH ER

Trend: Unknown

Presence: Presumed Extant

Location:

NEXT TO THE ELKHORN SLOUGH NATIONAL ESTUARINE RESEARCH RESERVE HEADQUARTERS.

Detailed Location:

2004 COLLECTION FROM NEAR THE CENTER DIVIDE IN THE VISITOR CENTER PARKING LOT. 2009 SIGHTING IN SHOWER OF RESEARCH BUILDING.

Ecological:

MOSTLY NATIVE PLANT LANDSCAPE (WHITE ALDER, PINK FLOWERING CURRANT, PACIFIC SILVERWEED, CALIFORNIA ASTER, BLUE WILD RYE, & CALIFORNIA BROME), BUT SOME INVASIVE PLANTS ALSO OBSERVED. SURROUNDING AREA IS OAK WOODLAND & GRASSLAND.

Threats:

POSSIBLE THREAT IF PAVED/DEVELOPED AREAS EXPANDED. NEARBY PARKING LOT, ROADS ALSO THREATS.

General:

CHANCE OBS OF ADULT SALAMANDER LATE AT NIGHT ON 13 JAN 2003. DOR SALAMANDER COLLECTED 23 DEC 2004 & DEPOSITED AT CAS (#231479). 1 FOUND IN SHOWER STALL IN RESEARCH BUILDING & MOVED TO NEAR A FRESHWATER SOURCE ABOUT 30M AWAY ON 23 JAN 2009.

PLSS: T13S, R02E, Sec. 10 (M)

Accuracy: nonspecific area

Area (acres): 9

UTM: Zone-10 N4075313 E613320

Latitude/Longitude: 36.81689 / -121.72946

Elevation (feet): 125

County Summary:

Quad Summary:

Monterey

Prunedale (3612176)

Sources:

CAN09F0001 CANDILORO, B. (CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE-ELKHORN SLOUGH ECOLOGICAL RESERVE) - FIELD SURVEY FORM FOR AMBYSTOMA MACRODACTYLUM CROCEUM 2009-01-23

CHA03F0001 CHABRE, C. (CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE-ELKHORN SLOUGH ECOLOGICAL RESERVE) - FIELD SURVEY FORM FOR AMBYSTOMA MACRODACTYLUM CROCEUM 2003-01-13

SAV04F0002 SAVAGE, W.K. (UNIVERSITY OF CALIFORNIA, DAVIS) - FIELD SURVEY FORM FOR AMBYSTOMA MACRODACTYLUM CROCEUM 2004-12-23



Occurrence Report
California Department of Fish and Wildlife
California Natural Diversity Database



Map Index Number: 70828

EO Index: 71746

Key Quad: Prunedale (3612176)

Element Code: AAAAAA01082

Occurrence Number: 20

Occurrence Last Updated: 2008-02-15

Scientific Name: *Ambystoma macrodactylum croceum*

Common Name: Santa Cruz long-toed salamander

Listing Status: **Federal:** Endangered

Rare Plant Rank:

State: Endangered

Other Lists: CDFW_FP-Fully Protected

CNDDDB Element Ranks: **Global:** G5T1T2

State: S1S2

General Habitat:

WET MEADOWS NEAR SEA LEVEL IN A FEW RESTRICTED LOCALES IN SANTA CRUZ AND MONTEREY COUNTIES.

Micro Habitat:

AQUATIC LARVAE PREFER SHALLOW (<12 INCHES) WATER, USING CLUMPS OF VEGETATION OR DEBRIS FOR COVER. ADULTS USE MAMMAL BURROWS.

Last Date Observed: 2007-05-10

Occurrence Type: Natural/Native occurrence

Last Survey Date: 2007-05-10

Occurrence Rank: Fair

Owner/Manager: PVT-ALBA/TRIPLE M RANCH

Trend: Unknown

Presence: Presumed Extant

Location:

1.7 MILES DIRECTLY EAST OF THE NORTH END OF ELKHORN SLOUGH, 4 MILES SE OF WATSONVILLE.

Detailed Location:

POND SOUTH OF HALL ROAD AND NW OF LIVE OAK ROAD - FORMER OXBOW OF CARNEROS CREEK.

Ecological:

HABITAT CONSISTS OF POND (40 X 450 FT). WATER TEA COLORED, 8-10 INCHES DEEP, WITH THIN FILM OF PEAT OIL? ON SURFACE. EMERGENT VEGETATION: MOSTLY YELLOW CRESS THROUGHOUT W/ SMARTWEED IN LOCALIZED DENSE PATCHES, SINGLE PATCH OF BULRUSH.

Threats:

General:

3 LARVAE CAPTURED, 10 MAY 2007. CAPTURE RATE LOW FOR EFFORT. Hyla TADPOLES, LOUISIANA CRAYFISH YOUNG, 1 ADULT BULLFROG (NO TADPOLES) ALSO CAPTURED. SURROUNDING LANDSCAPE: MAINLY AGRICULTURE W/ OAK WOODLANDS, ANNUAL GRASSLAND, EUCALYPTUS.

PLSS: T12S, R02E, Sec. 26 (M)

Accuracy: specific area

Area (acres): 2

UTM: Zone-10 N4079838 E614658

Latitude/Longitude: 36.85751 / -121.71377

Elevation (feet): 20

County Summary:

Quad Summary:

Monterey

Prunedale (3612176)

Sources:

MOR07F0019 MORI, B. - FIELD SURVEY FORM FOR AMBYSTOMA MACRODACTYLUM CROCEUM 2007-05-10



Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database



Map Index Number: 17079	EO Index: 12094	
Key Quad: Prunedale (3612176)	Element Code: AAAAAA01180	
Occurrence Number: 98	Occurrence Last Updated: 2000-03-13	

Scientific Name: <i>Ambystoma californiense</i>	Common Name: California tiger salamander
Listing Status:	Rare Plant Rank:
Federal: Threatened	
State: Threatened	Other Lists: CDFW_SSC-Species of Special Concern IUCN_VU-Vulnerable
CNDDDB Element Ranks:	
Global: G2G3	
State: S2S3	

General Habitat: CENTRAL VALLEY DPS FEDERALLY LISTED AS THREATENED. SANTA BARBARA & SONOMA COUNTIES DPS FEDERALLY LISTED AS ENDANGERED.	Micro Habitat: NEED UNDERGROUND REFUGES, ESPECIALLY GROUND SQUIRREL BURROWS, & VERNAL POOLS OR OTHER SEASONAL WATER SOURCES FOR BREEDING.
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Last Date Observed: 1990-05-02	Occurrence Type: Natural/Native occurrence
Last Survey Date: 1999-03-15	Occurrence Rank: None
Owner/Manager: UNKNOWN	Trend: Unknown
Presence: Possibly Extirpated	

Location:
ABOUT 2 MILES SOUTHEAST OF PRUNEDALE.

Detailed Location:
FOUND APPROXIMATELY 2400 FEET EAST OF THE END OF THE END OF THE HARRISON ROAD EXTENSION, ON THE EAST SIDE OF THE ACCESS.

Ecological:
STOCK POND/RESERVOIR IN NON-NATIVE GRASSLAND/COAST LIVE OAK MOSAIC. NO VEG IN POND OR AROUND MARGINS. SANDY SOILS. WATER VERY TURBID; DEPTH ABOUT 1.5 FT. AQUATIC INVERTS PRESENT.

Threats:
THREATS INCLUDE CATTLE GRAZING, PROPOSED CALTRANS BYPASS ALIGNMENT #4 FOR HWY 101, AND AGRICULTURAL CONVERSION.

General:
4 LARVAE (4.5 INCHES IN LENGTH) FOUND ON 2 MAY 1990; NO OTHER AMPHIBIAN LARVAE OBSERVED. DIP NET SURVEYS FOR CTS LARVAE YIELDED NO AMPHIBIANS ON 15 MAR 1999. MUCH OF SURROUNDING HABITAT HAS BEEN CONVERTED TO STRAWBERRY FIELDS.

PLSS: T13S, R03E, Sec. 33 (M)	Accuracy: 1/5 mile	Area (acres): 0
UTM: Zone-10 N4069205 E621566	Latitude/Longitude: 36.76083 / -121.63801	Elevation (feet): 100

County Summary:	Quad Summary:
Monterey	Prunedale (3612176)

Sources:

MOR90F0002	MORI, B. - FIELD SURVEY FORM FOR AMBYSTOMA CALIFORNIENSE 1990-05-02
MOR99F0008	MORI, B. - FIELD SURVEY FORM FOR AMBYSTOMA (TIGRINUM) CALIFORNIENSE 1999-03-15



Occurrence Report
California Department of Fish and Wildlife
California Natural Diversity Database



Map Index Number:	17081	EO Index:	12093
Key Quad:	Prunedale (3612176)	Element Code:	AAAAA01180
Occurrence Number:	99	Occurrence Last Updated:	1996-10-30

Scientific Name:	<i>Ambystoma californiense</i>	Common Name:	California tiger salamander
Listing Status:	Federal: Threatened State: Threatened	Rare Plant Rank:	
CNDDB Element Ranks:	Global: G2G3 State: S2S3	Other Lists:	CDFW_SSC-Species of Special Concern IUCN_VU-Vulnerable

General Habitat:	Micro Habitat:
CENTRAL VALLEY DPS FEDERALLY LISTED AS THREATENED. SANTA BARBARA & SONOMA COUNTIES DPS FEDERALLY LISTED AS ENDANGERED.	NEED UNDERGROUND REFUGES, ESPECIALLY GROUND SQUIRREL BURROWS, & VERNAL POOLS OR OTHER SEASONAL WATER SOURCES FOR BREEDING.

Last Date Observed:	1990-05-02	Occurrence Type:	Natural/Native occurrence
Last Survey Date:	1990-05-02	Occurrence Rank:	Excellent
Owner/Manager:	UNKNOWN	Trend:	Unknown
Presence:	Presumed Extant		

Location:
ABOUT 2 MILES ESE OF PRUNDALE.

Detailed Location:
LOCATED ABOUT 2500 FEET WEST OF RESIDENTIAL UNITS AT END OF HERBERT ROAD AND 800 FEET WEST OF UNPAVED ROAD.

Ecological:
SPRING FED STOCK POND/RESERVOIR IN MIDST OF GRASSLAND & COAST LIVE OAK MOSAIC. ABUNDANT & DIVERSE AQUATIC VEG. WATER CLEAR, ABUNDANT HYLAE & BUFO LARVAE, SOME TARICHA TOROSA LARVAE, ABUNDANT AQUATIC INVERTS.

Threats:
PROPOSED CALTRANS ALTERNATE BYPASS ALIGNMENT #4 FOR HWY 101, AND GRAZING.

General:
1 TIGER SALAMANDER LARVAE FOUND.

PLSS:	T13S, R03E, Sec. 27 (M)	Accuracy:	1/5 mile	Area (acres):	0
UTM:	Zone-10 N4070555 E622389	Latitude/Longitude:	36.77289 / -121.62857	Elevation (feet):	240

County Summary:	Quad Summary:
Monterey	San Juan Bautista (3612175), Prunedale (3612176)

Sources:
MOR90F0003 MORI, B. - FIELD SURVEY FORM FOR AMBYSTOMA CALIFORNIENSE 1990-05-20



Occurrence Report
California Department of Fish and Wildlife
California Natural Diversity Database



Map Index Number:	30795	EO Index:	4112
Key Quad:	Prunedale (3612176)	Element Code:	AAAAA01180
Occurrence Number:	303	Occurrence Last Updated:	1996-03-11

Scientific Name:	<i>Ambystoma californiense</i>	Common Name:	California tiger salamander
Listing Status:	Federal: Threatened State: Threatened	Rare Plant Rank:	
CNDDB Element Ranks:	Global: G2G3 State: S2S3	Other Lists:	CDFW_SSC-Species of Special Concern IUCN_VU-Vulnerable

General Habitat:

CENTRAL VALLEY DPS FEDERALLY LISTED AS THREATENED. SANTA BARBARA & SONOMA COUNTIES DPS FEDERALLY LISTED AS ENDANGERED.

Micro Habitat:

NEED UNDERGROUND REFUGES, ESPECIALLY GROUND SQUIRREL BURROWS, & VERNAL POOLS OR OTHER SEASONAL WATER SOURCES FOR BREEDING.

Last Date Observed:	1988-11-16	Occurrence Type:	Natural/Native occurrence
Last Survey Date:	1988-11-16	Occurrence Rank:	Unknown
Owner/Manager:	UNKNOWN	Trend:	Unknown
Presence:	Presumed Extant		

Location:

STRAWBERRY ROAD, 0.25 MILE EAST OF ELKHORN ROAD, APPROX 4 MILES NORTH OF CASTROVILLE.

Detailed Location:

1 ADULT FOUND DOR DURING 3 HOURS OF DRIVING ON A RAINY NIGHT.

Ecological:

BREEDING HABITAT CONSISTS OF ADJACENT FRESHWATER MARSH (PART OF ELKHORN SLOUGH ECOLOGICAL RESERVE).

Threats:**General:**

1 ADULT FOUND DEAD-ON-ROAD ON 16 NOVEMBER 1988, PRESUMABLY MIGRATING TO/FROM BREEDING AREA; SPECIMEN DEPOSITED IN MVZ.

PLSS: T13S, R02E, Sec. 03 (M)	Accuracy: 80 meters	Area (acres): 0
UTM: Zone-10 N4076446 E613360	Latitude/Longitude: 36.82710 / -121.72885	Elevation (feet): 5

County Summary:

Monterey

Quad Summary:

Prunedale (3612176)

Sources:

RUT88F0003 RUTH, S.B. - FIELD SURVEY FORM FOR AMBYSTOMA (TIGRINUM) CALIFORNIENSE 1988-11-16



Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database



Map Index Number: 20311	EO Index: 46225	
Key Quad: Prunedale (3612176)	Element Code: AAAAA01180	
Occurrence Number: 570	Occurrence Last Updated: 2008-02-29	

Scientific Name: <i>Ambystoma californiense</i>	Common Name: California tiger salamander
Listing Status:	Rare Plant Rank:
Federal: Threatened	
State: Threatened	Other Lists: CDFW_SSC-Species of Special Concern IUCN_VU-Vulnerable
CNDDB Element Ranks:	
Global: G2G3	
State: S2S3	

General Habitat: CENTRAL VALLEY DPS FEDERALLY LISTED AS THREATENED. SANTA BARBARA & SONOMA COUNTIES DPS FEDERALLY LISTED AS ENDANGERED.	Micro Habitat: NEED UNDERGROUND REFUGES, ESPECIALLY GROUND SQUIRREL BURROWS, & VERNAL POOLS OR OTHER SEASONAL WATER SOURCES FOR BREEDING.
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Last Date Observed: 2007-04-21	Occurrence Type: Natural/Native occurrence
Last Survey Date: 2007-04-21	Occurrence Rank: Good
Owner/Manager: PVT	Trend: Unknown
Presence: Presumed Extant	

Location:
MORO COJO SLOUGH AREA OFF CASTROVILLE BLVD, MOSS LANDING.

Detailed Location:
MUSEUM RECORD GIVES SITE AT "MARO COJA SLOUGH AREA OFF CASTROVILLE BLVD, MOSS LANDING".

Ecological:
TEMPORARY POOL WITH BARE GROUND AND NON-NATIVE GRASS ALONG THE FRINGE. UPLAND HABITAT CONSISTS OF WILLOW, OAK, AND NON-NATIVE GRASSES - PROVIDES HABITAT FOR AESTIVATING ADULTS. RESTORATION/PROTECTION WILL INCREASE HABITAT FOR CTS & SCLTS.

Threats:
POSSIBLE HYBRID.

General:
MVZ #204612 COLLECTED 19 MAY 1978 BY M.S. MARANGIO. 1 ADULT OBSERVED ON 21 APR 2007; POSSIBLE HYBRID - TISSUE SAMPLES AWAITING ANALYSIS. WATER MURKY - NEARBY AG MAY CONTRIBUTE TO POOR WATER QUALITY. LITTLE AQUATIC LIFE PRESENT.

PLSS: T13S, R02E, Sec. 15 (M)	Accuracy: nonspecific area	Area (acres): 94
UTM: Zone-10 N4072635 E612920	Latitude/Longitude: 36.79281 / -121.73433	Elevation (feet): 35

County Summary:	Quad Summary:
Monterey	Prunedale (3612176)

Sources:

DAY07F0011	DAYTON, G. (MOSS LANDING MARINE LAB) - FIELD SURVEY FORM FOR AMBYSTOMA CALIFORNIENSE 2007-04-21
MVZ01S0013	MVZ SPECIMEN DATABASE QUERY (UNIVERSITY OF CALIFORNIA, BERKELEY) - MVZ SPECIMENS FOR AMBYSTOMA CALIFORNIENSE COLLECTED BETWEEN 1912-1990 2001-08-17



Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database



Map Index Number: 46669	EO Index: 46669
Key Quad: Prunedale (3612176)	Element Code: AAAAA01180
Occurrence Number: 635	Occurrence Last Updated: 2007-03-27

Scientific Name: <i>Ambystoma californiense</i>	Common Name: California tiger salamander
Listing Status: Federal: Threatened State: Threatened	Rare Plant Rank: Other Lists: CDFW_SSC-Species of Special Concern IUCN_VU-Vulnerable
CNDDDB Element Ranks: Global: G2G3 State: S2S3	

General Habitat: CENTRAL VALLEY DPS FEDERALLY LISTED AS THREATENED. SANTA BARBARA & SONOMA COUNTIES DPS FEDERALLY LISTED AS ENDANGERED.	Micro Habitat: NEED UNDERGROUND REFUGES, ESPECIALLY GROUND SQUIRREL BURROWS, & VERNAL POOLS OR OTHER SEASONAL WATER SOURCES FOR BREEDING.
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Last Date Observed: 2006-05-03	Occurrence Type: Natural/Native occurrence
Last Survey Date: 2006-05-03	Occurrence Rank: Good
Owner/Manager: UNKNOWN, PVT	Trend: Unknown
Presence: Presumed Extant	

Location:
ALONG BLACKIE ROAD, 1 MILE WEST OF PRUNEDALE.

Detailed Location:
1997: CTS FOUND AT A LOW SPOT IN THE ROAD; PRESUMED BREEDING POND FOUND APPROXIMATELY 0.1 MILE NORTH OF BLACKIE ROAD. 2006 CAPTURES AT IRRIGATION RESERVOIR ON TOP OF KNOLL.

Ecological:
1997: WILLOWS TO NORTH & OAK WOODLAND TO SOUTH. 2006: RESERVOIR MARGINS DENSE WITH RUDERAL HERBS. CLEA WATER UP TO 2 FT DEEP. SANDSTONE SUBSTRATE. SPIKERUSH & SUBMERGENT AQUATIC PLANTS ABUNDANT. SURROUNDING AREA IS STRAWBERRY FIELDS.

Threats:
VIABLE UPLANDS FRAGMENTED DUE TO AGRICULTURE.

General:
1 SUB-ADULT OBSERVED ON A DARK, RAINY NIGHT, ON 16 NOV 1997. 1 LARVA CAPTURED ON 17 APR AND 8 ON 3 MAY 2006. TAIL CLIPPINGS SENT TO DR. BRAD SHAFFER AT UC DAVIS.

PLSS: T13S, R03E, Sec. 30 (M)	Accuracy: 1/10 mile	Area (acres): 0
UTM: Zone-10 N4070949 E617077	Latitude/Longitude: 36.77711 / -121.68802	Elevation (feet): 100

County Summary: Monterey	Quad Summary: Prunedale (3612176)
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Sources:
MOR06F0003 MORI, B. - FIELD SURVEY FORM FOR AMBYSTOMA CALIFORNIENSE 2006-04-17
RUT97F0001 RUTH, S.B. - FIELD SURVEY FORM FOR AMBYSTOMA CALIFORNIENSE 1997-11-16



Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database



Map Index Number: 68095	EO Index: 68236
Key Quad: Prunedale (3612176)	Element Code: AAAAA01180
Occurrence Number: 910	Occurrence Last Updated: 2007-03-02

Scientific Name: <i>Ambystoma californiense</i>	Common Name: California tiger salamander
Listing Status:	Rare Plant Rank:
Federal: Threatened	
State: Threatened	Other Lists: CDFW_SSC-Species of Special Concern IUCN_VU-Vulnerable
CNDDDB Element Ranks:	
Global: G2G3	
State: S2S3	

General Habitat: CENTRAL VALLEY DPS FEDERALLY LISTED AS THREATENED. SANTA BARBARA & SONOMA COUNTIES DPS FEDERALLY LISTED AS ENDANGERED.	Micro Habitat: NEED UNDERGROUND REFUGES, ESPECIALLY GROUND SQUIRREL BURROWS, & VERNAL POOLS OR OTHER SEASONAL WATER SOURCES FOR BREEDING.
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Last Date Observed: 2006-05-02	Occurrence Type: Natural/Native occurrence
Last Survey Date: 2006-05-02	Occurrence Rank: Excellent
Owner/Manager: PVT	Trend: Unknown
Presence: Presumed Extant	

Location:
UPPER ARM OF MORO COJO SLOUGH, ON THE SOUTH SIDE OF HIGHWAY 156, NE OF CASTROVILLE.

Detailed Location:
ADJACENT ANNUAL GRASSLANDS APPEAR SUITABLE AS UPLAND CTS HABITAT.

Ecological:
HABITAT CONSISTS OF A SEASONAL SWALE SURROUNDED BY ANNUAL GRASSLAND/STRAWBERRY FIELDS; WILLOW THICKETS LINE THE LOW FLOW CHANNEL, EMERGENT VEGETATION ALONG THE SLOUGH MARGINS. OPEN WATER IS EXTENSIVE, UP TO 4' DEEP; DRIES BY LATE FALL.

Threats:
POSSIBLE THREAT FROM THE STATE ROUTE 156 WEST CORRIDOR PROJECT SITE.

General:
AQUATIC SURVEYS WERE CONDUCTED ON 18 APR AND 2 MAY 2006; 33 CTS LARVAE WERE CAPTURED ON 2 MAY 2006. TAIL CLIPPINGS SENT TO UC DAVIS.

PLSS: T13S, R02E, Sec. 27 (M)	Accuracy: specific area	Area (acres): 10
UTM: Zone-10 N4070155 E613372	Latitude/Longitude: 36.77040 / -121.72964	Elevation (feet): 10

County Summary: Monterey	Quad Summary: Prunedale (3612176)
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Sources:
MOR06F0002 MORI, B. - FIELD SURVEY FORM FOR AMBYSTOMA CALIFORNIENSE 2006-04-18



Occurrence Report
California Department of Fish and Wildlife
California Natural Diversity Database



Map Index Number:	68134	EO Index:	68278
Key Quad:	Prunedale (3612176)	Element Code:	AAAAA01180
Occurrence Number:	912	Occurrence Last Updated:	2007-02-15

Scientific Name:	<i>Ambystoma californiense</i>	Common Name:	California tiger salamander
Listing Status:	Federal: Threatened	Rare Plant Rank:	
	State: Threatened	Other Lists:	CDFW_SSC-Species of Special Concern IUCN_VU-Vulnerable
CNDDDB Element Ranks:	Global: G2G3		
	State: S2S3		

General Habitat:	Micro Habitat:
CENTRAL VALLEY DPS FEDERALLY LISTED AS THREATENED. SANTA BARBARA & SONOMA COUNTIES DPS FEDERALLY LISTED AS ENDANGERED.	NEED UNDERGROUND REFUGES, ESPECIALLY GROUND SQUIRREL BURROWS, & VERNAL POOLS OR OTHER SEASONAL WATER SOURCES FOR BREEDING.

Last Date Observed:	2006-05-04	Occurrence Type:	Natural/Native occurrence
Last Survey Date:	2006-05-04	Occurrence Rank:	Poor
Owner/Manager:	PVT	Trend:	Unknown
Presence:	Presumed Extant		

Location:
WEST OF PRUNEDALE, ABOUT 0.8 MI NW OF INTERSECTION OF BLACKIE RD AND HWY 156.

Detailed Location:

Ecological:
SUBSTRATE HIGHLY SANDY, TURBID WATER. NO AQUATIC VEGETATION, BERMS LARGELY BARE. SURROUNDING AREA IS STRAWBERRY FIELDS IN VARYING PHASES (E.G. ACTIVE, FALLOW) & OAK WOODLANDS. VIABLE UPLANDS (ANNUAL GRASSLANDS) FRAGMENTED BY AGRICULTURE.

Threats:
General:
1 LARVA CAPTURED ON 17 APR AND 2 LARVAE CAPTURED ON 4 MAY 2006. TAIL CLIPPINGS SENT TO DR. BRAD SHAFFER AT UC DAVIS.

PLSS: T13S, R03E, Sec. 19 (M)	Accuracy: 80 meters	Area (acres): 0
UTM: Zone-10 N4071446 E617909	Latitude/Longitude: 36.78148 / -121.67862	Elevation (feet): 90

County Summary:	Quad Summary:
Monterey	Prunedale (3612176)

Sources:
MOR06F0004 MORI, B. - FIELD SURVEY FORM FOR AMBYSTOMA CALIFORNIENSE 2006-04-17



Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database



Map Index Number: 70875

EO Index: 71853

Key Quad: Prunedale (3612176)

Element Code: AAAAAA01180

Occurrence Number: 1005

Occurrence Last Updated: 2008-02-26

Scientific Name: *Ambystoma californiense*

Common Name: California tiger salamander

Listing Status: **Federal:** Threatened

Rare Plant Rank:

State: Threatened

Other Lists: CDFW_SSC-Species of Special Concern
IUCN_VU-Vulnerable

CNDDDB Element Ranks: **Global:** G2G3

State: S2S3

General Habitat:

CENTRAL VALLEY DPS FEDERALLY LISTED AS THREATENED. SANTA BARBARA & SONOMA COUNTIES DPS FEDERALLY LISTED AS ENDANGERED.

Micro Habitat:

NEED UNDERGROUND REFUGES, ESPECIALLY GROUND SQUIRREL BURROWS, & VERNAL POOLS OR OTHER SEASONAL WATER SOURCES FOR BREEDING.

Last Date Observed: 2007-10-11

Occurrence Type: Natural/Native occurrence

Last Survey Date: 2007-10-11

Occurrence Rank: Poor

Owner/Manager: NORTH MONTEREY COUNTY HS

Trend: Unknown

Presence: Presumed Extant

Location:

JUST NORTH OF UPPER MORO COJO SLOUGH AND SOUTHEAST OF CASTROVILLE BLVD, NORTH OF HIGHWAY 156, 1.5 MI NE OF CASTROVILLE.

Detailed Location:

WEST OF THE SEWAGE TREATMENT PONDS.

Ecological:

ANNUAL GRASSLAND/RUDERAL PATCH. LAND MAY FORMERLY HAVE BEEN ANNUAL GRASSLAND W/SEASONAL WETLANDS. SITE LIKELY SUPPORTED UPLAND HABITAT PRIOR TO GRADING. MORO COJO SLOUGH OR CASTROVILLE SEWAGE TREATMENT PONDS PROVIDE BREEDING HABITAT.

Threats:

THREATS INCLUDE PREVIOUS GRADING AND EXPANSION OF HIGH SCHOOL.

General:

1 SUBADULT CAPTURED ON 10 FEB AND 1 ADULT MALE CAPTURED ON 11 OCT DURING 2007. BOTH CAPTURES OCCURRED DURING DRIFT FENCE STUDY AND BOTH APPEARED TO BE HYBRIDS BASED ON SPOTTING PATTERN.

PLSS: T13S, R02E, Sec. 22 (M)

Accuracy: specific area

Area (acres): 14

UTM: Zone-10 N4071495 E613178

Latitude/Longitude: 36.78250 / -121.73162

Elevation (feet): 50

County Summary:

Monterey

Quad Summary:

Prunedale (3612176)

Sources:

MOR07F0021 MORI, B. - FIELD SURVEY FORM FOR AMBYSTOMA CALIFORNIENSE 2007-10-11

MOR07F0022 MORI, B. - FIELD SURVEY FORM FOR AMBYSTOMA CALIFORNIENSE 2007-02-10



Occurrence Report
California Department of Fish and Wildlife
California Natural Diversity Database



Map Index Number:	81197	EO Index:	82182
Key Quad:	Prunedale (3612176)	Element Code:	AAAAA01180
Occurrence Number:	1106	Occurrence Last Updated:	2010-12-30

Scientific Name:	<i>Ambystoma californiense</i>	Common Name:	California tiger salamander
Listing Status:	Federal: Threatened State: Threatened	Rare Plant Rank:	
CNDDB Element Ranks:	Global: G2G3 State: S2S3	Other Lists:	CDFW_SSC-Species of Special Concern IUCN_VU-Vulnerable

General Habitat:	Micro Habitat:
CENTRAL VALLEY DPS FEDERALLY LISTED AS THREATENED. SANTA BARBARA & SONOMA COUNTIES DPS FEDERALLY LISTED AS ENDANGERED.	NEED UNDERGROUND REFUGES, ESPECIALLY GROUND SQUIRREL BURROWS, & VERNAL POOLS OR OTHER SEASONAL WATER SOURCES FOR BREEDING.

Last Date Observed:	2008-05-17	Occurrence Type:	Natural/Native occurrence
Last Survey Date:	2008-05-17	Occurrence Rank:	Good
Owner/Manager:	TNC-ELKHORN SLOUGH RESERVE	Trend:	Unknown
Presence:	Presumed Extant		

Location:
 ABOUT 0.7 MILES NE OF ELKHORN RD AT KIRBY RD, ELKHORN SLOUGH RESERVE (TNC).

Detailed Location:
 MAPPED TO PROVIDED COORDINATES.

Ecological:
 CREATED POND FED FROM LEAKY PIPE AT THE TOP OF A RIDGE SURROUNDED BY CHAPARRAL. DOMINANT VEGETATION WAS CATTAIL AND BULRUSH. DOZENS OF PSEUDACRIS REGILLA TADPOLES WERE OBSERVED.

Threats:
 IF THE POND DRIES (FED BY LEAKY PIPE), LOCAL EXTIRPATION MAY OCCUR, BUT UNNATURAL ECOSYSTEM (OPPORTUNISTIC).

General:
 9 SUBADULTS WERE DETECTED ON 17 MAY 2008.

PLSS:	T12S, R02E, Sec. 34 (M)	Accuracy:	80 meters	Area (acres):	0
UTM:	Zone-10 N4078970 E612941	Latitude/Longitude:	36.84989 / -121.73316	Elevation (feet):	350

County Summary:	Quad Summary:
Monterey	Prunedale (3612176)

Sources:
 DAY08F0026 DAYTON, G. (MOSS LANDING MARINE LAB) - FIELD SURVEY FORM FOR AMBYSTOMA CALIFORNIENSE 2008-05-17



Occurrence Report
California Department of Fish and Wildlife
California Natural Diversity Database



Map Index Number: 20118

EO Index: 9753

Key Quad: Prunedale (3612176)

Element Code: AAABH01022

Occurrence Number: 30

Occurrence Last Updated: 2009-04-22

Scientific Name: *Rana draytonii*

Common Name: California red-legged frog

Listing Status: **Federal:** Threatened

Rare Plant Rank:

State: None

Other Lists: CDFW_SSC-Species of Special Concern
IUCN_VU-Vulnerable

CNDDB Element Ranks: **Global:** G2G3

State: S2S3

General Habitat:

LOWLANDS & FOOTHILLS IN OR NEAR PERMANENT SOURCES OF DEEP WATER WITH DENSE, SHRUBBY OR EMERGENT RIPARIAN VEGETATION.

Micro Habitat:

REQUIRES 11-20 WEEKS OF PERMANENT WATER FOR LARVAL DEVELOPMENT. MUST HAVE ACCESS TO ESTIVATION HABITAT.

Last Date Observed: 2003-07-23

Occurrence Type: Natural/Native occurrence

Last Survey Date: 2003-07-23

Occurrence Rank: Fair

Owner/Manager: UNKNOWN

Trend: Unknown

Presence: Presumed Extant

Location:

WETLAND AREA W OF PRUNEDALE, MOSTLY W OF HWY 101 FROM JCT OF BLACKIE RD & CROSS RD N ~1 MI ALONG PRUNEDALE SOUTH RD.

Detailed Location:

Ecological:

SOUTH SECTION OF DRAINAGE IS WETLAND AREA W/ CATTAIL, SEDGES, RUSHES, & HEMLOCK. WILLOWS SCATTERED. 2-3 FT DEEP POOLS W/ 100 % DUCKWEED COVER. OAK WOODLAND ADJACENT. NORTH SECTION OF DRAINAGE IN PASTURELAND W/ADJACENT WILLOW GROVE.

Threats:

PROPOSED HWY CHANGES BY CALTRANS COULD CHANGE DRAINAGE CHARACTERISTICS. SOME AREAS ARE USED BY CATTLE.

General:

3 ADULTS & OVER 100 LARVAE FOUND ON 7 MAY 1990. Hyla LARVAE ALSO PRESENT IN 1990. 2 ADULT OBSERVED ON 28 AUG 2001. 1 ADULT OBSERVED ON 23 JUL 2003. SEVERAL BULLFROGS WERE OBSERVED IN THIS LOCATION & >100 OBS ~1 MI DOWNSTREAM.

PLSS: T13S, R03E, Sec. 29 (M)

Accuracy: nonspecific area

Area (acres): 71

UTM: Zone-10 N4070875 E618494

Latitude/Longitude: 36.77626 / -121.67216

Elevation (feet): 30

County Summary:

Quad Summary:

Monterey

Prunedale (3612176)

Sources:

- MOR90F0004 MORI, B. (HABITAT RESTORATION GROUP) - FIELD SURVEY FORM FOR RANA DRAYTONII 1990-05-07
- MOR90F0005 MORI, B. (HABITAT RESTORATION GROUP) - FIELD SURVEY FORM FOR RANA DRAYTONII 1990-05-07
- SIE01F0003 SIEPEL, N. (CALIFORNIA DEPARTMENT OF TRANSPORTATION) - FIELD SURVEY FORM FOR RANA DRAYTONII 2001-08-28
- SIE03F0005 SIEPEL, N. (CALIFORNIA DEPARTMENT OF TRANSPORTATION) - FIELD SURVEY FORM FOR RANA DRAYTONII 2003-07-23
- SMA01F0008 SMALLWOOD, S. - FIELD SURVEY FORM FOR RANA DRAYTONII 2001-08-28



Occurrence Report
California Department of Fish and Wildlife
California Natural Diversity Database



Map Index Number: 36467

EO Index: 31464

Key Quad: Prunedale (3612176)

Element Code: AAABH01022

Occurrence Number: 224

Occurrence Last Updated: 1997-08-20

Scientific Name: *Rana draytonii*

Common Name: California red-legged frog

Listing Status: **Federal:** Threatened

Rare Plant Rank:

State: None

Other Lists: CDFW_SSC-Species of Special Concern
IUCN_VU-Vulnerable

CNDDDB Element Ranks: **Global:** G2G3

State: S2S3

General Habitat:

LOWLANDS & FOOTHILLS IN OR NEAR PERMANENT SOURCES OF DEEP WATER WITH DENSE, SHRUBBY OR EMERGENT RIPARIAN VEGETATION.

Micro Habitat:

REQUIRES 11-20 WEEKS OF PERMANENT WATER FOR LARVAL DEVELOPMENT. MUST HAVE ACCESS TO ESTIVATION HABITAT.

Last Date Observed: 1989-05-16

Occurrence Type: Natural/Native occurrence

Last Survey Date: 1989-05-16

Occurrence Rank: Fair

Owner/Manager: DFG-ELKHORN SLOUGH ER

Trend: Unknown

Presence: Presumed Extant

Location:

ELKHORN SLOUGH NATIONAL ESTUARINE RESEARCH PRESERVE. N OF RD TO ELKHORN, 0.3 MI E OF RR TRACKS & 0.3 MI W OF ELKHORN RD.

Detailed Location:

TEMPORARY FRESH WATER POND ACROSS THE ROAD FROM A BRACKISH WATER INLET.

Ecological:

LOTS OF DEEP CRACKS WITH WATER ~67 CM DEEP AND SHALLOWER. SURROUNDING VEGETATION: TULE, EUCALYPTUS, WILLOWS, BUNCH GRASS, BLOOMING HEMLOCK, STINGING NETTLE.

Threats:

MOSQUITO FISH & PREDATORY BEETLES.

General:

JUVENILES OBSERVED IN CRACKS MANY WITH TAILS BITTEN OFF. 1 ADULT OBSERVED.

PLSS: T13S, R02E, Sec. 03 (M)

Accuracy: 80 meters

Area (acres): 0

UTM: Zone-10 N4076115 E612818

Latitude/Longitude: 36.82418 / -121.73497

Elevation (feet): 5

County Summary:

Quad Summary:

Monterey

Prunedale (3612176)

Sources:

SUM89F0005 SUMMER, A. (MOSS LANDING MARINE LAB) - FIELD SURVEY FORM FOR RANA DRAYTONII (CALIFORNIA RED-LEGGED FROG) 1989-05-16



Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database



Map Index Number: 30795

EO Index: 33241

Key Quad: Prunedale (3612176)

Element Code: AAABH01022

Occurrence Number: 241

Occurrence Last Updated: 1998-02-25

Scientific Name: *Rana draytonii*

Common Name: California red-legged frog

Listing Status: **Federal:** Threatened

Rare Plant Rank:

State: None

Other Lists: CDFW_SSC-Species of Special Concern
IUCN_VU-Vulnerable

CNDDDB Element Ranks: **Global:** G2G3

State: S2S3

General Habitat:

LOWLANDS & FOOTHILLS IN OR NEAR PERMANENT SOURCES OF DEEP WATER WITH DENSE, SHRUBBY OR EMERGENT RIPARIAN VEGETATION.

Micro Habitat:

REQUIRES 11-20 WEEKS OF PERMANENT WATER FOR LARVAL DEVELOPMENT. MUST HAVE ACCESS TO ESTIVATION HABITAT.

Last Date Observed: 1989-06-13

Occurrence Type: Natural/Native occurrence

Last Survey Date: 1989-06-13

Occurrence Rank: Excellent

Owner/Manager: PVT

Trend: Unknown

Presence: Presumed Extant

Location:

STRAWBERRY ROAD, 0.25 MILE FROM INTERSECTION WITH ELKHORN ROAD. 0.7 MILE ENE OF ELKHORN AT ELKHORN SLOUGH.

Detailed Location:

Ecological:

NICE DEEP POND W/SURROUNDING GRASS, BUSHES; FAIR AMOUNT OF TERRESTRIAL HABITAT AVAILABLE. LOTS OF HYLEA TADPOLES AND AQUATIC INVERTS.

Threats:

General:

MANY RED-LEGGED FROG TADPOLES OBSERVED. OWNER KEEPING AREA IN NATURAL STATE, 1989. CALIFORNIA TIGER SALAMANDER FOUND, 1988, MAY BE THE LARVAE SEE IN 1989.

PLSS: T13S, R02E, Sec. 03 (M)

Accuracy: 80 meters

Area (acres): 0

UTM: Zone-10 N4076446 E613360

Latitude/Longitude: 36.82710 / -121.72885

Elevation (feet): 5

County Summary:

Quad Summary:

Monterey

Prunedale (3612176)

Sources:

SUM89F0008 SUMMERS, A. (MOSS LANDING MARINE LAB) - FIELD SURVEY FORM FOR RANA DRAYTONII 1989-06-13



Occurrence Report
California Department of Fish and Wildlife
California Natural Diversity Database



Map Index Number:	41102	EO Index:	41102
Key Quad:	Prunedale (3612176)	Element Code:	AAABH01022
Occurrence Number:	298	Occurrence Last Updated:	1999-05-25

Scientific Name:	<i>Rana draytonii</i>	Common Name:	California red-legged frog
Listing Status:	Federal: Threatened	Rare Plant Rank:	
	State: None	Other Lists:	CDFW_SSC-Species of Special Concern IUCN_VU-Vulnerable
CNDDB Element Ranks:	Global: G2G3		
	State: S2S3		

General Habitat:	Micro Habitat:
LOWLANDS & FOOTHILLS IN OR NEAR PERMANENT SOURCES OF DEEP WATER WITH DENSE, SHRUBBY OR EMERGENT RIPARIAN VEGETATION.	REQUIRES 11-20 WEEKS OF PERMANENT WATER FOR LARVAL DEVELOPMENT. MUST HAVE ACCESS TO ESTIVATION HABITAT.

Last Date Observed:	1999-05-10	Occurrence Type:	Natural/Native occurrence
Last Survey Date:	1999-05-10	Occurrence Rank:	Fair
Owner/Manager:	UNKNOWN	Trend:	Unknown
Presence:	Presumed Extant		

Location:
SOUTH SIDE OF HIGHWAY 156, 0.25 MILE EAST OF THE END OF OAK HILLS DRIVE, NE OF CASTROVILLE.

Detailed Location:

Ecological:
HABITAT CONSISTS OF AN AGRICULTURAL POND, VEGETATED BY EMERGENT SCIRPUS CALIFORNICUS. BANK VEGETATION INCLUDES CYPERUS ESCULENTUS, POLYGONUM SP, CORTADERIA SELLOANA, BACCHARIS PILULARIS. BEYOND BERM, ONLY CULTIVATED STRAWBERRIES ARE FOUND.

Threats:
THREATENED BY A FLUCTUATING WATER LEVEL (POND IS USED FOR IRRIGATION).

General:

PLSS: T13S, R02E, Sec. 24 (M)	Accuracy: 80 meters	Area (acres): 0
UTM: Zone-10 N4071442 E616443	Latitude/Longitude: 36.78163 / -121.69505	Elevation (feet): 200

County Summary:	Quad Summary:
Monterey	Prunedale (3612176)

Sources:
EDE99F0001 EDELL, T.M. (CALIFORNIA DEPARTMENT OF TRANSPORTATION) - FIELD SURVEY FORM FOR RANA DRAYTONII 1999-05-10



Occurrence Report
California Department of Fish and Wildlife
California Natural Diversity Database



Map Index Number: 47468

EO Index: 47468

Key Quad: Prunedale (3612176)

Element Code: AAABH01022

Occurrence Number: 506

Occurrence Last Updated: 2008-11-25

Scientific Name: *Rana draytonii*

Common Name: California red-legged frog

Listing Status: **Federal:** Threatened

Rare Plant Rank:

State: None

Other Lists: CDFW_SSC-Species of Special Concern
IUCN_VU-Vulnerable

CNDDDB Element Ranks: **Global:** G2G3

State: S2S3

General Habitat:

LOWLANDS & FOOTHILLS IN OR NEAR PERMANENT SOURCES OF DEEP WATER WITH DENSE, SHRUBBY OR EMERGENT RIPARIAN VEGETATION.

Micro Habitat:

REQUIRES 11-20 WEEKS OF PERMANENT WATER FOR LARVAL DEVELOPMENT. MUST HAVE ACCESS TO ESTIVATION HABITAT.

Last Date Observed: 1990-02-24

Occurrence Type: Natural/Native occurrence

Last Survey Date: 1990-02-24

Occurrence Rank: Unknown

Owner/Manager: PVT

Trend: Unknown

Presence: Presumed Extant

Location:

UPPER MORO COJO SLOUGH, SOUTHEAST OF CASTROVILLE BLVD, NORTHWEST OF HWY 156 & SOUTH OF MERIDIAN RD.

Detailed Location:

Ecological:

Threats:

PROPOSED DEVELOPMENT (1990). ROAD MORTALITY.

General:

1 ADULT FROG OBSERVED NEAR THE EDGE OF THE POND. TWO DOR FROGS FOUND 25 NOV 1989 SOMEWHERE ON MERIDIAN ROAD.

PLSS: T13S, R02E, Sec. 23 (M)

Accuracy: 80 meters

Area (acres): 0

UTM: Zone-10 N4071593 E613915

Latitude/Longitude: 36.78330 / -121.72335

Elevation (feet): 10

County Summary:

Quad Summary:

Monterey

Prunedale (3612176)

Sources:

ABA90R0001 ABA CONSULTANTS - SANTA CRUZ LONG-TOED SALAMANDER SURVEY IN UPPER MORO COJO SLOUGH, MONTEREY COUNTY, CA. 1990-05-01



Occurrence Report
California Department of Fish and Wildlife
California Natural Diversity Database



Map Index Number: 59445

EO Index: 59481

Key Quad: Prunedale (3612176)

Element Code: AAABH01022

Occurrence Number: 790

Occurrence Last Updated: 2005-01-19

Scientific Name: *Rana draytonii*

Common Name: California red-legged frog

Listing Status: **Federal:** Threatened

Rare Plant Rank:

State: None

Other Lists: CDFW_SSC-Species of Special Concern
IUCN_VU-Vulnerable

CNDDB Element Ranks: **Global:** G2G3

State: S2S3

General Habitat:

LOWLANDS & FOOTHILLS IN OR NEAR PERMANENT SOURCES OF DEEP WATER WITH DENSE, SHRUBBY OR EMERGENT RIPARIAN VEGETATION.

Micro Habitat:

REQUIRES 11-20 WEEKS OF PERMANENT WATER FOR LARVAL DEVELOPMENT. MUST HAVE ACCESS TO ESTIVATION HABITAT.

Last Date Observed: 2002-02-26

Occurrence Type: Natural/Native occurrence

Last Survey Date: 2002-05-XX

Occurrence Rank: Good

Owner/Manager: PVT

Trend: Unknown

Presence: Presumed Extant

Location:

UNNAMED DRAINAGE THAT CROSSES CARPENTERIA ROAD, 0.25 MILE NE OF SAN JUAN ROAD, 1.8 MILES SOUTH OF AROMAS.

Detailed Location:

Ecological:

HABITAT CONSISTS OF A DEEP POOL NEAR AN UPSTREAM CULVERT ALONG CARPENTERIA ROAD; DENSE LIVE OAKS AND WILLOWS FORM AN OVERHEAD CANOPY, WITH A DENSE POISON OAK AND BLACKBERRY GROUND COVER ALONG BOTH BANKS.

Threats:

General:

1 LARGE ADULT OBSERVED ON 26 FEB 2002, DURING A PRE-CONSTRUCTION SURVEY; BY MAY, THE CREEK WAS DRY AND NO FROGS WERE OBSERVED DURING ADDITIONAL SURVEYS.

PLSS: T12S, R03E, Sec. 28 (M)

Accuracy: 80 meters

Area (acres): 0

UTM: Zone-10 N4080511 E620286

Latitude/Longitude: 36.86288 / -121.65055

Elevation (feet): 130

County Summary:

Quad Summary:

Monterey

Prunedale (3612176)

Sources:

MOR02F0014 MORI, B. - FIELD SURVEY FORM FOR RANA DRAYTONII 2002-02-26



Occurrence Report
California Department of Fish and Wildlife
California Natural Diversity Database



Map Index Number: 68152

EO Index: 68302

Key Quad: Prunedale (3612176)

Element Code: AAABH01022

Occurrence Number: 927

Occurrence Last Updated: 2007-02-16

Scientific Name: *Rana draytonii*

Common Name: California red-legged frog

Listing Status: **Federal:** Threatened

Rare Plant Rank:

State: None

Other Lists: CDFW_SSC-Species of Special Concern
IUCN_VU-Vulnerable

CNDDB Element Ranks: **Global:** G2G3

State: S2S3

General Habitat:

LOWLANDS & FOOTHILLS IN OR NEAR PERMANENT SOURCES OF DEEP WATER WITH DENSE, SHRUBBY OR EMERGENT RIPARIAN VEGETATION.

Micro Habitat:

REQUIRES 11-20 WEEKS OF PERMANENT WATER FOR LARVAL DEVELOPMENT. MUST HAVE ACCESS TO ESTIVATION HABITAT.

Last Date Observed: 2006-05-31

Occurrence Type: Natural/Native occurrence

Last Survey Date: 2006-05-31

Occurrence Rank: Fair

Owner/Manager: PVT

Trend: Unknown

Presence: Presumed Extant

Location:

NORTH SIDE OF HIGHWAY 156, 3 MILES ENE OF CASTROVILLE.

Detailed Location:

POND WAS SURROUNDED BY STRAWBERRY FIELDS, RESIDENTIAL, FRAGMENTED OAK WOODLAND, AND HIGHWAY 156.

Ecological:

HABITAT CONSISTS OF AN IRRIGATION POND WITH DENSE SCIRPUS AND DUCKWEED/MOSQUITO FERN ON THE SURFACE (LITTLE OPEN WATER); WILLOWS AND CYPRESS TREES LINE THE BERM. WATER IS PUMPED INTO THE RESERVOIR; DEPTH WAS ~3.5 FEET.

Threats:

General:

AQUATIC SURVEYS WERE CONDUCTED 17 APR-31 MAY 2006; 2 LARVAE AND 2 ADULTS WERE CAPTURED (LOW NUMBERS CONSIDERING THE SAMPLING EFFORT).

PLSS: T13S, R02E, Sec. 24 (M)

Accuracy: 80 meters

Area (acres): 0

UTM: Zone-10 N4071584 E616021

Latitude/Longitude: 36.78295 / -121.69975

Elevation (feet): 195

County Summary:

Monterey

Quad Summary:

Prunedale (3612176)

Sources:

MOR06F0008 MORI, B. - FIELD SURVEY FORM FOR RANA DRAYTONII 2006-04-17



Occurrence Report
California Department of Fish and Wildlife
California Natural Diversity Database



Map Index Number: 68163

EO Index: 68310

Key Quad: Prunedale (3612176)

Element Code: AAABH01022

Occurrence Number: 928

Occurrence Last Updated: 2007-02-21

Scientific Name: *Rana draytonii*

Common Name: California red-legged frog

Listing Status: **Federal:** Threatened

Rare Plant Rank:

State: None

Other Lists: CDFW_SSC-Species of Special Concern
IUCN_VU-Vulnerable

CNDDDB Element Ranks: **Global:** G2G3

State: S2S3

General Habitat:

LOWLANDS & FOOTHILLS IN OR NEAR PERMANENT SOURCES OF DEEP WATER WITH DENSE, SHRUBBY OR EMERGENT RIPARIAN VEGETATION.

Micro Habitat:

REQUIRES 11-20 WEEKS OF PERMANENT WATER FOR LARVAL DEVELOPMENT. MUST HAVE ACCESS TO ESTIVATION HABITAT.

Last Date Observed: 2006-04-19

Occurrence Type: Natural/Native occurrence

Last Survey Date: 2006-04-19

Occurrence Rank: Fair

Owner/Manager: PVT

Trend: Unknown

Presence: Presumed Extant

Location:

0.8 MILE NW OF THE INTERSECTION OF BLACKIE ROAD AND HIGHWAY 156, JUST WEST OF PRUNEDALE.

Detailed Location:

SEDIMENT BASIN APPEARS NOT TO BE USED FOR RED-LEGGED FROG BREEDING, AS NO LARVAE WERE FOUND (2006).

Ecological:

HABITAT CONSISTS OF A SEDIMENT BASIN THAT IS DREDGED ANNUALLY AND A FRESHWATER MARSH BELOW. SUBSTRATE OF SEDIMENT BASIN IS SANDY AND WATER IS TURBID; NO AQUATIC VEGETATION, BERMS LARGELY BARE. MARSH IS A NATURAL WETLAND ENHANCED BY BERMS.

Threats:

POSSIBLE THREAT FROM BULLFROGS (ADULTS PRESENT, BUT NO TADPOLES CAPTURED).

General:

AQUATIC SURVEYS WERE CONDUCTED ON 17 APR, 19 APR, 4 MAY, AND 17 MAY 2006; 6 ADULTS CAPTURED ON 17 APR, WHILE SAMPLING FOR CTS IN THE SEDIMENT BASIN, AND NUMEROUS TADPOLES CAPTURED AND SEVERAL ADULTS OBSERVED IN THE MARSH ON 19 APR 2006.

PLSS: T13S, R03E, Sec. 19 (M)

Accuracy: specific area

Area (acres): 12

UTM: Zone-10 N4071445 E618015

Latitude/Longitude: 36.78145 / -121.67743

Elevation (feet): 90

County Summary:

Quad Summary:

Monterey

Prunedale (3612176)

Sources:

MOR06F0007 MORI, B. - FIELD SURVEY FORM FOR RANA DRAYTONII 2006-04-17

MOR06F0011 MORI, B. - FIELD SURVEY FORM FOR RANA DRAYTONII 2006-04-19



Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database



Map Index Number: 68157	EO Index: 68311	
Key Quad: Prunedale (3612176)	Element Code: AAABH01022	
Occurrence Number: 929	Occurrence Last Updated: 2007-02-20	

Scientific Name: <i>Rana draytonii</i>	Common Name: California red-legged frog
Listing Status:	Rare Plant Rank:
Federal: Threatened	
State: None	Other Lists: CDFW_SSC-Species of Special Concern IUCN_VU-Vulnerable
CNDDB Element Ranks:	
Global: G2G3	
State: S2S3	

General Habitat: LOWLANDS & FOOTHILLS IN OR NEAR PERMANENT SOURCES OF DEEP WATER WITH DENSE, SHRUBBY OR EMERGENT RIPARIAN VEGETATION.	Micro Habitat: REQUIRES 11-20 WEEKS OF PERMANENT WATER FOR LARVAL DEVELOPMENT. MUST HAVE ACCESS TO ESTIVATION HABITAT.
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Last Date Observed: 2006-05-31	Occurrence Type: Natural/Native occurrence
Last Survey Date: 2006-05-31	Occurrence Rank: Excellent
Owner/Manager: PVT	Trend: Unknown
Presence: Presumed Extant	

Location:
NORTH SIDE OF HWY 156, ABOUT 0.3 MI W OF INTERSECTION WITH MERIDIAN RD. 1 MILE WEST OF HWY 101 & 1 MILE N OF PRUNEDALE.

Detailed Location:
BREEDING POND; SURROUNDED BY STRAWBERRY FIELDS, OAK WOODLANDS, AND LOW-DENSITY RESIDENTIAL.

Ecological:
HABITAT CONSISTS OF AN ARTIFICIAL SPRING-FED POND CREATED BY THE ADDITION OF A BERM; POND IS USED BY HORSES. WETLAND VEGETATION IS LARGELY ABSENT AROUND THE POND PERIMETER, EXCEPT FOR A SMALL PATCH OF WILLOW SAPLINGS AND SCIRPUS SP.

Threats:
POSSIBLE THREAT FROM A PROPOSED CLOVERLEAF ADDITION IN THE SR 156 WEST CORRIDOR PROJECT.

General:
AQUATIC SURVEYS WERE CONDUCTED FROM 18 APR-31 MAY 2006; 3 ADULTS AND NUMEROUS LARVAE WERE CAPTURED WHILE SAMPLING FOR CTS LARVAE.

PLSS: T13S, R03E, Sec. 19 (M)	Accuracy: 80 meters	Area (acres): 0
UTM: Zone-10 N4072064 E617402	Latitude/Longitude: 36.78712 / -121.68420	Elevation (feet): 90

County Summary: Monterey	Quad Summary: Prunedale (3612176)
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Sources:
MOR06F0009 MORI, B. - FIELD SURVEY FORM FOR RANA DRAYTONII 2006-04-18



Occurrence Report
California Department of Fish and Wildlife
California Natural Diversity Database



Map Index Number:	68095	EO Index:	68308
Key Quad:	Prunedale (3612176)	Element Code:	AAABH01022
Occurrence Number:	930	Occurrence Last Updated:	2007-02-16

Scientific Name:	<i>Rana draytonii</i>	Common Name:	California red-legged frog
Listing Status:	Federal: Threatened	Rare Plant Rank:	
	State: None	Other Lists:	CDFW_SSC-Species of Special Concern IUCN_VU-Vulnerable
CNDDB Element Ranks:	Global: G2G3		
	State: S2S3		

General Habitat:	Micro Habitat:
LOWLANDS & FOOTHILLS IN OR NEAR PERMANENT SOURCES OF DEEP WATER WITH DENSE, SHRUBBY OR EMERGENT RIPARIAN VEGETATION.	REQUIRES 11-20 WEEKS OF PERMANENT WATER FOR LARVAL DEVELOPMENT. MUST HAVE ACCESS TO ESTIVATION HABITAT.

Last Date Observed:	2006-05-02	Occurrence Type:	Natural/Native occurrence
Last Survey Date:	2006-05-02	Occurrence Rank:	Excellent
Owner/Manager:	PVT	Trend:	Unknown
Presence:	Presumed Extant		

Location:
UPPER ARM OF MORO COJO SLOUGH, ON THE SOUTH SIDE OF HIGHWAY 156, NE OF CASTROVILLE.

Detailed Location:

Ecological:

HABITAT CONSISTS OF A SEASONAL SWALE SURROUNDED BY ANNUAL GRASSLAND/STRAWBERRY FIELDS; WILLOW THICKETS LINE THE LOW FLOW CHANNEL, EMERGENT VEGETATION ALONG THE SLOUGH MARGINS. OPEN WATER IS EXTENSIVE, UP TO 4' DEEP; DRIES BY LATE FALL.

Threats:

POSSIBLE THREAT FROM THE STATE ROUTE 156 WEST CORRIDOR PROJECT SITE.

General:

AQUATIC SURVEYS WERE CONDUCTED ON 18 APR AND 2 MAY 2006; SEVERAL RED-LEGGED FROG LARVAE WERE CAPTURED WHILE SAMPLING FOR CTS.

PLSS: T13S, R02E, Sec. 27 (M)	Accuracy: specific area	Area (acres): 10
UTM: Zone-10 N4070155 E613372	Latitude/Longitude: 36.77040 / -121.72964	Elevation (feet): 10

County Summary:

Monterey

Quad Summary:

Prunedale (3612176)

Sources:

MOR06F0010 MORI, B. - FIELD SURVEY FORM FOR RANA DRAYTONII 2006-04-18



Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database



Map Index Number: 68158

EO Index: 68312

Key Quad: Prunedale (3612176)

Element Code: AAABH01022

Occurrence Number: 931

Occurrence Last Updated: 2007-06-27

Scientific Name: *Rana draytonii*

Common Name: California red-legged frog

Listing Status: **Federal:** Threatened

Rare Plant Rank:

State: None

Other Lists: CDFW_SSC-Species of Special Concern
IUCN_VU-Vulnerable

CNDDDB Element Ranks: **Global:** G2G3

State: S2S3

General Habitat:

LOWLANDS & FOOTHILLS IN OR NEAR PERMANENT SOURCES OF DEEP WATER WITH DENSE, SHRUBBY OR EMERGENT RIPARIAN VEGETATION.

Micro Habitat:

REQUIRES 11-20 WEEKS OF PERMANENT WATER FOR LARVAL DEVELOPMENT. MUST HAVE ACCESS TO ESTIVATION HABITAT.

Last Date Observed: 2007-04-21

Occurrence Type: Natural/Native occurrence

Last Survey Date: 2007-04-21

Occurrence Rank: Fair

Owner/Manager: PVT

Trend: Unknown

Presence: Presumed Extant

Location:

ARM OF MORO COJO SLOUGH, DOWNSTREAM OF CASTROVILLE BOULEVARD, NNE OF CASTROVILLE.

Detailed Location:

AQUATIC SURVEYS WERE CONDUCTED ON 19 APR AND 3 AND 16 MAY 2006; NO EVIDENCE OF BREEDING (PERHAPS TOO BRACKISH). BREEDING OCCURRED DURING 2007 IN THE OLD SETTLING PONDS BELOW THE TRAILER PARK.

Ecological:

HABITAT CONSISTS OF AN ARM OF MORO COJO SLOUGH, WHICH CONTAINS SEASONAL POCKETS OF WATER IN DEPRESSIONS IN THE LOW-FLOW CHANNEL AND VARIES FROM FRESH TO BRACKISH SEASONALLY; VEGETATED BY DENSE SPIKE RUSH AND PICKLEWEED.

Threats:

POSSIBLE THREAT FROM THE STATE ROUTE 156 WEST CORRIDOR PROJECT SITE AND INTRODUCED PREDATORS.

General:

1 ADULT OBSERVED, APR-MAY 2006. 1 DEAD METAMORPH FOUND ON THE BIKE PATH, 14 NOV 2006. 1 ADULT OBSERVED IN MAIN SLOUGH CHANNEL, NEXT TO ROAD BELOW CULVERT, 3 APR 2007. 6 LARVAE OBSERVED IN SETTLING POND BELOW TRAILER PARK, 21 APR 2007.

PLSS: T13S, R02E, Sec. 27 (M)

Accuracy: specific area

Area (acres): 24

UTM: Zone-10 N4070871 E612636

Latitude/Longitude: 36.77694 / -121.73778

Elevation (feet): 10

County Summary:

Quad Summary:

Monterey

Prunedale (3612176)

Sources:

DAY07F0003 DAYTON, G. (MOSS LANDING MARINE LAB) - FIELD SURVEY FORM FOR RANA DRAYTONII 2007-04-03

DAY07F0004 DAYTON, G. (MOSS LANDING MARINE LAB) - FIELD SURVEY FORM FOR RANA DRAYTONII 2007-04-21

MOR06F0012 MORI, B. - FIELD SURVEY FORM FOR RANA DRAYTONII 2006-04-19

MOR06F0013 MORI, B. - FIELD SURVEY FORM FOR RANA DRAYTONII 2006-11-14



Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database



Map Index Number: 68842

EO Index: 69435

Key Quad: Prunedale (3612176)

Element Code: AAABH01022

Occurrence Number: 942

Occurrence Last Updated: 2007-04-19

Scientific Name: *Rana draytonii*

Common Name: California red-legged frog

Listing Status: **Federal:** Threatened

Rare Plant Rank:

* SENSITIVE *

State: None

Other Lists: CDFW_SSC-Species of Special Concern
IUCN_VU-Vulnerable

CNDDB Element Ranks: **Global:** G2G3

State: S2S3

General Habitat:

LOWLANDS & FOOTHILLS IN OR NEAR PERMANENT SOURCES OF DEEP WATER WITH DENSE, SHRUBBY OR EMERGENT RIPARIAN VEGETATION.

Micro Habitat:

REQUIRES 11-20 WEEKS OF PERMANENT WATER FOR LARVAL DEVELOPMENT. MUST HAVE ACCESS TO ESTIVATION HABITAT.

Last Date Observed: 2007-02-12

Occurrence Type: Natural/Native occurrence

Last Survey Date: 2007-02-12

Occurrence Rank: Good

Owner/Manager: PVT

Trend: Unknown

Presence: Presumed Extant

Location:

WALKER VALLEY ROAD, ~0.75 MILE NW OF INTERSECTION OF ELKHORN ROAD WITH CASTROVILLE BLVD, 3.5 MILES NE OF CASTROVILLE.

Detailed Location:

Ecological:

HABITAT CONSISTS OF A SMALL CREEK VEGETATED BY COTTONWOODS, WILLOWS, SEDGES, AND RUSHES, WITH OAK WOODLAND NEARBY.

Threats:

General:

2 ADULT FROGS (ONE LIVE, ONE ROAD KILL) OBSERVED AT THIS SITE ON 12 FEB 2007; ROAD KILL FROG TO BE SUBMITTED TO CAS.

PLSS: T13S, R02E, Sec. 14 (M)

Accuracy: 80 meters

Area (acres): 0

UTM: Zone-10 N4074165 E615088

Latitude/Longitude: 36.80633 / -121.70981

Elevation (feet): 190

County Summary:

Quad Summary:

Monterey

Prunedale (3612176)

Sources:

DAY07F0002 DAYTON, G. (MOSS LANDING MARINE LAB) - FIELD SURVEY FORM FOR RANA DRAYTONII 2007-02-12

DAY07U0001 DAYTON, G.H. (MOSS LANDING MARINE LAB) - ANNUAL REPORT ON SCTIVITIES CONDUCTED UNDER DFG 2005 SCIENTIFIC COLLECTING PERMIT SC-000633 (GAGE DAYTON) 2007-XX-XX

DAY07U0002 DAYTON, G.H. (MOSS LANDING MARINE LAB) - SCIENTIFIC COLLECTING PERMIT REPORT OF SPECIMENS CAPTURED OR SALVAGED. 2007-XX-XX



Occurrence Report
California Department of Fish and Wildlife
California Natural Diversity Database



Map Index Number: 70855

EO Index: 71779

Key Quad: Prunedale (3612176)

Element Code: AAABH01022

Occurrence Number: 987

Occurrence Last Updated: 2008-02-22

Scientific Name: *Rana draytonii*

Common Name: California red-legged frog

Listing Status: **Federal:** Threatened

Rare Plant Rank:

State: None

Other Lists: CDFW_SSC-Species of Special Concern
IUCN_VU-Vulnerable

CNDDDB Element Ranks: **Global:** G2G3

State: S2S3

General Habitat:

LOWLANDS & FOOTHILLS IN OR NEAR PERMANENT SOURCES OF DEEP WATER WITH DENSE, SHRUBBY OR EMERGENT RIPARIAN VEGETATION.

Micro Habitat:

REQUIRES 11-20 WEEKS OF PERMANENT WATER FOR LARVAL DEVELOPMENT. MUST HAVE ACCESS TO ESTIVATION HABITAT.

Last Date Observed: 2007-05-11

Occurrence Type: Natural/Native occurrence

Last Survey Date: 2007-05-11

Occurrence Rank: Excellent

Owner/Manager: PVT-TRIPLE M/ALBA

Trend: Unknown

Presence: Presumed Extant

Location:

1 MILE DIRECTLY EAST NORTH END OF ELKHORN SLOUGH AND IMMEDIATELY SOUTH OF HALL ROAD, 4 MILES SE OF WATSONVILLE.

Detailed Location:

MAPPED ACCORDING TO LOCATION PROVIDED ON MAP AND COORDINATES.

Ecological:

HABITAT CONSISTS OF AN AGRICULTURE DITCH ABOUT 15 FT WIDE. SEASONAL POOLING IN CHANNEL ABOUT 2 FT AT TIME OF SURVEY. WATER TURBID, SURFACE WATER OPEN. WHEN FULL, WATER OVERFLOWS ONTO ANNUAL GRASSLAND/PASTURE TO THE NORTH. WILLOWS TO SOUTH.

Threats:

General:

78 LARVAE CAPTURED ON 11 MAY 2007 WHILE SAMPLING FOR CTS/SCLTS LARVAE. BULLFROG ADULT AND LOUISIANA CRAYFISH ALSO OBSERVED. SURROUNDING LAND CONSISTS OF AGRICULTURAL AND RURAL RESIDENTIAL LAND.

PLSS: T12S, R02E, Sec. 26 (M)

Accuracy: 80 meters

Area (acres): 0

UTM: Zone-10 N4080446 E613943

Latitude/Longitude: 36.86308 / -121.72170

Elevation (feet): 13

County Summary:

Monterey

Quad Summary:

Prunedale (3612176)

Sources:

MOR07F0024 MORI, B. - FIELD SURVEY FORM FOR RANA DRAYTONII 2007-05-11



Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database



Map Index Number: 70856

EO Index: 71836

Key Quad: Prunedale (3612176)

Element Code: AAABH01022

Occurrence Number: 988

Occurrence Last Updated: 2008-02-26

Scientific Name: *Rana draytonii*

Common Name: California red-legged frog

Listing Status: **Federal:** Threatened

Rare Plant Rank:

State: None

Other Lists: CDFW_SSC-Species of Special Concern
IUCN_VU-Vulnerable

CNDDB Element Ranks: **Global:** G2G3

State: S2S3

General Habitat:

LOWLANDS & FOOTHILLS IN OR NEAR PERMANENT SOURCES OF DEEP WATER WITH DENSE, SHRUBBY OR EMERGENT RIPARIAN VEGETATION.

Micro Habitat:

REQUIRES 11-20 WEEKS OF PERMANENT WATER FOR LARVAL DEVELOPMENT. MUST HAVE ACCESS TO ESTIVATION HABITAT.

Last Date Observed: 2007-05-10

Occurrence Type: Natural/Native occurrence

Last Survey Date: 2007-05-10

Occurrence Rank: Excellent

Owner/Manager: PVT-TRIPLE M/ALBA

Trend: Unknown

Presence: Presumed Extant

Location:

CARNEROS CREEK, 1.5 MILES DIRECTLY EAST OF THE NORTH END OF ELKHORN SLOUGH AND SOUTH OF HALL RD, 4 MI SE OF WATSONVILLE.

Detailed Location:

MAPPED ACCORDING TO COORDINATES PROVIDED. LOCATION ON MAP PROVIDED SHOWN TO BE JUST TO THE WEST (ABOUT 250 METERS) OF COORDINATES.

Ecological:

HABITAT CONSISTS OF SEASONAL INTERMITTENT STREAM. SAMPLE SITE: 300 FT X 10 FT POOL MORE THAN 4 FT DEEP. SURFACE COVERED BY DUCKWEED, MOSQUITO FERN; STEEP SIDED BANKS. RIPARIAN CORRIDOR W/CANOPY OF WILLOWS; UNDERSTORY SMARTWEED, BLACKBERRY.

Threats:

General:

1 SUB-ADULT OBSERVED ON BANK WHILE SAMPLING FOR CALIFORNIA TIGER SALAMANDER, SANTA CRUZ LONG-TOED SALAMANDER LARVAE. ALSO, 1 YR+ BULLFROG LARVAE PRESENT, BUT UNCOMMON. SURROUNDING LAND CONSISTS OF AGRICULTURAL AND RURAL RESIDENTIAL LAND.

PLSS: T12S, R02E, Sec. 26 (M)

Accuracy: 80 meters

Area (acres): 0

UTM: Zone-10 N4080275 E614663

Latitude/Longitude: 36.86145 / -121.71366

Elevation (feet): 14

County Summary:

Quad Summary:

Monterey

Prunedale (3612176)

Sources:

MOR07F0025 MORI, B. - FIELD SURVEY FORM FOR RANA DRAYTONII 2007-05-10



Occurrence Report
California Department of Fish and Wildlife
California Natural Diversity Database



Map Index Number: 74080

EO Index: 75071

Key Quad: Prunedale (3612176)

Element Code: AAABH01022

Occurrence Number: 1022

Occurrence Last Updated: 2009-03-20

Scientific Name: *Rana draytonii*

Common Name: California red-legged frog

Listing Status: **Federal:** Threatened

Rare Plant Rank:

State: None

Other Lists: CDFW_SSC-Species of Special Concern
IUCN_VU-Vulnerable

CNDDB Element Ranks: **Global:** G2G3

State: S2S3

General Habitat:

LOWLANDS & FOOTHILLS IN OR NEAR PERMANENT SOURCES OF DEEP WATER WITH DENSE, SHRUBBY OR EMERGENT RIPARIAN VEGETATION.

Micro Habitat:

REQUIRES 11-20 WEEKS OF PERMANENT WATER FOR LARVAL DEVELOPMENT. MUST HAVE ACCESS TO ESTIVATION HABITAT.

Last Date Observed: 2004-06-04

Occurrence Type: Natural/Native occurrence

Last Survey Date: 2004-06-04

Occurrence Rank: Fair

Owner/Manager: DFG-ELKHORN SLOUGH ER

Trend: Unknown

Presence: Presumed Extant

Location:

0.24 MI SE OF THE ELKHORN SLOUGH NATIONAL ESTUARINE RESEARCH RESERVE HEADQUARTERS.

Detailed Location:

IN SMALL POND JUST S OF ELKHORN RD IN NW1/4 OF SW1/4 ESTIMATED SEC 11.

Ecological:

HABITAT IS GRASSLAND AND OAK WOODLAND.

Threats:

AGRICULTURAL FIELD AND ONE RESIDENCE NEXT TO POND. POND MAY NOT REMAIN WET LONG ENOUGH FOR BREEDING IN MOST YEARS.

General:

5 ADULTS OBSERVED IN A SMALL POND WITHIN A WILLOW GROVE. OBSERVATION DATE STATES 4 JUN 2004- PRESENT, FORM RECEIVED ON 2 NOV 2007.

PLSS: T13S, R02E, Sec. 11 (M)

Accuracy: 80 meters

Area (acres): 0

UTM: Zone-10 N4075098 E613615

Latitude/Longitude: 36.81492 / -121.72619

Elevation (feet): 50

County Summary:

Quad Summary:

Monterey

Prunedale (3612176)

Sources:

DAM04F0003 D'AMORE, A.J. (UNIVERSITY OF CALIFORNIA, SANTA CRUZ) - FIELD SURVEY FORM FOR RANA DRAYTONII 2004-06-01



Occurrence Report
California Department of Fish and Wildlife
California Natural Diversity Database



Map Index Number: 74120

EO Index: 75113

Key Quad: Prunedale (3612176)

Element Code: AAABH01022

Occurrence Number: 1024

Occurrence Last Updated: 2009-03-25

Scientific Name: *Rana draytonii*

Common Name: California red-legged frog

Listing Status: **Federal:** Threatened

Rare Plant Rank:

State: None

Other Lists: CDFW_SSC-Species of Special Concern
IUCN_VU-Vulnerable

CNDDB Element Ranks: **Global:** G2G3

State: S2S3

General Habitat:

LOWLANDS & FOOTHILLS IN OR NEAR PERMANENT SOURCES OF DEEP WATER WITH DENSE, SHRUBBY OR EMERGENT RIPARIAN VEGETATION.

Micro Habitat:

REQUIRES 11-20 WEEKS OF PERMANENT WATER FOR LARVAL DEVELOPMENT. MUST HAVE ACCESS TO ESTIVATION HABITAT.

Last Date Observed: 2001-06-22

Occurrence Type: Natural/Native occurrence

Last Survey Date: 2001-06-22

Occurrence Rank: Fair

Owner/Manager: PVT

Trend: Unknown

Presence: Presumed Extant

Location:

JUST SSE OF THE JUNCTION OF HWY 101 & DUNBARTON RD., 4.49 MI NNE OF PRUNDALE.

Detailed Location:

Ecological:

RIPARIAN OAK WOODLAND AND GRASSLAND. THE SEASONAL STREAM IS VEGETATED WITH WILLOWS AND COAST LIVE OAKS. THE STREAM RUNS THROUGH RANGE LAND THAT IS USED FOR CATTLE GRAZING.

Threats:

CATTLE HAVE ACCESS TO THE STREAM WHERE VEGETATION IS LESS DENSE.

General:

1 ADULT WAS OBSERVED IN A SMALL POOL THAT DRIED UP LATER IN THE SUMMER ON 1 JUN 2001 AND ON 22 JUN 2001.

PLSS: T13S, R03E, Sec. 03 (M)

Accuracy: 80 meters

Area (acres): 0

UTM: Zone-10 N4077576 E622162

Latitude/Longitude: 36.83619 / -121.62999

Elevation (feet): 275

County Summary:

Quad Summary:

Monterey

Prunedale (3612176)

Sources:

SIE01F0004 SIEPEL, N. (CALIFORNIA DEPARTMENT OF TRANSPORTATION) - FIELD SURVEY FORM FOR RANA DRAYTONII 2001-06-01

SMA01F0004 SMALLWOOD, S. - FIELD SURVEY FORM FOR RANA DRAYTONII 2001-06-22



Occurrence Report
California Department of Fish and Wildlife
California Natural Diversity Database



Map Index Number: 74133

EO Index: 75124

Key Quad: Prunedale (3612176)

Element Code: AAABH01022

Occurrence Number: 1026

Occurrence Last Updated: 2009-03-26

Scientific Name: *Rana draytonii*

Common Name: California red-legged frog

Listing Status: **Federal:** Threatened

Rare Plant Rank:

State: None

Other Lists: CDFW_SSC-Species of Special Concern
IUCN_VU-Vulnerable

CNDDDB Element Ranks: **Global:** G2G3

State: S2S3

General Habitat:

LOWLANDS & FOOTHILLS IN OR NEAR PERMANENT SOURCES OF DEEP WATER WITH DENSE, SHRUBBY OR EMERGENT RIPARIAN VEGETATION.

Micro Habitat:

REQUIRES 11-20 WEEKS OF PERMANENT WATER FOR LARVAL DEVELOPMENT. MUST HAVE ACCESS TO ESTIVATION HABITAT.

Last Date Observed: 2004-06-01

Occurrence Type: Natural/Native occurrence

Last Survey Date: 2004-06-01

Occurrence Rank: Good

Owner/Manager: DFG-ELKHORN SLOUGH ER

Trend: Unknown

Presence: Presumed Extant

Location:

ELKHORN SLOUGH NATIONAL ESTUARINE RESEARCH PRESERVE, 0.18 MI W OF THE INTERSECTION OF ELKHORN RD & PARADISE VALLEY RD.

Detailed Location:

Ecological:

THE HABITAT SURROUNDING THE PONDS IS COMPRISED OF MIXED OAK WOODLAND, HEAVILY INVADING GRASSLAND AND SOME STANDS OF EUCALYPTUS. THIS IS A RESERVE WITH A NETWORK OF 9 PONDS, 5 OF WHICH REGULARLY CONTAIN BREEDING FROGS.

Threats:

POOR WATER QUALITY, POTENTIAL FOR SALT WATER INTRUSION, AND DISEASE. SURROUNDING AREA IS ESTUARINE MARSH & AGRICULTURE.

General:

~100 ADULTS, ~200 JUVENILES, "MANY" LARVAE AND "SEVERAL" EGG MASSES OBSERVED. DATE RECORDED AS "1 JUN 2004- PRESENT", FIELD SURVEY FORM RECEIVED AT THE CNDDDB ON 2 NOV 2007.

PLSS: T13S, R02E, Sec. 10 (M)

Accuracy: 80 meters

Area (acres): 0

UTM: Zone-10 N4075717 E613164

Latitude/Longitude: 36.82055 / -121.73115

Elevation (feet): 15

County Summary:

Monterey

Quad Summary:

Prunedale (3612176)

Sources:

DAM04F0001 D'AMORE, A.J. (UNIVERSITY OF CALIFORNIA, SANTA CRUZ) - FIELD SURVEY FORM FOR RANA DRAYTONII 2004-06-01



Occurrence Report
California Department of Fish and Wildlife
California Natural Diversity Database



Map Index Number: 74140

EO Index: 75137

Key Quad: Prunedale (3612176)

Element Code: AAABH01022

Occurrence Number: 1033

Occurrence Last Updated: 2009-03-24

Scientific Name: *Rana draytonii*

Common Name: California red-legged frog

Listing Status: **Federal:** Threatened

Rare Plant Rank:

State: None

Other Lists: CDFW_SSC-Species of Special Concern
IUCN_VU-Vulnerable

CNDDB Element Ranks: **Global:** G2G3

State: S2S3

General Habitat:

LOWLANDS & FOOTHILLS IN OR NEAR PERMANENT SOURCES OF DEEP WATER WITH DENSE, SHRUBBY OR EMERGENT RIPARIAN VEGETATION.

Micro Habitat:

REQUIRES 11-20 WEEKS OF PERMANENT WATER FOR LARVAL DEVELOPMENT. MUST HAVE ACCESS TO ESTIVATION HABITAT.

Last Date Observed: 2006-06-01

Occurrence Type: Natural/Native occurrence

Last Survey Date: 2006-06-01

Occurrence Rank: Good

Owner/Manager: TNC-ELKHORN SLOUGH RES, ESF

Trend: Unknown

Presence: Presumed Extant

Location:

ON RIDGELINE EAST OF ELKHORN SLOUGH & NORTH OF SWISS CANYON, LOS CARNEROS, WATSONVILLE.

Detailed Location:

0.7 AIR MILES NE OF ELKHORN RD AT KIRBY RD.

Ecological:

ARTIFICIAL POND ON A RIDGELINE WITH EXTENSIVE TULE (SCIRPUS CALIFORNICUS) RINGING THE POND. THE UPLAND HABITAT IS CHAPARRAL.

Threats:

ARTIFICIALLY MAINTAINED WITH WATER.

General:

2 ADULTS AND "MANY" LARVAE OBSERVED.

PLSS: T12S, R02E, Sec. 34 (M)

Accuracy: 80 meters

Area (acres): 0

UTM: Zone-10 N4078965 E613025

Latitude/Longitude: 36.84984 / -121.73222

Elevation (feet): 350

County Summary:

Quad Summary:

Monterey

Prunedale (3612176)

Sources:

DAM06F0002 D'AMORE, A.J. (UNIVERSITY OF CALIFORNIA, SANTA CRUZ) - FIELD SURVEY FORM FOR RANA DRAYTONII 2006-06-01



Occurrence Report
California Department of Fish and Wildlife
California Natural Diversity Database



Map Index Number: 75946

EO Index: 76950

Key Quad: Prunedale (3612176)

Element Code: AAABH01022

Occurrence Number: 1225

Occurrence Last Updated: 2009-08-28

Scientific Name: *Rana draytonii*

Common Name: California red-legged frog

Listing Status: **Federal:** Threatened

Rare Plant Rank:

State: None

Other Lists: CDFW_SSC-Species of Special Concern
IUCN_VU-Vulnerable

CNDDDB Element Ranks: **Global:** G2G3

State: S2S3

General Habitat:

LOWLANDS & FOOTHILLS IN OR NEAR PERMANENT SOURCES OF DEEP WATER WITH DENSE, SHRUBBY OR EMERGENT RIPARIAN VEGETATION.

Micro Habitat:

REQUIRES 11-20 WEEKS OF PERMANENT WATER FOR LARVAL DEVELOPMENT. MUST HAVE ACCESS TO ESTIVATION HABITAT.

Last Date Observed: 2004-06-01

Occurrence Type: Natural/Native occurrence

Last Survey Date: 2004-06-01

Occurrence Rank: Good

Owner/Manager: PVT-ELKHORN RANCH

Trend: Unknown

Presence: Presumed Extant

Location:

ELKHORN NATIVE PLANT NURSERY, ELKHORN RANCH.

Detailed Location:

PONDS ARE JUST EAST OF THE NURSERY. OUTSIDE OF THE BREEDING SEASON, MANY OF THESE FROGS ARE IN THE UPLAND HABITAT RATHER THAN THE PONDS.

Ecological:

THIS IS A NETWORK OF 15 PONDS (1 AT THIS LOCATION) WHICH ARE SURROUNDED BY GRASSLANDS, OAKS, AND SMALL PATCHES OF ORGANIC FARMING. THE PONDS ARE MAN-MADE & ALL CONTAIN R. DRAYTONII & LOW R. CATESBEIANA DENSITIES.

Threats:

RANA CATESBEIANA (CONTROL MEASURES ONGOING). LIGHT CATTLE GRAZING IN AREA.

General:

20 ADULTS OBSERVED AT 2 SMALL PONDS AT THE NURSERY. "MANY" LARVAE & EGG MASSES OBS IN AREA. DATE RECORDED AS "1 JUN 2004-PRESENT," FIELD SURVEY FORM RECEIVED AT CNDDDB ON 2 NOV 2007.

PLSS: T13S, R02E, Sec. 04 (M)

Accuracy: 80 meters

Area (acres): 0

UTM: Zone-10 N4076982 E611481

Latitude/Longitude: 36.83215 / -121.74983

Elevation (feet): 100

County Summary:

Monterey

Quad Summary:

Prunedale (3612176)

Sources:

DAM04F0002 D'AMORE, A.J. (UNIVERSITY OF CALIFORNIA, SANTA CRUZ) - FIELD SURVEY FORM FOR RANA DRAYTONII 2004-06-01



Occurrence Report
California Department of Fish and Wildlife
California Natural Diversity Database



Map Index Number:	49429	EO Index:	49429
Key Quad:	Prunedale (3612176)	Element Code:	ABNKC06010
Occurrence Number:	63	Occurrence Last Updated:	2002-11-19

Scientific Name:	<i>Elanus leucurus</i>	Common Name:	white-tailed kite
Listing Status:	Federal: None State: None	Rare Plant Rank:	
CNDDDB Element Ranks:	Global: G5 State: S3	Other Lists:	BLM_S-Sensitive CDFW_FP-Fully Protected IUCN_LC-Least Concern

General Habitat:	Micro Habitat:
ROLLING FOOTHILLS AND VALLEY MARGINS WITH SCATTERED OAKS & RIVER BOTTOMLANDS OR MARSHES NEXT TO DECIDUOUS WOODLAND.	OPEN GRASSLANDS, MEADOWS, OR MARSHES FOR FORAGING CLOSE TO ISOLATED, DENSE-TOPPED TREES FOR NESTING AND PERCHING.

Last Date Observed:	2002-06-14	Occurrence Type:	Natural/Native occurrence
Last Survey Date:	2002-06-14	Occurrence Rank:	Fair
Owner/Manager:	DFG-ELKHORN SLOUGH ER	Trend:	Unknown
Presence:	Presumed Extant		

Location:
0.5 MILE WEST OF ELKHORN ROAD, BETWEEN THE MOUTHS OF STRAWBERRY CANYON AND LONG CANYON, ELKHORN SLOUGH ECO RESERVE.

Detailed Location:

Ecological:
NEST TREE IS A COAST LIVE OAK, WITHIN COASTAL OAK WOODLAND, ADJACENT TO WEEDY, ANNUAL GRASSLAND; ESTUARY NEARBY.

Threats:
THREATENED BY PROPOSED RECONDUCTORING.

General:
FEMALE OBSERVED SITTING ON NEST, WITH MALES NEARBY, ON 14 JUN 2002.

PLSS: T13S, R02E, Sec. 10 (M)	Accuracy: 80 meters	Area (acres): 0
UTM: Zone-10 N4075431 E612649	Latitude/Longitude: 36.81804 / -121.73697	Elevation (feet): 20

County Summary:	Quad Summary:
Monterey	Prunedale (3612176)

Sources:
BUR02F0002 BURTON, K. (GARCIA AND ASSOCIATES) - FIELD SURVEY FORM FOR ELANUS LEUCURUS (NEST SITE) 2002-06-14



Occurrence Report
California Department of Fish and Wildlife
California Natural Diversity Database



Map Index Number: 33858	EO Index: 25842
Key Quad: Prunedale (3612176)	Element Code: ABNME05016
Occurrence Number: 53	Occurrence Last Updated: 2005-01-31

Scientific Name: <i>Rallus longirostris obsoletus</i>	Common Name: California clapper rail
Listing Status:	Rare Plant Rank:
Federal: Endangered	
State: Endangered	Other Lists: ABC_WLBCC-Watch List of Birds of Conservation Concern
CNDDB Element Ranks:	CDFW_FP-Fully Protected
Global: G5T1	NABCI_RWL-Red Watch List
State: S1	

General Habitat: SALT-WATER & BRACKISH MARSHES TRAVERSED BY TIDAL SLOUGHS IN THE VICINITY OF SAN FRANCISCO BAY.	Micro Habitat: ASSOCIATED WITH ABUNDANT GROWTHS OF PICKLEWEED, BUT FEEDS AWAY FROM COVER ON INVERTEBRATES FROM MUD-BOTTOMED SLOUGHS.
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Last Date Observed: 1978-03-XX	Occurrence Type: Natural/Native occurrence
Last Survey Date: 1978-03-XX	Occurrence Rank: Unknown
Owner/Manager: UNKNOWN	Trend: Unknown
Presence: Presumed Extant	

Location:
ELKHORN SLOUGH.
Detailed Location:
BETWEEN KIRBY PARK AND HWY 1.

Ecological:
Threats:

General:
 SEVERAL OBSERVED 1966-1969, NORTH OF KIRBY PARK (INCLUDES ADULTS WITH YOUNG). NONE NORTH OF KIRBY PARK IN 1972. RESIDENT POPULATION ESTIMATED TO BE 14 IN 1972. NONE OBS AT HIGH TIDE DURNG DEC '77 AND APR '78. 1 BIRD OBS IN MARCH 1978.

PLSS: T13S, R02E, Sec. 10 (M)	Accuracy: nonspecific area	Area (acres): 1,668
UTM: Zone-10 N4075356 E612102	Latitude/Longitude: 36.81742 / -121.74310	Elevation (feet):

County Summary: Monterey	Quad Summary: Prunedale (3612176), Moss Landing (3612177)
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Sources:
 GIL79A0001 GILL, JR., R. - STATUS AND DISTRIBUTION OF THE CALIFORNIA CLAPPER RAIL. FISH AND GAME 65(1):36-49. 1979-XX-XX



Occurrence Report
California Department of Fish and Wildlife
California Natural Diversity Database



Map Index Number:	10589	EO Index:	25451
Key Quad:	Prunedale (3612176)	Element Code:	ABNSB10010
Occurrence Number:	69	Occurrence Last Updated:	2007-07-12

Scientific Name:	<i>Athene cucularia</i>	Common Name:	burrowing owl
Listing Status:	Federal: None State: None	Rare Plant Rank:	
CNDDDB Element Ranks:	Global: G4 State: S3	Other Lists:	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFWS_BCC-Birds of Conservation Concern

General Habitat:	Micro Habitat:
OPEN, DRY ANNUAL OR PERENNIAL GRASSLANDS, DESERTS & SCRUBLANDS CHARACTERIZED BY LOW-GROWING VEGETATION.	SUBTERRANEAN NESTER, DEPENDENT UPON BURROWING MAMMALS, MOST NOTABLY, THE CALIFORNIA GROUND SQUIRREL.

Last Date Observed:	1983-02-11	Occurrence Type:	Natural/Native occurrence
Last Survey Date:	1983-02-11	Occurrence Rank:	Unknown
Owner/Manager:	UNKNOWN	Trend:	Unknown
Presence:	Presumed Extant		

Location:
DOLAN ROAD, ABOUT 2 MILES NORTH OF CASTROVILLE.

Detailed Location:
UNKNOWN WHERE SEEN ALONG ROAD, SO ENTIRE ROAD MAPPED AT CNDDDB.

Ecological:
Threats:

General:
8 IN ONE GROUP OBSERVED ON 11 FEB 1983; OWLS ARE FREQUENTLY OBSERVED HERE, BUT PREVIOUSLY NEVER MORE THAN 4 AT ONE TIME.

PLSS:	T13S, R02E, Sec. 16 (M)	Accuracy:	nonspecific area	Area (acres):	233
UTM:	Zone-10 N4073017 E611480	Latitude/Longitude:	36.79641 / -121.75042	Elevation (feet):	60

County Summary:	Quad Summary:
Monterey	Prunedale (3612176), Moss Landing (3612177)

Sources:

JOH88U0001	JOHNSON, B. - JOHNSON'S PERSONAL DATA FOR BURROWING OWL. 1988-10-XX
SCH83U0002	SCHARFENSTEIN, B. - LETTER TO RON LEVALLEY, DESCRIBING A BURROWING OWL COLONY ALONG DOLAN ROAD, MONTEREY COUNTY. 1983-03-11



Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database



Map Index Number: 10655	EO Index: 23882
Key Quad: Prunedale (3612176)	Element Code: AMAFF02032
Occurrence Number: 3	Occurrence Last Updated: 2006-01-30

Scientific Name: <i>Reithrodontomys megalotis distichlis</i>	Common Name: Salinas harvest mouse
Listing Status:	Rare Plant Rank:
Federal: None	
State: None	Other Lists:
CNDDDB Element Ranks:	
Global: G5T1	
State: S1	

General Habitat: KNOWN ONLY FROM THE MONTEREY BAY REGION.	Micro Habitat: OCCURS IN FRESH AND BRACKISH WATER WETLANDS AND PROBABLY IN THE ADJACENT UPLANDS AROUND THE MOUTH OF THE SALINAS RIVER.
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Last Date Observed: 1937-06-03	Occurrence Type: Natural/Native occurrence
Last Survey Date: 1937-06-03	Occurrence Rank: Unknown
Owner/Manager: UNKNOWN	Trend: Unknown
Presence: Presumed Extant	

Location:
STRAWBERRY CANYON.

Detailed Location:
LAT-LONG GIVEN BY MVZ IS AT THE MOUTH OF STRAWBERRY CANYON WITH A 1 KM MAXIMUM ERROR.

Ecological:
Threats:

General:
MVZ #108423 (MALE) COLLECTED 3 JUN 1937.

PLSS: T13S, R02E, Sec. 03 (M)	Accuracy: nonspecific area	Area (acres): 218
UTM: Zone-10 N4076525 E613161	Latitude/Longitude: 36.82783 / -121.73105	Elevation (feet): 200

County Summary: Monterey	Quad Summary: Prunedale (3612176)
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Sources:

MVZ06S0002	MUSEUM OF VERTEBRATE ZOOLOGY (UNIVERSITY OF CALIFORNIA, BERKELEY) - PRINTOUT OF MVZ SPECIMEN RECORDS FOR REITHRODONTOMYS MEGALOTIS DISTICHLIS. 2006-01-30
VON37S0003	VON BLOEKER, J.C. - MVZ #108423 1937-06-03



Occurrence Report
California Department of Fish and Wildlife
California Natural Diversity Database



Map Index Number:	72498	EO Index:	69633
Key Quad:	Prunedale (3612176)	Element Code:	ARAAD02030
Occurrence Number:	1164	Occurrence Last Updated:	2008-10-09

Scientific Name:	<i>Emys marmorata</i>	Common Name:	western pond turtle
Listing Status:	Federal: None State: None	Rare Plant Rank:	
CNDDDB Element Ranks:	Global: G3G4 State: S3	Other Lists:	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_VU-Vulnerable USFS_S-Sensitive

General Habitat:

A THOROUGHLY AQUATIC TURTLE OF PONDS, MARSHES, RIVERS, STREAMS & IRRIGATION DITCHES, USUALLY WITH AQUATIC VEGETATION, BELOW 6000 FT ELEVATION.

Micro Habitat:

NEED BASKING SITES AND SUITABLE (SANDY BANKS OR GRASSY OPEN FIELDS) UPLAND HABITAT UP TO 0.5 KM FROM WATER FOR EGG-LAYING.

Last Date Observed:	2006-05-17	Occurrence Type:	Natural/Native occurrence
Last Survey Date:	2006-05-17	Occurrence Rank:	Excellent
Owner/Manager:	PVT	Trend:	Unknown
Presence:	Presumed Extant		

Location:

0.8 MILE NW OF THE INTERSECTION OF BLACKIE ROAD AND HIGHWAY 156, JUST WEST OF PRUNEDALE.

Detailed Location:

NATURAL WETLANDS ARE LIKELY ENHANCED BY BERMS AT THE DOWNSTREAM END.

Ecological:

HABITAT CONSISTS OF A LARGE FRESHWATER MARSH WITH OPEN-WATER; WATER DEPTH <4'. WILLOWS GROW ALONG THE SHORELINE, SUBMERGENT AQUATICS ABUNDANT, AND RUDERAL SPECIES ARE DENSE ALONG BERMS.

Threats:**General:**

AQUATIC SURVEYS WERE CONDUCTED ON 17 APR, 19 APR, 4 MAY, AND 17 MAY 2006; ONE TURTLE OBSERVED DURING RECONNAISSANCE ON 5 MAY AND ONE ON 17 MAY 2006 DURING CTS SAMPLING.

PLSS: T13S, R03E, Sec. 19 (M)	Accuracy: 80 meters	Area (acres): 0
UTM: Zone-10 N4071432 E618070	Latitude/Longitude: 36.78134 / -121.67682	Elevation (feet): 90

County Summary:

Monterey

Quad Summary:

Prunedale (3612176)

Sources:

MOR06F0017 MORI, B. - FIELD SURVEY FORM FOR ACTINEMYS (=EMYS) MARMORATA PALLIDA 2006-05-05



Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database



Map Index Number: 70796

EO Index: 71708

Key Quad: Prunedale (3612176)

Element Code: ARAAD02030

Occurrence Number: 1189

Occurrence Last Updated: 2008-02-08

Scientific Name: *Emys marmorata*

Common Name: western pond turtle

Listing Status: **Federal:** None

Rare Plant Rank:

State: None

Other Lists: BLM_S-Sensitive
CDFW_SSC-Species of Special Concern
IUCN_VU-Vulnerable
USFS_S-Sensitive

CNDDDB Element Ranks: **Global:** G3G4

State: S3

General Habitat:

A THOROUGHLY AQUATIC TURTLE OF PONDS, MARSHES, RIVERS, STREAMS & IRRIGATION DITCHES, USUALLY WITH AQUATIC VEGETATION, BELOW 6000 FT ELEVATION.

Micro Habitat:

NEED BASKING SITES AND SUITABLE (SANDY BANKS OR GRASSY OPEN FIELDS) UPLAND HABITAT UP TO 0.5 KM FROM WATER FOR EGG-LAYING.

Last Date Observed: 2007-05-16

Occurrence Type: Natural/Native occurrence

Last Survey Date: 2007-05-16

Occurrence Rank: Fair

Owner/Manager: PVT

Trend: Unknown

Presence: Presumed Extant

Location:

0.6 MI NORTH OF THE JUNCTION OF SAN JUAN ROAD AND HIGHWAY 101, 5 MILES WNW OF SAN JUAN BAUTISTA.

Detailed Location:

Ecological:

ARTIFICIAL POND BERMED IN SWALE. 50X185 FT, 3.5 FT DEEP. WATER TURBID. OPEN WATER HABITAT PROMINENT. EMERGENT VEGETATION: SMALL PATCH OF SCIRPUS, FEW PATCHES OF POLYGONUM. UPLAND HABITAT MOSAIC OF OAK WOODLANDS, FEW PATCHES ANNUAL GRASSLAND.

Threats:

General:

ONE 5 INCH POND TURTLE OBSERVED ON 16 MAY 2007. LOUISIANA CRAYFISH AND GAMBUSIA ABUNDANT. ABOUT 1 DOZEN BULLFROG SUB-ADULTS PRESENT - NO TADPOLES CAPTURED. CURRENT/SURROUNDING LAND USE IS MAINLY RANCHETTES.

PLSS: T12S, R03E, Sec. 27 (M)

Accuracy: 80 meters

Area (acres): 0

UTM: Zone-10 N4080697 E622017

Latitude/Longitude: 36.86433 / -121.63111

Elevation (feet): 220

County Summary:

San Benito

Quad Summary:

Prunedale (3612176)

Sources:

MOR07F0026 MORI, B. - FIELD SURVEY FORM FOR ACTINEMYS MARMORATA PALLIDA 2007-05-16



Occurrence Report
California Department of Fish and Wildlife
California Natural Diversity Database



Map Index Number:	70862	EO Index:	71747
Key Quad:	Prunedale (3612176)	Element Code:	ARAAD02030
Occurrence Number:	1190	Occurrence Last Updated:	2008-02-26

Scientific Name:	<i>Emys marmorata</i>	Common Name:	western pond turtle
Listing Status:	Federal: None State: None	Rare Plant Rank:	
CNDDDB Element Ranks:	Global: G3G4 State: S3	Other Lists:	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_VU-Vulnerable USFS_S-Sensitive

General Habitat:	Micro Habitat:
A THOROUGHLY AQUATIC TURTLE OF PONDS, MARSHES, RIVERS, STREAMS & IRRIGATION DITCHES, USUALLY WITH AQUATIC VEGETATION, BELOW 6000 FT ELEVATION.	NEED BASKING SITES AND SUITABLE (SANDY BANKS OR GRASSY OPEN FIELDS) UPLAND HABITAT UP TO 0.5 KM FROM WATER FOR EGG-LAYING.

Last Date Observed:	2001-07-17	Occurrence Type:	Natural/Native occurrence
Last Survey Date:	2001-07-17	Occurrence Rank:	Good
Owner/Manager:	CITY OF PRUNEDALE	Trend:	Unknown
Presence:	Presumed Extant		

Location:
 ALONG STREAM, 0.25 MILE SOUTH THE JUNCTION OF SAN MIGUEL CANYON RD AND HIGHWAY 101, WEST OF HIGHWAY 101, N OF PRUNEDALE.

Detailed Location:
 LOCATION MAPPED ACCORDING TO COORDINATES.

Ecological:
 HABITAT CONSISTS OF A STREAMBED WITH RIPARIAN VEGETATION. CURRENT SURROUNDING LAND USE IS URBAN AND COMMERCIAL.

Threats:
General:
 1 ADULT OBSERVED ON 17 JUL 2001.

PLSS: T13S, R03E, Sec. 17 (M)	Accuracy: 80 meters	Area (acres): 0
UTM: Zone-10 N4073084 E618954	Latitude/Longitude: 36.79611 / -121.66666	Elevation (feet): 120

County Summary:	Quad Summary:
Monterey	Prunedale (3612176)

Sources:
 SMA01F0023 SMALLWOOD, S. - FIELD SURVEY FORM FOR ACTINEMYS MARMORATA PALLIDA 2001-07-17



Occurrence Report
California Department of Fish and Wildlife
California Natural Diversity Database



Map Index Number: 10718	EO Index: 25356
Key Quad: Prunedale (3612176)	Element Code: CTT37C20CA
Occurrence Number: 1	Occurrence Last Updated: 1998-07-14

Scientific Name: <i>Central Maritime Chaparral</i>	Common Name: Central Maritime Chaparral
Listing Status:	Rare Plant Rank:
Federal: None	
State: None	Other Lists:
CNDDDB Element Ranks:	
Global: G2	
State: S2.2	

General Habitat: **Micro Habitat:**

Last Date Observed: 1980-XX-XX	Occurrence Type: Natural/Native occurrence
Last Survey Date: 1980-XX-XX	Occurrence Rank: Unknown
Owner/Manager: UNKNOWN	Trend: Unknown
Presence: Presumed Extant	

Location:
LONG VALLEY, 5 MILES NORTHEAST OF CASTROVILLE OR 1 MILE EAST OF ELKHORN.

Detailed Location:
MAPPED NEAR THE MIDDLE OF LONG CANYON.

Ecological:
GOOD STANDS OF THE ENDEMICS, ARCTOSTAPHYLOS PAJAROENSIS, A. HOOKERI AND CEANOTHUS RIGIDUS.

Threats:
THREATS INCLUDE AGRICULTURE AND RESIDENTIAL DEVELOPMENT.

General:
WORTHY OF PRESERVATION PER GRIGGS. SOME OF THIS OCCURRENCE IS WITHIN MANZANITA REGIONAL PARK. SEE WWW.DFG.CA.GOV/BIOGEODATA/VEGCAMP/NATURAL_COMM_BACKGROUND.ASP TO INTERPRET AND ADDRESS THE PRESENCE OF RARE COMMUNITIES.

PLSS: T13S, R02E, Sec. 12 (M)	Accuracy: 1 mile	Area (acres): 0
UTM: Zone-10 N4075808 E615859	Latitude/Longitude: 36.82105 / -121.70093	Elevation (feet): 200

County Summary:	Quad Summary:
Monterey	Prunedale (3612176)

Sources:

GRI78A0001	GRIFFIN, J.R. - MARITIME CHAPARRAL AND ENDEMIC SHRUBS OF THE MONTEREY BAY REGION, CA. MADRONO 25:65-112. 1978-XX-XX
GRI80R0003	GRIGGS, T. - ELEMENT PRESERVATION PLAN, MARITIME CHAPARRAL. 1980-XX-XX



Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database



Map Index Number: 10600	EO Index: 16139
Key Quad: Prunedale (3612176)	Element Code: CTT52110CA
Occurrence Number: 29	Occurrence Last Updated: 1998-07-20

Scientific Name: <i>Northern Coastal Salt Marsh</i>	Common Name: Northern Coastal Salt Marsh
Listing Status:	Rare Plant Rank:
Federal: None	
State: None	Other Lists:
CNDDDB Element Ranks:	
Global: G3	
State: S3.2	

General Habitat: _____ **Micro Habitat:** _____

Last Date Observed: 1972-11-XX	Occurrence Type: Natural/Native occurrence
Last Survey Date: 1972-11-XX	Occurrence Rank: Unknown
Owner/Manager: STATE?	Trend: Unknown
Presence: Presumed Extant	

Location:
ELKHORN SLOUGH AT MOSS LANDING.

Detailed Location:
ONLY USFWS E2EMN WETLAND WAS MAPPED.

Ecological:
312 HA SALT MARSH DOMINATED BY SALICORNIA; ASSOC W/EUSALINE LAGOON.

Threats:
HARBOR FACILITY AT MOUTH; HISTORY OF DAIRY OPS.

General:
PARTIALLY OWNED BY STATE; ESTUARINE SANCTUARY. SEE WWW.DFG.CA.GOV/BIOGEODATA/VEGCAMP/NATURAL_COMM_BACKGROUND.ASP TO INTERPRET AND ADDRESS THE PRESENCE OF RARE COMMUNITIES.

PLSS: T13S, R02E, Sec. 03 (M)	Accuracy: specific area	Area (acres): 1,199
UTM: Zone-10 N4077307 E611992	Latitude/Longitude: 36.83503 / -121.74406	Elevation (feet):

County Summary:	Quad Summary:
Monterey	Prunedale (3612176), Moss Landing (3612177)

Sources:

BRO72R0001	BROWNING, B.M. - THE NATURAL RESOURCES OF ELKHORN SLOUGH: THEIR PRESENT AND FUTURE USE. CALIFORNIA DEPT. OF FISH & GAME COASTAL WETLANDS SERIES REPORT #4, 1972. 1972-XX-XX
FWS81M0003	U.S. FISH & WILDLIFE SERVICE - NATIONAL WETLANDS INVENTORY (USGS 15' AND 7 1/2' MAPS). 1981-XX-XX



Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database



Map Index Number: 10594	EO Index: 16095	
Key Quad: Prunedale (3612176)	Element Code: CTT52200CA	
Occurrence Number: 26	Occurrence Last Updated: 1998-07-16	

Scientific Name: <i>Coastal Brackish Marsh</i>	Common Name: Coastal Brackish Marsh
Listing Status:	Rare Plant Rank:
Federal: None	
State: None	Other Lists:
CNDDDB Element Ranks:	
Global: G2	
State: S2.1	

General Habitat:	Micro Habitat:
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Last Date Observed: 1985-11-16	Occurrence Type: Natural/Native occurrence
Last Survey Date: 1985-11-16	Occurrence Rank: Unknown
Owner/Manager: PVT	Trend: Unknown
Presence: Presumed Extant	

Location:
MORO COJO SLOUGH, 2 MILES NORTH OF CASTROVILLE.

Detailed Location:

Ecological:
SCIRPUS, TYPHA & JUNCUS DOMINANT W/TRANSITION FROM SALT MARSH IN LOWER PORTION; SOME SEASONAL MARSH.

Threats:
UPLAND AREAS GRAZED.

General:
SEE WWW.DFG.CA.GOV/BIOGEODATA/VEGCAMP/NATURAL_COMM_BACKGROUND.ASP TO INTERPRET AND ADDRESS THE PRESENCE OF RARE COMMUNITIES.

PLSS: T13S, R02E, Sec. 21 (M)	Accuracy: specific area	Area (acres): 449
UTM: Zone-10 N4072053 E611246	Latitude/Longitude: 36.78776 / -121.75319	Elevation (feet): 15

County Summary:	Quad Summary:
Monterey	Prunedale (3612176), Moss Landing (3612177)

Sources:

HOL85F0098	HOLLAND, R.F. - FIELD SURVEY FORM FOR COASTAL BRACKISH MARSH (NC52200) 1985-11-16
HOO77R0001	HOOD, L. - INVENTORY OF CALIFORNIA NATURAL AREAS, CNACC 1977-XX-XX
USF82M0001	U.S. FISH & WILDLIFE SERVICE - NATIONAL WETLAND SURVEY MAPS. 1982-XX-XX



Occurrence Report
California Department of Fish and Wildlife
California Natural Diversity Database



Map Index Number:	10618	EO Index:	23210
Key Quad:	Prunedale (3612176)	Element Code:	IMGASJ7040
Occurrence Number:	17	Occurrence Last Updated:	2012-03-07

Scientific Name:	<i>Tryonia imitator</i>	Common Name:	mimic tryonia (=California brackishwater snail)
Listing Status:	Federal: None State: None	Rare Plant Rank:	
CNDDB Element Ranks:	Global: G2 State: S2	Other Lists:	IUCN_DD-Data Deficient

General Habitat:

INHABITS COASTAL LAGOONS, ESTUARIES AND SALT MARSHES, FROM SONOMA COUNTY SOUTH TO SAN DIEGO COUNTY.

Micro Habitat:

FOUND ONLY IN PERMANENTLY SUBMERGED AREAS IN A VARIETY OF SEDIMENT TYPES; ABLE TO WITHSTAND A WIDE RANGE OF SALINITIES.

Last Date Observed:	2007-XX-XX	Occurrence Type:	Natural/Native occurrence
Last Survey Date:	2008-04-XX	Occurrence Rank:	Unknown
Owner/Manager:	DFG-ELKHORN SLOUGH ER	Trend:	Unknown
Presence:	Presumed Extant		

Location:

PARSONS SLOUGH, ON THE SOUTHEAST EDGE OF ELKHORN SLOUGH, ABOUT 3 MILES NORTH OF CASTROVILLE.

Detailed Location:**Ecological:**

WELL FLUSHED WETLAND WITH NO CULVERTS CONSTRAINING TIDAL FLOW.

Threats:**General:**

1982: LIVING POPULATION FOUND IN KELLOGG'S STUDY. ONE FOUND AT 1 OF 4 SAMPLING STATIONS DURING 14 AUG TO 4 SEP 2007 SAMPLING PERIOD; NONE FOUND DURING FOLLOWING SAMPLING PERIOD IN APRIL 2008.

PLSS: T13S, R02E, Sec. 10 (M)	Accuracy: 1/5 mile	Area (acres): 0
UTM: Zone-10 N4074519 E612187	Latitude/Longitude: 36.80987 / -121.74227	Elevation (feet): 4

County Summary:

Monterey

Quad Summary:

Prunedale (3612176)

Sources:

- KEL85R0001 KELLOGG, M.G. (SAN FRANCISCO STATE UNIVERSITY) - CONTRIBUTIONS TO OUR KNOWLEDGE OF TRYONIA IMITATOR. MASTER'S THESIS, SAN FRANCISCO STATE UNIVERSITY. 1985-12-XX
- KEL88U0002 KELLOGG, M. (CALIFORNIA ACADEMY OF SCIENCES) - LETTER AND THESIS TABLE 2 INDICATING LOCATIONS AND STATUS OF TRYONIA IMITATOR. 1988-08-12
- MOO88U0001 MOORE, K. (CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE) - INFO CONCERNING ELKHORN SLOUGH 1988-08-XX
- NYB88U0001 NYBAKKEN, J. - PHONE CONVERSATION CONCERNING TRYONIA IMITATOR, MOSS LANDING MARINE LAB. 1988-08-08
- OLI09R0001 OLIVER, J.S. ET AL. (MOSS LANDING MARINE LAB) - BENTHIC INVERTEBRATE COMMUNITIES IN THE PERIPHERAL WETLANDS OF ELKHORN SLOUGH RANGING FROM VERY RESTRICTED TO WELL FLUSHED BY TIDES. 2009-07-29



Occurrence Report
California Department of Fish and Wildlife
California Natural Diversity Database



Map Index Number:	10583	EO Index:	23209
Key Quad:	Moss Landing (3612177)	Element Code:	IMGASJ7040
Occurrence Number:	19	Occurrence Last Updated:	2012-02-23

Scientific Name:	<i>Tryonia imitator</i>	Common Name:	mimic tryonia (=California brackishwater snail)
Listing Status:	Federal: None State: None	Rare Plant Rank:	
CNDDB Element Ranks:	Global: G2 State: S2	Other Lists:	IUCN_DD-Data Deficient

General Habitat:
 INHABITS COASTAL LAGOONS, ESTUARIES AND SALT MARSHES, FROM SONOMA COUNTY SOUTH TO SAN DIEGO COUNTY.

Micro Habitat:
 FOUND ONLY IN PERMANENTLY SUBMERGED AREAS IN A VARIETY OF SEDIMENT TYPES; ABLE TO WITHSTAND A WIDE RANGE OF SALINITIES.

Last Date Observed:	2008-04-XX	Occurrence Type:	Natural/Native occurrence
Last Survey Date:	2008-04-XX	Occurrence Rank:	Unknown
Owner/Manager:	TNC, UNKNOWN	Trend:	Unknown
Presence:	Presumed Extant		

Location:
 PORTER MARSH, AKA ELKHORN SLOUGH HUDSONS LANDING, ABOUT 4 MI NNE OF MOSS LANDING.

Detailed Location:

Ecological:
 HABITAT IS BRACKISH-WATER MARSH DOMINATED BY SALICORNIA. VERY RESTRICTED TIDAL REGIME.

Threats:

General:

1979: ONLY EMPTY, BUT FRESH-APPEARING SHELLS FOUND. ONE FOUND AT 1 OF 4 STATIONS DURING 14 AUG TO 4 SEP 2007 SAMPLING PERIOD; 7 FOUND AT 3 OF 4 STATIONS DURING 4-24 APR 2008 SAMPLING PERIOD.

PLSS:	T12S, R02E, Sec. 28 (M)	Accuracy:	1/5 mile	Area (acres):	0
UTM:	Zone-10 N4079593 E611131	Latitude/Longitude:	36.85573 / -121.75337	Elevation (feet):	10

County Summary:

Monterey

Quad Summary:

Prunedale (3612176), Moss Landing (3612177)

Sources:

- KEL85R0001 KELLOGG, M.G. (SAN FRANCISCO STATE UNIVERSITY) - CONTRIBUTIONS TO OUR KNOWLEDGE OF TRYONIA IMITATOR. MASTER'S THESIS, SAN FRANCISCO STATE UNIVERSITY. 1985-12-XX
- KEL88U0002 KELLOGG, M. (CALIFORNIA ACADEMY OF SCIENCES) - LETTER AND THESIS TABLE 2 INDICATING LOCATIONS AND STATUS OF TRYONIA IMITATOR. 1988-08-12
- LIG75A0001 SMITH, R.I. & J.T. CARLTON - PAGE 504 OF LIGHT'S MANUAL: INTERTIDAL INVERTEBRATES OF THE CENTRAL CALIFORNIA COAST - THIRD EDITION. 1975-XX-XX
- MOO88U0001 MOORE, K. (CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE) - INFO CONCERNING ELKHORN SLOUGH 1988-08-XX
- OLI09R0001 OLIVER, J.S. ET AL. (MOSS LANDING MARINE LAB) - BENTHIC INVERTEBRATE COMMUNITIES IN THE PERIPHERAL WETLANDS OF ELKHORN SLOUGH RANGING FROM VERY RESTRICTED TO WELL FLUSHED BY TIDES. 2009-07-29



Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database



Map Index Number: 85159

EO Index: 86179

Key Quad: Prunedale (3612176)

Element Code: IMGASJ7040

Occurrence Number: 37

Occurrence Last Updated: 2012-12-05

Scientific Name: *Tryonia imitator*

Common Name: mimic tryonia (=California brackishwater snail)

Listing Status: **Federal:** None

Rare Plant Rank:

State: None

Other Lists: IUCN_DD-Data Deficient

CNDDDB Element Ranks: **Global:** G2

State: S2

General Habitat:

INHABITS COASTAL LAGOONS, ESTUARIES AND SALT MARSHES, FROM SONOMA COUNTY SOUTH TO SAN DIEGO COUNTY.

Micro Habitat:

FOUND ONLY IN PERMANENTLY SUBMERGED AREAS IN A VARIETY OF SEDIMENT TYPES; ABLE TO WITHSTAND A WIDE RANGE OF SALINITIES.

Last Date Observed: 2007-XX-XX

Occurrence Type: Natural/Native occurrence

Last Survey Date: 2007-XX-XX

Occurrence Rank: Unknown

Owner/Manager: DFG-ELKHORN SLOUGH ER

Trend: Unknown

Presence: Presumed Extant

Location:

ESTRADA MARSH, BETWEEN ELKHORN SLOUGH AND ELKHORN RD AND SOUTH OF KIRBY RD. ELKHORN SLOUGH ECOLOGICAL RESERVE.

Detailed Location:

SAMPLES TAKEN FROM THE SOUTHERN END OF THE MARSH.

Ecological:

SALINITY WAS 47% IN SUMMER 2007. WATER WAS ONLY 30 CM DEEP. EXTENSIVE PATCHES OF DECAYING GREEN ALGAL MATS IN A MOSAIC OF PICKLEWEED WHICH FRINGED THE ENTIRE MARSH. VERY RESTRICTED TIDAL REGIME.

Threats:

General:

5 COLLECTED AT 1 OF 4 STATIONS BETWEEN 14 AUG & 4 SEP 2007; NONE COLLECTED IN APR 2008 OF SAME STUDY.

PLSS: T12S, R02E, Sec. 34 (M)

Accuracy: specific area

Area (acres): 10

UTM: Zone-10 N4077703 E612477

Latitude/Longitude: 36.83853 / -121.73856

Elevation (feet): 12

County Summary:

Monterey

Quad Summary:

Prunedale (3612176)

Sources:

OLI09R0001 OLIVER, J.S. ET AL. (MOSS LANDING MARINE LAB) - BENTHIC INVERTEBRATE COMMUNITIES IN THE PERIPHERAL WETLANDS OF ELKHORN SLOUGH RANGING FROM VERY RESTRICTED TO WELL FLUSHED BY TIDES. 2009-07-29



Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database



Map Index Number: 10753	EO Index: 16529
Key Quad: Prunedale (3612176)	Element Code: PDAST3L080
Occurrence Number: 14	Occurrence Last Updated: 2007-01-29

Scientific Name: <i>Ericameria fasciculata</i>	Common Name: Eastwood's goldenbush
Listing Status:	Rare Plant Rank: 1B.1
Federal: None	Other Lists: BLM_S-Sensitive
State: None	
CNDDB Element Ranks:	
Global: G2	
State: S2	

General Habitat: CLOSED-CONE CONIFEROUS FOREST, CHAPARRAL (MARITIME), COASTAL SCRUB, COASTAL DUNES.	Micro Habitat: IN SANDY OPENINGS. 30-275 M.
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Last Date Observed: 1987-09-27	Occurrence Type: Natural/Native occurrence
Last Survey Date: 1987-09-27	Occurrence Rank: Unknown
Owner/Manager: MNT COUNTY	Trend: Unknown
Presence: Presumed Extant	

Location:
MANZANITA COUNTY PARK, NORTHWEST OF PRUNEDALE.

Detailed Location:
6 PLANTS S OF CASTROVILLE BLVD, 0.9 AIR MI SW OF INTERSECTION WITH SAN MIGUEL CANYON RD.

Ecological:
ON VERY SANDY SOIL IN MARITIME CHAPARRAL ASSOCIATED WITH ARCTOSTAPHYLOS, CEANOTHUS AND ADENOSTOMA.

Threats:
NO IMMEDIATE THREATS, BUT WITHIN PARK ARE RIDING TRAILS, SOCCER FIELDS, ETC, NEARBY.

General:
6 PLANTS OBSERVED IN 1987.

PLSS: T13S, R03E, Sec. 18 (M)	Accuracy: specific area	Area (acres): 4
UTM: Zone-10 N4073479 E617293	Latitude/Longitude: 36.79988 / -121.68521	Elevation (feet): 260

County Summary:	Quad Summary:
Monterey	Prunedale (3612176)

Sources:

GRI77U0013	GRIFFIN, J. - CNPS RARE PLANT STATUS REPORT 1977-XX-XX
PIT87F0002	PITTMAN, J. - FIELD SURVEY FORM FOR ERICAMERIA FASCICULATA 1987-09-27



Occurrence Report
California Department of Fish and Wildlife
California Natural Diversity Database



Map Index Number:	10773	EO Index:	16525
Key Quad:	Prunedale (3612176)	Element Code:	PDAST3L080
Occurrence Number:	19	Occurrence Last Updated:	2007-01-29

Scientific Name:	<i>Ericameria fasciculata</i>	Common Name:	Eastwood's goldenbush
Listing Status:	Federal: None State: None	Rare Plant Rank:	1B.1
CNDDB Element Ranks:	Global: G2 State: S2	Other Lists:	BLM_S-Sensitive

General Habitat:	Micro Habitat:
CLOSED-CONE CONIFEROUS FOREST, CHAPARRAL (MARITIME), COASTAL SCRUB, COASTAL DUNES.	IN SANDY OPENINGS. 30-275 M.

Last Date Observed:	1987-09-27	Occurrence Type:	Natural/Native occurrence
Last Survey Date:	1987-09-27	Occurrence Rank:	Unknown
Owner/Manager:	MNT COUNTY	Trend:	Unknown
Presence:	Presumed Extant		

Location:
 MANZANITA COUNTY PARK, NORTHWEST OF PRUNEDALE.

Detailed Location:
 5 PLANTS S OF CASTROVILLE BLVD, 0.2 AIR MI SW OF INTERSECTION WITH SAN MIGUEL CANYON RD.

Ecological:
 ON VERY SANDY SOIL IN MARITIME CHAPARRAL ASSOCIATED WITH ARCTOSTAPHYLOS, CEANOTHUS, AND ADENOSTOMA.

Threats:
 POTENTIAL THREATS INCLUDE PARK RIDING TRAILS, SOCCER FIELDS, ETC.

General:
 5 PLANTS OBSERVED IN 2 SUBPOPULATIONS IN 1987.

PLSS:	T13S, R03E, Sec. 18 (M)	Accuracy:	specific area	Area (acres):	5
UTM:	Zone-10 N4074145 E618209	Latitude/Longitude:	36.80577 / -121.67483	Elevation (feet):	420

County Summary:	Quad Summary:
Monterey	Prunedale (3612176)

Sources:
 PIT87F0002 PITTMAN, J. - FIELD SURVEY FORM FOR ERICAMERIA FASCICULATA 1987-09-27



Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database



Map Index Number: 10775	EO Index: 16523	
Key Quad: Prunedale (3612176)	Element Code: PDAST3L080	
Occurrence Number: 20	Occurrence Last Updated: 2007-03-06	

Scientific Name: <i>Ericameria fasciculata</i>	Common Name: Eastwood's goldenbush
Listing Status:	Rare Plant Rank: 1B.1
Federal: None	Other Lists: BLM_S-Sensitive
State: None	
CNDDB Element Ranks:	
Global: G2	
State: S2	

General Habitat: CLOSED-CONE CONIFEROUS FOREST, CHAPARRAL (MARITIME), COASTAL SCRUB, COASTAL DUNES.	Micro Habitat: IN SANDY OPENINGS. 30-275 M.
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Last Date Observed: 1987-09-27	Occurrence Type: Natural/Native occurrence
Last Survey Date: 1987-09-27	Occurrence Rank: Unknown
Owner/Manager: MNT COUNTY	Trend: Unknown
Presence: Presumed Extant	

Location:
MANZANITA COUNTY PARK, NORTHWEST OF PRUNEDALE.

Detailed Location:
PLANTS LOCATED S OF CASTROVILLE BLVD, 0.6 AIR MI SSW OF INTERSECTION WITH SAN MIGUEL CANYON RD.

Ecological:
IN VERY SANDY SOIL IN MARITIME CHAPARRAL ASSOCIATED WITH ARCTOSTAPHYLOS, CEANOTHUS, AND ADENOSTOMA.

Threats:
POTENTIAL THREATS INCLUDE PARK RIDING TRAILS, SOCCER FIELDS, ETC.

General:
5 PLANTS OBSERVED IN 1987.

PLSS: T13S, R03E, Sec. 18 (M)	Accuracy: 80 meters	Area (acres): 0
UTM: Zone-10 N4073325 E618250	Latitude/Longitude: 36.79837 / -121.67450	Elevation (feet): 340

County Summary:	Quad Summary:
Monterey	Prunedale (3612176)

Sources:
PIT87F0002 PITTMAN, J. - FIELD SURVEY FORM FOR ERICAMERIA FASCICULATA 1987-09-27



Occurrence Report
California Department of Fish and Wildlife
California Natural Diversity Database



Map Index Number: 67927	EO Index: 68072
Key Quad: Prunedale (3612176)	Element Code: PDAST3L080
Occurrence Number: 21	Occurrence Last Updated: 2007-02-14

Scientific Name: <i>Ericameria fasciculata</i>	Common Name: Eastwood's goldenbush
Listing Status:	Rare Plant Rank: 1B.1
Federal: None	Other Lists: BLM_S-Sensitive
State: None	
CNDDB Element Ranks:	
Global: G2	
State: S2	

General Habitat:	Micro Habitat:
CLOSED-CONE CONIFEROUS FOREST, CHAPARRAL (MARITIME), COASTAL SCRUB, COASTAL DUNES.	IN SANDY OPENINGS. 30-275 M.

Last Date Observed: 2005-12-09	Occurrence Type: Natural/Native occurrence
Last Survey Date: 2005-12-09	Occurrence Rank: Fair
Owner/Manager: PVT	Trend: Unknown
Presence: Presumed Extant	

Location:
0.7 MILES NORTHEAST OF PRUNEDALE.

Detailed Location:
2 COLONIES: ONE POPULATION SOUTH OF BERTA RIDGE COURT, NORTH OF CARLSON RD. ANOTHER POPULATION WEST OF EDEN PATH.

Ecological:
MARITIME CHAPARRAL ON SANDSTONE OUTCROPPINGS ALONG RIDGELINES AND S-FACING SLOPES. DOMINANT SPECIES IS THE RARE ARCTOSTAPHYLOS PAJAROENSIS.

Threats:
FRAGMENTATION DUE TO DEVELOPMENT; ENCROACHMENT OF INTRODUCED PLANTS; LACK OF FIRE.

General:
15 PLANTS OBSERVED IN 2005.

PLSS: T13S, R03E, Sec. 20 (M)	Accuracy: specific area	Area (acres): 7
UTM: Zone-10 N4072074 E619817	Latitude/Longitude: 36.78690 / -121.65714	Elevation (feet): 321

County Summary:	Quad Summary:
Monterey	Prunedale (3612176)

Sources:
MOR05F0013 MORI, B. - FIELD SURVEY FORM FOR LOMATIUM PARVIFOLIUM & ERICAMERIA FASCICULATA & ARCTOSTAPHYLOS PAJAROENSIS & PIPERIA YADONII & PIPERIA MICHAELII 2005-12-09



Occurrence Report
California Department of Fish and Wildlife
California Natural Diversity Database



Map Index Number:	67836	EO Index:	68144
Key Quad:	Prunedale (3612176)	Element Code:	PDAST3L080
Occurrence Number:	25	Occurrence Last Updated:	2007-02-14

Scientific Name:	<i>Ericameria fasciculata</i>	Common Name:	Eastwood's goldenbush
Listing Status:	Federal: None State: None	Rare Plant Rank:	1B.1
CNDDB Element Ranks:	Global: G2 State: S2	Other Lists:	BLM_S-Sensitive

General Habitat:	Micro Habitat:
CLOSED-CONE CONIFEROUS FOREST, CHAPARRAL (MARITIME), COASTAL SCRUB, COASTAL DUNES.	IN SANDY OPENINGS. 30-275 M.

Last Date Observed:	2001-06-01	Occurrence Type:	Natural/Native occurrence
Last Survey Date:	2001-06-01	Occurrence Rank:	Good
Owner/Manager:	TNC-ELKHORN SLOUGH RES, ESF	Trend:	Unknown
Presence:	Presumed Extant		

Location:
ON RIDGE NORTH OF BLOHM RANCH, 0.8 MILES SOUTH OF LAS LOMAS.

Detailed Location:
BLOHM RANCH IS LOCATED AT 695 ELKHORN RD., S OF INTERSECTION OF ELKHORN RD. AND HALL RD.

Ecological:
MARITIME CHAPARRAL WITH ARCTOSTAPHYLOS PAJAROENSIS, ARCTOSTAPHYLOS HOOKERI SSP. HOOKERI, PIPERIA YADONII, CEANOTHUS CUNEATUS VAR. RIGIDUS.

Threats:
LACK OF FIRE.

General:
UNKNOWN NUMBER OF PLANTS OBSERVED IN 2001. NEEDS FIELDWORK.

PLSS: T12S, R02E, Sec. 27 (M)	Accuracy: 1/5 mile	Area (acres): 0
UTM: Zone-10 N4079413 E612361	Latitude/Longitude: 36.85396 / -121.73960	Elevation (feet):

County Summary:	Quad Summary:
Monterey	Prunedale (3612176)

Sources:
HOL01F0005 HOLTE, J. - FIELD SURVEY FORM FOR ERICAMERIA FASCICULATA, ARCTOSTAPHYLOS HOOKERI SSP. HOOKERI, ARCTOSTAPHYLOS PAJAROENSIS & CHORIZANTHE PUNGENS VAR. PUNGENS, ETC. 2001-06-01



Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database



Map Index Number: 35107	EO Index: 17
Key Quad: Prunedale (3612176)	Element Code: PDAST4R0P1
Occurrence Number: 25	Occurrence Last Updated: 1996-03-11

Scientific Name: <i>Centromadia parryi ssp. congdonii</i>	Common Name: Congdon's tarplant
Listing Status:	Rare Plant Rank: 1B.1
Federal: None	Other Lists: BLM_S-Sensitive
State: None	SB_RSABG-Rancho Santa Ana Botanic Garden
CNDDB Element Ranks:	
Global: G3T2	
State: S2	

General Habitat: VALLEY AND FOOTHILL GRASSLAND.	Micro Habitat: ALKALINE SOILS, SOMETIMES DESCRIBED AS HEAVY WHITE CLAY. 1-230 M.
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Last Date Observed: 1994-06-05	Occurrence Type: Natural/Native occurrence
Last Survey Date: 1994-06-05	Occurrence Rank: None
Owner/Manager: PVT	Trend: Unknown
Presence: Possibly Extirpated	

Location:
ALONG ROAD THROUGH LONG CANYON, 1.5 MI EAST OF ELKHORN ROAD, NORTHEAST OF CASTROVILLE.

Detailed Location:
ALONG SIDE OF ROAD IN BOTTOM OF CANYON.

Ecological:
OPEN, SANDY, COMPACTED SOIL.

Threats:

General:
10 PLANTS IN 1994. POSSIBLY EXTIRPATED AT THIS SITE (R. PRESTON 1999).

PLSS: T13S, R02E, Sec. 12 (M)	Accuracy: 80 meters	Area (acres): 0
UTM: Zone-10 N4075978 E616320	Latitude/Longitude: 36.82253 / -121.69573	Elevation (feet): 220

County Summary: Monterey	Quad Summary: Prunedale (3612176)
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Sources:

MER94F0001	MERCURIO, E. & B. DELGADO - FIELD SURVEY FORM FOR CENTROMADIA PARRYI SSP. CONGDONII 1994-06-05
PRE99R0001	PRESTON, R. - PRELIMINARY REPORT ON THE CONSERVATION STATUS OF CONGDON'S SPIKEWEED (HEMIZONIA PARRYI SSP. CONGDONII) IN THE SOUTH AND EAST SAN FRANCISCO BAY AREA AND MONTEREY COUNTY, CALIFORNIA. 1999-02-23



Occurrence Report
California Department of Fish and Wildlife
California Natural Diversity Database



Map Index Number: 42344	EO Index: 42344
Key Quad: Prunedale (3612176)	Element Code: PDAST4R0P1
Occurrence Number: 38	Occurrence Last Updated: 2000-02-07

Scientific Name: <i>Centromadia parryi ssp. congdonii</i>	Common Name: Congdon's tarplant
Listing Status: Federal: None	Rare Plant Rank: 1B.1
State: None	Other Lists: BLM_S-Sensitive
CNDDB Element Ranks: Global: G3T2	SB_RSABG-Rancho Santa Ana Botanic Garden
State: S2	

General Habitat: VALLEY AND FOOTHILL GRASSLAND.	Micro Habitat: ALKALINE SOILS, SOMETIMES DESCRIBED AS HEAVY WHITE CLAY. 1-230 M.
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Last Date Observed: 1933-11-03	Occurrence Type: Natural/Native occurrence
Last Survey Date: 1998-10-15	Occurrence Rank: None
Owner/Manager: UNKNOWN	Trend: Unknown
Presence: Possibly Extirpated	

Location:
7.3 MILES NORTH OF SALINAS (PRUNEDALE).
Detailed Location:
MAPPED NORTH OF SALINAS ALONG HWY 101, NEAR JUNCTION WITH HWY 156.

Ecological:
Threats:
MOST OF THE TOPOGRAPHICALLY SUITABLE AREAS HAVE BEEN DEVELOPED.

General:
SITE BASED UPON 1933 COLLECTION BY D. KECK AS REPORTED BY R. PRESTON. POTENTIAL HABITAT ALONG HWY 101 NEAR BLACKE ROAD SEARCHED IN 1998, BUT NO PLANTS SEEN.

PLSS: T13S, R03E, Sec. 20 (M)	Accuracy: 1 mile	Area (acres): 0
UTM: Zone-10 N4071480 E618498	Latitude/Longitude: 36.78172 / -121.67202	Elevation (feet):

County Summary: Monterey	Quad Summary: Prunedale (3612176)
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Sources:

KEC33S0020	KECK, D. - KECK #2636 DS (CITED IN PRE99R0001) 1933-11-03
PRE98F0052	PRESTON, R. - FIELD SURVEY FORM FOR CENTROMADIA PARRYI SSP. CONGDONII 1998-10-15
PRE99R0001	PRESTON, R. - PRELIMINARY REPORT ON THE CONSERVATION STATUS OF CONGDON'S SPIKEWEED (HEMIZONIA PARRYI SSP. CONGDONII) IN THE SOUTH AND EAST SAN FRANCISCO BAY AREA AND MONTEREY COUNTY, CALIFORNIA. 1999-02-23



Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database



Map Index Number: 22088	EO Index: 42345
Key Quad: Moss Landing (3612177)	Element Code: PDAST4R0P1
Occurrence Number: 39	Occurrence Last Updated: 2006-01-23

Scientific Name: <i>Centromadia parryi ssp. congdonii</i>	Common Name: Congdon's tarplant
Listing Status:	Rare Plant Rank: 1B.1
Federal: None	Other Lists: BLM_S-Sensitive
State: None	SB_RSABG-Rancho Santa Ana Botanic Garden
CNDDB Element Ranks:	
Global: G3T2	
State: S2	

General Habitat: VALLEY AND FOOTHILL GRASSLAND.	Micro Habitat: ALKALINE SOILS, SOMETIMES DESCRIBED AS HEAVY WHITE CLAY. 1-230 M.
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Last Date Observed: 1909-08-23	Occurrence Type: Natural/Native occurrence
Last Survey Date: 1998-10-15	Occurrence Rank: None
Owner/Manager: UNKNOWN	Trend: Unknown
Presence: Extirpated	

Location:
CASTROVILLE.

Detailed Location:

Ecological:

Threats:

AGRICULTURAL LANDS ADJACENT TO TOWN.

General:

SITE BASED UPON 1909 COLLECTION BY J. MCMURPHY. RUDERAL HABITAT ALONG RAILROAD R-O-W AND IN RESIDENTIAL AREAS SEARCHED IN 1998 BUT NO CENTROMADIA OBSERVED.

PLSS: T13S, R02E, Sec. 28 (M)	Accuracy: 1 mile	Area (acres): 0
UTM: Zone-10 N4069788 E610968	Latitude/Longitude: 36.76738 / -121.75664	Elevation (feet):

County Summary:

Quad Summary:

Monterey	Prunedale (3612176), Moss Landing (3612177)
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Sources:

MCM09S0008	MCMURPHY, J. - MCMURPHY #737 DS (CITED IN PRE99R0001) 1909-08-23
MCM09S0011	MCMURPHY, J. - MCMURPHY SN RSA #81645 1909-08-23
PRE98F0053	PRESTON, R. - FIELD SURVEY FORM FOR CENTROMADIA PARRYI SSP. CONGDONII 1998-10-15
PRE99R0001	PRESTON, R. - PRELIMINARY REPORT ON THE CONSERVATION STATUS OF CONGDON'S SPIKEWEED (HEMIZONIA PARRYI SSP. CONGDONII) IN THE SOUTH AND EAST SAN FRANCISCO BAY AREA AND MONTEREY COUNTY, CALIFORNIA. 1999-02-23



Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database



Map Index Number: 10623	EO Index: 15192	
Key Quad: Prunedale (3612176)	Element Code: PDAST4X020	
Occurrence Number: 19	Occurrence Last Updated: 2008-08-19	

Scientific Name: <i>Holocarpha macradenia</i>	Common Name: Santa Cruz tarplant
Listing Status:	Rare Plant Rank: 1B.1
Federal: Threatened	Other Lists: SB_RSABG-Rancho Santa Ana Botanic Garden
State: Endangered	
CNDDDB Element Ranks:	
Global: G1	
State: S1	

General Habitat: COASTAL PRAIRIE, COASTAL SCRUB, VALLEY AND FOOTHILL GRASSLAND.	Micro Habitat: LIGHT, SANDY SOIL OR SANDY CLAY; OFTEN WITH NONNATIVES. 10-220 M.
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Last Date Observed: 1993-XX-XX	Occurrence Type: Natural/Native occurrence
Last Survey Date: 1993-XX-XX	Occurrence Rank: Good
Owner/Manager: PVT	Trend: Stable
Presence: Presumed Extant	

Location:
PORTER RANCH, 2 MILES SOUTH OF PAJARO ON EAST SIDE OF JUNCTION AT HALL ROAD AND ELKHORN ROAD.

Detailed Location:

Ecological:

IN DRY, MOSTLY ANNUAL GRASSLAND IN MARINE TERRACE SOIL. MOSTLY W/ NON-NATIVE ANNUALS, BUT ALSO W/ NATIVE COASTAL PRAIRIE SPECIES. SITE IS UNUSUAL IN THAT PLANTS ARE MOSTLY IN THE BOTTOM OF A SMALL CANYON, RATHER THAN ON A COASTAL TERRACE.

Threats:

SITE IS HEAVILY GRAZED; A MANAGEMENT PLAN IS BEING DEVELOPED TO ADDRESS THE PLANT. HALL ROAD HAS BEEN WIDENED.

General:

LARGE POPULATION OVER AN APPROXIMATELY 10 ACRE AREA WITH 3 OTHER TARPLANT SPECIES. 1500-2500 PLANTS IN 1984, 18,000 IN 1986, SEVERAL 1000 IN 1988, 43,000 IN 1989, 35,000 IN 1990, 3200 IN 1993.

PLSS: T12S, R02E, Sec. 22 (M)	Accuracy: specific area	Area (acres): 17
UTM: Zone-10 N4081284 E612066	Latitude/Longitude: 36.87086 / -121.74264	Elevation (feet): 100

County Summary:

Monterey

Quad Summary:

Prunedale (3612176)



Occurrence Report
California Department of Fish and Wildlife
California Natural Diversity Database



Sources:

BAL88S0004	BALDWIN, B. - BALDWIN #724 JEPS #98924 1988-08-22
HOO66S0016	HOOVER, R. - HOOVER #9967 UC #1321286, RSA #216834 1966-09-08
HOO66S0017	HOOVER, R. - HOOVER #9941 RSA #219975 UC #1357610 1966-08-27
HOO69S0001	HOOVER, R. - HOOVER #11523 UC #1392849 RSA #216826 1969-08-08
KIN80U0001	KING, J.M. - COASTAL PLANNER WITH MONTEREY COUNTY PLANNING DEPT. LETTER TO BOB POWELL, CNPS REGARDING RARE AND ENDANGERED PLANT SPECIES IN NORTH MONTEREY COUNTY AREA 1980-08-02
MAT84F0001	MATTHEWS, C. - FIELD SURVEY FORM FOR HOLOCARPHA MACRADENIA & CORDYLANTHUS RIGIDUS SSP. LITTORALIS 1984-07-26
MAT84F0002	MATTHEWS, C. - FIELD SURVEY FORM FOR HOLOCARPHA MACRADENIA 1984-07-26
MOR86F0018	MORGAN, R. - FIELD SURVEY FORM FOR HOLOCARPHA MACRADENIA 1986-08-09
MOR94U0001	MOREY, S. - MEMO FROM WORKSHOP WITH INFORMATION ON HOLOCARPHA MACRADENIA SITES BY ELEMENT OCCURRENCE 1994-02-22
PAL77U0001	PALMER, R. - CNPS RARE PLANT PROJECT REPORT FOR SANTA CRUZ TARWEED 1977-08-22
PAL81M0002	PALMER, R. - PERSONAL COMMUNICATION CONCERNING HOLOCARPHA MACRADENIA 1981-01-29
PAL81U0003	PALMER, R. - PHONE CORRESPONDENCE WITH R. PALMER REGARDING HOLOCARPHA MACRADENIA 1981-01-29
TAY89S0035	TAYLOR, D. - TAYLOR #10569 JEPS #89778 1989-09-29
TAY90R0001	TAYLOR, D. - CONSERVATION BIOLOGY OF THE SANTA CRUZ TARPLANT ANNUAL REPORT FOR 1990 1990-03-20
YAD84S0012	YADON, V. - YADON SN PGM #2539, 2540 & 2541 1984-07-21



Occurrence Report
California Department of Fish and Wildlife
California Natural Diversity Database



Map Index Number:	93090	EO Index:	94239
Key Quad:	Prunedale (3612176)	Element Code:	PDBOR0V061
Occurrence Number:	15	Occurrence Last Updated:	2014-07-16

Scientific Name:	<i>Plagiobothrys chorisianus</i> var. <i>chorisianus</i>	Common Name:	Choris' popcornflower
Listing Status:	Federal: None State: None	Rare Plant Rank:	1B.2
CNDDB Element Ranks:	Global: G3T2Q State: S2	Other Lists:	

General Habitat:	Micro Habitat:
CHAPARRAL, COASTAL SCRUB, COASTAL PRAIRIE.	MESIC SITES. 15-160 M.

Last Date Observed:	2005-05-31	Occurrence Type:	Natural/Native occurrence
Last Survey Date:	2005-05-31	Occurrence Rank:	Unknown
Owner/Manager:	UNKNOWN	Trend:	Unknown
Presence:	Presumed Extant		

Location:
MORO COJO SLOUGH, ARM OF THE SLOUGH LYING BETWEEN DOLAN RD AND ELKHORN RD ~250 M E OF CONFLUENCE WITH MAIN SLOUGH ARM.

Detailed Location:
MAPPED ACCORDING TO COORDINATES ON TAYLOR'S 2005 COLLECTION: 36.78804, -121.74575 (NAD27). IN THE SE 1/4 OF THE NE 1/4 OF SECTION 21.

Ecological:
SEASONALLY INUNDATED MARSH DOMINATED BY POLYPOGON AUSTRALIS (HEAVILY RUST INFESTED).

Threats:

General:
ONLY SOURCE OF INFORMATION FOR THIS OCCURRENCE IS A 2005 TAYLOR COLLECTION.

PLSS: T13S, R02E, Sec. 21 (M)	Accuracy: 80 meters	Area (acres): 0
UTM: Zone-10 N4072087 E611815	Latitude/Longitude: 36.78800 / -121.74680	Elevation (feet): 7

County Summary:	Quad Summary:
Monterey	Prunedale (3612176)

Sources:

TAY05I0006	TAYLOR, D. - PHOTOS OF PLAGIOBOTHRYUS CHORISIANUS VAR. CHORISIANUS, CALPHOTOS ID #0000 0000 0306 1885, 1886, 1888 2005-05-31
TAY05S0023	TAYLOR, D. - TAYLOR #19329 JEPS #109796 2005-05-31



Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database



Map Index Number: 67836	EO Index: 66307
Key Quad: Prunedale (3612176)	Element Code: PDERI040J1
Occurrence Number: 19	Occurrence Last Updated: 2007-06-04

Scientific Name: <i>Arctostaphylos hookeri ssp. hookeri</i>	Common Name: Hooker's manzanita
Listing Status:	Rare Plant Rank: 1B.2
Federal: None	Other Lists: BLM_S-Sensitive
State: None	
CNDDDB Element Ranks:	
Global: G3T2?	
State: S2?	

General Habitat: CHAPARRAL, COASTAL SCRUB, CLOSED-CONE CONIFEROUS FOREST, CISMONTANE WOODLAND.	Micro Habitat: SANDY SOILS, SANDY SHALES, SANDSTONE OUTCROPS. 85-300M.
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Last Date Observed: 2001-06-01	Occurrence Type: Natural/Native occurrence
Last Survey Date: 2001-06-01	Occurrence Rank: Good
Owner/Manager: TNC-ELKHORN SLOUGH RES, ESF	Trend: Unknown
Presence: Presumed Extant	

Location:
ON RIDGE (NORTH) OF BLOHM RANCH, 0.8 AIR MILES SOUTH OF LAS LOMAS.

Detailed Location:
BLOHM RANCH IS LOCATED AT 695 ELKHORN ROAD, S OF INTERSECTION OF ELKHORN RD AND HALL RD. MAPPED ON RIDGE AT N SIDE OF BLOHM RANCH, ACCORDING TO MAP PROVIDED BY HOLTE.

Ecological:
MARITIME CHAPARRAL. ARCTOSTAPHYLOS DOMINANT. OTHER RARE SPECIES INCLUDE CHORIZANTHE PUNGENS VAR. PUNGENS, ERICAMERIA FASCICULATA, A. PAJAROENSIS, PIPERIA YADONII, AND CEANOETHUS CUNEATUS VAR. RIGIDUS.

Threats:
LACK OF FIRE.

General:
LISTED AS AN ASSOCIATE DURING A SURVEY FOR CHORIZANTHE PUNGENS VAR. PUNGENS. UNKNOWN NUMBER OF PLANTS OBSERVED IN 2001.

PLSS: T12S, R02E, Sec. 27 (M)	Accuracy: 1/5 mile	Area (acres): 0
UTM: Zone-10 N4079413 E612361	Latitude/Longitude: 36.85396 / -121.73960	Elevation (feet): 150

County Summary: Monterey	Quad Summary: Prunedale (3612176)
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Sources:
HOL01F0005 HOLTE, J. - FIELD SURVEY FORM FOR ERICAMERIA FASCICULATA, ARCTOSTAPHYLOS HOOKERI SSP. HOOKERI, ARCTOSTAPHYLOS PAJAROENSIS & CHORIZANTHE PUNGENS VAR. PUNGENS, ETC. 2001-06-01



Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database



Map Index Number: 28457	EO Index: 66310
Key Quad: Prunedale (3612176)	Element Code: PDERI040J1
Occurrence Number: 20	Occurrence Last Updated: 2006-09-15

Scientific Name: <i>Arctostaphylos hookeri</i> ssp. <i>hookeri</i>	Common Name: Hooker's manzanita
Listing Status:	Rare Plant Rank: 1B.2
Federal: None	Other Lists: BLM_S-Sensitive
State: None	
CNDDB Element Ranks:	
Global: G3T2?	
State: S2?	

General Habitat: CHAPARRAL, COASTAL SCRUB, CLOSED-CONE CONIFEROUS FOREST, CISMONTANE WOODLAND.	Micro Habitat: SANDY SOILS, SANDY SHALES, SANDSTONE OUTCROPS. 85-300M.
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Last Date Observed: 1973-05-22	Occurrence Type: Natural/Native occurrence
Last Survey Date: 1973-05-22	Occurrence Rank: Unknown
Owner/Manager: PVT	Trend: Unknown
Presence: Presumed Extant	

Location:
RIDGE BETWEEN LONG CANYON AND STRAWBERRY CANYON, ABOUT 5 MI SW OF AROMAS.

Detailed Location:
EXACT LOCATION AND EXTENT OF POPULATION UNKNOWN. MAPPED ACCORDING TO BOUNDARIES OF PROPOSED MARITIME CHAPARRAL PRESERVE (GRI81U0011).

Ecological:
ROCKY AND SANDY SOILS OF SANDSTONE AREA. CENTRAL MARITIME CHAPARRAL DOMINATED BY A. PAJAROENSIS, A. HOOKERI, AND CEANOTHUS RIGIDUS.

Threats:
AGRICULTURE AND RESIDENTIAL DEVELOPMENT A THREAT THROUGHOUT PAJARO HILLS AREA.

General:
SEVERAL OLD COLLECTIONS FROM "PAJARO HILLS" "LONG CANYON" AND "SANDY HILLS E OF ELKHORN" ALSO ATTRIBUTED TO THIS OCCURRENCE.

PLSS: T13S, R02E, Sec. 12 (M)	Accuracy: nonspecific area	Area (acres): 984
UTM: Zone-10 N4076084 E615594	Latitude/Longitude: 36.82357 / -121.70386	Elevation (feet): 500

County Summary: Monterey	Quad Summary: Prunedale (3612176)
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Sources:

ADA35S0016	ADAMS, J. - ADAMS #913 UC #909846 1935-02-02
CHANDS0004	CHANDLER, H. - CHANDLER #430 UC XXXX-XX-XX
COO27S0002	COOPER, W. - COOPER #27-6 JEPS #38718 1927-06-29
COO27S0003	COOPER, W. - COOPER #27-7 JEPS 38719 1927-06-29
HEC73S0005	HECKARD, L. - HECKARD #3410 UC 1973-05-22
LEWNDS0003	LEWIS, A. - LEWIS #467 RSA #122395 XXXX-XX-XX



Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database



Map Index Number: 63631	EO Index: 66312
Key Quad: Prunedale (3612176)	Element Code: PDERI040J1
Occurrence Number: 21	Occurrence Last Updated: 2006-09-19

Scientific Name: <i>Arctostaphylos hookeri ssp. hookeri</i>	Common Name: Hooker's manzanita
Listing Status:	Rare Plant Rank: 1B.2
Federal: None	Other Lists: BLM_S-Sensitive
State: None	
CNDDDB Element Ranks:	
Global: G3T2?	
State: S2?	

General Habitat: CHAPARRAL, COASTAL SCRUB, CLOSED-CONE CONIFEROUS FOREST, CISMONTANE WOODLAND.	Micro Habitat: SANDY SOILS, SANDY SHALES, SANDSTONE OUTCROPS. 85-300M.
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Last Date Observed: 1958-06-28	Occurrence Type: Natural/Native occurrence
Last Survey Date: 1958-06-28	Occurrence Rank: Unknown
Owner/Manager: UNKNOWN	Trend: Unknown
Presence: Presumed Extant	

Location:
END OF MCGUFFIE ST. ABOUT 1 MILE W OF US 101 ON SR 156 NEAR PRUNEDALE.

Detailed Location:
EXACT LOCATION UNKNOWN. MAPPED AS BEST GUESS BY CNDDDB.

Ecological:
OTHER RARE SPECIES INCLUDE PIPERIA YADONII AND ARCTOSTAPHYLOS PAJAROENSIS.

Threats:

General:

SEVERAL OLD COLLECTIONS FROM "PRUNEDALE" AND "SAND HILLS W OF PRUNEDALE" ALSO ATTRIBUTED TO THIS OCCURRENCE.

PLSS: T13S, R03E, Sec. 18 (M)	Accuracy: 1/5 mile	Area (acres): 0
UTM: Zone-10 N4072995 E618087	Latitude/Longitude: 36.79542 / -121.67638	Elevation (feet):

County Summary: Monterey	Quad Summary: Prunedale (3612176)
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Sources:

ADA35S0015	ADAMS, J. - ADAMS #886 UC #549503 1935-02-01
ADA35S0017	ADAMS, J. - ADAMS #879 UC #549504 1935-02-01
GAN58S0014	GANKIN, R. - GANKIN #306 RSA #381041 1958-01-28
GAN58S0015	GANKIN, R. & J. KINGSBURY - GANKIN #308 RSA #381040 1958-12-20
KEL32S0003	KELLY, G. - KELLY SN UC #486528 1932-06-29
ROS50S0002	ROSE, L. - ROSE #50024 UC 1950-02-27



Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database



Map Index Number: 28462	EO Index: 29653	
Key Quad: Prunedale (3612176)	Element Code: PDERI04100	
Occurrence Number: 1	Occurrence Last Updated: 2005-11-08	

Scientific Name: <i>Arctostaphylos pajaroensis</i>	Common Name: Pajaro manzanita
Listing Status:	Rare Plant Rank: 1B.1
Federal: None	Other Lists: BLM_S-Sensitive
State: None	
CNDDDB Element Ranks:	
Global: G1	
State: S1	

General Habitat: CHAPARRAL.	Micro Habitat: SANDY SOILS. 30-760 M.
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Last Date Observed: 1966-05-26	Occurrence Type: Natural/Native occurrence
Last Survey Date: 1966-05-26	Occurrence Rank: Unknown
Owner/Manager: UNKNOWN	Trend: Unknown
Presence: Presumed Extant	

Location:
ALONG PESANTE ROAD AND HOLLY HILL DRIVE, ABOUT 2 MI EAST OF PRUNDALE.

Detailed Location:
2 CNDDDB POLYGONS MAPPED FROM VAGUE DATA: (1) 2.4 MI EAST OF PRUNDALE, MAPPED ALONG PESANTE ROAD, IN THE SW 1/4 OF SECTION 22, AND (2) 0.5 MI NORTH OF PESANTE ROAD ON HOLLY HILL DRIVE, IN THE E 1/2 OF SECTION 21.

Ecological:
SANDY SOIL.

Threats:
AGRICULTURE AND RESIDENTAL DEVELOPMENT A THREAT THROUGHOUT PAJARO HILLS AREA.

General:
ONLY SOURCE OF INFORMATION FOR THESE SITES ARE 1959 GANKIN COLLECTION AND 1966 HOWE COLLECTION. NEEDS FIELDWORK. INCLUDES FORMER EO #2.

PLSS: T13S, R03E, Sec. 22 (M)	Accuracy: nonspecific area	Area (acres): 127
UTM: Zone-10 N4071791 E622232	Latitude/Longitude: 36.78404 / -121.63013	Elevation (feet): 400

County Summary: Monterey	Quad Summary: San Juan Bautista (3612175), Prunedale (3612176)
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Sources:

GAN59S0003	GANKIN, R. - GANKIN #320 CAS #661204, RSA #381045, SBBG #83929 1959-02-21
GRI81U0011	GRIFFIN, J. - HANDWRITTEN NOTES TO CNPS REGARDING POLYSTICHUM DUDLEYI, ARCTOSTAPHYLOS PAJAROENSIS, ERYSIMUM AMMOPHILUM, ARCTOSTAPHYLOS HOOKERI HOOKERI, MECONELLA DENTICULATA, ET AL. 1981-02-25
HOW66S0003	HOWE, D. - HOWE #4238 SD #64257 1966-05-26
KIN80U0002	KING, J. - REPORT TO MONTEREY COUNTY PLANNING DEPT. 1980-02-08
WEL91U0001	WELLS, P. - COMMENTS ON CNPS INVENTORY, 5TH EDITION. 1991-08-04



Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database



Map Index Number: 28463	EO Index: 29654
Key Quad: Prunedale (3612176)	Element Code: PDERI04100
Occurrence Number: 3	Occurrence Last Updated: 1996-11-07

Scientific Name: <i>Arctostaphylos pajaroensis</i>	Common Name: Pajaro manzanita
Listing Status:	Rare Plant Rank: 1B.1
Federal: None	Other Lists: BLM_S-Sensitive
State: None	
CNDDDB Element Ranks:	
Global: G1	
State: S1	

General Habitat: CHAPARRAL.	Micro Habitat: SANDY SOILS. 30-760 M.
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Last Date Observed: 1936-01-23	Occurrence Type: Natural/Native occurrence
Last Survey Date: 1936-01-23	Occurrence Rank: Unknown
Owner/Manager: UNKNOWN	Trend: Unknown
Presence: Presumed Extant	

Location:
1 MILE SOUTHWEST OF PRUNEDALE.

Detailed Location:
CNDDDB LOCATION VERY APPROXIMATE; EXACT LOCATION UNKNOWN.

Ecological:
GROWING ON ROUGH BANK IN CHAPARRAL IN ASSOCIATION WITH ARCTOSTAPHYLOS CRUSTACEA. SUBSTRATE IS SANDSTONE.

Threats:
AGRICULTURE AND RESIDENTAL DEVELOPMENT A THREAT THROUGHOUT PAJARO HILLS AREA.

General:
ONLY SOURCE OF INFORMATION FOR THIS SITE IS 1936 COLLECTION BY BELSHAW.

PLSS: T13S, R03E, Sec. 30 (M)	Accuracy: 2/5 mile	Area (acres): 0
UTM: Zone-10 N4069558 E617809	Latitude/Longitude: 36.76448 / -121.68003	Elevation (feet): 175

County Summary: Monterey	Quad Summary: Prunedale (3612176)
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Sources:

BEL36S0013	BELSHAW, C. - BELSHAW #1506 UC #1120864, DAV #50403 1936-01-23
BEL36S0029	BELSHAW, C. - BELSHAW #1515 UC 1936-02-23
GRI81U0011	GRIFFIN, J. - HANDWRITTEN NOTES TO CNPS REGARDING POLYSTICHUM DUDLEYI, ARCTOSTAPHYLOS PAJAROENSIS, ERYSIMUM AMMOPHILUM, ARCTOSTAPHYLOS HOOKERI HOOKERI, MECONELLA DENTICULATA, ET AL. 1981-02-25
KIN80U0002	KING, J. - REPORT TO MONTEREY COUNTY PLANNING DEPT. 1980-02-08
WEL91U0001	WELLS, P. - COMMENTS ON CNPS INVENTORY, 5TH EDITION. 1991-08-04



Occurrence Report
California Department of Fish and Wildlife
California Natural Diversity Database



Map Index Number:	28460	EO Index:	29651
Key Quad:	Prunedale (3612176)	Element Code:	PDERI04100
Occurrence Number:	4	Occurrence Last Updated:	2007-05-31

Scientific Name:	<i>Arctostaphylos pajaroensis</i>	Common Name:	Pajaro manzanita
Listing Status:	Federal: None State: None	Rare Plant Rank:	1B.1
CNDDDB Element Ranks:	Global: G1 State: S1	Other Lists:	BLM_S-Sensitive

General Habitat:	Micro Habitat:
CHAPARRAL.	SANDY SOILS. 30-760 M.

Last Date Observed:	2004-01-29	Occurrence Type:	Natural/Native occurrence
Last Survey Date:	2004-01-29	Occurrence Rank:	Unknown
Owner/Manager:	SCR COUNTY-MANZANITA CP	Trend:	Unknown
Presence:	Presumed Extant		

Location:
 MANZANITA COUNTY PARK, JUST NORTHWEST OF INTERSECTION OF HIGHWAYS 101 AND 156; PRUNEDALE.

Detailed Location:
 EXACT LOCATION UNKNOWN; MAPPED BY CNDDDB AROUND PERIMETER OF MANZANITA PARK, WEST OF PRUNEDALE.

Ecological:
 GROWING IN SANDY SOIL, IN CHAPARRAL AND COASTAL SCRUB WITH ARCTOSTAPHYLOS HOOKERI, A. CRUSTACEA, BACCHARIS, CEANOETHUS DENTATUS, C. FOLIOSUS, C. THYRSIFLORUS, PICKERINGIA MONTANA, HETEROMELES ARBUTIFOLIA, AND QUERCUS AGRIFOLIA.

Threats:
General:
 1964 GANKIN COLLECTION FROM "DIRT ROAD LEADING N FROM END OF MCGUFFIE RD", BALLS 1958 "0.6 MI WEST OF JUNCTION WITH HWY 101 ALONG ROAD FROM CASTROVILLE TO PRUNEDALE", AND MANY GENERAL "PRUNEDALE" COLLECTIONS ARE ATTRIBUTED TO THIS SITE.

PLSS: T13S, R03E, Sec. 18 (M)	Accuracy: nonspecific area	Area (acres): 462
UTM: Zone-10 N4073358 E617808	Latitude/Longitude: 36.79872 / -121.67945	Elevation (feet): 279

County Summary:	Quad Summary:
Monterey	Prunedale (3612176)



Occurrence Report
California Department of Fish and Wildlife
California Natural Diversity Database



Sources:

ADA34S0002	ADAMS - ADAMS #880 UC #909833; #881 UC #909872; #883 JEPS #49545, UC #531717; #884 UC #909834; #885 UC #909873 1934-02-01
ADA35S0005	ADAMS, J. - ADAMS #882 UC #909826; #887 UC #909829; #889 UC 1935-02-01
BAL58S0003	BALLS, E. - BALLS #23562 UC #1294043 1958-07-19
BAL58S0012	BALLS, E. - BALLS #23562 RSA #130908, UC #1294043 1958-07-19
BEL36S0028	BELSHAW, C. - BELSHAW #1513 UC 1936-02-23
FOR86S0001	FORBES, H. - FORBES #1018 UC, SBBG 1986-10-16
GAN58S0008	GANKIN, R. & J. KINGSBURY - GANKIN #308B SBBG #83926, DAV #53150 1958-12-20
GAN58S0009	GANKIN, R. - GANKIN #307 RSA #381105, SBBG #83938, DAV #53157 1958-06-28
GAN58S0010	GANKIN, R. - GANKIN #304 RSA #381112, SBBG #83941, DAV #53155 1958-02-02
GAN58S0011	GANKIN, R. - GANKIN #264 RSA #381103, SBBG #25400, DAV #53011 & 53121 1958-02-03
GAN58S0017	GANKIN, R. ET AL. - GANKIN #265 RSA #381102, DAV #53004 & 53123; #266 DAV #52998; #267 DAV #53012 & 53027 1958-02-03
GAN59S0010	GANKIN, R. - GANKIN #315 DAV #53119 1959-02-21
GAN59S0011	GANKIN, R. - GANKIN #326 DAV #53149 1959-02-28
GAN64S0004	GANKIN, R. - GANKIN #368 CAS #476216, SBBG #25401, DAV #53020 1964-03-23
GAN66S0025	GANKIN, R. - GANKIN #673 DAV #53016 1966-02-18
GAN66S0026	GANKIN, R. - GANKIN #674 DAV #53115 1966-02-18
GAN67S0007	GANKIN, R. & W. HILDRETH - GANKIN #1084 UC, SBBG #34149 1967-10-09
GAN67S0009	GANKIN, R. & W. HILDRETH - GANKIN #1083 DAV #53134; #1084 DAV #53132; #1085 DAV #53130; #1086 DAV #53007 & 53129; #1087 DAV #53128 1967-10-09
GRI81U0011	GRIFFIN, J. - HANDWRITTEN NOTES TO CNPS REGARDING POLYSTICHUM DUDLEYI, ARCTOSTAPHYLOS PAJAROENSIS, ERYSIMUM AMMOPHILUM, ARCTOSTAPHYLOS HOOKERI HOOKERI, MECONELLA DENTICULATA, ET AL. 1981-02-25
HAR61S0018	HARDHAM, C. - HARDHAM #7311 UC, RSA #166607, SBBG #20681 1961-06-08
HOONDS0004	HOOVER, R. - HOOVER #8619 JEPS #98809 XXXX-XX-XX
HOW62S0015	HOWITT, B. - HOWITT #1292 PGM #5751 1962-05-11
KEL32S0002	KELLEY, G. - KELLEY SN UC #486526 1932-06-29
KIN80U0002	KING, J. - REPORT TO MONTEREY COUNTY PLANNING DEPT. 1980-02-08
MIL04S0003	MILLER, D. - MILLER SN CHSC #900969 2004-01-25
ROS38S0009	ROSE, L. - ROSE #38076 UC #876455 1938-02-06
ROS44S0002	ROSE, L. - ROSE #44308 POM #303036, RSA #35138 1944-12-25
ROS50S0003	ROSE, L. - ROSE #50025 UC #942932, UC #1294043 1950-02-27
ROS61S0007	ROSE, L. - ROSE #61036 RSA #155439 1961-04-12
ROS66S0001	ROSE, L. - ROSE SN HSC #7763 1966-03-27
ROS66S0003	ROSE, L. - ROSE #66004 DAV #53110 1966-03-27
SCH04U0003	SCHUSTEFF, A. - ARCTOSTAPHYLOS PAJAROENSIS RECORD IN CALPHOTOS 2004-01-29
SCH38S0010	SCHREIBER, B. - SCHREIBER #2577 UC 1938-10-16
TIL77S0002	TILFORTH, C. & W. WISURA - TILFORTH #1443 RSA #265671 1977-04-13
WAL74S0012	WALLACE, G. - WALLACE #1313 RSA #252150 1974-11-16
WEL91U0001	WELLS, P. - COMMENTS ON CNPS INVENTORY, 5TH EDITION. 1991-08-04
YAD83S0003	YADON, V. - YADON SN PGM #2620 1983-02-20
YAD84S0009	YADON, V. - YADON SN PGM #3442 1984-06-24



Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database



Map Index Number: 28458	EO Index: 8925
Key Quad: Prunedale (3612176)	Element Code: PDERI04100
Occurrence Number: 5	Occurrence Last Updated: 1996-11-07

Scientific Name: <i>Arctostaphylos pajaroensis</i>	Common Name: Pajaro manzanita
Listing Status:	Rare Plant Rank: 1B.1
Federal: None	Other Lists: BLM_S-Sensitive
State: None	
CNDDDB Element Ranks:	
Global: G1	
State: S1	

General Habitat: CHAPARRAL.	Micro Habitat: SANDY SOILS. 30-760 M.
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Last Date Observed: 1936-08-18	Occurrence Type: Natural/Native occurrence
Last Survey Date: 1936-08-18	Occurrence Rank: Unknown
Owner/Manager: UNKNOWN	Trend: Unknown
Presence: Presumed Extant	

Location:
1 MILE NORTHEAST OF ELKHORN SCHOOL, EAST OF ELKHORN SLOUGH AND NORTHWEST OF PRUNEDALE.

Detailed Location:
MAPPED IN VICINITY OF PARADISE ROAD AND WALKER VALLEY ROAD. INCLUDES COLLECTION FROM "HILLS EAST OF ELKHORN".

Ecological:
GROWING IN CHAPARRAL ON SOUTH SLOPE.

Threats:
AGRICULTURE AND RESIDENTAL DEVELOPMENT A THREAT THROUGHOUT PAJARO HILLS AREA.

General:
MAIN SOURCE OF INFORMATION FOR THIS SITE IS 1936 COLLECTION BY AXELROD.

PLSS: T13S, R02E, Sec. 13 (M)	Accuracy: 2/5 mile	Area (acres): 0
UTM: Zone-10 N4074326 E615527	Latitude/Longitude: 36.80773 / -121.70487	Elevation (feet): 300

County Summary: Monterey	Quad Summary: Prunedale (3612176)
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Sources:

AXE36S0003	AXELROD, D. - AXELROD #667 UC #1389129, UC #1120867 1936-08-18
AXE36S0004	AXELROD, D. - AXELROD #586 UC 1936-07-14
COO27S0001	COOPER, W. - COOPER #27-4 UC 1927-06-29
GRI81U0011	GRIFFIN, J. - HANDWRITTEN NOTES TO CNPS REGARDING POLYSTICHUM DUDLEYI, ARCTOSTAPHYLOS PAJAROENSIS, ERYSIMUM AMMOPHILUM, ARCTOSTAPHYLOS HOOKERI HOOKERI, MECONELLA DENTICULATA, ET AL. 1981-02-25
KIN80U0002	KING, J. - REPORT TO MONTEREY COUNTY PLANNING DEPT. 1980-02-08
WEL91U0001	WELLS, P. - COMMENTS ON CNPS INVENTORY, 5TH EDITION. 1991-08-04



Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database



Map Index Number: 28459	EO Index: 5011	
Key Quad: Prunedale (3612176)	Element Code: PDERI04100	
Occurrence Number: 6	Occurrence Last Updated: 2005-11-10	

Scientific Name: <i>Arctostaphylos pajaroensis</i>	Common Name: Pajaro manzanita
Listing Status:	Rare Plant Rank: 1B.1
Federal: None	Other Lists: BLM_S-Sensitive
State: None	
CNDDB Element Ranks:	
Global: G1	
State: S1	

General Habitat: CHAPARRAL.	Micro Habitat: SANDY SOILS. 30-760 M.
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Last Date Observed: 1999-08-04	Occurrence Type: Natural/Native occurrence
Last Survey Date: 1999-08-04	Occurrence Rank: Fair
Owner/Manager: PVT	Trend: Unknown
Presence: Presumed Extant	

Location:
NORTH RIM OF LANGLEY CANYON, JUST SOUTH OF NORTHWOOD PLACE, ABOUT 0.4 MI EAST OF SAN MIGUEL CANYON RD; PRUNEDALE.

Detailed Location:
MAPPED BASED ON 1999 MAP PROVIDED BY KJELDEN (ALTHOUGH ELEVATION GIVEN WITH FIELD SURVEY FORM DOES NOT MATCH MAP).

Ecological:
A. PAJAROENSIS IS THE DOMINANT SPECIES OF THE CHAPARRAL/DISTURBED QUERCUS AGRIFOLIA WOODLAND COMMUNITY.

Threats:
SITE PROPOSED FOR 10 LOT SUBDIVISION; CONSERVATION EASEMENT WILL PRESERVE THE POPULATION.

General:
"MANY" INDIVIDUALS OBSERVED IN 1999. 1989 TAYLOR COLLECTION "NEAR JUNCTION OF HWY 101 WITH SAN MIGUEL CANYON RD, IN VICINITY OF MORO RD" AND 1980 JAMES COLLECTION "HWY G12, 0.6 MI NORTH OF PRUNEDALE" ALSO ATTRIBUTED TO THIS SITE.

PLSS: T13S, R03E, Sec. 08 (M)	Accuracy: specific area	Area (acres): 33
UTM: Zone-10 N4074938 E618894	Latitude/Longitude: 36.81283 / -121.66704	Elevation (feet): 300

County Summary:	Quad Summary:
Monterey	Prunedale (3612176)

Sources:

GAN62S0012	GANKIN, R. - GANKIN #332 UC, SBBG #83966, DAV #53159 1962-02-19
GRI81U0011	GRIFFIN, J. - HANDWRITTEN NOTES TO CNPS REGARDING POLYSTICHUM DUDLEYI, ARCTOSTAPHYLOS PAJAROENSIS, ERYSIMUM AMMOPHILUM, ARCTOSTAPHYLOS HOOKERI HOOKERI, MECONELLA DENTICULATA, ET AL. 1981-02-25
JAM80S0001	JAMES, S. - JAMES #104 UCR #23084 1980-04-16
KIN80U0002	KING, J. - REPORT TO MONTEREY COUNTY PLANNING DEPT. 1980-02-08
KJE99F0007	KJELDEN, C. & D. KJELD - FIELD SURVEY FORM FOR ARCTOSTAPHYLOS PAJAROENSIS 1999-08-04
TAY89S0001	TAYLOR, D. - TAYLOR #10594 UC #1561052 1989-12-09
WEL91U0001	WELLS, P. - COMMENTS ON CNPS INVENTORY, 5TH EDITION. 1991-08-04



Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database



Map Index Number: 28457	EO Index: 12293
Key Quad: Prunedale (3612176)	Element Code: PDERI04100
Occurrence Number: 7	Occurrence Last Updated: 2007-05-31

Scientific Name: <i>Arctostaphylos pajaroensis</i>	Common Name: Pajaro manzanita
Listing Status:	Rare Plant Rank: 1B.1
Federal: None	Other Lists: BLM_S-Sensitive
State: None	
CNDDB Element Ranks:	
Global: G1	
State: S1	

General Habitat: CHAPARRAL.	Micro Habitat: SANDY SOILS. 30-760 M.
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Last Date Observed: 2001-06-01	Occurrence Type: Natural/Native occurrence
Last Survey Date: 2001-06-01	Occurrence Rank: Unknown
Owner/Manager: PVT	Trend: Unknown
Presence: Presumed Extant	

Location:
LONG VALLEY, 5 MILES NORTHEAST OF WATSONVILLE AND 1 MILE EAST OF ELKHORN SLOUGH.

Detailed Location:
EXACT LOCATION AND EXTENT OF POPULATION UNKNOWN. MAPPED ACCORDING TO BOUNDARIES OF PROPOSED MARITIME CHAPARRAL PRESERVE (GRIGGS 1980). INCLUDES COLLECTIONS FROM VICINITY OF STRAWBERRY CANYON ROAD AND ONE FROM RIDGE "E OF ELKHORN SLOUGH."

Ecological:
CENTRAL MARITIME CHAPARRAL DOMINATED BY ARCTOSTAPHYLOS PAJAROENSIS, A. HOOKERI, AND CEANOTHUS RIGIDUS.

Threats:
AGRICULTURE AND RESIDENTIAL DEVELOPMENT A THREAT THROUGHOUT PAJARO HILLS AREA.

General:
GOOD STANDS OF A. PAJAROENSIS REPORTED BY GRIGGS, 1980. COLLECTIONS BY GANKIN IN 1959, HOWITT IN 1963, DAVIS IN 1971, HECKARD IN 1973, WHITE IN 1991 ALSO ATTRIBUTED TO THIS SITE. THIS SPECIES NOTED IN 2001 SURVEY FOR CHORIZANTHE PUNGENS.

PLSS: T13S, R02E, Sec. 12 (M)	Accuracy: nonspecific area	Area (acres): 984
UTM: Zone-10 N4076084 E615594	Latitude/Longitude: 36.82357 / -121.70386	Elevation (feet): 350

County Summary: Monterey	Quad Summary: Prunedale (3612176)
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- Sources:**
- DAV71S0002 DAVIS, C. - DAVIS #D269 DAV #53161 1971-06-24
 - GAN59S0002 GANKIN, R. - GANKIN #316 CAS #429495 1959-02-14
 - GAN59S0007 GANKIN, R. - GANKIN #315 DAV #53022; #326 DAV #53025 1959-02-14
 - GRI81U0011 GRIFFIN, J. - HANDWRITTEN NOTES TO CNPS REGARDING POLYSTICHUM DUDLEYI, ARCTOSTAPHYLOS PAJAROENSIS, ERYSIMUM AMMOPHILUM, ARCTOSTAPHYLOS HOOKERI HOOKERI, MECONELLA DENTICULATA, ET AL. 1981-02-25
 - HEC73S0006 HECKARD, L. - HECKARD #3411 UC, JEPS 1973-05-22
 - HOL01F0006 HOLTE, J. - FIELD SURVEY FORM FOR ARCTOSTAPHYLOS PAJAROENSIS 2001-06-01
 - HOW63S0004 HOWITT, B. - HOWITT #1414 CAS #476218, PGM #5752 1963-02-14
 - KIN80U0002 KING, J. - REPORT TO MONTEREY COUNTY PLANNING DEPT. 1980-02-08
 - WEL91U0001 WELLS, P. - COMMENTS ON CNPS INVENTORY, 5TH EDITION. 1991-08-04
 - WHI91S0002 WHITE, S. - WHITE SN UCR #67320, SD #133108 1991-02-11



Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database



Map Index Number: 28456	EO Index: 26893
Key Quad: Prunedale (3612176)	Element Code: PDERI04100
Occurrence Number: 8	Occurrence Last Updated: 2007-05-31

Scientific Name: <i>Arctostaphylos pajaroensis</i>	Common Name: Pajaro manzanita
Listing Status:	Rare Plant Rank: 1B.1
Federal: None	Other Lists: BLM_S-Sensitive
State: None	
CNDDDB Element Ranks:	
Global: G1	
State: S1	

General Habitat: CHAPARRAL.	Micro Habitat: SANDY SOILS. 30-760 M.
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Last Date Observed: 1996-03-23	Occurrence Type: Natural/Native occurrence
Last Survey Date: 1996-03-23	Occurrence Rank: Unknown
Owner/Manager: UNKNOWN	Trend: Unknown
Presence: Presumed Extant	

Location:
HILLS EAST OF ROYAL OAKS COUNTY PARK, NORTH OF PRUNEDALE.

Detailed Location:
MAPPED AS BEST GUESS BY CNDDDB AMONG HILLS BETWEEN PARK AND HIGHWAY 101 AND TO THE SOUTH NEAR THE VICINITY OF ECHO VALLEY RD.

Ecological:
DRY SANDY PLEISTOCENE DUNES IN CHAPARRAL WITH ARCTOSTAPHYLOS HOOKERI AND CEANOTHUS THYRSIFLORUS, AND QUERCUS AGRIFOLIA.

Threats:
AGRICULTURE AND RESIDENTIAL DEVELOPMENT A THREAT THROUGHOUT PAJARO HILLS AREA.

General:
1965 THORNE COLLECTION FROM "NEAR PRUNEDALE, WEST ALONG ROAD TO AROMAS" AND 1996 HRUSA COLLECTIONS FROM "ECHO VALLEY RD APPROX. 1/2 MILE W OF US 101" ATTRIBUTED TO THIS OCCURRENCE. NEEDS FIELDWORK.

PLSS: T13S, R03E, Sec. 04 (M)	Accuracy: 3/5 mile	Area (acres): 0
UTM: Zone-10 N4077100 E621147	Latitude/Longitude: 36.83203 / -121.64144	Elevation (feet): 500

County Summary: Monterey	Quad Summary: Prunedale (3612176)
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Sources:

GRI81U0011	GRIFFIN, J. - HANDWRITTEN NOTES TO CNPS REGARDING POLYSTICHUM DUDLEYI, ARCTOSTAPHYLOS PAJAROENSIS, ERYSIMUM AMMOPHILUM, ARCTOSTAPHYLOS HOOKERI HOOKERI, MECONELLA DENTICULATA, ET AL. 1981-02-25
HOW66S0005	HOWITT - HOWITT #2041 CAS #476221 1966-10-29
HRU96S0005	HRUSA, G.F. - HRUSA #12688 DAV #53140 1996-03-23
HRU96S0006	HRUSA, G.F. - HRUSA #12689 DAV #53144 1996-03-23
KIN80U0002	KING, J. - REPORT TO MONTEREY COUNTY PLANNING DEPT. 1980-02-08
THO65S0012	THORNE, R. - THORNE #35457 UC #1409113, RSA #246725 1965-08-17
WEL91U0001	WELLS, P. - COMMENTS ON CNPS INVENTORY, 5TH EDITION. 1991-08-04



Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database



Map Index Number: 63158	EO Index: 63250
Key Quad: Prunedale (3612176)	Element Code: PDERI04100
Occurrence Number: 14	Occurrence Last Updated: 2007-06-01

Scientific Name: <i>Arctostaphylos pajaroensis</i>	Common Name: Pajaro manzanita
Listing Status:	Rare Plant Rank: 1B.1
Federal: None	Other Lists: BLM_S-Sensitive
State: None	
CNDDDB Element Ranks:	
Global: G1	
State: S1	

General Habitat: CHAPARRAL.	Micro Habitat: SANDY SOILS. 30-760 M.
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Last Date Observed: 1981-02-14	Occurrence Type: Natural/Native occurrence
Last Survey Date: 1981-02-14	Occurrence Rank: Unknown
Owner/Manager: UNKNOWN	Trend: Unknown
Presence: Presumed Extant	

Location:
ALONG MORO ROAD, 1.8 MI EAST FROM JUNCTION WITH SAN MIGUEL CANYON ROAD, PRUNEDALE.

Detailed Location:

Ecological:
IN SANDY SOIL, ASSOCIATED WITH QUERCUS AGRIFOLIA, SALVIA MELLIFERA, AND RHUS DIVERSILOBA.

Threats:

General:

1959 GANKIN COLLECTIONS FROM "[0.3 AND 0.4] MI ALONG MORO ROAD WEST FROM US 101, VICINITY NORTH OF PRUNEDALE" AND 1981 "S SIDE OF RD ON SAN MIGUEL CANYON RD; 1.8 MI E OF JCT MORO RD" ALSO ATTRIBUTED TO THIS SITE. NEEDS FIELDWORK.

PLSS: T13S, R03E, Sec. 09 (M)	Accuracy: nonspecific area	Area (acres): 51
UTM: Zone-10 N4075003 E621001	Latitude/Longitude: 36.81315 / -121.64342	Elevation (feet):

County Summary: Monterey	Quad Summary: Prunedale (3612176)
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Sources:

GAN59S0001	GAN KIN, R. - GANKIN #312 CAS #476213, SBBG #25383 1959-02-14
GAN59S0004	GAN KIN, R. - GANKIN #310 UC, SBBG #83930 1959-02-14
GAN59S0008	GAN KIN, R. - GANKIN #309 DAV #53108 & 53112 1959-02-14
GAN59S0009	GAN KIN, R. - GANKIN #311 DAV #53126 & 53147 1959-02-14
GAN81S0001	GAN KIN, R. - GANKIN #312 DAV #53153 1981-02-14



Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database



Map Index Number: 67927	EO Index: 63253	
Key Quad: Prunedale (3612176)	Element Code: PDERI04100	
Occurrence Number: 15	Occurrence Last Updated: 2007-06-01	

Scientific Name: <i>Arctostaphylos pajaroensis</i>	Common Name: Pajaro manzanita
Listing Status:	Rare Plant Rank: 1B.1
Federal: None	Other Lists: BLM_S-Sensitive
State: None	
CNDDDB Element Ranks:	
Global: G1	
State: S1	

General Habitat: CHAPARRAL.	Micro Habitat: SANDY SOILS. 30-760 M.
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Last Date Observed: 2005-12-09	Occurrence Type: Natural/Native occurrence
Last Survey Date: 2005-12-09	Occurrence Rank: Fair
Owner/Manager: PVT-PGE	Trend: Unknown
Presence: Presumed Extant	

Location:
BETWEEN BERTA CANYON AND PESANTE CANYON, APPROX 0.5 MI E OF HIGHWAY 101; PRUNEDALE.

Detailed Location:
MAPPED ACCORDING TO MAP PROVIDED BY MORI. ONE POLYGON IS 0.5 MI E OF HWY 101 AND 0.2 MI S OF BERTA CANYON; SECOND POLYGON IS 0.2 MI TO THE SE.

Ecological:
MARITIME CHAPARRAL ON SANDSTONE OUTCROPPINGS ON RIDGELINES; S-FACING. A. PAJAROENSIS IS DOMINANT. OTHER RARE SPP: A. HOOKERI (SSP UNKNOWN), CEANOTHUS RIGIDUS, ERICAMERIA FASCICULATA, LOMATIUM PARVIFLORUM, PIPERIA MICHAELII.

Threats:
DEVELOPMENT, PG&E MAINT, LACK OF FIRE, ENCROACHMENT OF ACACIA SPP, EUCALYPTUS GLOBULUS, CORTADERIA JUBATUM, AND OAKS.

General:
UNKNOWN NUMBER OF PLANTS OBSERVED IN 2004, 15 PLANTS OBSERVED IN 2005. POPULATION COULD BE MORE EXTENSIVE THAN INDICATED BY CNDDDB MAP.

PLSS: T13S, R03E, Sec. 20 (M)	Accuracy: specific area	Area (acres): 7
UTM: Zone-10 N4072074 E619817	Latitude/Longitude: 36.78690 / -121.65714	Elevation (feet): 200

County Summary: Monterey	Quad Summary: Prunedale (3612176)
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Sources:

CHI04F0001	CHILDS, S. - FIELD SURVEY FORM FOR ARCTOSTAPHYLOS PAJAROENSIS & PIPERIA YADONII 2004-06-09
MOR05F0013	MORI, B. - FIELD SURVEY FORM FOR LOMATIUM PARVIFOLIUM & ERICAMERIA FASCICULATA & ARCTOSTAPHYLOS PAJAROENSIS & PIPERIA YADONII & PIPERIA MICHAELII 2005-12-09



Occurrence Report
California Department of Fish and Wildlife
California Natural Diversity Database



Map Index Number:	67836	EO Index:	70243
Key Quad:	Prunedale (3612176)	Element Code:	PDERI04100
Occurrence Number:	20	Occurrence Last Updated:	2007-06-01

Scientific Name:	<i>Arctostaphylos pajaroensis</i>	Common Name:	Pajaro manzanita
Listing Status:	Federal: None State: None	Rare Plant Rank:	1B.1
CNDDDB Element Ranks:	Global: G1 State: S1	Other Lists:	BLM_S-Sensitive

General Habitat:	Micro Habitat:
CHAPARRAL.	SANDY SOILS. 30-760 M.

Last Date Observed:	2001-06-01	Occurrence Type:	Natural/Native occurrence
Last Survey Date:	2001-06-01	Occurrence Rank:	Good
Owner/Manager:	TNC-ELKHORN SLOUGH RES, ESF	Trend:	Unknown
Presence:	Presumed Extant		

Location:
ON RIDGE NORTH OF BLOHM RANCH, 0.8 MILES SOUTH OF LAS LOMAS.

Detailed Location:
BLOHM RANCH IS LOCATED AT 695 ELKHORN RD., S OF INTERSECTION OF ELKHORN RD. AND HALL RD.

Ecological:
MARITIME CHAPARRAL IN OPEN AREAS THROUGHOUT RIDGE IN SANDY SOILS. ARCTOSTAPHYLOS DOMINANT. RARE SPP INCLUDE CHORIZANTHE PUNGENS VAR PUNGENS, ERICAMERIA FASCICULATA, A. HOOKERI SSP. HOOKERI, PIPERIA YADONII, CEANOETHUS CUNEATUS VAR RIDGIDUS.

Threats:
LACK OF FIRE.

General:
UNKNOWN NUMBER OF PLANTS OBSERVED IN 2001. BETTER LOCATION INFO. NEEDED.

PLSS: T12S, R02E, Sec. 27 (M)	Accuracy: 1/5 mile	Area (acres): 0
UTM: Zone-10 N4079413 E612361	Latitude/Longitude: 36.85396 / -121.73960	Elevation (feet):

County Summary:	Quad Summary:
Monterey	Prunedale (3612176)

Sources:
HOL01F0005 HOLTE, J. - FIELD SURVEY FORM FOR ERICAMERIA FASCICULATA, ARCTOSTAPHYLOS HOOKERI SSP. HOOKERI, ARCTOSTAPHYLOS PAJAROENSIS & CHORIZANTHE PUNGENS VAR. PUNGENS, ETC. 2001-06-01



Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database



Map Index Number: 10764

EO Index: 8274

Key Quad: Prunedale (3612176)

Element Code: PDPGN040M2

Occurrence Number: 7

Occurrence Last Updated: 1993-01-14

Scientific Name: *Chorizanthe pungens* var. *pungens*

Common Name: Monterey spineflower

Listing Status: **Federal:** Threatened

Rare Plant Rank: 1B.2

State: None

Other Lists: SB_UCBBG-UC Berkeley Botanical Garden

CNDDDB Element Ranks: **Global:** G2T2

State: S2

General Habitat:

COASTAL DUNES, CHAPARRAL, CISMONTANE WOODLAND, COASTAL SCRUB.

Micro Habitat:

SANDY SOILS IN COASTAL DUNES OR MORE INLAND WITHIN CHAPARRAL OR OTHER HABITATS. 0-150 M.

Last Date Observed: 1989-04-XX

Occurrence Type: Natural/Native occurrence

Last Survey Date: 1989-04-XX

Occurrence Rank: Unknown

Owner/Manager: MNT COUNTY

Trend: Unknown

Presence: Presumed Extant

Location:

MANZANITA PARK NEAR PRUNEDALE.

Detailed Location:

Ecological:

ON SANDY SOIL, ASSOCIATED WITH CHORIZANTHE DIFFUSA AND PUTATIVE HYBRIDS IN OPEN AREAS BETWEEN THICKETS OF ARCTOSTAPHYLOS PAJAROENSIS, A. HOOKERI, ETC.

Threats:

General:

SPECIMEN ANNOTATED BY REVEAL, 1987.

PLSS: T13S, R03E, Sec. 18 (M)

Accuracy: specific area

Area (acres): 30

UTM: Zone-10 N4073464 E617935

Latitude/Longitude: 36.79967 / -121.67802

Elevation (feet): 300

County Summary:

Quad Summary:

Monterey

Prunedale (3612176)

Sources:

YAD84S0001 YADON, V. - YADON SN UC #82973 1984-06-24

YAD89M0001 YADON, V.L. - MAP OF CHORIZANTHE PUNGENS VAR. PUNGENS AT MANZANITA PARK, MONTEREY COUNTY. 1989-04-23



Occurrence Report
California Department of Fish and Wildlife
California Natural Diversity Database



Map Index Number: 22088

EO Index: 8275

Key Quad: Moss Landing (3612177)

Element Code: PDPGN040M2

Occurrence Number: 20

Occurrence Last Updated: 1992-12-28

Scientific Name: *Chorizanthe pungens var. pungens*

Common Name: Monterey spineflower

Listing Status: **Federal:** Threatened

Rare Plant Rank: 1B.2

State: None

Other Lists: SB_UCBBG-UC Berkeley Botanical Garden

CNDDDB Element Ranks: **Global:** G2T2

State: S2

General Habitat:

COASTAL DUNES, CHAPARRAL, CISMONTANE WOODLAND, COASTAL SCRUB.

Micro Habitat:

SANDY SOILS IN COASTAL DUNES OR MORE INLAND WITHIN CHAPARRAL OR OTHER HABITATS. 0-150 M.

Last Date Observed: 1929-06-09

Occurrence Type: Natural/Native occurrence

Last Survey Date: 1929-06-09

Occurrence Rank: Unknown

Owner/Manager: UNKNOWN

Trend: Unknown

Presence: Presumed Extant

Location:

CASTROVILLE.

Detailed Location:

Ecological:

Threats:

General:

HERBARIUM LABEL IS ONLY SOURCE OF INFORMATION; NEEDS FIELDWORK.

PLSS: T13S, R02E, Sec. 28 (M)

Accuracy: 1 mile

Area (acres): 0

UTM: Zone-10 N4069788 E610968

Latitude/Longitude: 36.76738 / -121.75664

Elevation (feet): 15

County Summary:

Monterey

Quad Summary:

Prunedale (3612176), Moss Landing (3612177)

Sources:

DEA29S0001 DEARING & DEARING - DEARING SN POM #161512 1929-06-09



Occurrence Report
California Department of Fish and Wildlife
California Natural Diversity Database



Map Index Number: 67836

EO Index: 67984

Key Quad: Prunedale (3612176)

Element Code: PDPGN040M2

Occurrence Number: 37

Occurrence Last Updated: 2007-02-07

Scientific Name: *Chorizanthe pungens var. pungens*

Common Name: Monterey spineflower

Listing Status: **Federal:** Threatened

Rare Plant Rank: 1B.2

State: None

Other Lists: SB_UCBBG-UC Berkeley Botanical Garden

CNDDDB Element Ranks: **Global:** G2T2

State: S2

General Habitat:

COASTAL DUNES, CHAPARRAL, CISMONTANE WOODLAND, COASTAL SCRUB.

Micro Habitat:

SANDY SOILS IN COASTAL DUNES OR MORE INLAND WITHIN CHAPARRAL OR OTHER HABITATS. 0-150 M.

Last Date Observed: 2001-06-01

Occurrence Type: Natural/Native occurrence

Last Survey Date: 2001-06-01

Occurrence Rank: Good

Owner/Manager: TNC-ELKHORN SLOUGH RES, ESF

Trend: Unknown

Presence: Presumed Extant

Location:

ON RIDGE NORTH OF BLOHM RANCH, 0.8 MILES SOUTH OF LAS LOMAS.

Detailed Location:

BLOHM RANCH IS LOCATED AT 695 ELKHORN ROAD.

Ecological:

MARITIME CHAPARRAL IN OPEN AREAS THROUGHOUT RIDGE IN SANDY SOILS. ARCTOSTAPHYLOS DOMINANT. RARE SPECIES INCLUDE ERICAMERIA FASCICULATA, A. PAJAROENSIS, A. HOOKERI SSP. HOOKERI, PIPERIA YADONII, CEANOTHUS CUNEATUS VAR. RIDGIDUS.

Threats:

LACK OF FIRE.

General:

100'S TO 1000'S OF PLANTS OBSERVED IN 2001.

PLSS: T12S, R02E, Sec. 27 (M)

Accuracy: 1/5 mile

Area (acres): 0

UTM: Zone-10 N4079413 E612361

Latitude/Longitude: 36.85396 / -121.73960

Elevation (feet): 300

County Summary:

Monterey

Quad Summary:

Prunedale (3612176)

Sources:

HOL01F0005 HOLTE, J. - FIELD SURVEY FORM FOR ERICAMERIA FASCICULATA, ARCTOSTAPHYLOS HOOKERI SSP. HOOKERI, ARCTOSTAPHYLOS PAJAROENSIS & CHORIZANTHE PUNGENS VAR. PUNGENS, ETC. 2001-06-01



Occurrence Report
California Department of Fish and Wildlife
California Natural Diversity Database



Map Index Number: 67844

EO Index: 67991

Key Quad: Prunedale (3612176)

Element Code: PDPGN040M2

Occurrence Number: 38

Occurrence Last Updated: 2007-01-23

Scientific Name: *Chorizanthe pungens var. pungens*

Common Name: Monterey spineflower

Listing Status: **Federal:** Threatened

Rare Plant Rank: 1B.2

State: None

Other Lists: SB_UCBBG-UC Berkeley Botanical Garden

CNDDDB Element Ranks: **Global:** G2T2

State: S2

General Habitat:

COASTAL DUNES, CHAPARRAL, CISMONTANE WOODLAND, COASTAL SCRUB.

Micro Habitat:

SANDY SOILS IN COASTAL DUNES OR MORE INLAND WITHIN CHAPARRAL OR OTHER HABITATS. 0-150 M.

Last Date Observed: 2001-06-18

Occurrence Type: Natural/Native occurrence

Last Survey Date: 2001-06-18

Occurrence Rank: Poor

Owner/Manager: PVT

Trend: Unknown

Presence: Presumed Extant

Location:

1 AIR MILE NW OF JUNCTION OF STRAWBERRY CANYON RD. AND SAN MIGUEL CANYON RD., EAST OF SWISS CANYON.

Detailed Location:

ON WEST SIDE OF SAN MIGUEL CANYON RD.

Ecological:

IN DISTURBED, OPEN HABITAT OF GRASSES AND FORBS IN SANDY SOIL. ADJACENT HABITATS INCLUDE ROW-CROP AGRICULTURE, COASTAL SCRUB, MARITIME CHAPARRAL, ANNUAL GRASSLAND, AND OAK WOODLAND.

Threats:

ACTIVITIES RELATED TO ROW CROP AGRICULTURE.

General:

ABOUT 100 PLANTS OBSERVED IN 2001. SITE WAS FARMED FOR STRAWBERRIES FOR 20+ YEARS, THEN INACTIVE FOR 15 YEARS, PRIOR TO RESUMPTION OF FARMING.

PLSS: T12S, R03E, Sec. 31 (M)

Accuracy: 80 meters

Area (acres): 0

UTM: Zone-10 N4078247 E616753

Latitude/Longitude: 36.84291 / -121.69052

Elevation (feet): 160

County Summary:

Monterey

Quad Summary:

Prunedale (3612176)

Sources:

MOR01F0063 MORI, B. - FIELD SURVEY FORM FOR CHORIZANTHE PUNGENS VAR. PUNGENS 2001-06-18



Occurrence Report
California Department of Fish and Wildlife
California Natural Diversity Database



Map Index Number: 67846

EO Index: 67993

Key Quad: Prunedale (3612176)

Element Code: PDPGN040M2

Occurrence Number: 39

Occurrence Last Updated: 2007-01-18

Scientific Name: *Chorizanthe pungens var. pungens*

Common Name: Monterey spineflower

Listing Status: **Federal:** Threatened

Rare Plant Rank: 1B.2

State: None

Other Lists: SB_UCBBG-UC Berkeley Botanical Garden

CNDDDB Element Ranks: **Global:** G2T2

State: S2

General Habitat:

COASTAL DUNES, CHAPARRAL, CISMONTANE WOODLAND, COASTAL SCRUB.

Micro Habitat:

SANDY SOILS IN COASTAL DUNES OR MORE INLAND WITHIN CHAPARRAL OR OTHER HABITATS. 0-150 M.

Last Date Observed: 2001-06-01

Occurrence Type: Natural/Native occurrence

Last Survey Date: 2001-06-01

Occurrence Rank: Excellent

Owner/Manager: ELKHORN SLOUGH FOUNDATION

Trend: Unknown

Presence: Presumed Extant

Location:

LONG VALLEY PRESERVE, NEAR EAST END OF LONG CANYON.

Detailed Location:

THREE NEARBY COLONIES MAPPED AS ONE POLYGON IN NW1/4 OF NE1/4 SEC 12.

Ecological:

IN OPEN TRAIL AREAS IN ECOTONE BETWEEN OAK WOODLAND AND MARITIME CHAPARRAL. DOMINANTS INCLUDE BLACK SAGE AND MANZANITAS.

Threats:

UNAUTHORIZED MOTOR VEHICLE TRAFFIC.

General:

100 TO 1000'S OF PLANTS OBSERVED IN 2001.

PLSS: T13S, R02E, Sec. 12 (M)

Accuracy: specific area

Area (acres): 11

UTM: Zone-10 N4075944 E616123

Latitude/Longitude: 36.82224 / -121.69794

Elevation (feet): 200

County Summary:

Monterey

Quad Summary:

Prunedale (3612176)

Sources:

HOL01F0008 HOLTE, J. - FIELD SURVEY FORM FOR CHORIZANTHE PUNGENS VAR. PUNGENS 2001-06-01



Occurrence Report
California Department of Fish and Wildlife
California Natural Diversity Database



Map Index Number: 67882

EO Index: 67997

Key Quad: Prunedale (3612176)

Element Code: PDPGN040M2

Occurrence Number: 40

Occurrence Last Updated: 2007-01-24

Scientific Name: *Chorizanthe pungens var. pungens*

Common Name: Monterey spineflower

Listing Status: **Federal:** Threatened

Rare Plant Rank: 1B.2

State: None

Other Lists: SB_UCBBG-UC Berkeley Botanical Garden

CNDDB Element Ranks: **Global:** G2T2

State: S2

General Habitat:

COASTAL DUNES, CHAPARRAL, CISMONTANE WOODLAND, COASTAL SCRUB.

Micro Habitat:

SANDY SOILS IN COASTAL DUNES OR MORE INLAND WITHIN CHAPARRAL OR OTHER HABITATS. 0-150 M.

Last Date Observed: 2001-04-22

Occurrence Type: Natural/Native occurrence

Last Survey Date: 2001-04-22

Occurrence Rank: Excellent

Owner/Manager: PVT

Trend: Unknown

Presence: Presumed Extant

Location:

APPROX. 2 ROAD MILES WEST OF PRUNEDALE ON N SIDE OF PESANTE CANYON RD., EAST OF N. KING RD.

Detailed Location:

MAPPED ACCORDING TO COORDINATES (NO DATUM) AND MAP PROVIDED BY LOWE. IN SE1/4 SEC 21 AND SW1/4 SEC 22.

Ecological:

SANDY SOILS AT EDGES AND OPENINGS OF COASTAL SAGE SCRUB OR MIXED MARITIME CHAPARRAL/COAST LIVE OAK WOODLAND. RARE SPECIES INCLUDE ARCTOSTAPHYLOS PAJAROENSIS, CEANOETHUS CUNEATUS RIGIDUS, AND ERICAMERIA FASCICULATA.

Threats:

LAND APPROVED FOR DEVELOPMENT WITH SINGLE FAMILY HOMES. HORSEBACK RIDING AND 4WD ACTIVITY ON PROPERTY ROADS.

General:

ABOUT 2000 PLANTS OBSERVED IN 2001.

PLSS: T13S, R03E, Sec. 21 (M)

Accuracy: specific area

Area (acres): 3

UTM: Zone-10 N4071779 E621624

Latitude/Longitude: 36.78401 / -121.63694

Elevation (feet): 200

County Summary:

Monterey

Quad Summary:

Prunedale (3612176)

Sources:

LOW01F0005 LOWE, T. - FIELD SURVEY FORM FOR CHORIZANTHE PUNGENS VAR. PUNGENS 2001-04-22



Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database



Map Index Number: 46104	EO Index: 46104	
Key Quad: Prunedale (3612176)	Element Code: PDROS1J0W0	
Occurrence Number: 5	Occurrence Last Updated: 2001-10-10	

Scientific Name: <i>Rosa pinetorum</i>	Common Name: pine rose
Listing Status:	Rare Plant Rank: 1B.2
Federal: None	Other Lists:
State: None	
CNDDDB Element Ranks:	
Global: G2Q	
State: S2	

General Habitat: CLOSED-CONE CONIFEROUS FOREST.	Micro Habitat: 2-300 M.
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Last Date Observed: 1993-06-10	Occurrence Type: Natural/Native occurrence
Last Survey Date: 1993-06-10	Occurrence Rank: Unknown
Owner/Manager: MNT COUNTY	Trend: Unknown
Presence: Presumed Extant	

Location:
MANZANITA (COUNTY) PARK.

Detailed Location:
ALONG TRAIL.

Ecological:
AT EDGE OF DRAINAGE, WET LOCATION, FULL SUN.

Threats:
General:
NEEDS FIELDWORK.

PLSS: T13S, R03E, Sec. 18 (M)	Accuracy: 3/5 mile	Area (acres): 0
UTM: Zone-10 N4073183 E617593	Latitude/Longitude: 36.79718 / -121.68189	Elevation (feet):

County Summary: Monterey	Quad Summary: Prunedale (3612176)
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Sources:

YAD93S0001	YADON, V. - YADON SN JEPS #87343 1993-06-10
YAD93S0002	YADON, V. - YADON SN JEPS #87344 1993-06-10



Occurrence Report
California Department of Fish and Wildlife
California Natural Diversity Database



Map Index Number:	22088	EO Index:	68394
Key Quad:	Moss Landing (3612177)	Element Code:	PDSCROJ0P2
Occurrence Number:	40	Occurrence Last Updated:	2007-02-26

Scientific Name:	<i>Cordylanthus rigidus ssp. littoralis</i>	Common Name:	seaside bird's-beak
Listing Status:	Federal: None State: Endangered	Rare Plant Rank:	1B.1
CNDDDB Element Ranks:	Global: G5T2 State: S2	Other Lists:	BLM_S-Sensitive

General Habitat:	Micro Habitat:
CLOSED-CONE CONIFEROUS FOREST, CHAPARRAL, CISMONTANE WOODLAND, COASTAL SCRUB, COASTAL DUNES.	SANDY, OFTEN DISTURBED SITES, USUALLY WITHIN CHAPARRAL OR COASTAL SCRUB. 0-215M.

Last Date Observed:	1908-06-XX	Occurrence Type:	Natural/Native occurrence
Last Survey Date:	1908-06-XX	Occurrence Rank:	Unknown
Owner/Manager:	UNKNOWN	Trend:	Unknown
Presence:	Presumed Extant		

Location:
CASTROVILLE.

Detailed Location:
EXACT LOCATION UNKNOWN. MAPPED AS BEST GUESS BY CNDDDB IN THE VICINITY OF CASTROVILLE.

Ecological:

Threats:

General:

THE ONLY SOURCE OF INFORMATION FOR THIS OCCURRENCE IS 1908 BRANDEGEE COLLECTION. NEEDS FIELDWORK.

PLSS: T13S, R02E, Sec. 28 (M)	Accuracy: 1 mile	Area (acres): 0
UTM: Zone-10 N4069788 E610968	Latitude/Longitude: 36.76738 / -121.75664	Elevation (feet):

County Summary:	Quad Summary:
Monterey	Prunedale (3612176), Moss Landing (3612177)

Sources:
BRA08S0012 BRANDEGEE, K. - BRANDEGEE SN UC #217602 1908-06-XX



Occurrence Report
California Department of Fish and Wildlife
California Natural Diversity Database



Map Index Number: 25089	EO Index: 6095
Key Quad: Prunedale (3612176)	Element Code: PMLIL0V0C0
Occurrence Number: 29	Occurrence Last Updated: 2007-03-30

Scientific Name: <i>Fritillaria liliacea</i>	Common Name: fragrant fritillary
Listing Status:	Rare Plant Rank: 1B.2
Federal: None	Other Lists: USFS_S-Sensitive
State: None	
CNDDB Element Ranks:	
Global: G2	
State: S2	

General Habitat: COASTAL SCRUB, VALLEY AND FOOTHILL GRASSLAND, COASTAL PRAIRIE.	Micro Habitat: OFTEN ON SERPENTINE; VARIOUS SOILS REPORTED THOUGH USUALLY CLAY, IN GRASSLAND. 3-410M.
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Last Date Observed: 1993-XX-XX	Occurrence Type: Natural/Native occurrence
Last Survey Date: 1993-XX-XX	Occurrence Rank: Unknown
Owner/Manager: PVT	Trend: Unknown
Presence: Presumed Extant	

Location:
1 MILE SOUTH OF AROMAS.

Detailed Location:
GENERAL VICINITY OF THE POPULATION IS BOUNDED BY THE SBT/MNT COUNTY LINE TO THE NORTHEAST, SAN JUAN RD AND HWY 101 TO THE SOUTH, AND BY CARPENTERIA RD TO THE NORTHWEST.

Ecological:
Threats:

PAST SHEEP GRAZING SEVERELY IMPACTED THE POPULATION, PRESENT CATTLE GRAZING APPEARS TO HAVE MUCH REDUCED IMPACT.

General:
SITE MANAGED INFORMALLY FOR THE PLANT. 1973 YADON COLLECTIONS FROM "THE ROCKS HWY 101 S SAN BENITO CO...ON W SIDE OF S BOUND LANE" AND "AROMAS AREA, 19180 EL CERRITO WAY.." ATTRIBUTED TO THIS SITE. NEED BETTER LOCATION INFO.

PLSS: T12S, R03E, Sec. 28 (M)	Accuracy: nonspecific area	Area (acres): 509
UTM: Zone-10 N4080639 E621050	Latitude/Longitude: 36.86394 / -121.64197	Elevation (feet): 200

County Summary: Monterey, San Benito	Quad Summary: Prunedale (3612176)
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Sources:

PIT94U0001	PITMAN, P. - CONVERSATION NOTES REGARDING FRITILLARIA LILIACEA OCCURRENCE ON THE PRUNEDALE QUAD. 1994-01-26
YAD73S0003	YADON, V. - YADON SN PGM #1118 1973-03-27
YAD73S0004	YADON, V. - YADON SN PGM #1119 1973-03-27
YAD90S0004	YADON, V. - YADON SN PGM #3868 1990-03-21



Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database



Map Index Number: 68765	EO Index: 69250
Key Quad: Prunedale (3612176)	Element Code: PMLIL0V0C0
Occurrence Number: 64	Occurrence Last Updated: 2007-03-30

Scientific Name: <i>Fritillaria liliacea</i>	Common Name: fragrant fritillary
Listing Status:	Rare Plant Rank: 1B.2
Federal: None	Other Lists: USFS_S-Sensitive
State: None	
CNDDB Element Ranks:	
Global: G2	
State: S2	

General Habitat: COASTAL SCRUB, VALLEY AND FOOTHILL GRASSLAND, COASTAL PRAIRIE.	Micro Habitat: OFTEN ON SERPENTINE; VARIOUS SOILS REPORTED THOUGH USUALLY CLAY, IN GRASSLAND. 3-410M.
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Last Date Observed: 2002-06-XX	Occurrence Type: Natural/Native occurrence
Last Survey Date: 2002-06-XX	Occurrence Rank: Unknown
Owner/Manager: UNKNOWN	Trend: Unknown
Presence: Presumed Extant	

Location:
RANCHO SAN JUAN AREA, ABOUT 2 AIR MILES SE OF PRUNEDALE.

Detailed Location:
"...DISTRIBUTED OVER APPROXIMATELY 3 ACRES...IN THE CENTRAL PORTION OF THE [RANCH SAN JUAN] SPECIFIC PLAN AREA." EXACT LOCATION OF RANCHO SAN JUAN UNKNOWN. MAPPED AS BEST GUESS BY CNDDB ACCORDING TO THE "VICINITY MAP" OF THE PLAN.

Ecological:
MIXED NATIVE/NON-NATIVE GRASSLAND.

Threats:
General:
FEWER THAN 20 PLANTS WERE OBSERVED IN 1998, AND AGAIN IN APRIL AND JUNE OF 2002. NEEDS FIELDWORK TO DETERMINE EXACT LOCATION.

PLSS: T13S, R03E, Sec. 34 (M)	Accuracy: 1 mile	Area (acres): 0
UTM: Zone-10 N4068933 E621935	Latitude/Longitude: 36.75832 / -121.63391	Elevation (feet):

County Summary: Monterey	Quad Summary: Natividad (3612165), Salinas (3612166), San Juan Bautista (3612175), Prunedale (3612176)
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Sources:
TAY05U0004 TAYLOR, D. - EMAIL FROM DEAN TAYLOR RE: NEW OCCURRENCE REPORTED IN RANCHO SAN JUAN SPECIFIC PLAN EIR. 2005-01-07



Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database



Map Index Number: 23613	EO Index: 7359
Key Quad: Prunedale (3612176)	Element Code: PMORC1X070
Occurrence Number: 10	Occurrence Last Updated: 1996-10-30

Scientific Name: <i>Piperia yadonii</i>	Common Name: Yadon's rein orchid
Listing Status:	Rare Plant Rank: 1B.1
Federal: Endangered	Other Lists:
State: None	
CNDDB Element Ranks:	
Global: G2	
State: S2	

General Habitat: CLOSED-CONE CONIFEROUS FOREST, CHAPARRAL, COASTAL BLUFF SCRUB.	Micro Habitat: ON SANDSTONE AND SANDY SOIL, BUT POORLY DRAINED AND OFTEN DRY. 10-510 M.
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Last Date Observed: 199X-XX-XX	Occurrence Type: Natural/Native occurrence
Last Survey Date: 199X-XX-XX	Occurrence Rank: Unknown
Owner/Manager: PVT	Trend: Unknown
Presence: Presumed Extant	

Location:
VIERRA CANYON, BETWEEN CANYON AND HIGHWAY 101, WEST OF CRAZY HORSE CANYON ROAD, NORTHEAST OF PRUNEDALE.

Detailed Location:

Ecological:

Threats:

PROPOSED REALIGNMENT OF HWY 101 (PRUNEDALE BYPASS) THREATENS.

General:

OVER 10 PLANTS REPORTED CIRCA 1992.

PLSS: T13S, R03E, Sec. 15 (M)	Accuracy: 2/5 mile	Area (acres): 0
UTM: Zone-10 N4074293 E621601	Latitude/Longitude: 36.80668 / -121.63680	Elevation (feet): 450

County Summary: Monterey	Quad Summary: Prunedale (3612176)
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Sources:

JSA96R0001	JONES & STOKES ASSOCIATES, INC. - FINAL RECOVERY STRATEGIES FOR SIX COASTAL PLANT SPECIES ON THE MONTEREY PENINSULA 1996-05-XX
MOR91S0001	MORGAN, R. - MORGAN #1983 HERBARIUM UNKNOWN (CITED IN MOR93U0003) 1991-07-21
MOR93U0005	MORGAN, R. - COMMENTS TO CNPS INVENTORY 5TH EDITION AND COLLECTION INFORMATION REGARDING PIPERIA YADONII 1993-XX-XX
RUT93U0001	RUTHERFORD, C. - LETTER WITH AAA MAP FAXED TO R. BITTMAN REGARDING LOCATIONS FOR PIPERIA YADONII AND POTENTILLA HICKMANII. 1993-05-25



Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database



Map Index Number: 23612	EO Index: 12672
Key Quad: Prunedale (3612176)	Element Code: PMORC1X070
Occurrence Number: 11	Occurrence Last Updated: 1995-11-02

Scientific Name: <i>Piperia yadonii</i>	Common Name: Yadon's rein orchid
Listing Status:	Rare Plant Rank: 1B.1
Federal: Endangered	Other Lists:
State: None	
CNDDDB Element Ranks:	
Global: G2	
State: S2	

General Habitat: CLOSED-CONE CONIFEROUS FOREST, CHAPARRAL, COASTAL BLUFF SCRUB.	Micro Habitat: ON SANDSTONE AND SANDY SOIL, BUT POORLY DRAINED AND OFTEN DRY. 10-510 M.
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Last Date Observed: 199X-XX-XX	Occurrence Type: Natural/Native occurrence
Last Survey Date: 199X-XX-XX	Occurrence Rank: Unknown
Owner/Manager: MNT COUNTY	Trend: Unknown
Presence: Presumed Extant	

Location:
MANZANITA PARK, SOUTH OF INTERSECTION OF SAN MIGUEL CANYON ROAD AND CASTROVILLE ROAD, NORTH OF PRUNEDALE.

Detailed Location:

Ecological:
SPIKES OF PLANTS WERE EXPOSED TO FULL SUN, GROWING UP THROUGH PROSTRATE MATS OF ARCTOSTAPHYLOS HOOKERI.

Threats:

General:
OVER 30 PLANTS WITH FLOWERING STALKS REPORTED CIRCA 1992.

PLSS: T13S, R03E, Sec. 17 (M)	Accuracy: 1/5 mile	Area (acres): 0
UTM: Zone-10 N4074019 E618377	Latitude/Longitude: 36.80462 / -121.67298	Elevation (feet): 380

County Summary: Monterey	Quad Summary: Prunedale (3612176)
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Sources:

JSA96R0001	JONES & STOKES ASSOCIATES, INC. - FINAL RECOVERY STRATEGIES FOR SIX COASTAL PLANT SPECIES ON THE MONTEREY PENINSULA 1996-05-XX
MOR90A0002	MORGAN & ACKERMAN - "TWO NEW PIPERIAS (ORCHIDACEAE) FROM WESTERN N. AMERICA" LINDLEYANA 5(4):205-211 1990-XX-XX
MORNDS0005	MORGAN - MORGAN #1585 CAS (CITED IN MOR90A0002) XXXX-XX-XX
RUT93U0001	RUTHERFORD, C. - LETTER WITH AAA MAP FAXED TO R. BITTMAN REGARDING LOCATIONS FOR PIPERIA YADONII AND POTENTILLA HICKMANII. 1993-05-25



Occurrence Report
California Department of Fish and Wildlife
California Natural Diversity Database



Map Index Number: 67836	EO Index: 7361
Key Quad: Prunedale (3612176)	Element Code: PMORC1X070
Occurrence Number: 12	Occurrence Last Updated: 2007-06-04

Scientific Name: <i>Piperia yadonii</i>	Common Name: Yadon's rein orchid
Listing Status:	Rare Plant Rank: 1B.1
Federal: Endangered	Other Lists:
State: None	
CNDDDB Element Ranks:	
Global: G2	
State: S2	

General Habitat: CLOSED-CONE CONIFEROUS FOREST, CHAPARRAL, COASTAL BLUFF SCRUB.	Micro Habitat: ON SANDSTONE AND SANDY SOIL, BUT POORLY DRAINED AND OFTEN DRY. 10-510 M.
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Last Date Observed: 2001-06-01	Occurrence Type: Natural/Native occurrence
Last Survey Date: 2001-06-01	Occurrence Rank: Excellent
Owner/Manager: TNC-ELKHORN SLOUGH RES, ESF	Trend: Unknown
Presence: Presumed Extant	

Location:
ON RIDGE (NORTH) OF BLOHM RANCH, 0.8 AIR MILE SOUTH OF LAS LOMAS.

Detailed Location:
BLOHM RANCH IS LOCATED AT 695 ELKHORN ROAD, S OF INTERSECTION OF ELKHORN RD. AND HALL RD. MAPPED ON RIDGE AT N SIDE OF BLOHM RANCH, ACCORDING TO MAP PROVIDED BY HOLTE.

Ecological:
MARITIME CHAPARRAL. OTHER RARE SPECIES INCLUDE ARCTOSTAPHYLOS PAJAROENSIS, A. HOOKERI SSP. HOOKERI, CHORIZANTHE PUNGENS VAR. PUNGENS, ERICAMERIA FASCICULATA, AND CEANOETHUS CUNEATUS VAR. RIGIDUS.

Threats:
LACK OF FIRE.

General:
OVER 50 PLANTS SEEN CIRCA 1992. 1000 PLANTS IN 3 POPULATIONS AT PRESERVE IN 1995. 100'S TO 1000'S OF PLANTS OBSERVED IN 2001. BETTER LOCATION INFO NEEDED.

PLSS: T12S, R02E, Sec. 27 (M)	Accuracy: 1/5 mile	Area (acres): 0
UTM: Zone-10 N4079413 E612361	Latitude/Longitude: 36.85396 / -121.73960	Elevation (feet): 150

County Summary: Monterey	Quad Summary: Prunedale (3612176)
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Sources:

CHA99S0003	CHANDLER, H. - CHANDLER #434 UC #4678 (ALSO CITED IN MOR90A0002) 1899-06-01
COL96U0002	COLEMAN, R. - COLLECTION/SITE INFORMATION FOR PIPERIA YADONII 1996-01-12
HOL01F0005	HOLTE, J. - FIELD SURVEY FORM FOR ERICAMERIA FASCICULATA, ARCTOSTAPHYLOS HOOKERI SSP. HOOKERI, ARCTOSTAPHYLOS PAJAROENSIS & CHORIZANTHE PUNGENS VAR. PUNGENS, ETC. 2001-06-01
JSA96R0001	JONES & STOKES ASSOCIATES, INC. - FINAL RECOVERY STRATEGIES FOR SIX COASTAL PLANT SPECIES ON THE MONTEREY PENINSULA 1996-05-XX
LAK95F0005	LAKE, V. - FIELD SURVEY FORM FOR PIPERIA YADONII 1995-06-27
MAL96S0004	MALLORY, J. - MALLORY #92274(02) RSA #593810 1996-06-17
MOR90A0002	MORGAN & ACKERMAN - "TWO NEW PIPERIAS (ORCHIDACEAE) FROM WESTERN N. AMERICA" LINDLEYANA 5(4):205-211 1990-XX-XX
RUT93U0001	RUTHERFORD, C. - LETTER WITH AAA MAP FAXED TO R. BITTMAN REGARDING LOCATIONS FOR PIPERIA YADONII AND POTENTILLA HICKMANII. 1993-05-25



Occurrence Report
California Department of Fish and Wildlife
California Natural Diversity Database



Map Index Number:	23611	EO Index:	12670
Key Quad:	Prunedale (3612176)	Element Code:	PMORC1X070
Occurrence Number:	13	Occurrence Last Updated:	2006-01-10

Scientific Name:	<i>Piperia yadonii</i>	Common Name:	Yadon's rein orchid
Listing Status:	Federal: Endangered	Rare Plant Rank:	1B.1
	State: None	Other Lists:	
CNDDDB Element Ranks:	Global: G2		
	State: S2		

General Habitat:	Micro Habitat:
CLOSED-CONE CONIFEROUS FOREST, CHAPARRAL, COASTAL BLUFF SCRUB.	ON SANDSTONE AND SANDY SOIL, BUT POORLY DRAINED AND OFTEN DRY. 10-510 M.

Last Date Observed:	1996-06-17	Occurrence Type:	Natural/Native occurrence
Last Survey Date:	1996-06-17	Occurrence Rank:	Unknown
Owner/Manager:	PVT	Trend:	Unknown
Presence:	Presumed Extant		

Location:
 NORTH OF LONG VALLEY, ALONG SOUTH SIDE OF TUCKER ROAD, NORTHWEST OF PRUNEDALE.

Detailed Location:

Ecological:

Threats:

General:

OVER 150 PLANTS WITH FLOWERING STALKS REPORTED CIRCA 1992. 1996 COLLECTION BY MALLORY FROM END OF TUCKER ROAD ATTRIBUTED TO THIS SITE. 1670 PLANTS COUNTED IN MARCH 1996 BY MALLORY.

PLSS: T13S, R02E, Sec. 01 (M)	Accuracy: nonspecific area	Area (acres): 93
UTM: Zone-10 N4076408 E616233	Latitude/Longitude: 36.82641 / -121.69664	Elevation (feet): 300

County Summary:

Monterey

Quad Summary:

Prunedale (3612176)

Sources:

- JSA96R0001 JONES & STOKES ASSOCIATES, INC. - FINAL RECOVERY STRATEGIES FOR SIX COASTAL PLANT SPECIES ON THE MONTEREY PENINSULA 1996-05-XX
- MAL96S0003 MALLORY, J. - MALLORY #92274(04) RSA #593801 1996-06-17
- MOR92S0001 MORGAN, R. - MORGAN #2114 HERBARIUM UNKNOWN (CITED IN MOR93U0005) 1992-05-09
- MOR93U0005 MORGAN, R. - COMMENTS TO CNPS INVENTORY 5TH EDITION AND COLLECTION INFORMATION REGARDING PIPERIA YADONII 1993-XX-XX
- RUT93U0001 RUTHERFORD, C. - LETTER WITH AAA MAP FAXED TO R. BITTMAN REGARDING LOCATIONS FOR PIPERIA YADONII AND POTENTILLA HICKMANII. 1993-05-25



Occurrence Report
California Department of Fish and Wildlife
California Natural Diversity Database



Map Index Number:	59012	EO Index:	59069
Key Quad:	Prunedale (3612176)	Element Code:	PMORC1X070
Occurrence Number:	22	Occurrence Last Updated:	2007-06-06

Scientific Name:	<i>Piperia yadonii</i>	Common Name:	Yadon's rein orchid
Listing Status:	Federal: Endangered	Rare Plant Rank:	1B.1
	State: None	Other Lists:	
CNDDDB Element Ranks:	Global: G2		
	State: S2		

General Habitat:	Micro Habitat:
CLOSED-CONE CONIFEROUS FOREST, CHAPARRAL, COASTAL BLUFF SCRUB.	ON SANDSTONE AND SANDY SOIL, BUT POORLY DRAINED AND OFTEN DRY. 10-510 M.

Last Date Observed:	2005-12-09	Occurrence Type:	Natural/Native occurrence
Last Survey Date:	2005-12-09	Occurrence Rank:	Fair
Owner/Manager:	PVT-PGE	Trend:	Unknown
Presence:	Presumed Extant		

Location:
JUST N OF PRUNEDALE, BETWEEN PRUNEDALE AND BERTA CANYON.

Detailed Location:
SEVERAL COLONIES MAPPED ALONG EAST-WEST TENDING RIDGES JUST N OF PRUNEDALE, DUE EAST OF 101 AND SOUTH OF BERTA CANYON.

Ecological:
MARITIME CHAPARRAL ON SANDSTONE ROCK OUTCROP AND S-FACING SLOPES. OTHER RARE SPP INCLUDE ARCTOSTAPHYLOS HOOKERI, A. PAJAROENSIS, CHORIZANTHE PUNGENS, ERICAMERIA FASCICULATA, LOMATIUM PARVIFLORUM, AND PIPERIA MICHAELII.

Threats:
FRAGMENTATION DUE TO DEVELOPMENT; INVASIVES INCLUDE ACACIA SP., EUCALYPTUS GLOBULUS, CORTADERIA JUBATUM.

General:
3500 PLANTS SEEN IN S AND SW COLONIES IN 2004. AT LEAST 6 PLANTS IN NORTHERN COLONY IN 2004 (POLYGON TO THE NNW). 15 PLANTS IN NE AND E POLYGON IN 2005.

PLSS:	T13S, R03E, Sec. 20 (M)	Accuracy:	specific area	Area (acres):	18
UTM:	Zone-10 N4071598 E619642	Latitude/Longitude:	36.78263 / -121.65918	Elevation (feet):	260

County Summary:	Quad Summary:
Monterey	Prunedale (3612176)

Sources:

CHI04F0001	CHILDS, S. - FIELD SURVEY FORM FOR ARCTOSTAPHYLOS PAJAROENSIS & PIPERIA YADONII 2004-06-09
CHI04M0001	CHILDS, S. - MAP OF OBSERVATIONS OF PIPERIA YADONII. 2004-06-XX
DUF04R0001	DENISE DUFFY & ASSOCIATES - PORTION OF DRAFT ENVIRONMENTAL IMPACT REPORT FOR CARLSEN ESTATES RESIDENTIAL SUBDIVISION. 2004-11-XX
MOR05F0013	MORI, B. - FIELD SURVEY FORM FOR LOMATIUM PARVIFOLIUM & ERICAMERIA FASCICULATA & ARCTOSTAPHYLOS PAJAROENSIS & PIPERIA YADONII & PIPERIA MICHAELII 2005-12-09
VAN05U0002	VANDYKE, E. - EMAIL REGARDING PIPERIA YADONII 2005-10-15



Occurrence Report
California Department of Fish and Wildlife
California Natural Diversity Database



Map Index Number:	63631	EO Index:	63726
Key Quad:	Prunedale (3612176)	Element Code:	PMORC1X070
Occurrence Number:	30	Occurrence Last Updated:	2006-01-10

Scientific Name:	<i>Piperia yadonii</i>	Common Name:	Yadon's rein orchid
Listing Status:	Federal: Endangered	Rare Plant Rank:	1B.1
	State: None	Other Lists:	
CNDDDB Element Ranks:	Global: G2		
	State: S2		

General Habitat:	Micro Habitat:
CLOSED-CONE CONIFEROUS FOREST, CHAPARRAL, COASTAL BLUFF SCRUB.	ON SANDSTONE AND SANDY SOIL, BUT POORLY DRAINED AND OFTEN DRY. 10-510 M.

Last Date Observed:	1996-06-17	Occurrence Type:	Natural/Native occurrence
Last Survey Date:	1996-06-17	Occurrence Rank:	Unknown
Owner/Manager:	UNKNOWN	Trend:	Unknown
Presence:	Presumed Extant		

Location:
EASTERN PART OF MANZANITA PARK, UPSLOPE OF RESIDENTIAL AREA OFF COUNTRYSIDE CT, SW OF HWY 101/SAN MIGUEL CYN JUNCTION.

Detailed Location:
EXACT LOCATION UNKNOWN. MAPPED AS BEST GUESS BY CNDDDB IN SE CORNER OF MANZANITA PARK UPSLOPE OF RESIDENTIAL AREAS.

Ecological:
ON RIDGES, IN LOW-GROWING CHAPARRAL NEAR OLD TRAILS, PATHS, FIREBREAKS, AND ROAD CUTS UNDER THE OUTER MOST BRANCHES OF ARCTOSTAPHYLOS HOOKERI, A. PAJARONEISIS, AND ADENOSTOMA FASCICULATUM.

Threats:
General:
6,483 PLANTS COUNTED IN MARCH 1996; APPROXIMATELY 2% FLOWERING SUCCESS NOTED.

PLSS: T13S, R03E, Sec. 18 (M)	Accuracy: 1/5 mile	Area (acres): 0
UTM: Zone-10 N4072995 E618087	Latitude/Longitude: 36.79542 / -121.67638	Elevation (feet): 330

County Summary:	Quad Summary:
Monterey	Prunedale (3612176)

Sources:
MAL96S0001 MALLORY, J. - MALLORY #92274(01) RSA #593805 1996-06-17



Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database



Map Index Number: 63635	EO Index: 63730
Key Quad: Prunedale (3612176)	Element Code: PMORC1X070
Occurrence Number: 31	Occurrence Last Updated: 2006-01-10

Scientific Name: <i>Piperia yadonii</i>	Common Name: Yadon's rein orchid
Listing Status:	Rare Plant Rank: 1B.1
Federal: Endangered	Other Lists:
State: None	
CNDDDB Element Ranks:	
Global: G2	
State: S2	

General Habitat: CLOSED-CONE CONIFEROUS FOREST, CHAPARRAL, COASTAL BLUFF SCRUB.	Micro Habitat: ON SANDSTONE AND SANDY SOIL, BUT POORLY DRAINED AND OFTEN DRY. 10-510 M.
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Last Date Observed: XXXX-XX-XX	Occurrence Type: Natural/Native occurrence
Last Survey Date: XXXX-XX-XX	Occurrence Rank: Unknown
Owner/Manager: PVT	Trend: Unknown
Presence: Presumed Extant	

Location:
DESMOND/TIMEVIEW/AVERY ROAD (WHITEHEAD PROPERTY).

Detailed Location:
MAPPED IN GENERAL VICINITY OF DESMOND ROAD, AVERY LANE, AND PARADISE CANYON ROAD.

Ecological:

Threats:

General:
VAN DYKE HAS LOCATED AND VISITED OCCURRENCES IN THIS VICINITY SEVERAL TIMES. NEED SPECIFIC MAP DETAIL AND ADDITIONAL SITE INFORMATION.

PLSS: T13S, R02E, Sec. 12 (M)	Accuracy: 2/5 mile	Area (acres): 0
UTM: Zone-10 N4074848 E616227	Latitude/Longitude: 36.81235 / -121.69694	Elevation (feet):

County Summary: Monterey	Quad Summary: Prunedale (3612176)
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Sources:
VAN05U0002 VANDYKE, E. - EMAIL REGARDING PIPERIA YADONII 2005-10-15



Occurrence Report
California Department of Fish and Wildlife
California Natural Diversity Database



Map Index Number:	63636	EO Index:	63731
Key Quad:	Prunedale (3612176)	Element Code:	PMORC1X070
Occurrence Number:	32	Occurrence Last Updated:	2007-06-04

Scientific Name:	<i>Piperia yadonii</i>	Common Name:	Yadon's rein orchid
Listing Status:	Federal: Endangered	Rare Plant Rank:	1B.1
	State: None	Other Lists:	
CNDDDB Element Ranks:	Global: G2		
	State: S2		

General Habitat:	Micro Habitat:
CLOSED-CONE CONIFEROUS FOREST, CHAPARRAL, COASTAL BLUFF SCRUB.	ON SANDSTONE AND SANDY SOIL, BUT POORLY DRAINED AND OFTEN DRY. 10-510 M.

Last Date Observed:	XXXX-XX-XX	Occurrence Type:	Natural/Native occurrence
Last Survey Date:	XXXX-XX-XX	Occurrence Rank:	Unknown
Owner/Manager:	PVT-ELKHORN SLOUGH FOUNDATION	Trend:	Unknown
Presence:	Presumed Extant		

Location:
RENERIA AND BROTHERS RANCHES, EAST OF ELKHORN SLOUGH.

Detailed Location:
ELKHORN SLOUGH UPLANDS. MAPPED AS BEST GUESS ALONG RIDGES WITHIN BOUNDARIES OF THE TWO RANCHES. SPECIFIC MAP DETAIL NEEDED.

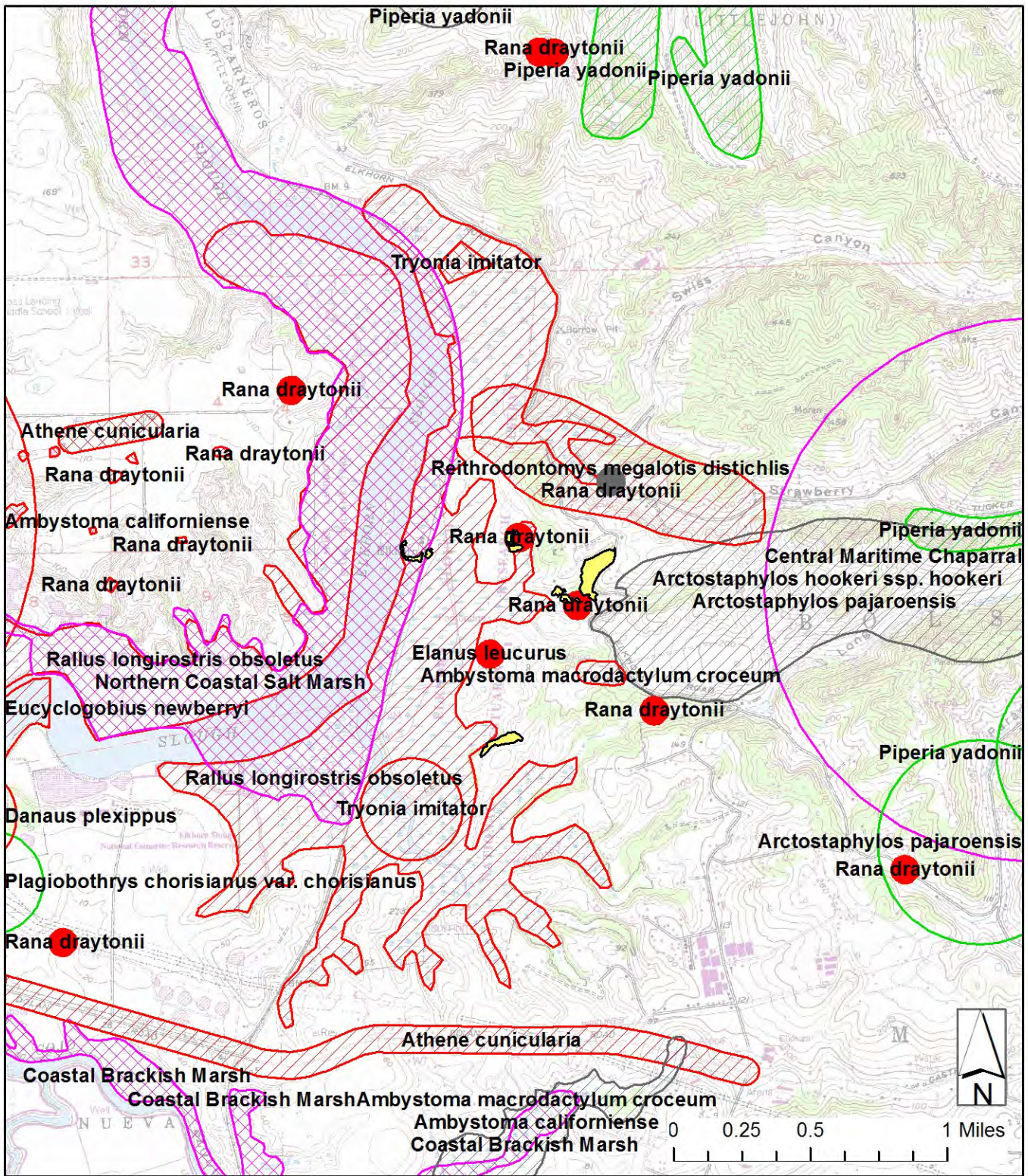
Ecological:
RIDGELINES SUPPORT REMNANT MARITIME CHAPARRAL PATCHES SIMILAR TO BLOHM RANCH.

Threats:
General:
HAYES, GRAFF AND VAN DYKE HAVE VISITED PIPERIA YADONII OCCURRENCES ON THESE RANCHES VARIOUS TIMES. OWNED AND MANAGED BY THE ELKHORN SLOUGH FOUNDATION. NEEDS FIELDWORK AND MORE ECOLOGICAL AND POPULATION DETAIL.

PLSS: T12S, R02E, Sec. 35 (M)	Accuracy: nonspecific area	Area (acres): 244
UTM: Zone-10 N4079278 E613986	Latitude/Longitude: 36.85254 / -121.72140	Elevation (feet):

County Summary:	Quad Summary:
Monterey	Prunedale (3612176)

Sources:
VAN05U0002 VANDYKE, E. - EMAIL REGARDING PIPERIA YADONII 2005-10-15



Special Status Plants and Animals Within One Mile of Project Area

Eucalyptus Removal Area

California Natural Diversity Database Occurrence

Plant (non-specific)

Plant (circular)

Animal (80m)

Animal (non-specific)

Animal (circular)

Terrestrial Comm. (specific)

Terrestrial Comm. (circular)

Multiple (non-specific)

Source: CNDDB November 2014 and USGS

Appendix III

Memorandum - Estimate of Greenhouse Gas Emissions associated with Elkhorn Slough Ecological Reserve Eucalyptus Removal.



Memorandum

Date: October 16, 2012
To: Andrea Woolfolk, ESNERR
From: Steve Carroll
Subject: Estimate of Greenhouse Gas Emissions associated with the removal of four groves of Eucalyptus trees from within the Elkhorn Slough National Estuarine Research Reserve.

DU Project No.: US-CA-485-2
DU Project Name: Parson Slough

INTRODUCTION

Elkhorn Slough National Estuarine Research Reserve (ESNERR) is seeking a permit for removal of approximately 1,225 Eucalyptus globulus trees ranging in size from six to thirty-four inches at diameter breast height (DBH). The trees are distributed in four groves within ENSERR as outlined below:

Grove	Acres	No. Trees
Cattail	8.2	615
Five Fingers	1.3	197
South Marsh	1.3	144
Hummingbird	2.8	299
	13.6	1,255

The proposed cutting and removal will take place during a four month window, from August through November, over the next several years. At this time it is unknown as to which trees will be removed first or how many trees per year will be removed.

The purpose of this memorandum is to estimate the greenhouse gas emissions associated with these removal activities.

ASSUMPTIONS

In order to estimate greenhouse gas emissions assumptions had to be made regarding timing, method of removal and the volume of trees to be removed, each described below.

TIMING

This memorandum assumes that trees will be removed over a four year period starting in 2013, with one grove removed each year. The order of removal was assumed to be Cattail, Five Fingers, South Marsh and Hummingbird.

METHOD

Multiple approaches could be taken in completion of this work. The method used in this analysis was chosen based on the belief that it is the most standardized approach within the industry and therefore representative of the actual work to be performed.

The approach is assumed to consist of workers with chainsaws dropping trees to the grove floor. Workers with chainsaws would buck up the felled trees into manageable sizes. Trees would then be hauled by a tracked log skidder to a temporary landing, where they would be chipped and loaded by a whole tree chipper into trucks and hauled off to the disposal site. It was assumed that the crew and equipment performing the work would consist of the following:

Equipment Type	Quantity	
	Equipment	Operators
Chainsaws	3	3
Skidder	1	1
Whole Tree Chipper	1	2
Haul Trucks	4	4
Fuel Truck	1	1

Work days and hours were set at five days per week, eight hours per day. The four groves are located in rural areas. Access for equipment is adequate, however the size of the equipment would be limited by unimproved narrow, winding roads. Due to these site restrictions it was assumed that 40 cubic yard (CY) capacity trucks would be the maximum size that could access the sites. The disposal site was assumed to be twenty miles from the worksite. Likewise, worker commutes were assumed to be twenty miles.

TREE VOLUME

The production rate for tree removal varies greatly with the size and location of the trees to be removed. The volume of trees to be removed was estimated for each grove by multiplying the number of trees per grove (provided by ESNERR) by the average chipped tree volume. The chipped tree volume was developed using a standard volume table for blue gum along California's central coast (Pillsbury, 1989). The table provided the gross tree volume (defined as the volume of tree from outside of bark to a two inch top) for trees of various DBH and heights. It was assumed that the groves were evenly distributed in DBH and height, so the average volume was taken for all trees in the table between six and thirty four inches DBH with a height of ninety feet or greater. The tree canopy was estimated by adding 10% to the average gross volume. Finally, to determine the chipped volume a bulking factor of 2.5 was applied (Lynch, 2005). The average chipped tree volume was calculated to be 21.7 cubic yards.

PRODUCTION RATES

Rate of removal is limited by the chipping and hauling operation. Given the site constraints, specified equipment and crew size it was estimated that roughly nineteen trees could be felled, chipped and removed from the site per day.

ANALYSIS

Emission analysis looked at off-site emissions resulting from worker commute, vender trips (fueling) and off-road emissions due to tree removal activities. Off-site emissions were calculated using project specific number of trips, standard mileage distance assumptions and emission rates developed by the South Coast Air Quality Management District for on-road vehicles and heavy-heavy-duty vehicles (using EMFAC2007 version 2.3). Off-road emission calculations used the Off-Road Equipment Emission Factors provided in CalEEMod Appendix D. Emission factors for 2012 were used exclusively in this analysis.

The analysis was "validated" by running the CalEEMod Model Version 2011.1.1. The model was used as a check on the specific methodologies and assumptions used in the analysis and not used for the analysis itself since it is set up for more standardized construction projects such as site development and building construction.

RESULTS

Based on the analysis, the removal of the four eucalyptus groves will result in a total of 268.84 metric tons of carbon dioxide equivalent (CO₂e). Compared to the current annual inventory of 427,000,000 metric tons in California, this represents 0.00006 percent of that inventory. The emissions per grove is presented in the table below.

Tree Removal Emissions		
Year	Grove	CO ₂ e
2013	Cattail	131.55
2014	Five Fingers	42.27
2015	South Marsh	30.96
2016	Hummingbird	60.06
Total		260.84

The removal of the groves will convert 13.6 acres of eucalyptus forest to grassland. This will result in a one-time change in carbon sequestration capacity of the vegetation land use by 1,451.0 CO₂e.

Detailed Results are provided in Attachment A.

REFERENCES

Environ International Corporation (2011). California Emissions Estimator Model (CalEEMOD) Version 2011.1 and associated documentation. Prepared for the South Coast Air Quality Management District.

Lynch, Peter (2005). Foresters Field Handbook. Forest Sciences, Colorado State University Bulletin no. XCM-185.

Pillsbury, Norman et al (1989). Wood Volume Equations for Central Coast Blue Gum. California Agriculture, Volume 43, No. 6.

South Coast Air Quality Management District (2008). EMFAC 2007 (v2.3) Emission Factors for On-Road Vehicles (Scenario Years 2007-2026) and Heavy-Heavy Duty Vehicles (Scenario Years 2007-2026).

U.S. Environmental Protection Agency (2011). Greenhouse Gas Emissions from a Typical Passenger Vehicle. EPA-420-F-11-041.

U.S. Environmental Protection Agency (2005). Emission Facts; Average Carbon Dioxide Emissions Resulting from Gasoline and Diesel Fuel. EPA420-F-05-001

Attachment A - Emission Summary

Project: Removal of Globulus Eucalyptus trees from four groves within ESNERR

Date: October 18, 2012

Overall Construction

Year	Grove	Emissions (Metric Ton)									
		TOG	ROG	CO	NOX	SO2	PM10	PM2_5	CO2	CH4	CO2e
2013	Cattail	4.96	8.80	18.97	0.80	0.00	0.07	0.07	130.86	0.55	131.55
2014	Five Fingers	1.59	2.82	6.08	0.26	0.00	0.02	0.02	42.06	0.18	42.27
2015	South Marsh	1.16	2.06	4.44	0.19	0.00	0.02	0.02	30.79	0.13	30.96
2016	Hummingbird	2.41	4.28	9.22	0.39	0.00	0.03	0.03	63.73	0.27	64.06
Total		10.12	17.95	38.71	1.64	0.01	0.14	0.14	267.44	1.12	268.84

Vegetation Conversion

Year	Grove	Forrest Land			Grassland			CO2e
		Initial Acres	Final Acres	Total CO2	Initial Acres	Final Acres	Total CO2	
2013	Cattail	8.2	0	-910.2	0	8.2	35.3	-874.9
2014	Five Fingers	1.3	0	-144.3	0	1.3	5.6	-138.7
2015	South Marsh	1.3	0	-144.3	0	1.3	5.6	-138.7
2016	Hummingbird	2.8	0	-310.8	0	2.8	12.1	-298.7
Total		13.6	0	-1509.6	0	13.6	58.6	-1451.0

* Estimates the one-time change in carbon sequestration capacity of the vegetation land use type by converting from Eucalyptus forest to grassland

Details by Grove

Cattail - 2013

Category	Emissions in Metric Ton/Year									
	TOG	ROG	CO	NOX	SO2	PM10	PM2_5	CO2	CH4	CO2e
Worker	0.00	0.00	0.03	0.00	0.00	0.00	0.00	3.86	0.00	3.86
Vender	0.00	0.00	0.01	0.01	0.00	0.00	0.00	1.82	0.00	1.82
Hauling	0.00	0.02	0.06	0.19	0.00	0.01	0.01	25.57	0.00	25.58
Chainsaw	4.13	8.73	18.70	0.16	0.00	0.04	0.04	49.01	0.54	49.64
Chipper	0.61	0.03	0.09	0.29	0.00	0.01	0.01	37.09	0.00	37.12
Skidder	0.22	0.02	0.08	0.15	0.00	0.01	0.01	13.51	0.00	13.53
Total	4.96	8.80	18.97	0.80	0.00	0.07	0.07	130.86	0.55	131.55

Five Fingers - 2014

Category	Emissions in Metric Ton/Year									
	TOG	ROG	CO	NOX	SO2	PM10	PM2_5	CO2	CH4	CO2e
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	1.24	0.00	1.24
Vender	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.72	0.00	0.72
Hauling	0.00	0.00	0.02	0.06	0.00	0.00	0.00	8.19	0.00	8.20
Chainsaw	1.32	2.80	5.99	0.05	0.00	0.01	0.01	15.70	0.17	15.90
Chipper	0.19	0.01	0.03	0.09	0.00	0.00	0.00	11.88	0.00	11.89
Skidder	0.07	0.01	0.03	0.05	0.00	0.00	0.00	4.33	0.00	4.33
Total	1.59	2.82	6.08	0.26	0.00	0.02	0.02	42.06	0.18	42.27

South Marsh - 2015

Category	Emissions in Metric Ton/Year									
	TOG	ROG	CO	NOX	SO2	PM10	PM2_5	CO2	CH4	CO2e
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.90	0.00	0.90
Vender	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.58
Hauling	0.00	0.00	0.01	0.04	0.00	0.00	0.00	5.99	0.00	5.99
Chainsaw	0.97	2.04	4.38	0.04	0.00	0.01	0.01	11.48	0.13	11.62
Chipper	0.14	0.01	0.02	0.07	0.00	0.00	0.00	8.69	0.00	8.69
Skidder	0.05	0.00	0.02	0.03	0.00	0.00	0.00	3.16	0.00	3.17
Total	1.16	2.06	4.44	0.19	0.00	0.02	0.02	30.79	0.13	30.96

Hummingbird - 2016

Category	Emissions in Metric Ton/Year									
	TOG	ROG	CO	NOX	SO2	PM10	PM2_5	CO2	CH4	CO2e
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	1.88	0.00	1.88
Vender	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.99	0.00	0.99
Hauling	0.00	0.01	0.03	0.09	0.00	0.00	0.00	12.43	0.00	12.44
Chainsaw	2.01	4.24	9.09	0.08	0.00	0.02	0.02	23.83	0.26	24.13
Chipper	0.29	0.01	0.04	0.14	0.00	0.00	0.00	18.03	0.00	18.05
Skidder	0.11	0.01	0.04	0.07	0.00	0.00	0.00	6.57	0.00	6.58
Total	2.41	4.28	9.22	0.39	0.00	0.03	0.03	63.73	0.27	64.06