

## MEMORANDUM

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**To:** Todd Morrison, County of Santa Barbara  
**From:** Melissa A. Blundell (Dudek Biologist) and John H. Davis IV (Dudek Project Manager/Senior Coastal Ecologist)  
**Subject:** Monarch Butterfly Surveys for Jalama Beach Affordable Overnight Accommodations, Lompoc, Santa Barbara County, California  
**Date:** January 2, 2018  
**cc:** Jill Van Wie, County of Santa Barbara  
**Attachment(s):** Figure 1 – Monarch Butterfly Survey Results

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This memorandum (memo) serves as an addendum to the *Biological Report for Jalama Beach Affordable Overnight Accommodations, Lompoc, Santa Barbara County, California* (Biological Report; Dudek 2017a). The Biological Report was produced in response to Santa Barbara County Planning and Development (County P&D) request to address sensitive biological resources, including monarch butterflies (*Danaus plexippus*), which have the potential to be impacted by the Jalama Beach Affordable Overnight Accommodations Project (project). Specifically, this memo addresses if overwintering monarch butterflies are located on site, if any overwintering habitat is present on site, and if any mitigation concerning monarch butterflies is necessary (if impacts may occur to this species as a result of the project). This memo provides a description of the monarch butterfly overwintering sites, methods and results of the monarch butterfly surveys, and provides an impact analysis with any associated mitigation measures. A full description of the project location, project description, existing conditions, and relevant local policies for this project is provided in the Biological Report (Dudek 2017a) and the Initial Study (Dudek 2017b).

### MONARCH BUTTERFLY OVERWINTERING SITES

The monarch butterfly follows a pattern of seasonal migration. The summer grounds of the species are found in New England, the Great Lakes region, and the northern Rocky Mountains. These areas are occupied from May through late August to mid-September (Urquhart 1987). The New England and Great Lakes populations migrate southwest to wintering grounds in the Sierra Madre mountain range of Mexico. The Rocky Mountains population migrates southwest to wintering grounds along the California coast.

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In spring and summer, the species' distribution is controlled by the distribution of its larval host plant (i.e., various milkweeds, genus *Asclepias*) for egg deposition/larval development and nectar plants for fuel. Eggs are deposited and hatch on the underside of leaves of the milkweed plant. Upon hatching, the larvae feed upon the fine hairs on the leaves of the plant and stay on the same plant throughout its molting stages. After molting, the larvae leave the milkweed and construct its chrysalis elsewhere. However, once an adult monarch butterfly emerges from the chrysalis, it soon returns to a milkweed plant for foraging and shelter (Urquhart 1987). Multiple generations are produced during spring and summer. During the fall, the last generation of monarchs migrate to overwintering sites and live for 6-9 months (Xerces 2016).

Monarch butterfly overwintering sites are considered special status by the California Department of Fish and Wildlife (CDFW; CDFW 2017a). Overwintering sites in California are associated with wind-protected groves of large trees (primarily eucalyptus or pine) with nectar and water sources nearby, generally near the coast. In addition, the Santa Barbara County Coastal Land Use Plan (County 1982) sets forth the following policies regarding monarch butterfly trees:

*Coastal Plan Policy 9-22.* Butterfly trees shall not be removed except where they pose a serious threat to life or property, and shall not be pruned during roosting and nesting season.

*Coastal Plan Policy 9-23.* Adjacent development shall be set back a minimum of 50 feet from the trees.

## **METHODS**

### **Literature Review**

Prior to conducting field surveys, a literature review for monarch overwintering sites was conducted. The California Natural Diversity Database (CNDDB) includes one occurrence directly northeast of the project site within a small grove of eucalyptus approximately 190 feet north of Jalama Creek (CDFW 2017b, Xerces Site #2722). The most recent count of monarchs at this location was 76 individuals in 2013. This grove is located east of the railroad trestle, north of Jalama Creek, and is documented as monarch autumnal/transitory overwintering aggregation by Meade (1999, Site 35). Autumnal overwintering aggregations are considered small and in locations that provide adequate protection that serve as temporary habitat as monarchs search for more permanent locations that will be occupied for the entire overwintering period (between October and March; Meade 1999). Permanent aggregations stay in a location for the entire overwintering period and most of these sites are occupied each year.

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Monarch butterflies have previously been documented flying on and near a line of Monterey cypress trees along the eastern edge of Jalama campgrounds, near staff residencies (Meade 1999). Other than these areas, there is reportedly little other habitat suitable for monarch aggregations. Generally, monarchs begin to arrive at overwintering sites along the Pacific coast in September and first half of October and by mid-November have formed more stable aggregations that persist into January or February (Xerces 2016). As a result, monarch surveys conducted in 2017 began in mid-November, as described below.

**Field Surveys**

A total of two focused monarch butterfly surveys were conducted by Dudek biologist Melissa Blundell. *Table 1* provides the dates and weather conditions for these surveys. Monarch surveys were conducted to document the extent of overwintering habitat and to record any individuals, clusters, and their locations on or adjacent to (approximately 150 feet) the project site. On the first visit, Ms. Blundell walked the entire projects site, including directly adjacent to and east of staff residencies, to document the extents of potential suitable monarch overwintering sites and used binoculars (8x42) to record all occurrences of monarch individuals and/or clusters. During the second visit, Ms. Blundell focused on those areas where suitable monarch overwintering sites were observed (Figure 1) and walked the campgrounds to document any monarchs that may have flew away from suitable overwintering sites.

**Table 1**  
**Dates and Conditions for Focused Overwintering Monarch Butterfly Surveys**

Survey date	Time	Personnel <sup>1</sup>	Survey Conditions
11/16/2017	1402-1455	MB	62 degrees Fahrenheit (°F); 100 percent cloud cover (%cc); 01 miles per hour (mph) winds
12/01/2017	0835-0918	MB	56-61°F; 5 %cc; 1-4 mph

Notes: <sup>1</sup> Biologists' Initials: MB = Melissa Blundell

**RESULTS AND DISCUSSION**

A total of three individual monarch butterflies were observed during focused monarch surveys conducted in November and December 2017. These individuals were observed flying within the eucalyptus directly north of Jalama Creek and adjacent to the rail road trellis (*Figure 1*). In addition between approximately 10 to 30 monarch individuals were observed during October 2017 surveys. These monarchs were observed utilizing the same eucalyptus trees north of Jalama Creek and several individuals were flying around pine trees directly south of Jalama Creek within the staff residencies (*Figure 1*). However, the pine trees within the staff residencies are

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not sheltered and would not provide adequate cover or protection for this species. In addition, all additional trees inspected within the project site were either individual trees and/or would not provide suitable cover from wind and other weather elements and, therefore, unlikely to provide suitable habitat for autumnal or overwintering aggregations. The habitat directly adjacent to these eucalyptus trees consist of dry grassland and coastal scrub habitat, which may include scatters of nectar plants. As a result, the only suitable overwintering sites on or adjacent to the project site consists of the eucalyptus trees directly north of Jalama Creek (*Figure 1*). Individuals detected in October appear to have used the eucalyptus groves as temporary habitat and, as found in previous years, formed autumnal aggregations of monarchs.

## **IMPACT ANALYSIS**

As mentioned above, suitable overwintering habitat was limited to the north of Jalama Creek and outside of the project site boundaries (*Figure 1*). The closest of these eucalyptus trees is located on the banks of Jalama Creek, approximately 130 feet northeast of the closest work area (photovoltaic upgrade). Although monarch butterflies were observed on pines within the staff residences on site, these were individuals appeared to have been flying through the area instead of using the trees for overwintering. In addition, the only trees within the survey area that would provide suitable overwintering conditions for monarchs is present north of Jalama creek within the eucalyptus.

Existing and potential overwintering sites along the Southern California coast supporting large eucalyptus and/or pine trees are important for the long-term survival of western United States monarch populations. When monarch butterflies are concentrated in wintering areas, the colony is particularly vulnerable to threats. In addition to the direct loss of tree groves used as wintering sites, wintering monarch butterflies are vulnerable to several effects related to construction activities and urbanization. Excessive fugitive dust, noise, and ground vibrations associated with construction activities near wintering grounds could disrupt wintering behavior and result in the abandonment of winter roost sites. Additionally, tree groves used as wintering sites could be subject to a higher fire risk from nearby development or to adverse effects from increased light and glare.

Construction of the proposed project is not anticipated to directly or indirectly impact monarch butterfly individuals or suitable overwintering habitat. The closest work area (photovoltaic upgrade) is located approximately 130 feet southwest of suitable habitat and is separated from the eucalyptus trees by Jalama Creek and vegetation along the banks of the creek. In addition, this work area involves the installation of solar panels on an existing workshop building and is expected to result in the least amount of noise and ground disturbance of all project work areas

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(see Dudek 2017a). In addition, the closest work area is in an existing developed area and any fugitive dust is expected to be minimal or non-existent. Since the work area does not contain any suitable overwintering habitat for this species, and the closest habitat is 130 feet away, construction of the project is not expected to affect monarch wintering behavior that would result in abandonment of overwintering sites.

## **REFERENCES**

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-  Project Site
-  Proposed Work Areas
-  Observed Monarch Butterflies
-  Observed Suitable Overwintering Locations

SOURCE: BING IMAGERY



FIGURE 1

Monarch Butterfly Survey Results  
 Jalama Beach Affordable Overnight Accommodations