### **CA DEPT PARKS & REC**



MONARCH OVER-WINTERING SITES

SANTA CRUZ DISTRICT APRIL 2021

# **KEY LOCATIONS**

OVERWINTERING SITES AND THE MIGRATION CORRIDORS THAT SURROUND THEM ARE OF CRITICAL IMPORTANCE TO SUSTAINING AND RECOVERING THE WESTERN MONARCH POPULATION.

The Natural Bridges State Beach and Lighthouse Field State Beach monarch butterfly overwintering sites have consistently harbored among the largest of the Western populations during the past five years.

Last year, in 2020, a year of critically low monarch population counts, Natural Bridges held the most butterflies of all Western sites with over 28% of all butterflies counted. Lighthouse Field has held the second largest populations of all Western overwintering sites in 2018 and 2019.





## THE NUMBERS

With some of the highest annual butterfly counts, Natural Bridges and Lighthouse Field consistently rank as two of the most significant overwintering sites for the Western monarchs when compared to populations at 340+ other reported sites.

	SITE	RANK	COUNT	TOTAL WESTERN POP
2020	NATURAL BRIDGES LIGHTHOUSE FIELD	1 9	550 50	1,870
2019	NATURAL BRIDGES LIGHTHOUSE FIELD	6 2	1,997 3,402	29,436
2018	NATURAL BRIDGES LIGHTHOUSE FIELD	4 2	1,120 1,802	27,721
2017	NATURAL BRIDGES LIGHTHOUSE FIELD	6 4	9,000 12,000	192,624
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1997	NATURAL BRIDGES LIGHTHOUSE FIELD	1 3	120,000 70,000	949,009

\*According to Xerces Society Western Monarch Thanksgiving Count. 2021. Western Monarch Thanksgiving Count Data, 1997-2020. Available at www.westernmonarchcount.org.

## LIGHTHOUSE FIELD STATE BEACH

IMPLEMENT THE LIGHTHOUSE FIELD COASTAL WETLAND RESTORATION PROJECT



This project will increase resiliency of the monarch overwintering grove by directing channelized runoff into coastal wetlands to promote shallow water aquifer recharge that provisions the grove with water. Water is anticipated to become a more limiting resource in the face of a warming and drying Central Coast climate. This project includes reworking the current road and trail system around the grove to reduce soil compaction and the impact of traffic on shallow Eucalyptus roots. This project will include local tribal members in helping with design and wild sourcing of plant stock from species of ethnobotanical importance.

MONARCH OVERWINTERING SITES

### NATURAL BRIDGES STATE BEACH

FLOODING BELOW MONARCH CLUSTERS AND TRAIL IMPROVEMENT



Over 25% of the entire 2020 Western monarch population clustered over a section of trail that is sinking into a coastal estuary. Observations by local experts suggest monarchs leave the cluster site when the trail below floods, likely due to avoid falling in the water if dislodged from the cluster. This site is in need of a solution to decrease subsidence and flooding along the trail and surrounding area including the existing elevated pathways which are crumbling and hazardous.





### IMPLEMENT THE CRUMB CLEAN CAMPAIGN

Research shows that yellow jackets are a leading cause of mortality for monarchs in Lighthouse Field (click <u>here</u> for a video of yellow jacket predation on LHF monarchs). Expanding CADPR's Crumb Clean Campaign through interpretive signage, direct outreach and reducing trash will reduce yellow jacket populations and increase survivorship rates for overwintering monarchs.





### **EUCALYPTUS REGENERATION**

Natural regeneration of Eucalyptus trees has decreased due to grove senescence and lack of recruits. Small scale controlled burning of strategically cleared and stacked understory brush would help to promote recruitment and increase the health of existing trees. Selective thinning and strategic removal of invasive ivy on upper branches would strengthen the grove.





### EXPANDING THE DIVERSITY AND ABUNDANCE OF EARLY AND LATE BLOOMING NECTAR PLANTS SURROUNDING OVERWINTERING SITES

Parks is working to increase early and late blooming nectar plants at overwintering sites. This program could be accelerated and use Parks as a model and enabler of spreading early and late blooming nectar plants to adjacent properties. The project would involve local tribal members in implementation.











#### NORTH COAST HABITAT ENHANCEMENT

The lands of the North Coast of Santa Cruz County along Highway 1 are an important coastal monarch flyway. Most of these lands are held by State Parks and primarily used for agriculture. This project would work with local tribes and farmers to expand highway and agricultural buffers to promote early and late flowering nectar plants to support pollinators in general and specifically help migrating monarch butterflies as they approach and move between nearby critical overwinter sites. Previous research by Parks partners has shown conversion of this type of habitat from invasive monoculture plants to foundational native plant species has increased native bee diversity three-fold and abundance ten-fold.





Photos courtesy of California State Parks Groundswell Ecology Liz Celeste







