



Discovery of a Diamond-petaled California Poppy (*Eschscholzia rhombipetala*) Population on DWR Property in Alameda County

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During the spring of 2015, DWR botanists located a population of the rare diamond-petaled California poppy (Eschscholzia rhombipetala) in Alameda County. Prior to this survey, the only known local occurrence of this species was identified in 1888 by E.L. Greene “near Byron” and was presumed to be extirpated from the area. This CNPS list 1.B species has only been observed in two areas in the last 65+ years: near the Alameda/San Joaquin County boundary and at Carrizo Plain.

Background

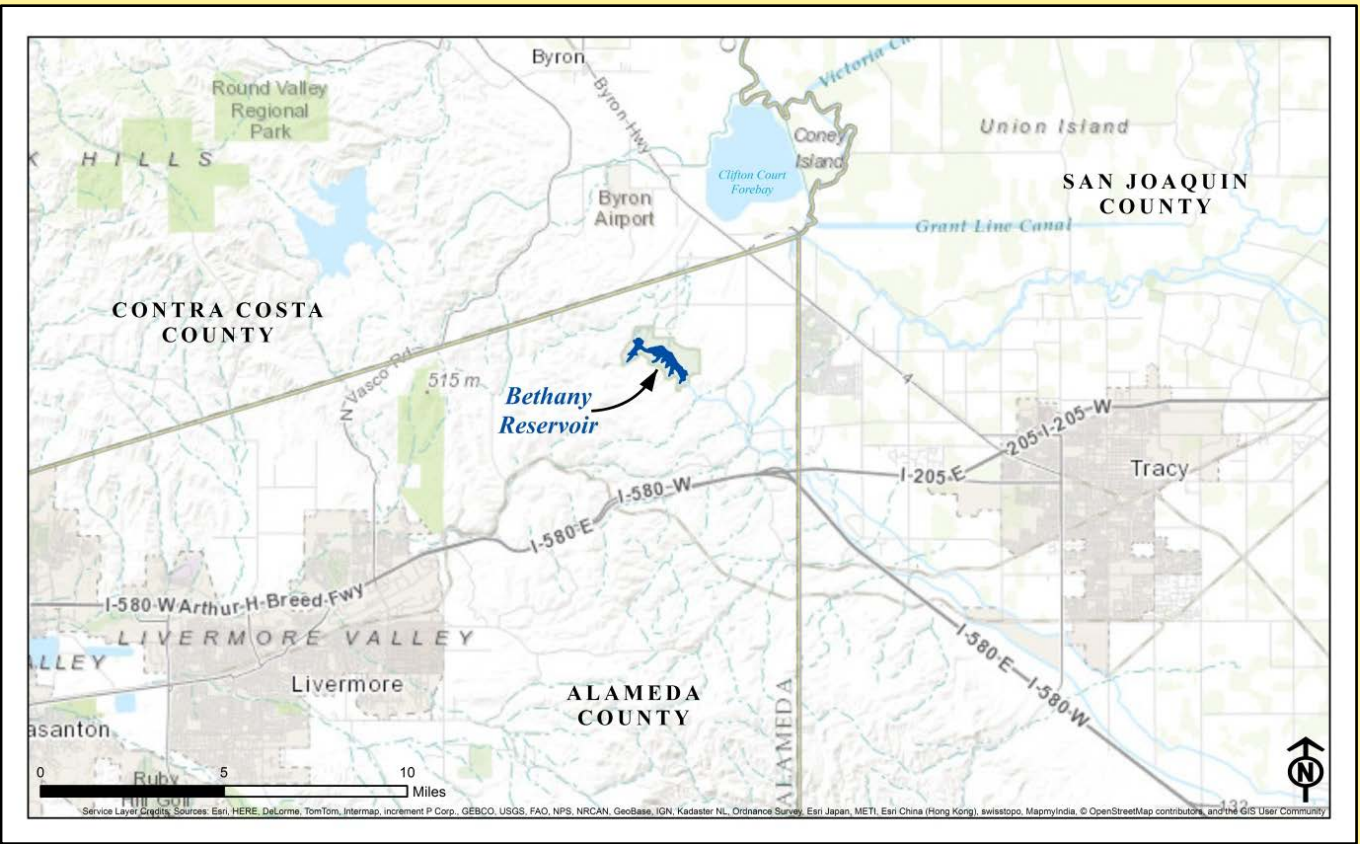
The California Department of Water Resources (DWR) is primarily tasked with operating the State Water Project, a large-scale water storage and delivery system composed of reservoirs, aqueducts, power plants and pumping plants, which extends for more than 600 miles-- two-thirds the length of California. DWR owns property and holds many easements along the State Water Project right of way, but because the principal focus of the agency is water delivery, some of these lands have not been extensively surveyed for biological resources in many years, if ever.

This past year, a proposed maintenance project on the Bethany Reservoir Dam prompted a full floristic survey of DWR property located adjacent to Bethany Reservoir in Alameda County. These surveys were conducted by Laura Burris, Lesley Hamamoto, and Gina Radieva between March 3 and March 12, 2015. To the delight and astonishment of all present, the diamond-petaled California poppy (*Eschscholzia rhombipetala*) was found hiding in plain sight!

DWR's Bethany Reservoir is located along the eastern margin of the Central Coast Range, between the SF Bay Area and the San Joaquin Valley. The property is leased as grazing land for cattle. Soils are comprised of clays and clay loams, and the landcover type is predominantly California forb grassland, dominated by non-natives such as *Erodium cicutarium*, *Festuca perennis*, and *Medicago polymorpha*.



Aerial view of Bethany Reservoir looking northeast.



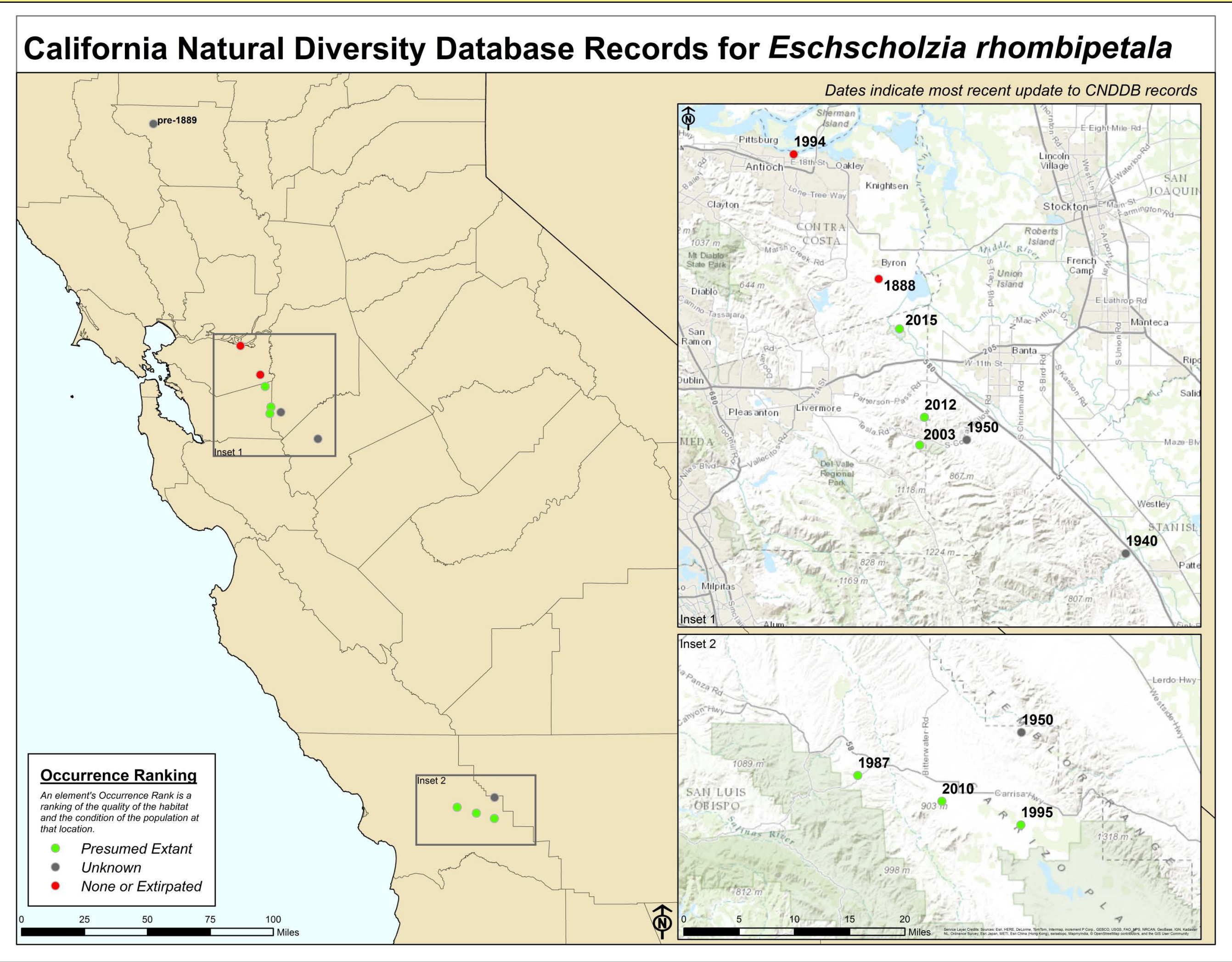
Map of Bethany Reservoir vicinity.

A Diamond-Petaled Poppy in the Rough

A population of approximately 25 diamond-petaled California poppies was discovered on March 4, 2015 near the DWR property line north of Bethany Reservoir. The tiny (2-inch tall) plants were growing with *Erodium cicutarium*, *Medicago polymorpha*, and *Calandrinia ciliata*. Plants exhibited flowers, fruits, and buds. A return visit was scheduled for the following week to thoroughly map and catalog the population. During the intervening week, the *Erodium* had grown considerably in stature, making the tiny poppy very difficult to find amongst the other vegetation. This realization highlighted the importance of survey timing for this species, and demonstrated how easily this plant could be overlooked. Other sensitive plant species found at this site included hogwallow starfish (*Hesperex caulescens*) and round-leaved filaree (*California macrophylla*).

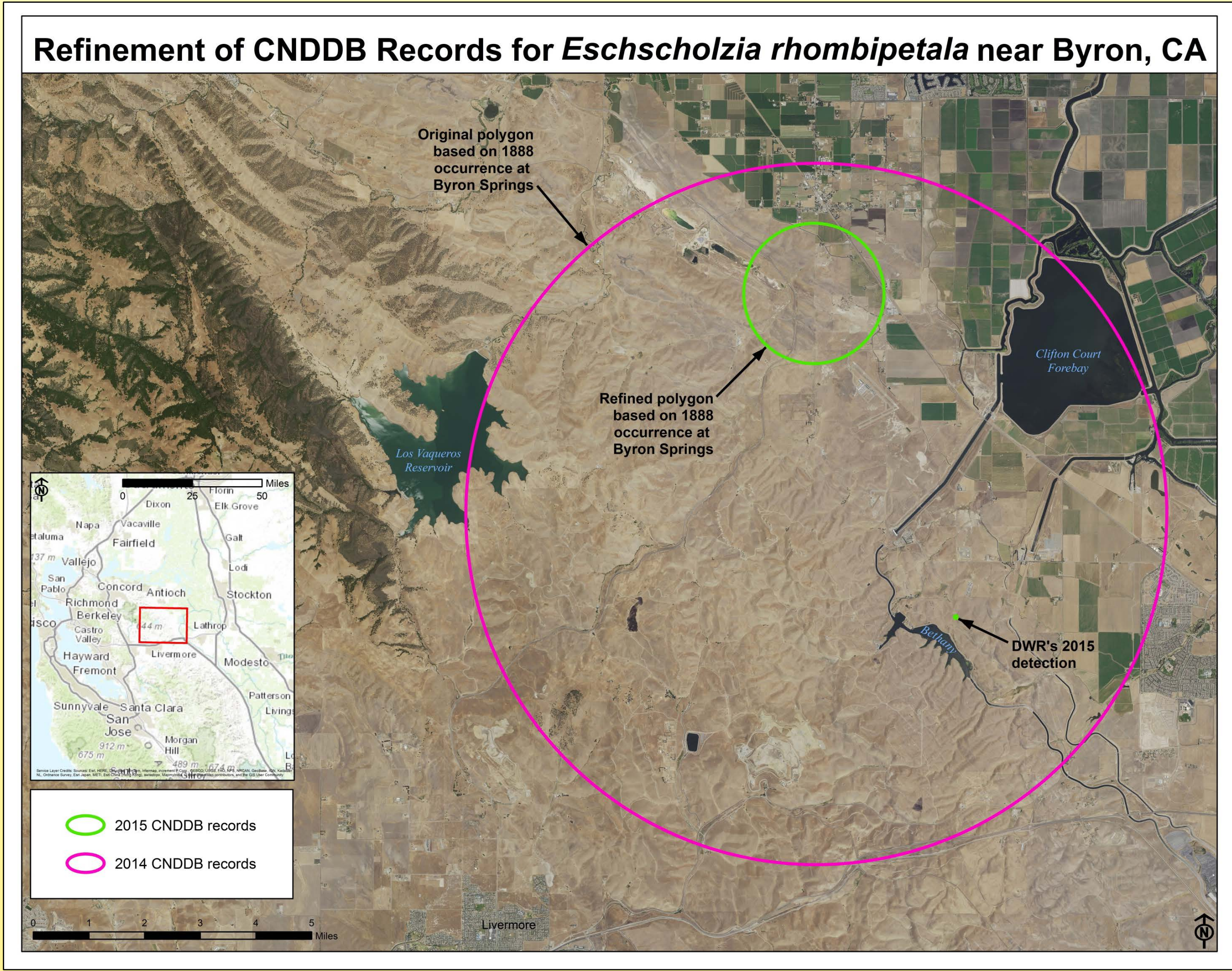


This new finding of an extremely rare California endemic should encourage other botanists to consider Eschscholzia rhombipetala when surveying in potential habitat, keeping in mind that the plant’s small stature may allow it to be easily overlooked, particularly when growing amongst exotic annual forbs.



Due to the scarcity of the diamond-petaled California poppy, few photos of this species exist in publication and none of the surveyors had ever seen the species either *in situ* or as an herbarium specimen. In order to confirm our identification of this extremely rare plant, Dr. Shannon Still, a researcher who has worked extensively on the phylogeny and taxonomy of the genus *Eschscholzia*, was consulted and was able to confirm via photographs that the poppies found at Bethany Reservoir were correctly identified as *E. rhombipetala*.

Few populations of diamond-petaled California poppy are known to be extant today. These include two populations at the Lawrence Livermore National Laboratory (LLNL) “Site 300” property, and three populations in the Carrizo Plain area. Populations at Site 300 are monitored by LLNL staff and the area is closed to the public. CDFW volunteers in the Carrizo region have been searching at the site where plants were last seen in 2010, but have not surveyed other known locations recently.



Refining Statewide Rare Plant Data

When querying in CDFW's California Natural Diversity Database (CNDB) for locations of diamond-petaled California poppy around Byron, users were formerly presented with a large 5-mile radius circle which represented the approximate location of E.L. Greene's 1888 collection “near Byron.” No recent information had been submitted to CNDB for this area. This historic record was spatially vague and temporally remote, making it difficult to try to relocate this population during a contemporary survey. After finding the diamond-petaled California poppy near Bethany, DWR staff promptly submitted a CNDB Online Field Survey Form describing the population.

Using the information that DWR submitted, CNDB botanists were able to refine the mapping of diamond-petaled California poppy in the Byron area. CNDB botanists re-mapped the 1888 location to a 1-mile radius circle around Byron and then added a site-specific polygon showing DWR's 2015 detection. This new mapping gives a more refined representation of the distribution of the diamond-petaled California poppy in the local area.

Looking Ahead

Although DWR is traditionally a water resources management agency, our Mission Statement also guides us to protect, restore, and enhance the natural environment. In support of this, DWR plans to develop a monitoring plan for encouraging the persistence of this occurrence going forward. The ecology of the diamond-petaled California poppy is not well-studied, and it is unclear why the poppy has not been found at several historic localities. We hope to be able to contribute to the body of knowledge for this rare species, and determine to what extent climate change, grazing pressure, invasive plants, and/or population size may be affecting the persistence of the species.

