

# MAPPING RARE PLANT HOTSPOT CLUSTERS IN THE NINE BAY AREA COUNTIES

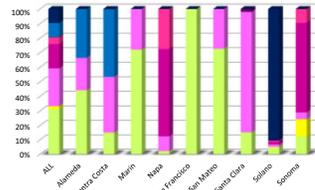


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**Abstract.** This rare plant hotspot mapping project was undertaken with the goal to promote further understanding of the rare flora across the California landscape and to help identify important botanical areas for rare taxa. The ultimate goal is to map the state, but the current milestone presented here is mapping of the nine Bay Area counties. Based on a 2016 dataset query on 4,242 records maintained by the state in California Natural Diversity Database (CNDDb), the Bay Area is home to 303 rare plant taxa. The CNDDb records were analyzed in GIS using a clustering approach to identify areas called hotspots, which are places with a minimum density of rare plant records. This map shows the results of CNDDb rare plant records clustered as 234 hotspots across the nine counties. In the nine county area, approximately 70 percent of records (2,994 of 4,242) are located in these hotspot clusters. The clustering analysis contains known extirpated records and thus also provides a historic context for the region. Additional data presented here for each of the nine counties includes the CNDDb record's reported health, the location of the record in relation to potential development risk status as defined by the Bay Area Greenbelt Alliance, and the location of records across the geographic subdivisions in the area.

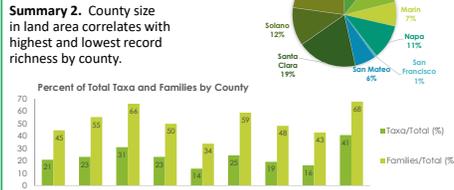
## FINDINGS

**Table 1. CNDDb Records by Jepson Bioregion**



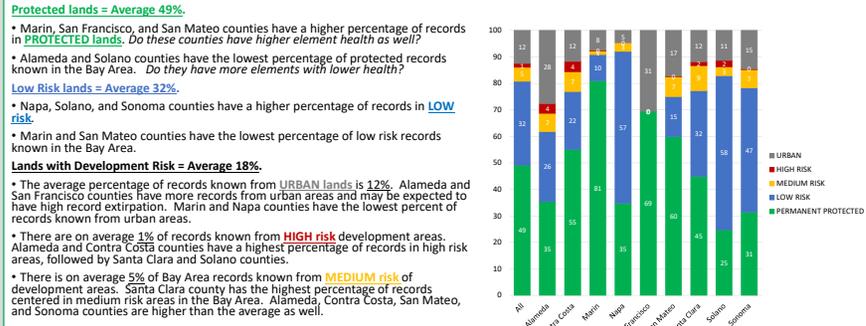
**Summary 1.** Types of rare flora are likely variable across the Bay Area because of the diversity in bioregional representation.

**Table 2. Land Area and Represented Taxa**



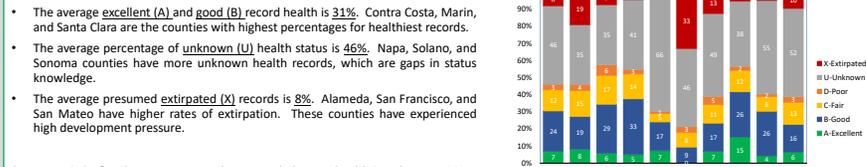
**Summary 2.** County size in land area correlates with highest and lowest record richness by county.

**Table 3. Greenbelt Alliance Development Risk**

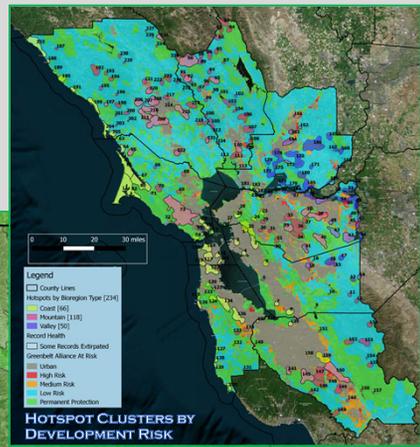
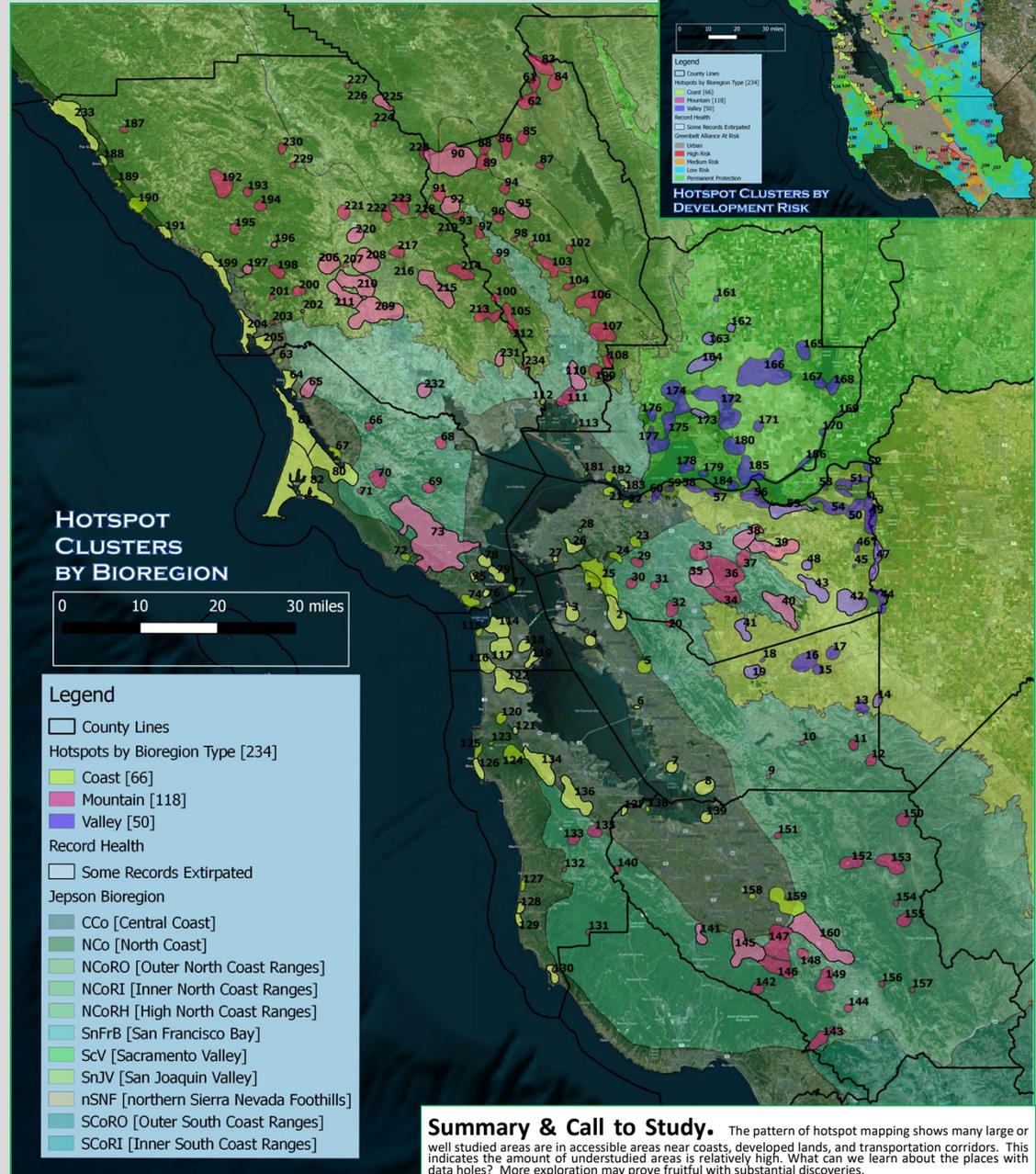


**Summary 3.** There are several hotspots in vicinity of urban areas that have suffered extirpations. However, even protected areas have experienced extirpation. What are the lessons to learn from each end of the development pressure spectrum? Can restoration attempts be started?

**Table 4. CNDDb Element Health**



**Summary 4.** By far, the most commonly reported element health is unknown. More documentation and revisits to records would improve our understanding of element health and thus, rare plant conservation status.



**Summary & Call to Study.** The pattern of hotspot mapping shows many large or well studied areas are in accessible areas near coasts, developed lands, and transportation corridors. This indicates the amount of understudied areas is relatively high. What can we learn about the places with data holes? More exploration may prove fruitful with substantial discoveries.