Alameda County RESOURCE CONSERVATION DISTRICT

Progress Report: Expanding Early-season California Milkweed (*Asclepias californica*) for Monarch Conservation in Alameda County Rangelands

Funding from the Alameda Fish and Game Commission enabled the Alameda County Resource Conservation District (ACRCD) to partner with East Bay Regional Parks (EBRPD) and the Natural Resources Conservation Service (NRCS) to identify locations where California milkweed (*Asclepias californica*) occurred and collect seed that will be grown by the Watershed Nursery for outplanting on public lands and private ranches in Alameda County.

First, to identify recent sightings of CA milkweed, we developed the California Milkweed in the East Bay project in iNaturalist. In 2019, citizen scientists contributed 11 observations of the species in Contra Costa County and 2 in Alameda County. This information added to historic distribution data from the CalFlora database, allowing us to narrow down our seed scouting locations. We also identified one stand on San Francisco Public Utility property in the Alameda Creek Watershed and altered their staff; it was the first recording of CA milkweed on their property. NRCS also consulted with the East Bay Chapter of the California Native Plant Society. CA milkweed is now on their radar as a rare local species, which will hopefully result in increased sightings and prioritization of protections. The iNaturalist project will continue to provide data on CA milkweed over time, allowing us to track it's population, add new sightings and monitor locations that no longer support the plant.

We identified 5 locations to visit to collect seed. A citizen scientist scouted for plants at EBRPD's Morgan Territory without success. In August 2019, NRCS, ACRCD and the EBRPD botanist went to Round Valley Park to a location from a citizen scientist. We found two plants but no seed. We were unable to find any CA milkweed in Las Trampas but did find a large stand of another locally rare species, showy milkweed (*Asclepias speciosa*). The Watershed Nursery went to a private ranch

Figure 1. Seed pods of CA milkweed have opened and dropped seeds to ground, they are visible are under the white fluff, known as pappus. Photo credit- Hillary Sardinas, ACRCD.

on Mines Road and found 17 plants, making it one of the largest known stand of CA milkweed in the region (the other being the one we encountered on SFPUC property). Watershed Nursery staff bagged seed pods and were successful in collecting seed. Finally, ACRCD visited Black Diamond Mines and successfully collected seed from 6 plants of an 8-plant stand; one plant was in an area too steep to access and another plant was too small to set seed. All but one of the seed pods had already split, seeds were on the ground surrounding the plants (Figure 1); these will be bleached before sowing to help prevent disease.

In all collection locations we recorded co-occurring species as well as abiotic conditions. This will help us to identify optimal locations for outplanting, once the Watershed Nursery produces plants from the seeds. The late rains caused a delay in bloom and seed production in 2019, therefore we determined it was too late to try to germinate seeds this year because of the short growth window. If plants are not large enough when outplanted, then they won't have sufficient roots and their chances of survival are minimal. Instead we will wait until 2020 to sow the seeds then outplant onto 5 ranches in Alameda County. The Watershed Nursery and ranchers have committed to ensuring implementation happens next year. We plan to provide a finalreport, with additional photos, once the milkweed has been planted.

Figure 2. Ca milkweed plant with pods bagged to assist with seed collection. Photo credit- Diana Benner, the Watershed Nursery.

This project has garnered a lot of interest from EBRPD and the SFPUC. We are currently working with EBRPD to identify locations to restore CA milkweed. In addition, we plan to expand out seed collection

efforts in 2020. We will apply for a permit to collect in Mt Diablo State Park, which based on iNaturalist records appears to be the center of the CA milkweed population in the region.

The scarcity of CA milkweed stands detected led us to identify future directions for expanding this project. We plan to consult with Hedgerow Farms and the Xerces Society for Invertebrate Conservation, leaders in milkweed restoration in the state, to determine whether CA milkweed can be propagated by rhizome as well as the best ways to grow it from seed. If we can grow from rhizome, then this method may enable us to propagate small stands that may be pollen limited, such as the stand we found in Round Valley, allowing us to preserve their genetics. We also plan to continue working with local CNPS and EBRPD to determine the status of CA milkweed in the East Bay, as our observations indicate it is more rare now than it was historically. In fact, it is on the EBCNPS Rare, Unusual, and Significant Plants of Alameda and Contra Costa Counties Database Watch List B. Given the status of the monarch and local

Figure 3. Cleaned CA milkweed seed and a pod. Photo credit- Hillary Sardinas, ACRCD.

interest in milkweed, we anticipate that this project will continue in future years with collection and restoration of populations in private and public parks surrounding the mountain.

Overall, the funding from the Alameda County Fish and Game Commission launched what is turning into a collaborative, multi-year effort to better understand and enhance the local population of California milkweed. Monarch researchers have indicated that early-blooming species like this one may be critical to helping stave off the extinction of the monarch butterfly, whose population has plummeted in recent years. This project is a small but critically important part of enabling the monarch butterfly to persist into the future.

Figure 4. California milkweed in bloom. Photo credit- Diana Benner, the Watershed Nursery.

Figure 5. EBRPD botanist and ACRCD biologist scan a hillside for milkweed. Photo credit- Ling He, NRCS.