Restoring a Rare Freshwater Seep in Support of the Federally Endangered Marsh Sandwort (Arenaria paludicola)

Recipient: UC Santa Barbara's Cheadle Center for Biodiversity and Ecological Restoration &
U.S. Fish and Wildlife Service
Project Period: 3/01/2022 – 3/22/2024
Award Amount: $48,927.26
Matching Contributions: $0.00
Project Number: #8006.22.074386

Summary of Accomplishments

This project established the occurrence of 17 federal, state, and/or California Native Plant Society listed plant species along with other associated wetland and upland plant species. Although the goal was to establish Marsh sandwort, it was unable to be established even in the imported sandy soils. The sand soils provide a unique micro-habitat, but the organic soils still manage to seep into the installed sandy areas. Continuous weed control is needed which will be provided by grant funds from the Wetlands Recovery Program.

Engagement and training of multiple UC Santa Barbara undergraduates in field work, monitoring, plant propagation, and interpretation related to rare plant ecological requirements and native American use of plant resources began.

Project Activities & Outcomes

Activities

- Plant propagation and establishment of 17 special status plant species; Marsh sandwort establishment was not feasible
- Structural restoration work was used to create microtopography and add sandy soils in support of special status plants
- Restoration work focused on weed control and plant establishment. Several Eucalyptus trees were removed and continuous weed control is required
- Photo and transect monitoring was initiated
- UC Santa Barbara undergraduates were engaged and trained

Outcomes

- 17 out of 21 special status plant species were established on the site
- A mixture of sand and compost was installed at the site as well as a small pond to evaluate the benefits of open water
- Extensive weed control revealed how degraded the site was. Weed control methods included solarization, flame weeding, hand pulling, and minor herbicide use. Removal of invasive species is opening up multiple sites for native plant establishment
- Photo monitoring points were established. Six vegetation monitoring transects were set up and demonstrate that the restoration work has transformed a site that was initially 100% invasive plants to a site that has more than 75% native cover
- This site has been used to each about ethnobotany and rare plant restoration and has been the site for multiple internships in the field of ecological restoration
- The interpretive sign proposed for the site was eliminated because of the inability of the site to support the endangered Arenaria paludicola as initially envisioned

Lessons Learned

The primary lessons learned from this project are that with careful attention to locally, regionally and listed special stats plant taxa and their ecological requirements, you can evaluate restoration sites for their potential to support and provide refuge for these species. Because the project site is on the UCSB campus it provides a meaningful, easily accessed site for interpretation of the value of seeps and wetlands for our unique flora and fauna. It also provides opportunities to see how challenging it is to undo our impacts to these natural areas and hopefully inspires future generations to protect native ecosystems.

Dissemination

A newsletter that reaches about 1050 people will feature a story based on this project to celebrate restoration progress. This work will also be mentioned in an upcoming presentation at the Society for Ecological Restoration California Chapter conference.

POSTING OF FINAL REPORT: This report and attached project documents may be shared by the Foundation and any Funding Source for the Project via their respective websites. In the event that the Recipient intends to claim that its final report or project documents contains material that does not have to be posted on such websites because it is protected from disclosure by statutory or regulatory provisions, the Recipient shall clearly mark all such potentially protected materials as "PROTECTED" and provide an explanation and complete citation to the statutory or regulatory source for such protection.

Project Photos

Image 1: Project site in January 2021 before work was initiated.

Image 2: Project site after tree and iceplant removal.

Image 3: Establishment of diverse coastal sage scrub on slopes and wetland habitats.