



Project Update Memorandum: Ballona Wetlands Restoration through Community Partnership

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Project Summary

The Bay Foundation, in partnership with California Department of Fish and Wildlife (CDFW), Friends of Ballona Wetlands (FBW), Loyola Marymount University's Center for Urban Resilience (CUREs), and community volunteers are conducting a project to remove invasive vegetation while broadening public involvement and stewardship at the Ballona Wetlands Ecological Reserve (Reserve). This memorandum serves as a brief project update for the "Ballona Wetlands Restoration through Community Partnership" project through 14 September, 2016, and may be publically distributed.

The project is focused on the removal of *Carpobrotus spp.*, or iceplant, from a targeted area within Area B of the Reserve. Removing iceplant and other non-native vegetation on site will help protect the remaining native flora that will be critical to the revegetation of the Reserve for the larger multi-year restoration effort. Iceplant is a creeping, mat-forming group of species that form dense monocultures, causing a reduction in biodiversity and competing directly with native wetland species. Its removal, and subsequent introduction of native wetland species will provide an increase in the health and condition of the wetland habitats in Area B – south of Culver, and allow for community engagement in restoration efforts at the Reserve. Pre- and post-restoration monitoring will evaluate the success of the project and will provide recommendations for additional community-level restoration opportunities on site and at other, similarly-impacted urban wetland systems throughout Southern California.

Two iceplant removal methods are currently being implemented by project participants and will be compared for cost and effectiveness to inform future hands-on restoration projects. The first method involves traditional hand-pulling of iceplant mats and the second method involves covering areas affected by iceplant monocultures with large plastic tarps to eliminate radiant sunlight. Both restoration methods have been implemented thus far in the restoration project, and the tarps have been fully deployed.

We are grateful for the help of the many volunteers who have participated in this restoration project, and appreciate all of their efforts and donated time. We would not be able to do this project without them.



Pre-Restoration Monitoring Summary

Ornithologists performed pre-restoration bird surveys to confirm a lack of identified presence of bird nesting in the restoration areas and in the immediate vicinity of the project area. The final bird survey was conducted on 29 August, 2016, timed purposefully as close to the start of the restoration events as possible. No Belding's savannah sparrows were observed and no indication of nesting was detected for any bird species observed. Three additional pre-restoration monitoring survey days were conducted on 9, 18, and 23 August, 2016, with participation from CDFW, FBW, and several internship student volunteers. Surveys conducted included vegetation cover, vegetation mapping, wildlife presence and behavior, and cultural resources, in accordance with the approved Implementation and Monitoring Plan (June 2016). Detailed survey results will be available in future Annual Reports for this project. Additionally, a Cultural Resource Protocol was written and submitted to CDFW and the Native American monitor for approval. Once approved, a site visit was coordinated and specific strategies were finalized.

Outreach and Public Engagement

A concerted effort has been made before and throughout the implementation of this project to engage the community in a diverse number of ways. For example, before the project began, TBF discussed the project at several public meetings, facilitated a media article in the local paper, discussed the project with several stakeholder groups, and went through a public permitting process through the California Coastal Commission (Permit No. 5-15-1427). Additionally, a public website was created and maintained, including general information about the project, several photographs of the site, project documents, links to permit information and the Implementation and Monitoring Plan, and clickable interactive links to volunteer for an event: <http://www.santamonicabay.org/community-iceplant-removal-project/>. The website is updated frequently and is also currently featured on the home page of TBF's website (Figure 1).



Figure 1. Screen grab of the Community Iceplant Removal Project website on 14 September, 2016.



Restoration Events

Following our Coastal Commission permit conditions (Permit No. 5-15-1427), restoration events began on 1 September, 2016 (Figures 2, 3, and 4). To maximize the potential sunlight availability and to increase the effectiveness of the tarping method, double restoration events were held on the first three restoration days. This allowed for the full deployment of all tarps to occur by 8 September, 2016.

Table 1 provides summary statistics of the seven restoration events held to-date. Over 20 cubic yards of iceplant have been hand-pulled and removed from the site to a green waste dumpster for composting. The hand-pull restoration area is estimated at approximately 0.5 acres, with an additional area of just under 0.5 acres of tarped restoration area. The exact total acreage will be calculated using a Trimble Geo7x GPS for each Annual Report and will be displayed on maps.

Table 1. Summary of restoration event statistics through 14 September, 2016.

Event Date / Time	Site / Area	# Volunteers	# Hours	Restoration Method
1 Sept – AM	Site 1	9	27	Tarping + Hand-Pull
1 Sept – PM	Site 1	9	27	Tarping + Hand-Pull
6 Sept – AM	Site 2	11	25.5	Tarping + Hand-Pull
6 Sept – PM	Site 2	13	39	Tarping + Hand-Pull
8 Sept – AM	Site 3	9	19.5	Tarping + Hand-Pull
8 Sept – PM	Site 3 + 1	8	24	Hand-Pull
13 Sept – AM	Site 1 + 2	9	16.5	Hand-Pull
Subtotal	----	68	178.5	----

Overall, restoration events have been highly successful, with small but enthusiastic groups of engaged community members and local residents. At the start of each event, an informational safety and cultural resource speech is given that also includes a brief history of the Reserve, and the importance of healthy wetlands. All participants sign-in and turn in a waiver to track participation over time.





Figure 2. Photograph of tarped restoration areas at: Site 1 (top, page 3), Site 2 (middle), and Site 3 (bottom) at the Ballona Wetlands Ecological Reserve.



Figure 3. Photographs of volunteers during restoration events at the Ballona Wetlands Ecological Reserve.



Figure 4. Photograph of pre-restoration square meter area of iceplant with intermixed native salt marsh species (top) and post-restoration photograph of the same square meter area after hand-pulling (bottom).



Challenges

The primary challenges associated with this project have come from a misunderstanding of the impacts of the tarp restoration method on iceplant and associated wildlife both from the public and from the Coastal Commission. There was unanimous consensus from the scientific community surveyed prior to the implementation of this project that the tarping method was a successful, low-impact, and cost-effective eradication method for iceplant. However, some community members still felt that there might be wildlife mortality under the tarps. This project is an incredibly important local example comparison of two types of low-impact restoration methods (tarping and hand-pulling). Scientific monitoring over time will be important to inform future restoration efforts at the Reserve, and an unbiased presentation of the results of the project will be presented in the Annual Reports and published on the project website. Detailed photographs are being taken at every event and by members of the public not associated with the project.

Future Ecological Benefits

Iceplant is a ground-hugging succulent that can grow deep, nearly impenetrable mats several feet thick which dominate resources along a range of soil moisture and nutrient conditions. Iceplant provides little protection or useable habitat for native birds and wildlife. Additionally, its shallow, fibrous root network consumes large quantities of available water year-round, further impeding the growth of native species with the largest impact occurring during times of drought. Most significantly, the highly competitive characteristics of iceplant for available nutrients, water, light, and space allows it to suppress the growth of native seedlings and often results in the growth of large, monospecific stands providing minimal habitat value. Iceplant also alters soil conditions, making the influx of native vegetation species difficult.

Iceplant removal will provide immediate and long-term ecological benefits to the Reserve. Following establishment, native vegetation will increase ecological function by providing habitat, food sources and opportunities for foraging by birds and other wildlife, and protective cover for a variety of native fauna. New vegetation will increase native biodiversity and provide healthier habitat for several endangered and special concern species such as the Belding's savannah sparrow (*Passerculus sandwichensis beldingi*) and South Coast marsh vole (*Microtus californicus stephensi*). Revegetation efforts will also increase the ability of local flora and fauna to compete against invaders, increasing the resilience of the restored areas and their ability to respond to urban stressors. Restored areas will be carefully monitored to quantify change over time within and adjacent to the restoration areas and the results will be publically reported.