Performance Program Report 2021



EUROPEAN BEACH GRASS REMOVAL TO BENEFIT WESTERN SNOWY PLOVER AND LEAST TERN HABITAT ON GUADALUPE-NIPOMO DUNES NATIONAL WILDLIFE REFUGE



Submitted by: The Land Conservancy of San Luis Obispo County Lindsey Roddick December 2021 Cooperative Agreement Award: F19AC00021

Reporting Period- 10/1/2020 through 9/30/2021

Herbicide Treatment

The original Scope of Work establish in 2017, outlines three treatment areas: Primary (6.5 acres), Secondary (63 acres), and Tertiary Treatment Areas (32 acres). The Primary Treatment Area is within the Secondary Treatment Area, both of which were treated during Year 1. In year 1, 19.4 acres of European beachgrass was treated. Year 2 treatment expanded the treatment area into the Tertiary Treatment Area, treating 21.72-acres of European beachgrass. Year 3 expanded into 95 additional acres instead of the originally planned 32 acres (Figure 1). Treatment by The Land Conservancy's restoration crew took place over the course of 5 days (December 30, 2020 and January 4, 6, 7, 8, 2021) (Figure 2). Backpack sprayers and truck sprayers were used to apply Round up Pro (glyphosate) and Habitat (imazapyr) (Table 1).

Application Date	Application Method	Acres Treated	Blue- dye (Ounc es)	Denali EA CA Reg.No. 2935- 50204 (Ounces)	Round Up Custom EPA Reg. No. 524·343 (Ounc es)	Habitat EPA Reg. No. 241-426-67690 (Ounces)
12/30/2020	Handgun	7.1	39	83.2	332.8	166.4
1/4/2021	Handgun <i>,</i> Backpack	2.3	33.25	60.8	243.2	121.6
1/6/2021	Handgun <i>,</i> Backpack	26.1	40.25	73.6	294.4	147.25
1/7/2021	Handgun <i>,</i> Backpack	11.6	36.75	67.2	268.8	134.4
1/8/2021	Handgun <i>,</i> Backpack	9.7	59.5	108.8	435.2	217.6
			Total Ounces	393.6	1574.4	787.25
			Total Gallons	3.08	12.30	6.15

Table 1: Chemical used during Year 3 treatment of European beachgrass.

This project is being implemented in conjunction with a Dunes Collaborative-funded project that is also targeting European beachgrass. In 2020, the treatment areas were shifted to better utilize current funding sources (Figure 2). This funding was utilized to maintain previously treated areas while Dune Collaborative funding was used to expand the north and west perimeter. The matching Dunes Collaborative funded treatment area will now cover 160.95 acres in addition to this funding's 101 acres.

Year 2 Post-Treatment Monitoring

Post-treatment monitoring was completed before Year 3 treatment began. This provides the necessary time for the herbicide to show effectiveness and avoid inaccurate percent cover evaluations. A post-treatment survey was conducted on January 20, 2021 using the 50-meter² grid, following the established monitoring protocol. Each grid cell was visited and the percent cover of European beachgrass was documented. Year 2 herbicide treatment was very successful with reduction in percent cover in 56 of 162 50-meter² grids (Year 1 post-treatment monitoring saw a reduction in 12 grids).

Other nontarget invasive species found throughout the treatment area were European searocket (*Cakile maritima*), narrow-leaf iceplant (*Conicosia pugioniformis*), and highway iceplants (*Carpobrotus spp*). Percent cover of these species were also documented in the monitoring effort and will be shared

at Refuge staff request.

When special status species were found, the area is well marked with flags and documented with a GPS. LCSLO's restoration crew is well trained in coastal dune special status species identification and did not use herbicide near special status species. When possible, a shield was used to protect herbicide application from nearby special status species. If the European beachgrass was too close to the special status species, it was hand-removed to the best of their ability, without harming the neighboring plants.

In previous survey of the area (February 2019, and January 2020), two special status species were found in the project area, dune spectaclepod (*Dithyrea maritima*), and surf thistle (*Cirsium rhothophilum*). During the latest survey on January 20, 2021 only dune spectaclepod was found (Table 2) (Figure 2). The timing of this survey is not ideal for the rare plants, however, it is the best time to evaluate if the beachgrass is dead or just dormant. Additional surveys of the area during spring would provide more accurate rare plant census information.

Species	Number of Individuals Found (01/20/2021)
Dune spectaclepod (<i>Dithyrea</i> <i>maritima</i>)	190
Surf thistle (Cirsium rhothophilum)	0

Table 2: Special status species found during monitoring survey 01/20/2021.

Scope of Work Updates

The scope of work for this project was updated in June 2020. Treatments funded through this project as well as the Dunes Collaborative have been very successful. Efficiency of treatment has increased and there are funds within the current budget for an additional year of treatment. The tertiary treatment area was also expanded to include 95 acres, rather than the original 32 acres. Year 3 treatment completed January 2021 included this updated area.

Plover Monitoring

A Western snowy plover monitoring is completed annually by Trihyro Corporation. Weekly and annual reports have been given directly to Refuge staff. Monitoring was completed October 2020 through April 2021. The final report is pending.

Refuge Beachgrass Treatment Areas



Figure 1: Updated Tertiary treatment area set in the updated scope of work (June 2020).



TORCH Funded European Beachgrass Herbicide Treatment



Figure 2: Year 3 herbicide treatment completed within the treatment areas (December 2020/January 2021) as well as special status plant species found within the treatment area.



Refuge TORCH Funded Beachgrass Treatment

Figure 3: Year 2 post-treatment European beachgrass percent cover mapping (January 2021). 56 grids were reduced to a lower percent cover class.



Figure 4: Dead European beachgrass found after year 2 of treatment. The area continues to be monitored for resprouts from the rhizomes.



Figure 5: Resprouted European beachgrass among previously treated and dead patches. All previously treated areas are surveyed during treatment for resprouts.