
Western Snowy Plover Habitat Restoration at Vandenberg Air Force Base, California: Torch Oil Spill Mitigation

Quarterly Report for Summer 2011 & End of Contract Summary

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Prepared for:

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1.0 Introduction

On 27 September 1997, a rupture occurred along a pipeline connecting offshore torch/platform Irene to the onshore processing facility. The spill released 163 barrels of crude oil into the ocean, spreading throughout 17 miles of northern Santa Barbara County coastline. The most heavily oiled beach was Surf Beach on Vandenberg Air Force Base (VAFB or Base). In October 2007, a *Torch/Platform Irene Oil Spill Final Restoration Plan/Environmental Assessment* was developed, which calls for mitigation through the restoration of sandy beach and dune habitat on Surf Beach, funded through the Natural Resources Damage Assessment and Restoration Fund. Restoration is to be accomplished through the eradication of invasive plant species and enhancement of coastal strand habitat for the federally threatened western snowy plover (*Charadrius alexandrinus nivosus*), a small shorebird that breeds on the beaches of VAFB.

In September 2007, the 30th Space Wing Asset Management Flight, Natural Resources Management (30 CES/CEANC) at VAFB, tasked ManTech SRS Technologies, Inc. (MSRS) with implementing the *Final Plan for the Removal of Selected Invasive Plants from Western Snowy Plover Habitat at Vandenberg Air Force Base* (SRS Technologies 2005). This plan calls for the eradication of invasive coastal dune vegetation, European beachgrass (*Ammophila arenaria*), iceplant (*Carpobrotus* spp.), and Sydney golden wattle (*Acacia longifolia*) from a 29.5 acre area along a 0.62 mile section of coastline from the Santa Ynez river mouth extending south to the beach access trail at Surf Station, referred to herein as Area D (Figure 1).

In August 2009, VAFB tasked MSRS with conducting the first phase of the restoration plan, which included: herbicide treatment of European beachgrass and iceplant, mechanical mulching of Sydney golden wattle, collection of baseline vegetation data and development of photo monitoring stations within the restoration site known as Area D (Figure 1). Work began in September 2009 with the mechanical mulching of 6-acres of habitat infested with Sydney golden wattle, which controlled the trees and created a firebreak perimeter in preparation for a prescribed burn of the restoration site.

On 22 October 2009, VAFB Hot Shots in coordination with 30 CES/CEANC botanist, Ms. Luanne Lum, implemented a prescribed burn within the restoration area. The prescribed burn was the first step in a European beachgrass management schedule developed by Tim Hyland (California Department of Parks and Recreation) and Pete Holloran (Environmental Studies Department, University of California, Santa Cruz) for beaches in Santa Cruz County (T. Hyland, pers. comm.). In their work, fire was used to create optimal conditions for herbicide application by removing thatch, and promoting fresh regrowth of European beachgrass. Reemerging grass shoots were then treated with a 7 percent concentration of glyphosate based herbicide containing a surfactant that facilitates adhesion of the herbicide to foliage. Though this method is reported to result in a 60-80 percent kill rate, successive retreatment was necessary to achieve target control goals.

To allow for the resprouting of beachgrass after the controlled burn and avoid impacts to breeding snowy plovers, full scale treatment of invasive plants did not begin within the restoration site until October 2010. Unfortunately, heavy rains caused the Santa Ynez river estuary to breach in late October which blocked our only access route to the

restoration site. We could not return to the site until early January 2011 when arrangements were made with the Union Pacific Railroad to allow for access across their property. However, this access route became blocked for much of February 2011 due to railroad construction activities at our only point of access to the restoration site. Regardless of these obstacles, MSRS was able perform an initial round of herbicide treatment across 93.4-percent of the restoration site prior to the start of the snowy plover breeding season on 1 March 2011 (Figure 1).

To expand the window of time when restoration activities can occur at the site and improve the effectiveness of herbicide application, the 30th Space Wing Asset Management Flight (30 CES/CEA) consulted with the U.S. Fish and Wildlife Service (USFWS) to obtain authorization for additional treatments to occur within and adjacent to snowy plover habitat during the breeding season. This request was approved providing that a USFWS permitted biologist be present at all times when working in plover habitat and that no vehicles be driven where snowy plover could be threatened or disturbed.

This report summarizes the activities performed during the Summer Quarter of 2011 (1 June to 31 July 2011) and provides a final synopsis of the herbicide treatment performed during the entire contract period from 1 February 2011 to 31 July 2011.

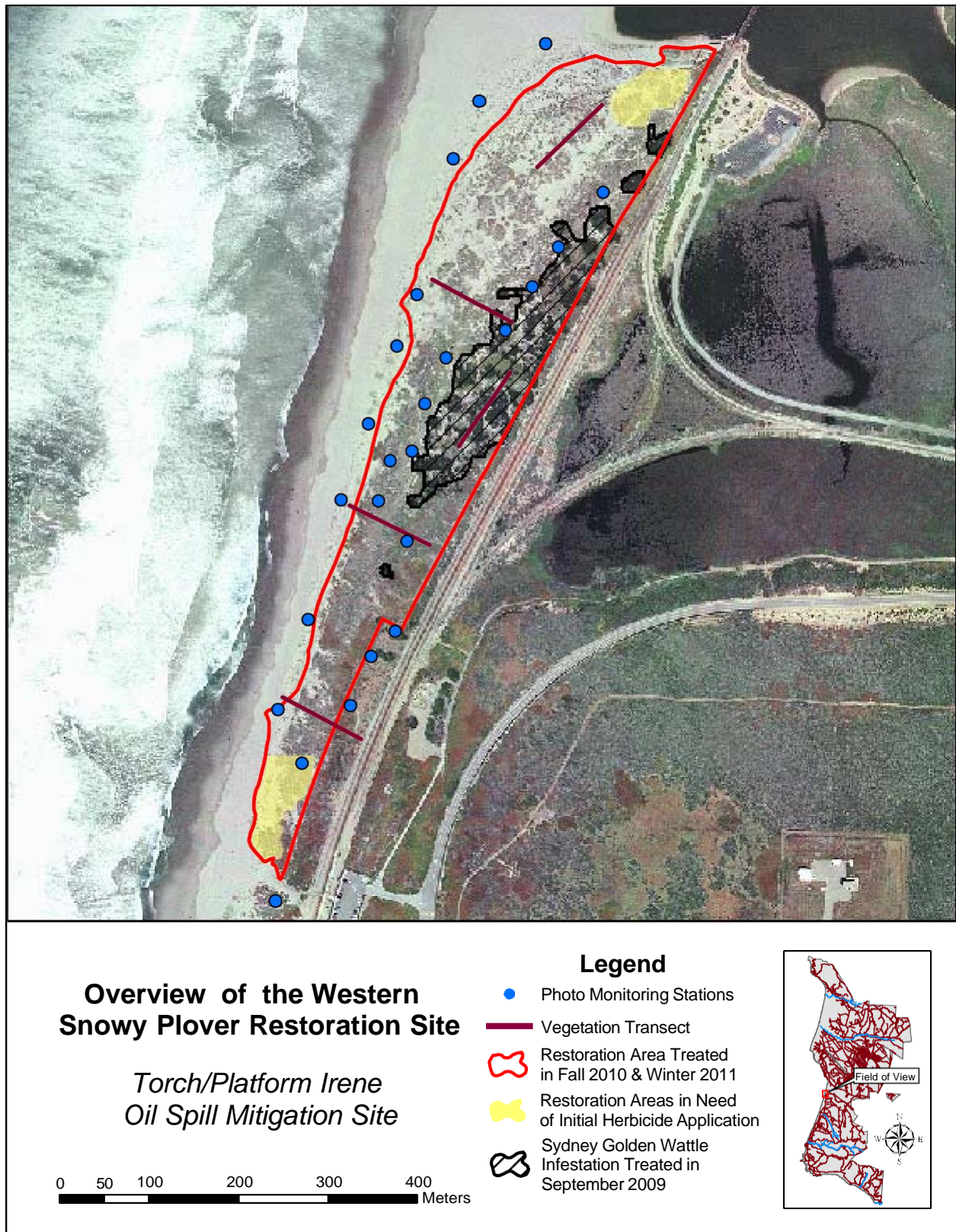


Figure 1. Location of Photo Monitoring Stations, Vegetation Transects, and Treatment Progress within the Snowy Plover Restoration Area.

2.0 Herbicide Treatment Summary

During Summer 2011, MSRS began foliar herbicide application of European beachgrass, iceplant and Sydney golden wattle within a limited portion of the restoration site closed to public access during the western snowy plover breeding season. Under the direct supervision of an onsite USFWS permitted biologist, MSRS treated a 6.44 acre strip of the back dune habitat (approximately 22-percent of the entire restoration area) where no impacts to western snowy plover would occur (Figure 2).

In total, MSRS treated 6.11 acres of European beachgrass, 0.23 acres of iceplant (mostly narrow leaved iceplant (*Conicosia pugioniformis*)), and 0.10 of Sydney golden wattle with 267.90 pounds of concentrated Rodeo® herbicide. Table 1 provides a tabular summary of invasive weed treatment activities performed during this contract arranged by treatment quarter.

Table 1. Invasive weed treatment summary by quarter and species.

Time Period	Species	Method of Control	Chemical Type	Chemical (lbs)	Invasives Treated (Acres)	Total Invasives Treated Within T&E Habitat (Acres)	Total Invasives Treated Within Wetland Habitat	
Winter Quarter <i>Partial Summary</i> - (1 Feb – 31 Mar)	European beachgrass	Foliar Herbicide	Rodeo	645.0	7.8	8.5	0	
	Iceplant			78.80	0.6			
	Sydney golden wattle			8.60	0.1			
Spring Quarter- (1 Apr – 30 Jun)	European beachgrass	Foliar Herbicide	Rodeo	185.58	8.85	10.48	0	
	Iceplant			21.92	1.05			
	Sydney golden wattle			12.29	0.59			
Summer Quarter- (1 Apr – 30 Jun)	European beachgrass	Foliar Herbicide	Rodeo	254.30	6.11	6.44	0	
	Iceplant			9.46	0.23			
	Sydney golden wattle			4.14	0.10			
TOTALS				Current Contract Total	1220.09	25.42	25.42	0

During this contract, MSRS performed herbicide treatment within 25.42 acres infested dune scrub habitat (approximately 86-percent of the entire restoration area). The remaining 14-percent of the site lies within full view of nesting snowy plovers and could therefore not be treated with an ATV spray rig. MSRS did attempt treatment of invasive weeds with backpack sprayers in the area open to public access at the south end of the restoration site. However, this method has an extremely slow rate of application and is

therefore very time consuming. Only a limited area of backpack treatment was performed before the close of this contract period. This fall, MSRS plans to return and prioritize the areas not treated during this contract.

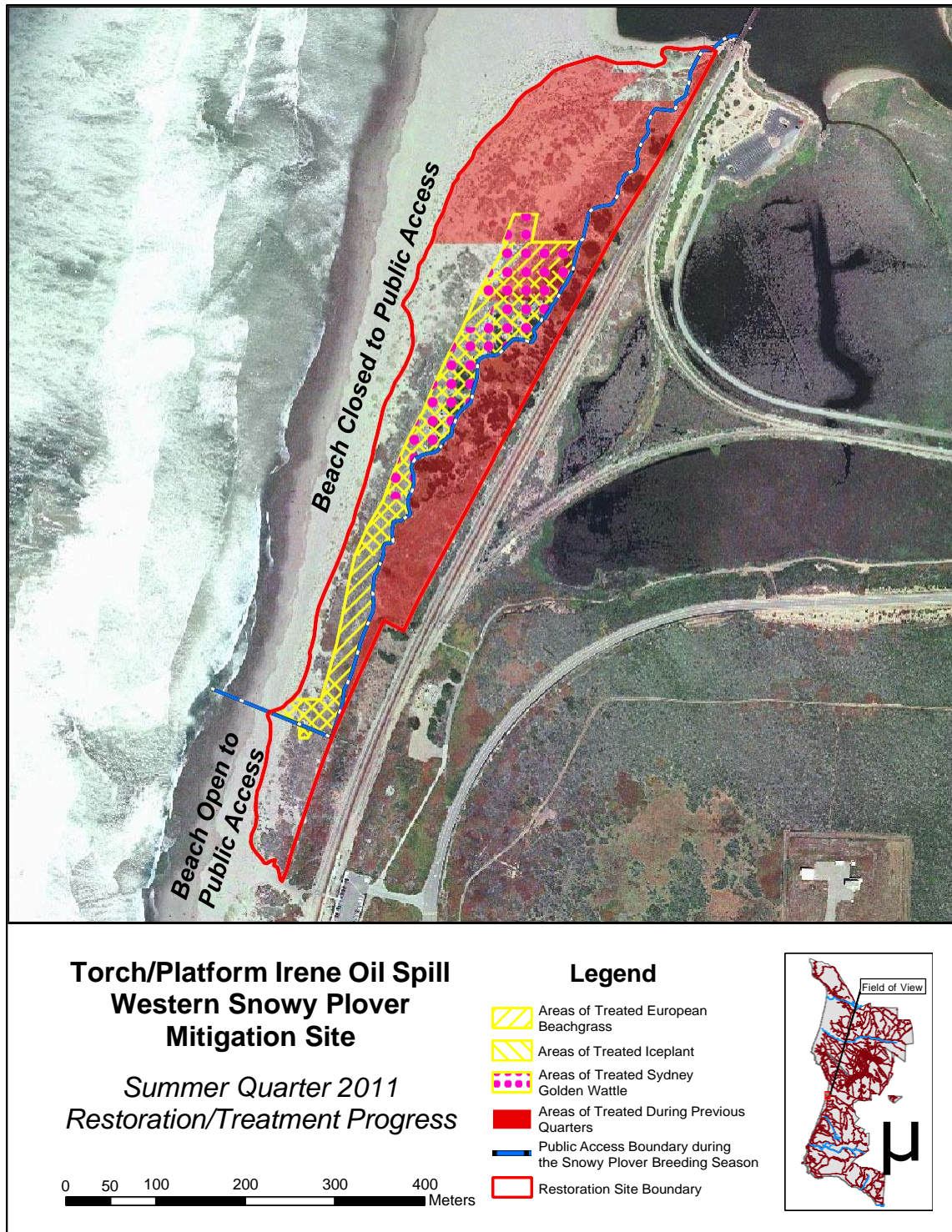


Figure 2. Invasive Species Control Activities Performed During Summer 2011.

3.0 Expense Reporting

Expenses incurred during the Summer Quarter 2011 reflect hours for chemical herbicide application, field mapping, report preparation and herbicide purchasing. Total project expenses are shown in Table 2.

Table 2. Total expenses incurred during the period of performance (1 February to 31 July 2011)

	Amount
Labor Support	\$ 40,731.99
ODCs	\$ 13,935.70
TOTAL	\$ 54,667.69

4.0 References

ManTech SRS (MSRS). March 2011. Western Snowy Plover Habitat Restoration at Vandenberg Air Force Base, California- Torch Oil Spill Mitigation Summary Report for Period 14 August 2009 to 31 January 2011.13pp.

SRS Technologies. 2005. Final Plan for the Removal of Selected Invasive Plants from Western Snowy Plover Habitat at Vandenberg Air Force Base. 80pp.