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EXHIBITS-3

DRAFT

Hollywood Beach Western Snowy Plover Habitat Expansion and Enhancement Plan

Channel Islands/Port Hueneme Harbors Maintenance Dredging Project

Ventura County, California

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Exhibit 6
CD-0001-24

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1.0 INTRODUCTION AND BACKGROUND

1.1 PLAN PURPOSE

The USACE is congressionally mandated to maintain safe navigable access to Channel Islands Harbor from the Pacific Ocean to protect commerce and marine safety afforded by USCG facilities stationed in the harbor. Maintenance dredging of Channel Islands and Port Hueneme Harbors is authorized by the River and Harbor Act approved March 2, 1945. A modification to the Act (P.L. 91-611, Sec 114) dated December 31, 1970, established that dredging and maintenance of Channel Islands and Port Hueneme Harbors would be the responsibility of the United States (U.S.) Federal government. This work is undertaken by the U.S. Army Corps of Engineers (USACE), Los Angeles District.

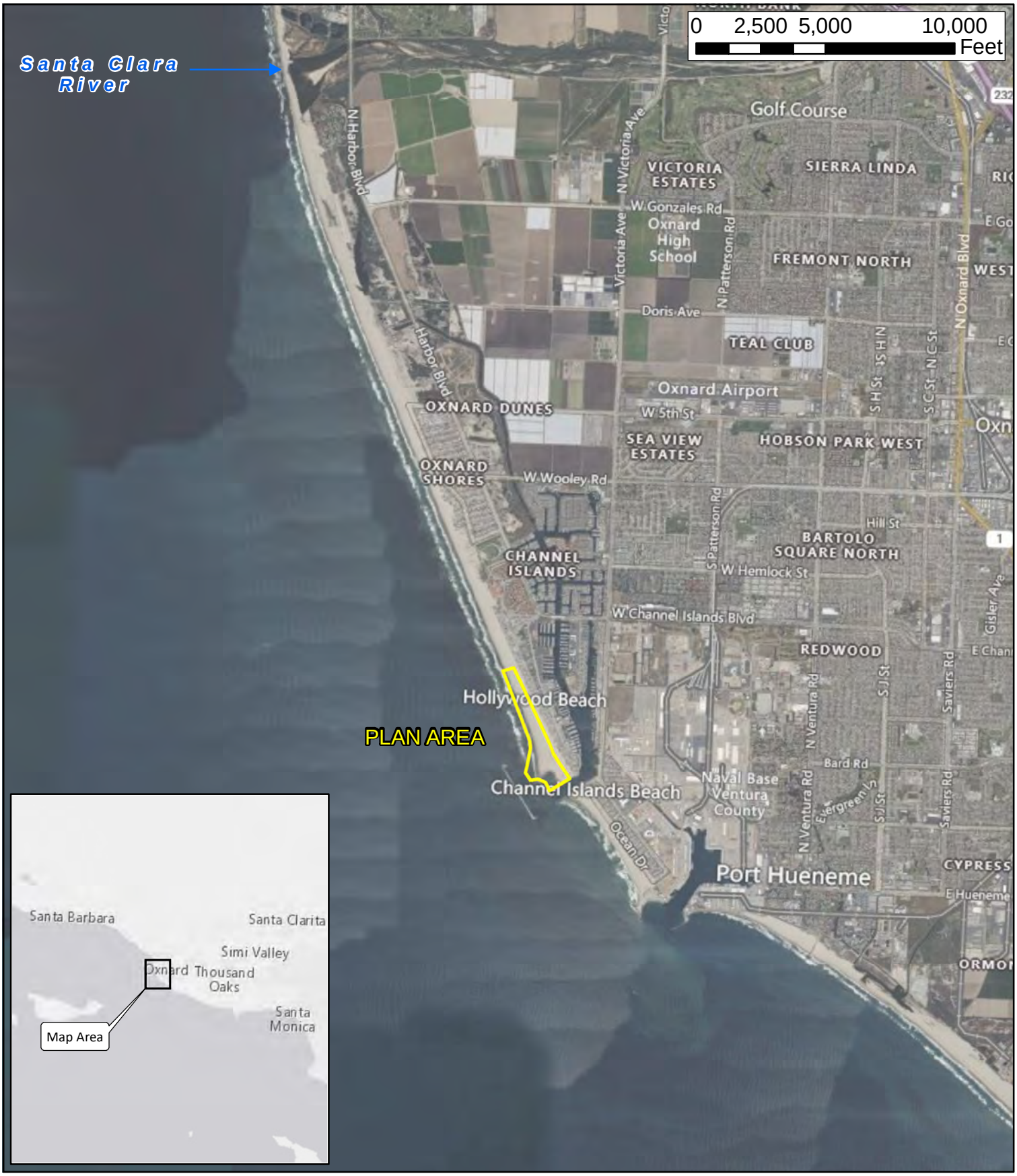
1.2 PROJECT AUTHORITY

The USACE is congressionally mandated to maintain safe navigable access to Channel Islands Harbor from the Pacific Ocean to protect commerce and marine safety afforded by USCG facilities stationed in the harbor. Maintenance dredging of Channel Islands and Port Hueneme Harbors is authorized by the River and Harbor Act approved March 2, 1945. A modification to the Act (P.L. 91-611, Sec 114) dated December 31, 1970, established that dredging and maintenance of Channel Islands and Port Hueneme Harbors would be the responsibility of the United States (U.S.) Federal government. This work is undertaken by the U.S. Army Corps of Engineers (USACE), Los Angeles District.

In implementing its mandate for navigational dredging, the Corps is subject to federal environmental regulation, including the National Environmental Policy Act, the Endangered Species Act of 1973, and the Coastal Zone Management Act of 1972 (CZMA), among others. The maintenance dredging has effects on two federally listed species, the endangered California least tern (CLT) and threatened western snowy plover (WSP), that make use of the widened beach and coastal foredune habitat that have developed within and adjacent to the sand trap due to the configuration of north entrance channel jetty and the detached breakwater that trap sand by design. The maintenance dredging also has adverse effects on designated critical habitat for WSP. As a result of these effect on listed species and critical habitat, the Corps consulted with the U.S. Fish & Wildlife Service (USFWS) under section 7 of the ESA. This resulted in the issuance of a Biological Opinion on the Channel Islands/Port Hueneme Harbors Maintenance Dredging Increased Quantity Project, Ventura County, California (08EVEN00-2022-0085983-S7) that incorporated obligatory terms and conditions that must be incorporated for the Corps to undertake its maintenance obligations to dredge in maintenance of navigation for safety and commerce. One such obligation is the development and implementation of a dune restoration plan. This document serves as that plan.

1.3 PLAN REQUIREMENTS

The Biological Opinion for the Channel Islands/Port Hueneme Harbors Maintenance Dredging (08EVEN00-2022-0085983-S7) calls for the implementation of a dune restoration plan. The proposed dune restoration would occur on Hollywood Beach located north of and adjacent to the Channel Islands Harbor (Figure 1). Specifically, the requirement as set forth for this dune restoration plan are as follows:



Hollywood Beach Western Snowy Plover Habitat Enhancement Plan Regional Map

Ventura Harbor Navigational Maintenance Dredging Program
Ventura County, California

Figure 1

Proposed Dune Restoration
To offset potential impacts to western snowy plover designated critical habitat, the Corps proposes to restore 13.47 acres (1:1 impact restoration ratio) of foredune habitat adjacent to the action area as agreed to with the Service. The restoration effort will include beach grass (Ammophila sp.) control to zero density, recontouring of sand dunes to approximate natural dune contours using heavy equipment, restoration of native beach species using plants or seeds, and manual removal of non-native plant species. The Corps will manage this area for a period of 5 years. Management activities will include installation and maintenance of native dune vegetation, manual removal of non-native plant species, strategic fencing, predator exclosures for shorebird protection, and other measures intended to protect any nesting or foraging activities that may occur in this area without significantly impacting authorized recreational beach use. The purpose of the restoration site is to provide comparable habitat function and value for the western snowy plover to offset the temporary and recurring loss of beach that would occur whenever the Corps excavates "sand trap D". At a minimum, weekly monitoring for California least tern and western snowy plover will occur during the proposed action and for 5 years post - dune restoration completion to verify the restoration site is fulfilling the purpose as stated above. Annual metrics monitoring of the dune restoration will occur for 5 years post - dune restoration completion to verify the restoration site will remain functional habitat for the intended species.

2. DREDGING AND BEACH DYNAMICS

2.1 Corps Maintenance Dredging at Channel Islands Harbor

The Channel Island Harbor inlet was designed and constructed to allow for recurrent maintenance dredging to remove littoral shoal sand from the inlet and bypass this sand down-coast of the two harbors. At Channel Islands Harbor, structural features consist of a 2,300-foot-long detached offshore breakwater, and two channel parallel entrance jetties that protect and an entrance channel leading to the harbor interior. The entrance channel and basin are 3,400 feet long and varies in width from approximately 300 feet at the entrance to 600 feet within the harbor.

Channel Islands Harbor receives sediments from upcoast beaches and streams by the southerly littoral transport system. As sand migrates southward, the offshore breakwater creates a wave shadow that drops the sediment transport energy allowing sand to settle north of the channel against the northern jetty within what has been established as a maintenance sand trap. The sand trap minimizes shoaling in the entrance channel, preventing the formation of dangerous bars across the inlet. The accumulated sand in the sand trap and the channel are dredged out periodically and passed to the beach south of Port Hueneme Harbor. This passage of sand to downcoast areas is critical to maintaining littoral transport through the littoral cell, otherwise beach and dune environments in the downcoast portions of the littoral cell are deprived of sand. This leads to narrowing of the beaches and dune losses in down coast areas along with impacts to harbor navigational safety when inadequate levels of sand bypass occur. The effects of bypass of sand from the sand trap to down coast of Port Hueneme are best visualized by examples from period of low bypass from the sand trap (2014) and periods with higher rates of sand bypass (2023) (Figure 2).

Figure 2. Difference in beach width and dune condition on Ormond Beach during periods of low sand bypass (August 27, 2014) and higher sand bypass (May 7, 2023). Note changes in beach widths and dune locations (red).

The dredge areas are divided into dredge areas: Areas A, B, C, D, E, and G (Figures 3). The Congressionally authorized depth of the entrance channel (Area A) and entrance basin (Area E) are -20 feet Mean Low Water (MLLW). Areas B, C, & D are authorized to maintenance depths of -35 feet MLLW and Area G is authorized to a depth of -25 ft MLLW.

Figure 3. Federal Navigational Dredging Template and Potential Dune and Beach Effects Area

Maintenance dredging has been conducted routinely by the Corps since the 1960s at Channel Islands Harbor. During the most recent biennial dredge cycle in Fiscal Year 2023 2,405,000 cubic yards of sand was dredged from the Channel Islands Harbor dredge template. When dredging is conducted within the sand trap Area D and to a lesser extent Area C, the beach and dunes encroaching into the sand trap are removed. In addition, the effects of dredging within the sand trap extend beyond the trap to the adjacent beach and dune environment as the beach slopes layback to a stable configuration following dredging. This layback is typically limited in distance from the boundary of

the sand trap, however, based on conservative coastal engineering projection of potential impacts due to dredging sand trap Area D to full authorized depth. This may affect a considerable amount of dune and non-dune beach as illustrated in Figure 3. Such effects would result in the temporary loss of suitable habitat for nesting, shelter, and foraging by western snowy plover.

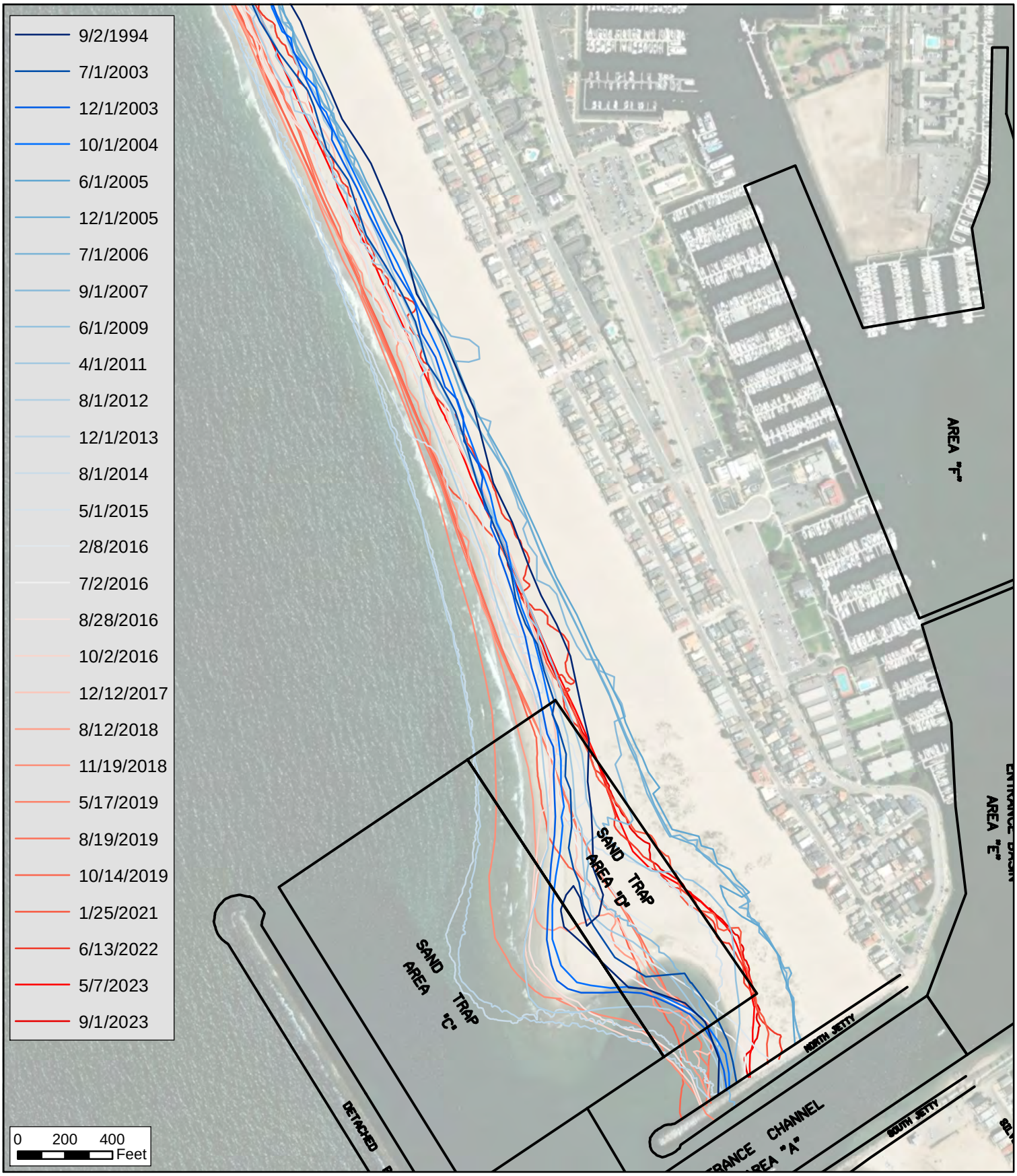
2.2 Hollywood Beach Dynamics

Hollywood Beach extends southward approximately 7,000 feet from McGrath State Beach to the north jetty of Channel Islands Harbor. At a distance of 12,000 feet updrift of Hollywood Beach is the Santa Clara River, which contributes an uneven but substantial supply of sand to the littoral cell. The southerly 1,500 feet of the beach is situated within the lee of the detached breakwater.

According to the VC Resilient Coastal Adaptation Project Seal Level Rise Adaptation Strategies Report (County of Ventura Resource Management Agency - Planning Division 2019), Hollywood Beach is one of the few areas in the unincorporated County where accretion of sand occurs over time. Despite reductions in the amount of sediment carried into the littoral cell, due to the trapping of sand at the harbor entrance and the direction of the waves and onshore winds, this beach builds both horizontally (widens), and vertically grows taller). The northern beach has been generally widening since at least 1994. This is based on widening of the dry beach as measured from the first line of residential development to the wetted beach margin (Figure 4). In 1994 the average dry beach width on the northern portions of Hollywood Beach was 272 feet, while this expanded to an extreme of 544 feet in 2016. In 2023, the northern beach areas averaged 410 feet in width.

A different condition is seen at the south end of Hollywood Beach where the channel inlet structural improvements and recurrent dredging play key roles in the development and dynamics of the beach. Within this area, the 1994 dry beach width averaged 770 feet, while the 2023 dry beach width averaged 524 feet and the maximum beach width was found in 2014 at 1,181 feet in width due to an extensive sand shoal that had developed well out into the sand trap and allowed considerable passage of sand into the channel inlet. The narrowest dry beach in this area occurred in 2005 at an average of 325 feet (Figure 4).

In the lee of the breakwater, sand piles up due to loss of wave energy and creates a large protruding shoal that extends outward from the beach into a sand trap designed into the channel configuration to capture littoral sand, reducing the influx of sand into the entrance channel of the harbor. The sand trap is regularly dredged to remove the accumulated sand as part of the navigational channel maintenance operations and the sand is passed to the south beyond the entrance to Port Hueneme to allow sand to continue to migrate down the shoreline. This creates a temporary deficit of sand behind the breakwater resulting in beach and dune erosion in proximity to the dredge footprint until beach slopes stabilize. Once this occurs, erosion ceases and littoral transport from the north reverts the southern beach behind the breakwater to a zone of accretion, building back beach width and height. Within a short period of months, the northernmost portion of the sand trap fills and begins to develop a protruding shoal of sand, that blocks sand infill along the southern edge of the sand trap adjacent to the north jetty. Over time sand extends beyond the protruding shoal to the north jetty. This process often results in a small shallow basin forming within the interior of the redeveloping beach that retains beach wrack within a pocket of the sand trap.



Hollywood Beach Dry Beach Margin

Ventura Harbor Navigational Maintenance Dredging Program

Ventura County, California

Figure 4

Beach/dune scarp development inside sand trap Area D following maintenance dredging. The flatter profile beach below is the result of erosion of a higher beach/dune elevation as the site stabilizes.

Beach rebuilding and dune development at the beach edge of the sand trap is a consistent and predictable process in response to sand transport and maintenance dredge cycles. However, the rate and extent of dune development is likely influenced by many factors that are less predictable. First, dunes generally begin to form against anchoring windbreaks. This often takes the form of woody debris derived most substantially from discharges from the Santa Clara River. The extent of debris discharge varies and thus the amount of dune generating windbreaks varies over time. The second highly variable factor influencing dune development in this area is the seedling establishment rate. This is influenced by the amount of seed produced, the seasonal rainfall conditions, and the extent of seed spread to the west of the existing dunes. A final unpredictable factor driving the rate of dune development is the extent of pedestrian and vehicle traffic within the beach area that disrupts early dune development.

Beach debris loading during winter 2022-2023 due to flood discharges from the Santa Clara River. The incorporation of this debris into the beach sand plays a role in ultimate dune development by creating hardened points in the sand that assist in forming small dune features.

At the upper portions of this newly developed sand spit, dunes begin to develop where there is beach debris or seedling plant establishment. The dunes on the upper margin of the active beach are generally sparse, low in elevation, and characterized by widely scattered plants. These foredunes are a precursor to further back dune development where the elevation of dunes increases as they are further stabilized by expanding vegetation cover that stabilizes the dunes.

It is notable that the present dividing line between what can be considered foredunes and backdune habitat has its origin in catastrophic dune losses of the seaward dunes during the 2005 El Nino Southern Oscillation (ENSO) event coupled with maintenance dredging. During this period, the shore was eroded back as much as 850 feet, laying the foundation for new beach and incipient foredune advance over the next several years.

The extent of beach and dune development at the southern end of Hollywood Beach has varied over time in response to the accumulation of sand based on variable rates of sand transport and the extent and frequency of maintenance dredging. Over the past three decades, the maximum extent of dune development has reached a high of 20.5 acres in 2014, with a low of approximately 8.5 acres in 1994. In recent years, the average extent of dunes has been between approximately 9 and 11 acres. The most variable dunes present on the beach are the foredunes that are intermittently lost to erosion from wave run-up that is facilitated by maintenance dredging within the sand trap, as well as

intermittent elevated sea level and wave energy associated with ENSO events. These dunes are therefore low in stature, sparsely vegetated, and intermixed with the more open beach environment. Where dunes are stable within the back of the dune complex, they are tall, ranging to over 10 feet in height and are stabilized by predominantly invasive species including European beach grass (*Ammophila arenaria*) and Hottentot fig (*Carpobrotus edulis*).

While the stable back dune habitat is not suited to supporting use by WSP, it does reduce vehicular and pedestrian traffic seaward of the dune complex. This barrier effect allows for the development of foredune habitat that, when coupled with the beach, provides suitable habitat for nesting, foraging, and roosting by WSPs. The intermittent maintenance dredging both results in a loss of dune habitat and a maintenance of the foredune complex in a state of early successional low stature and partially stabilized condition, preventing this area from developing towards the stable back dune conditions.

While the effects of dredging on the dune habitat is naturally ephemeral, the necessity to conduct dredging at a frequency suited to maintaining sediment transport through the littoral cell, navigational safety, and functional access to Channel Islands Harbor and Port Hueneme, results in a dynamic equilibrium of dune extent that is less than would otherwise occur absent dredging. However, the recurrent maintenance of the sand trap and bypassing of sand also sustains the character of dunes that do develop to the low fore dunes most suited to supporting use by plover.

Because dune development and loss occur as a continuous and recurrent process adjacent to the sand trap, the conditions differ from those associated with permanent losses such as for roadways, parking lots, or other development. Rather, the character of the active foredune is derived from the maintenance dredging, but it comes with a locally reduced overall dune footprint. If dredging were to cease, the dunes within the sand trap would become larger, but would also stabilize and grow in elevation, resulting in a reduction in function for species associated with the more active dune margin, such as snowy plover, since the offshore breakwater would eliminate natural shoreline erosion and accretion patterns that help sustain active foredunes in less developed environments. In addition, the depletion of sand from the downcoast littoral cell would result in beach and dune erosion at Port Hueneme Beach Park and Ormond Beach as was noted in 2013-2014 while the sand trap was accumulating sand without adequate bypass (Figure 2).

In planning to enhance and expand snowy plover habitat, it is important to keep the beach and dune dynamics in mind as they are critical to defining the expected consequences of restoration, both from a temporal development and climax condition, as well as the expected frequency of disturbance and necessity to pass sand downcoast to sustain offsite coastal resources.

3. JURISDICTION, OWNERSHIP, AND LAND USE

3.1 JURISDICTION AND STEWARDSHIP

The overall beach stewardship and land-use management on Hollywood beach is performed by Ventura County. The beach is managed Ventura County Harbor Department (Harbor Department) for public access and recreational use. The Harbor Department provides essential public services on the beach along with the Ventura County Sherriff's Department and Ventura County Fire Department.

Residents and non-profit organizations also play a role in beach management as these groups, along with Ventura County manage blow sand extending into the neighborhood and also manage stewardship of natural resources including outreach regarding beach regulations, and they perform vital functions of monitoring and reporting on the beach uses and resource status.

Homeowners on the beach are permitted to hire a private sand-moving tractor to push sand away from their properties throughout the year, even during the breeding season. Typically, the owners of the tractor company contact the monitor and discuss their routes before working on the beach. Vehicles access the beach, including trucks, golf carts and other all-terrain vehicles (ATVs). These vehicles often use the beach after dark and on weekends and can occur near the dunes and nest areas. Access is facilitated via several openings between houses from Ocean Street to the beach.

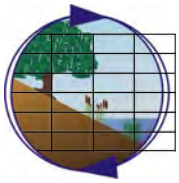
No formal management program for WSPs and CLTs is generally funded on Hollywood Beach, however, the Ventura Audubon Society (VAS) has initiated and implemented a Shorebird Recovery Program specifically for Hollywood Beach and Ormand Beach), where VAS's efforts aim to protect nesting habitat with fencing and signs, monitor wintering and breeding WSP, engage volunteers to help steward the beaches, and educate the public about the importance of these locations. In 2022 and 2023, the USACE, in association with its environmental commitments related to the dredging program have funded monitoring and management efforts.

3.2 PROPERTY OWNERSHIP

Hollywood Beach ownership is held by two parties (Figure 5). The State of California, through the California State Lands Commission (CSLC), owns the offshore area and beach landward to the 1939 ordinary high-water mark (OHWM). This boundary was verified through SSLC boundary team and an AutoCAD boundary file was provided by, Joe Porter, Senior Boundary Determination Officer. This boundary was compared with the County of Ventura spatial data for property boundaries, and it was determined that the plotted shoreward state lands boundary provide by CSLC is consistent with the plotted seaward boundary of the County of Ventura parcels provided by the County of Ventura.

3.3 HOLLYWOOD BEACH LAND USE

The County owned parcels at the upper portion of the beach is zoned Coastal Open Space and is a county park intended for day use. The CSLC lands are not zoned and managed for public use. The wide flat high back beach breaking to a defined wetted foreshore results in a generally disjunct use pattern by the public. Many active uses occur close to the development where there are established volleyball courts and the beach is close to parking, although parking in the immediate area is somewhat limited. Conversely, users of the beach that come for the water, tend to cross the broad back beach to the crest of the foreshore and sloping



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Hollywood Beach Jurisdictional Boundaries
Ventura Harbor Navigational Maintenance Dredging Program
Ventura County, California

Figure 5

beach access to the wetted sand margin and surf. This results in more intensive use along the seaward and landward margins of the beach, with lesser use occurring through the central portion of the upper beach. As a result, uses of the central portion of the beach tend to be shore normal crossings of the beach (perpendicular to the shoreline) rather than broad use patterns. This is further refined within the southern portion of the beach, where crossings of the dunes follow defined routes between dune hummocks.

The county of Ventura Coastal Area Plan identifies Hollywood beach to include an existing hiking/walking trail component through county lands seaward of the first row of residential homes. This area does not include improved trails but rather is a continuous sand beach along the entire length of Hollywood Beach. Because of the presence of Channel Island harbor and no crossover bridges along the beach, the plan notes that this trail segment provides access to Channel Islands harbor and in the northerly direction could provide access through Mandalay Beach to McGrath State Beach.

The Coastal Area Plan notes that Hollywood Beach and Silver Strand have limited erosion concerns according to the Department of Navigation and Ocean Development and USACE (1979). The Plan notes that erosion at Hollywood Beach is significantly minimized by the jetty configuration at the entrance of Channel Islands Harbor and that erosion at Silver Strand is also minimal. The Coastal Area Plan notes that beach sections that become eroded are stabilized with sand replenishment by the Army Corps of Engineers as requested by the Ventura County Flood Control District as funds are available. The Coastal Area Plan establishes Beach Erosion Goal 1 "To protect public safety and property from beach erosion as provided for in existing ordinances, and within the constraints of natural coastal processes". Among the policies to implement this goal is Policy 7 – "During their scheduled dredging of Channel Islands Harbor, the Army Corps of Engineers is encouraged to replenish beaches with severe erosional losses consistent with environmental restraints on the deposition of dredge spoils."

3.4 Federal Interests

Federal Navigation Improvements

Congressionally mandated federal navigational improvements, including structures, original dredging, and recurrent maintenance occur within and adjacent to state lands along the ocean beach and nearshore waters. Similarly, but not relevant to the present action, federal channel improvement also occurs within County of Ventura properties inside Channel Islands Harbor. Under the Rivers & Harbors Act, the Army Corps is mandated to maintain these facilities and empowered to do so under the Commerce Clause in Article 1, Section 8 of the U.S. Constitution.

Western Snowy Plover Critical Habitat

Portions of Hollywood Beach have been designated critical habitat for the WSP within Unit CA 39 (USFWS 2012, 77 FR 36728). This designation overlaps both County of Ventura parcels and state lands and extends over portions of Area D within the federal channel sand trap (Figure 4). Critical habitat affects federal and federally authorized actions requiring consultation with the U.S. Fish and Wildlife Service for actions that may adversely modify critical habitat.

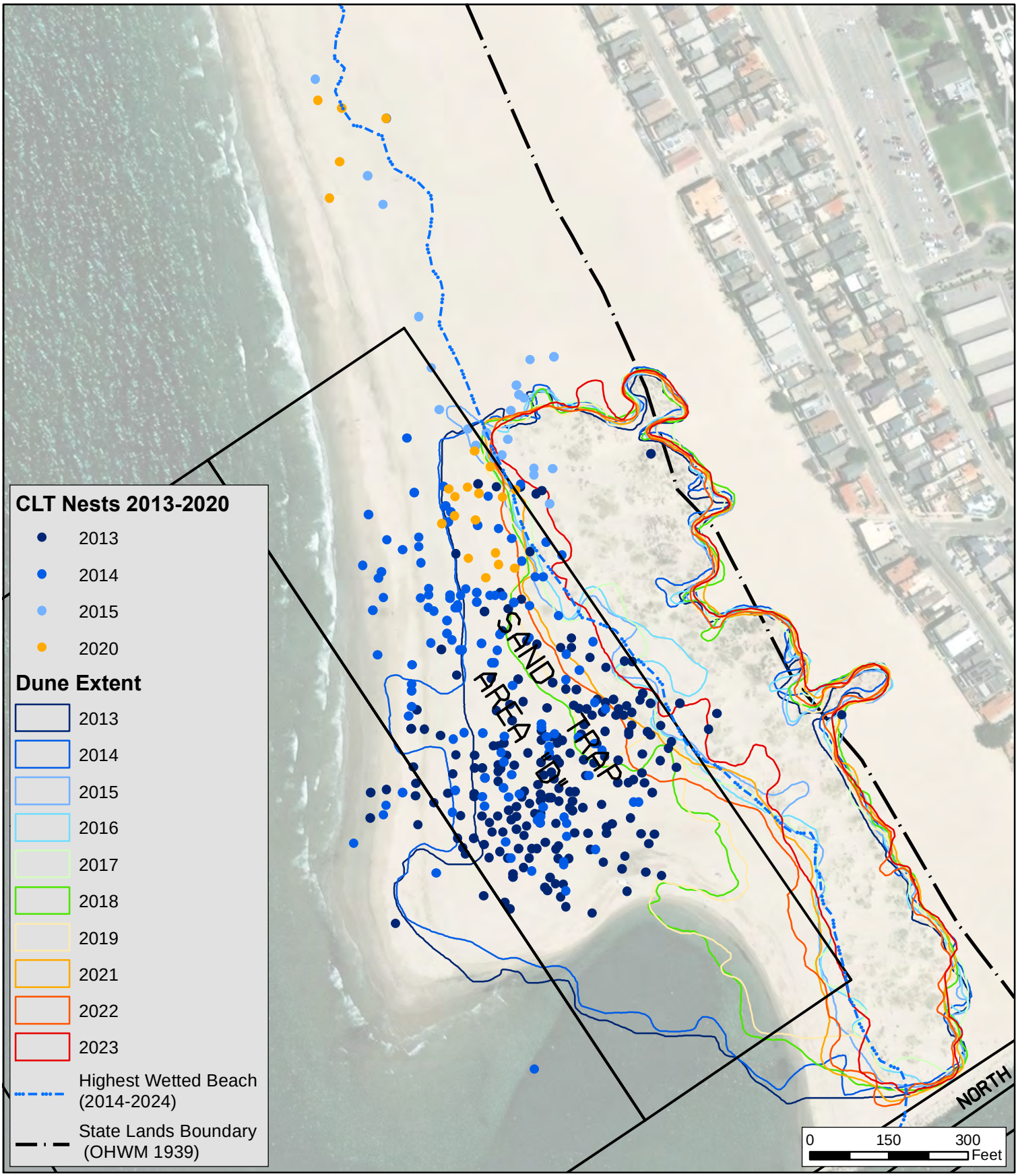
4. LEAST TERN AND SNOWY PLOVER UTILIZATION OF HOLLYWOOD BEACH

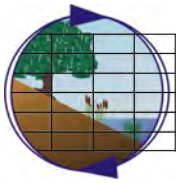
4.1. California Least Tern

Least terns are only present at Hollywood Beach during the breeding season, nominally April-September. Lower than normal funding for maintenance dredging during the winters of 2013 and 2014 resulted in an unusually large accumulation of sand within the sand trap. This extended a terminal sand shoal well into the sand trap toward the detached breakwater and led to the development of a wide and sparsely vegetated foredune habitat. The widened beach and early dune development provided ideal habitat for CLTs and attracted the establishment of 209 nests in 2013, 2,000% higher than the average for the beach (Barringer 2014). During the fall-winter of 2014, dredging operations led to the loss of a significant portion of the low lying vegetated foredune habitat, which was followed by a precipitous decline in adult presence and nesting during the 2015 breeding season (Barringer 2015) (Figure 6). Similarly, both the 2020 and 2022 breeding seasons saw the establishment of CLT nests with 26 breeding adults each year, followed by subsequent breeding seasons declines (zero nests in 2021 and 2023) (Barringer 2021, 2023, & 2024). While small nesting groups have occurred in recent years, no fledging success has been documented since 2015.

No CLTs nested on Hollywood Beach during the 2023 breeding season. However, on May 15th, a pair of CLTs landed on the beach within the fenced area but no nests were found upon inspection. Other observations were limited to flyovers and foraging behaviors in nearshore waters. CLT breeding activities and hatch success have been recorded on Hollywood Beach since 1996, with as many as 26 nests in 2022.

Two California least terns inside temporary symbolic exclosure fence (May 26, 2023)





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CLT Nests Relative to Sand Dune Extent 2013-2023
Ventura Harbor Navigational Maintenance Dredging Program
Ventura County, California

Figure 6

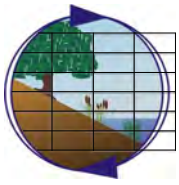
4.2. WESTERN SNOWY PLOVER

Non-breeding Season (Wintering)

Hollywood Beach has been extensively surveyed for wintering WSPs since at least 2012. The beach is a habitual wintering area for plovers. In 2023, a comprehensive monitoring program was undertaken under the environmental commitments of the dredging program and to support planning for implementation of a WSP habitat restoration and expansion plan. For this monitoring program, a total of 23 wintering snowy plover surveys were conducted from September 2022 through February 2023. The number of WSPs observed during this monitoring program was similar to recent years (Barringer 2023, and 2021). WSPs were observed during every survey conducted at Hollywood Beach, although the population displayed a declining trend following the initial surveys (Merkel & Associates 2024). On average, 62.9 plovers were counted per survey, with counts ranging from a high of 216 on January 11, 2023, to only one bird on January 24, 2023. Weekly counts were higher from September through November, with an average of 102.6 plovers per survey, compared to December through February when the average was 51.8 per survey. Weekly counts peaked in October with 103 plovers per survey, declining steadily thereafter to a low of 19.5 per survey. More than 50 plovers were recorded in 52% of surveys. Less than five plovers were observed in two (8.7%) of the surveys. Wintering plovers were generally distributed north of the sand trap with the highest number of birds occurring between La Crescenta Street and Las Palmas Street (Figure 7). However, slight shifts in distribution occurred over the wintering season (Merkel & Associates 2024).

The plover population exhibited an initial surge during the first surveys in fall 2022, likely aided by the arrival of migrating birds. Subsequent surveys indicated a gradual decrease in numbers, which is a typical dispersal pattern. However, a notable deviation from this trend occurred during one week in January, when an abnormal aggregation of birds was sighted on the beach. This phenomenon may be attributed to a recent rainstorm that likely disrupted their beach roosting site(s), or seasonal low tide (-0.1 feet mean lower low water) that exposed nearby mudflats. Subsequent surveys showed a return to a more typical population size (Barringer 2023, and 2021).

Wintering plover outside of dredging construction safety fence at sand trap (October 25, 2022).



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Western Snowy Plover Distribution Heat Map

Hollywood Beach Western Snowy Plover
2022-2023 Winter and 2023 Breeding Season

Figure 7

Breeding Season

Nesting by snowy plovers has been monitored regularly at Hollywood Beach for at least 20 years. The monitoring shows a relatively consistent number of nests on the beach ranging from approximately 5-10 nests with nest counts falling outside of this range being anomalous (Figure 8). Nest hatching success in Figure 8 is based on the number of nest within which at least one egg hatched, rather than presenting the overall hatching success.

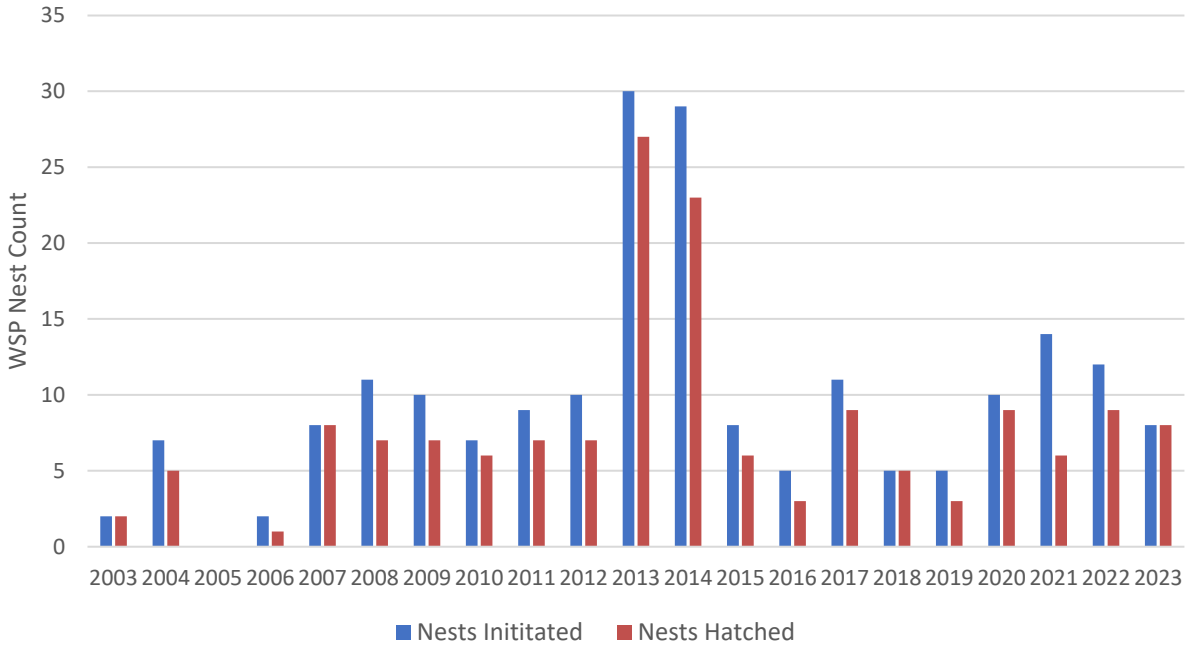
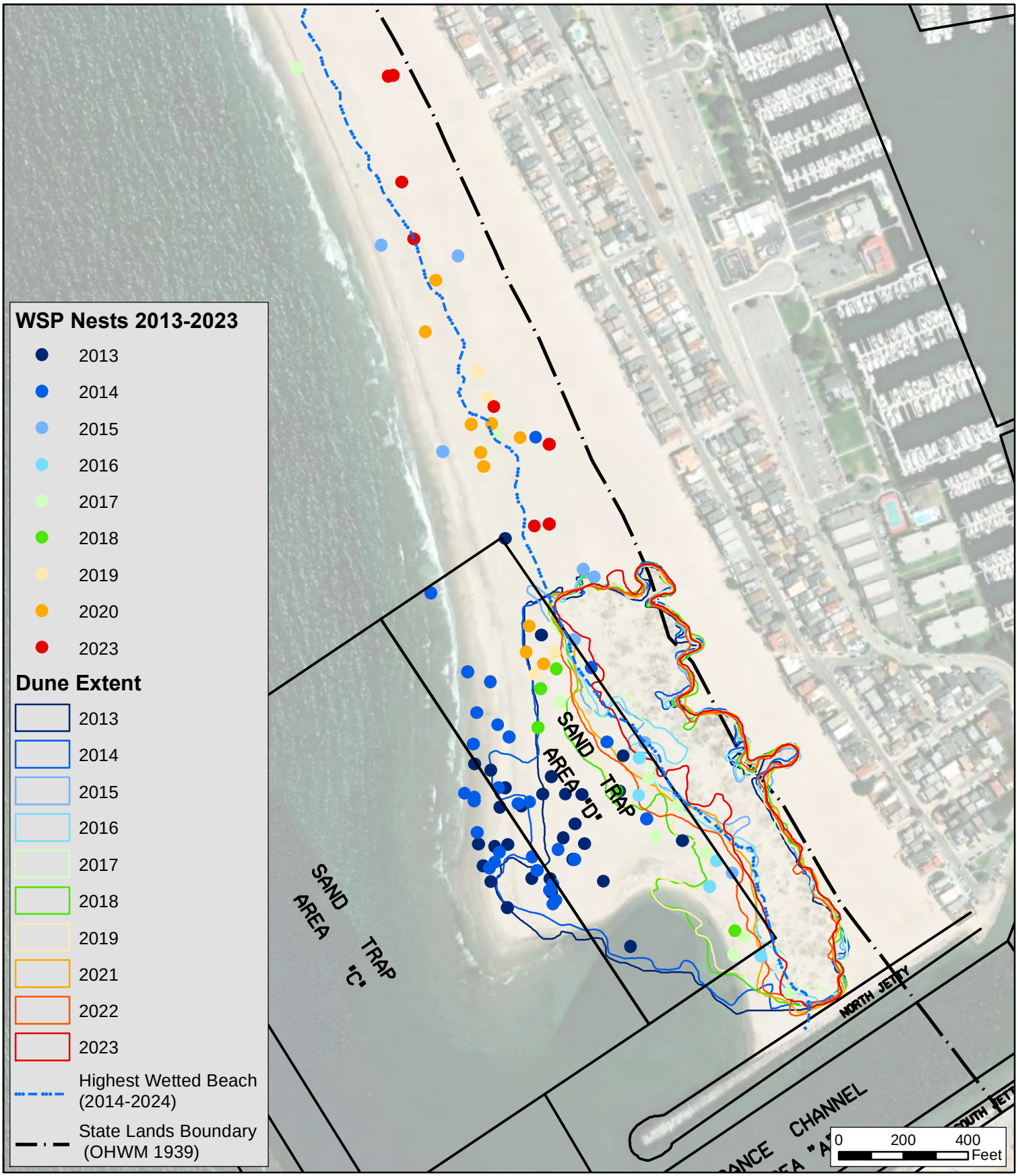
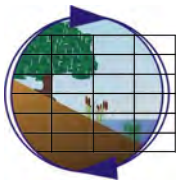


Figure 8. Western snowy plover nest count and nests yielding hatching success (2003-2023)

During the 2023 breeding season, eight plover nests were initiated. Six out of the total eight nests were placed on the open sand north of the existing dunes (Figure 9). The nesting site selections were characterized by a minimal amount of natural cover or nearby foraging resources. The other two nest sites occurred closer to dune habitat, but still north of the more developed dune complex. Of the eight nests initiated in 2023, all hatched, resulting in a total of 18 eggs (100% nest hatch rate, 90% egg hatch rate). This marks an improvement over last year's results, which showed a 75% nest hatch rate and a 71% egg hatch rate and surpasses the average nest hatch rate of 74% (calculated over 19 years of data collection—excluding the two outlier years).

The trend of nesting to the north of the dunes has persisted over the past few years, with the majority of nests now found at some distance from the dunes (Figure 9), unlike previous years when they were primarily located seaward of the dunes. The placement of nests is believed to be influenced by the availability and width of the open sand habitat (MacDonald 2010), which has decreased in front of the dunes following dredging cycles. Notwithstanding the nesting location, following hatching chicks are regularly guided to the south toward the beach rack and dune habitat where better foraging and sheltering habitat are available.





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WSP Nests Relative to Sand Dune Extent 2013-2023
Ventura Harbor Navigational Maintenance Dredging Program
Ventura County, California

Figure 9

HB03 chick in debris wrack at south beach adjacent to sand trap (May 26, 2023)

In 2023, nest abandonment dropped from the previous2022 year to only two eggs out of 20, which is more typical for Hollywood Beach. There was also only one documented human disturbance, involving the removal of a micro-exclosure (ME) from a nest within the fenced off symbolic fence area, however no plovers were nesting there at that time.

5. PLOVER HABITAT EXPANSION AND ENHANCEMENT PLAN

5.1. WESTERN SNOWY PLOVER CRITICAL HABITAT PRIMARY CONSTITUENT ELEMENTS

In designating critical habitat for the WSP, the USFWS identified primary constituent elements (PCEs) essential to the conservation of the Pacific Coast WSP as follows:

> *Sandy beaches, dune systems immediately inland of an active beach face, salt flats, mud flats, seasonally exposed gravel bars, artificial salt ponds and adjoining levees, and dredge spoil sites, with:*
>
> *(1) Areas that are below heavily vegetated areas or developed areas and above the daily high tides;*
>
> *(2) Shoreline habitat areas for feeding, with no or very sparse vegetation, that are between the annual low tide or low-water flow and annual high tide or high-water flow, subject to inundation but not constantly under water, that support small invertebrates, such as crabs, worms, flies, beetles, spiders, sand hoppers, clams, and ostracods, that are essential food sources;*
>
> *(3) Surf- or water-deposited organic debris, such as seaweed (including kelp and eelgrass) or driftwood located on open substrates that supports and attracts small invertebrates described in PCE 2 for food, and provides cover or shelter from predators and weather, and assists in avoidance of detection (crypsis) for nests, chicks, and incubating adults; and*
>
> *(4) Minimal disturbance from the presence of humans, pets, vehicles, or human-attracted predators, which provide relatively undisturbed areas for individual and population growth and for normal behavior.*
>
> ***(USFWS 2012, 77 FR 36728)***

In addition, the final critical habitat designation (USFWS 2012, 77 FR 36728) also identifies criteria used to identify critical habitat for designation. Thise criteria along with the identified PCEs provide some guidance to habitat restoration and enhancement for snowy plovers, as does the present and historic use patterns of plovers on Hollywood Beach. Among the salient criteria for identification of critical habitat are:

> *(1) Areas throughout the range of the Pacific Coast WSP located to allow the species to move and expand. The dynamic nature of beach, dune, and similar habitats necessitates that Pacific Coast WSPs move to adjust for changes in habitat availability, food sources, and pressures on survivorship or reproductive success (Colwell et al. 2009)*
>
> *…*
>
> *(2) Breeding areas. Areas identified in the Recovery Plan (Service 2007) known to support breeding Pacific Coast WSP were selected. Selected sites include historical breeding areas and areas currently being used by breeding plovers…*

(3) Wintering areas. Major wintering sites not already selected under criterion 2 above were added. A "major" wintering site is defined as one that supports more wintering birds than average for the geographical region based on current or historical numbers…

(4) Unique habitat. Additional sites were added that provide unique habitat, or that are situated to facilitate interchange between otherwise widely separated units…

(5) Areas to maintain connectivity of habitat. Some areas that may be seasonally lacking in certain elements of essential physical or biological features and that contain marginal habitat were included if they were contiguous with areas containing one or more of those elements and if they contribute to the hydrologic and geologic processes essential to the ecological function of the system…

(6) Restoration areas. We have selected some areas within occupied units that, once restored, would be able to support the Pacific Coast WSP. These areas generally are upland habitats adjacent to beach and other areas used by the species containing introduced vegetation, such as European beach grass (Ammophila arenaria), that currently limits use of the area by the species. These areas would provide habitat to off-set the anticipated loss and degradation of habitat due to sea-level rise expected from the effects of climate change or due to development. These areas previously contained and would still contain the features essential to the conservation of the species once removal of the beachgrass and restoration of the area has occurred.

In focusing on providing value to plovers through habitat enhancement and expansion, it is important to consider the PCE's and original identification criteria applied to critical habitat designation in the context of specific circumstances existing on Hollywood Beach. In doing so, it is possible to amplify the PCEs that are being poorly met, while protecting those that are being met well. In the case of Hollywood Beach, the presence of consistent wintering and breeding by WSPs supports a need to support both uses to the extent practicable.

5.2. Hollywood Beach Conditions and Western Snowy Plover Habitat Suitability

Hollywood Beach supports several conditions that collectively favor and disfavor the utility of the habitat by WSPs, and as an ancillary condition nesting season use by CLTs.

The primary detractor to habitat suitability is the high degree of vehicles, pedestrian, and domestic animal traffic on the beach. While the broad dry beach provides good opportunity for recreational uses to occur, the use patterns are ill defined within areas lacking dune development or seasonal controls to access that are associated with erection of symbolic seasonal fencing to support WSP use. The VAS initiated Shorebird Recovery Program, providing outreach and education facilitates controlling domestic animals, and to a lesser extent vehicle traffic, yet the lack of partitioned defined beach uses limits the capacity to provide broad protection to plovers and terns against lawful exercise of public rights to utilize the beach.

The adverse effect of lacking broad partitioned land use controls over beach uses is somewhat mitigated by two factors. First, is the physical presence of the dune field at the southern end of the beach, that breaks up the beach and creates a physical barrier to intensive recreational use of the

seaward side of the dunes. This provides a protected zone wherein limited intensive recreation occurs, while public access and passive use is retained with limited conflicts to plover foraging and roosting activities along the shoreline. The second mitigating factor to high recreational disturbance, is that Hollywood Beach is a very broad beach averaging over 350 feet in width at the north end and over 500 feet in width at the south end of the beach. This means that there is a propensity for recreational uses to be aggregated either near the upper beach adjacent to the development, or along the shoreline. This results in lower traffic on the seaward portions of the high beach. While this does not provide direct protection to nesting plovers, considerable efforts of volunteers to place micro-exclosures (MEs) on discovered nests, along with a general reverence of the beach using public and County staff to not disturb the MEs and nests provides plovers with better chances of successful nesting absent these localized protection measures.

While dunes mediate the intensity of beach use, providing protection to wintering and breeding plovers, mature back dune environments do not serve directly as habitat for this species. Further, there is a generally low use of intermediately developed dunes supporting expanding vegetated cover and increasing dune height. Concurrently, there is good evidence of WSP use of small, low relief incipient foredunes that developed over short periods of time following beach disturbance. This can be seen in the development of incipient dune features in less than a year leading up to a period of low in channel entrance maintenance funding (2013-2014). The rapidly accreting beach and neonatal dunes with vegetated cover of well below 3% cover were immediately and heavily used by nesting WSPs.

Stabilized dunes of sizable vertical stature and high vegetated cover are not good habitat for WSPs at Hollywood Beach. Back dunes provide a barrier to widespread vehicle disturbance and curtail intensive foot-traffic, conversely, this barrier effect does not restrict beach access of a more passive nature, in that access through the dune complex by narrower foot trails continues to provide for surf zone access. Backdune habitats create both real and perceived threats to roosting and nesting plovers due to the presence of cover that can provide habitat for predators (e.g., rats and squirrels) and which can screen predators (e.g., domestic dogs, and feral cats). from early detection. The presence of tall dunes and high vegetation typically results in plovers avoiding these areas for activities such as nesting and roosting. During foraging activities plovers are more tolerant of the threats that exist with higher terrain and will forage more closely to the back dunes but will generally restrict activities to the lower elevation and less vegetated foredunes and wrack deposits on the more open beach. As a result, it should be considered that back dunes do not provide intrinsic value to plovers that cannot be achieved by smaller foredunes and physical or symbolic barriers.

An additional detractor to plover habitat suitability is a mixed issue and relates to the federal navigation improvements and recurrent maintenance. The maintenance of navigation at Channel Islands Harbor results in recurrent temporary loss of dune habitat, followed by rebuilding of the beach and dunes between maintenance cycles. As noted previously, the degree of beach and dune recovery is not consistent, nor is the degree of loss when maintenance occurs. Immediately following dredging, the beach and foredunes are lost. However, the redevelopment of these dunes provides a more suitable dune environment than would occur absent the intermittent losses and redevelopment, as the dune habitat would ultimately advance towards stabilized dunes, unsuited to plover use. This is because the detached breakwater and north jetty create a protected beach environment that allow persistence of the beach and dunes at this location, even during the harshest

storms that would damage more exposed beach environments. Conversely, the same physical improvements that still and capture littoral drift sand north of the Channel Islands Harbor entrance also trap and retain drift wrack creating an enriched feeding area in the lee of the detached breakwater and north of the north jetty. The detached breakwater contributes kelp and macro algae, principally feather boa kelp, to the beach wrack that is primarily derived from discharges from the Santa Clara River. This wrack is trapped in the sands accreting in the sand trap and on the beach above the sand trap. This leads to the persistence of wrack deposits at this location that are otherwise absent along the beach further north, later in the nesting season. The wrack results in variable blown sand sculpting and the beginning of dune initiates rapidly following deposition. The integrated wrack also provides for increased seed trapping, nutrient and carbon enrichment in the sand, and retained moisture. These factors stimulate dune plant establishment and rapid development of natal dunes on building beach within the sand trap.

5.3. Targeted Habitat Enhancements and Expansions

The Western Snowy Plover Habitat Expansion and Enhancement Plan seeks to achieve the following objectives that target retaining present beach value to plovers and terns, enhancing and restoring values that are degraded, and expanding these values within the beach in areas that are not otherwise adversely affected by necessary navigational safety and commerce mandated maintenance.

1) Remove invasive species that support stabilized back dune development and foster potential predator presence. This includes European beach grass (*Ammophila arenaria*) and hottentot fig (*Carpobrotus edulis*). *Ammophila* spp. shall be eradicated from the Hollywood Beach dune complex within a 5 year period, and hottentot fig and other noxious invasive species shall be reduced to a level of less than 3 percent of the existing vegetative cover, with a goal of complete eradication.

2) Reduce the maximum height of back dunes to not more than 6 feet above surrounding grade. This will require lowering several of the tallest dunes located in the northeast quadrant of the dune complex that are presently stabilized by *Ammophila*. These dunes were not lost during the 2005 ENSO period.

3) Expand protected beach/dune habitat areas to the north and adjacent to the existing dune complex through the use of permanent symbolic fencing and signage, and through natal dune fostering, including dune formation, and dune plant establishment. The objective is to achieve the enhancement and restoration of at least 13.47 acres of habitat suited to support use by WSP for wintering and nesting functions.

4) Concurrent with initial physical improvements to the habitat, this plan provides for on-going establishment maintenance for a period of 5-years to ensure success in the habitat objectives. Habitat establishment management activities include installation and maintenance of native dune vegetation, removal of non-native plant species, symbolic fencing and signage maintenance, and other measures intended to protect any nesting or foraging activities that may occur in this area without significantly impacting authorized recreational beach use.

5) Accompanying the habitat improvements, the plan also incorporates active species management for least terns and snowy plovers. This includes completion of nesting season monitoring at a minimum frequency of, weekly during the nesting season, documentation of nesting status and success rates, and nest site protection using micro-enclosures for a period of 5-years post-dune restoration, to verify the restoration site is fulfilling the purpose intended.

6) Annual metrics monitoring of the dune restoration will occur for 5 years post-dune restoration to verify the restoration site will remain functional habitat for the intended species (WSP and CLT).

The purpose of the restoration site is to provide comparable habitat function and value for the WSP to offset the temporary and recurring loss of beach that would occur whenever the Corps excavates the sand trap (Area D).

6. PLAN IMPLEMENTATION ELEMENTS

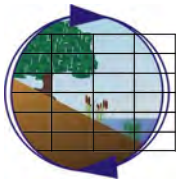
6.1. PLOVER HABITAT EXPANSION AND ENHANCEMENT PLAN

The proposed plover habitat expansion and enhancement plan is intended to retain the natural resource values that develop at the south beach, compatible with existing beach recreational uses on Hollywood Beach and be consistent with advanced planning concepts for sea level rise adaptation. This would be achieved by focusing beach and dune expansion and enhancement within the central portions of the beach that receive the least amount of existing recreational use and which do not deprive the public of either the intensive recreational areas found on the back beach, or the shoreward facing recreational uses of the forebeach and seaward high beach. To ensure that the expansion does not block access, regular trailways would be provided in alignment with existing access routes from the public streets to the beach (Figure 10).

Foredunes of a low and open stature can be developed on the leading side of barrier dunes. These habitats develop where trampling does not occur and nuclei such as woody debris or plant can start to influence blow sand deposition. This habitat provides good sheltering and roosting habitat by plovers but is generally not used for nesting. As a result, the complex should also include beach areas, protected from traffic that can support nesting. Persistent protection of the beach areas at Hollywood Beach would be expected to result in a conversion of this habitat to dunes, and ultimately a reduction in nesting habitat on the beach.

At the southernmost end of the beach, the plan would principally be an enhancement plan, providing for invasive species removal, lowering of the built-up elevation of back dunes, and monumenting access through the dunes with symbolic fencing. At the northern portion of the project the work is a habitat expansion project wherein symbolic fencing would be placed to curtail disturbance of the beach and plover roosting and nesting, woody debris would be retained and augmented for cover, forage resource enhancement, and dune development, and low dune habitat would be established along the landward portion of the expansion area.

The total area involved in the enhancement and expansion is 19.4 acres. This exceeds the commitment to restore 13.47 acres foredune habitat adjacent to the action area from the BO.



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Dune Restoration and Expansion Plan
Ventura Harbor Navigational Maintenance Dredging Program
Ventura County, California

Figure 10

However, the greater size is essential to address the fact that portions of the dune enhancement area are located within the potential layback impact area of sand trap Area D and may be subject to intermittent disturbances from dredging maintenance in the future. While recurrent disturbance of dunes may occur from dredging, the plan objective is to ensure that a minimum of 13.47 acres of restored and enhanced habitat is always available for use by plovers. Further, it is not possible to completely avoid enhancement activities within dunes that may be subject to future disturbance by dredging as these dunes support a considerable amount of invasive plants that would ultimately invade the expanded dunes if they were not effectively controlled within the existing dune system. The following sections discuss elements to be undertaken within the expansion and enhancement plan area. These include funding, invasive species eradication/control, dune expansion and symbolic fencing and signage. In addition, ongoing management and monitoring is provided as discussed in subsequent sections.

6.2. Funding Commitments

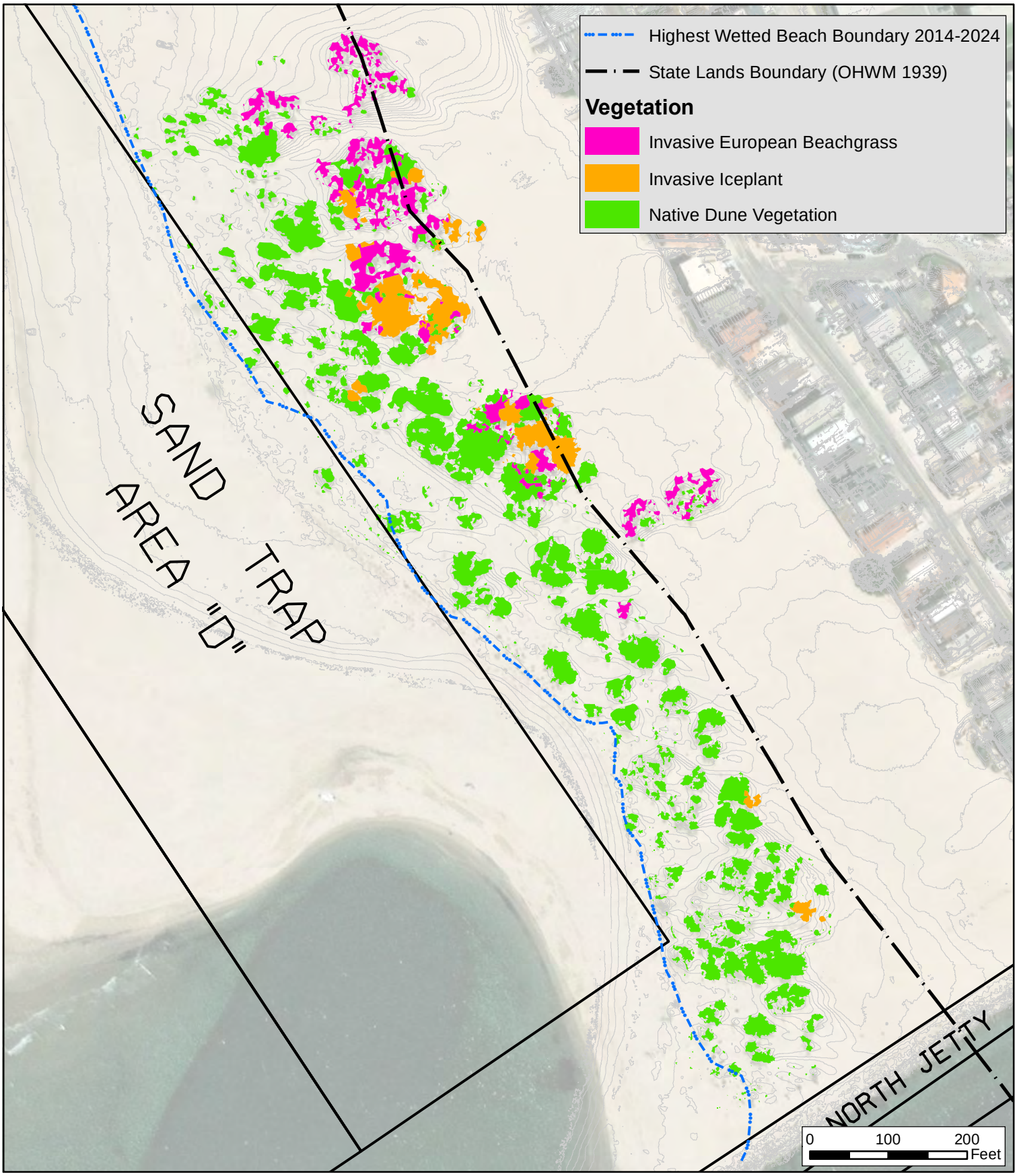
The proposed Hollywood Beach Western Snowy Plover Habitat Expansion and Enhancement Plan is expected to include a capital expenditure followed by 5-year establishment maintenance and monitoring elements during which ongoing habitat establishment and WSP and CLT stewardship management and monitoring will occur. This period also provides for adaptive management actions and assessment of metric achievement. The funding for plan implementation has been secured in the FY2025 budget such that implementation is expected to occur commencing fall 2024.

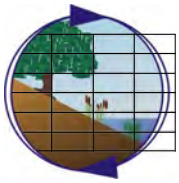
6.3. Invasive Species Eradication/Control

Invasive species within the dunes are dominated by European beach grass (*Ammophila arenaria*) and hottentot fig (*Carpobrotus edulis*) and occupy approximately 0.7 acre of the dunes (Figure 11). Additional invasive species include crystalline ice plant (*Mesembryanthemum crystallinum*), wild radish (*Raphanus raphanistrum* subsp. *sativus*), and sea rocket (*Cakile maritima*) among others.

Invasive species comprise approximately 29 percent of the vegetation present on the dunes, with native species occupying approximately 1.7 acres of the dune environment. Collectively, the dunes are approximately 24.5 percent vegetated. Overall, this reflects a relatively high proportion of vegetation and is considered to principally be stabilized dunes. More suitable vegetation for optimal snowy plover habitat would be expected to be much lower with a cover of approximately 2-5 percent cover as is more typical of early foredune development.

Invasive species to be controlled or eradicated are identified below. The intent for removal is to utilize a combination of physical and chemical control agents in the removals. For back dune habitat, where the dune elevations are to be lowered concurrent with invasive species control physical removal will be the initial primary method for lowering the biomass of invasives. This will be followed up by chemical herbicide control that will be used in an initial application period in the fall with follow up treatments occurring in early spring prior to the nesting season, and again in fall of each maintenance year as required. The specific prescription for control varies and will follow the methods recommended in Invasive Plants of California's Wildlands (Bossard et al. 2000).





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Invasive/Native Species Distribution - September2023
Ventura Harbor Navigational Maintenance Dredging Program
Ventura County, California

Figure 11

European Beachgrass *(Ammophila arenaria)*

- Problems
    - Many native plant species are excluded by the dense cover formed by European beachgrass, leading to loss of plant species diversity in affected areas. Similarly, dunes covered by European beachgrass experience a reduction in arthropod diversity.
    - Reduction of open sand areas on dunes covered by European beachgrass also severely reduces availability of nesting habitat for the snowy plover.
    - Introduction of European beachgrass alters dune topology, creating steep stabilized dunes and promoting the formation of dunes parallel to the coast. Natural dune formation tends to be perpendicular to the coast and of lower elevation.

- Reproduction and Spread
    - Reproduction is primarily vegetative through rhizome growth. Rhizomes may be either vertical or horizontal. New shoots occur most commonly along vertical rhizomes, while lateral growth is attributed to horizontal rhizomes. European beachgrass is rarely established by seed. The most vigorous shoot growth occurs during the spring and slows, but does not stop, in the winter.
    - European beachgrass is perennial. Its most aggressive growth occurs under conditions of continuous sand accretion, forming stands that exclude other species.
    - European beachgrass has been shown to have high tolerance for sand burial which stimulates vertical rhizome growth as well as leaf and internode elongation.
- Control Methods
    - Physical
        - European beachgrass is manually controlled with intensive repeated digging. One case of successful manual control required weekly to monthly digging between early spring and fall. Sifting sand with rakes for rhizome fragment removal from 19.5 to 39 inches following digging may remove the need for follow-up treatment the following year. Without sand sifting, a second year of monthly digging may be required. Coastal dunes may require a third year of monthly digging.
        - One attempt to remove European beachgrass to a depth of one meter using heavy machinery (after which removed material was buried and capped with up to one meter of sand) resulted in moderate resprouting the following spring.
        - Burning and saltwater applications to eliminate European beachgrass have been unsuccessful.
    - Chemical
        - Glyphosate (Roundup), applied at concentrations of 4 or 10% and mixed with 0.5% added surfactant (either Citowett or Silwet L-77), at 200 gallons per acre have been shown to consistently reduce European beachgrass cover by at least 90 percent.
        - Removal using selective application of 33% glyphosate (Roundup) applied with a wiper or herbicide sprayer has yielded inconsistent results, ranging from extremely successful to practically no effect. For selective control, the most effective option is use of a wiper to apply 33% glyphosate and 1 to 2.5% non-ionic surfactant.

- Metham (as Vapam), applied at label rate, is 98 to 100 percent effective at clearing European beachgrass, and nearly as effective even when applied at one-half and one-quarter the label rate. Basimid is easier to apply, but not as effective without sufficient rain or irrigation.

o Planned Control at Hollywood Beach

- The proposed control methods for Hollywood beach include both physical and chemical treatment over an initial period and follow up applications.
- Physical removals will occur within back dune habitat where the elevations of the dunes are to be lowered from approximately 10 feet above surrounding grade to approximately 6 feet above surrounding grade. Sand removed from dunes infested with European beachgrass will be buried in the beach below the waterline where plants will decompose, or the sand will be screened with a 1.0-inch screen to remove beachgrass rhizomes for landfill disposal.
- Chemical treatments will occur within dune areas that are not proposed for modification and as follow up to modified dune areas. Treatment will be by glyphosate herbicide applied at concentrations of 10% and mixed with 0.5% added surfactant (Silwet L-77), at 220 ft^2/gallon of herbicide solution.
- Treatments will include initial actions with spring (February-March) and fall (October-November) maintenance treatments outside of the nesting season.

The typical pattern of rhizomatous spread of Eurasian dune grass is evident at Hollywood Beach within the back dune environments. Linear patterns of dune grass extent are indicative of rhizome runs that create sprawling dune grass.

Hottentot Fig *(Carpobrotus edulis)*

- Problems
    - The hottentot fig plant is able to establish itself under a wide range of soil conditions and thrive even in the presence of competitors and herbivores, allowing it to invade native habitat and effectively displace most native plant species through dominance in competing for resources including water, nutrients, light, and space. It also suppresses the growth of native seedlings as well as mature native shrubs, and it can lower the pH of the soil in loamy sand environments and alter the root system morphology of native shrubs.
    - When hottentot fig establishes itself, organic matter can build up in its surroundings, in normally sandy beach and dune soils, which can assist in the invasion of non-native species which cannot normally establish in sandy soils. Hottentot fig also stabilizes dune sands, altering natural dune formation processes in the area.
    - Hottentot fig also provide habitat that is suitable to support nest predators such as rats, ground squirrels, and ants.
- Reproduction and Spread
    - Reproduction occurs both by seed and vegetative expansion and viable plant parts. Hottentot fig flowers almost year-round, beginning in February. Each fruit produces hundreds of seeds, which are spread by herbivores. Germination is enhanced in seeds that have passed through an animal's digestive system. Any shoot segment can become a propagule, allowing for isolated segments to survive and establish.
    - Active growth occurs year-round. Individual shoot segments can grow in excess of 3 feet per year, and roots can form on the nodes of all segments in contact with the soil. The impact of this species on native competitors correlates inversely with the availability of water (i.e., the greatest impact occurs during periods of drought).

- Control Methods
    - Physical
        - Hottentot fig is easy to remove by hand. All live shoot segments must be removed from the soil to prevent resprouting. If complete removal is not possible, mulching remaining portions with removed material will prevent most resprouting. In this case, follow-up visits will be required to remove resprouts.
        - Mechanical removal by heavy equipment is effective at any time of year.
        - Burning of live or dead plants is not generally effective due to the high water content of tissues.
    - Chemical
        - Glyphosate herbicides at concentrations of 2% or higher have been effective at controlling hottentot fig. Addition of 1% surfactant increases mortality. Greater mortality has been reported when using more acidic water, thus the addition of an acidifier to hard water before mixing with glyphosate is recommended for more effective removal. It can take several weeks for the clones to die off using this method, and resprouting may occur for up to several months afterward.

- Planned Control at Hollywood Beach
  - The proposed control methods for Hollywood beach include both physical and chemical treatment over an initial period and follow up applications.
  - Physical removals will occur within back dune habitat where the elevations of the dunes are to be lowered. Sand removed from dunes infested with hottentot fig will be buried in the beach below the waterline where plants will decompose, or the sand will be screened with a 0.5-inch screen to remove hottentot fig for landfill disposal. Mulching may be acceptable, with deep burial of mulch.
  - Chemical treatments will occur within dune areas that are not proposed for modification and as follow up to modified dune areas. Treatment will be by glyphosate herbicide applied at concentrations of 10% and mixed with 0.5% added surfactant (Silwet L-77), at 220 ft^2/gallon of herbicide solution.
  - Treatments will include initial actions with spring (February) and fall (September-October) maintenance treatments outside of the nesting season.

Other Species

Crystalline Ice Plant (Mesembryanthemum crystallinum)
Wild Radish (Raphanus raphanistrum subsp. sativus)
European Sea Rocket (Cakile maritima)

- Problems
  - Crystalline iceplant, wild radish, and sea rocket are all present in low abundance on the dunes. These species outcompete native species, increase dune stability, and increase vegetated cover levels.
  - Increased cover by these species also increases pest species that may be nest predators such as rats.
- Reproduction and Spread
  - These species are prolific seeder and spread by annual seedling recruitment from local seed sources.
  - Vegetative spread is not common.
- Control Methods
  - Planned Control at Hollywood Beach
    - The proposed control methods for Hollywood beach include both physical and chemical treatment over an initial period and follow up applications.
    - Physical removals will occur in the spring each year with follow up in the fall as may be required.
    - Chemical treatments will occur within dune areas that are not proposed for modification and as follow up to modified dune areas. Treatment will be by glyphosate herbicide applied at concentrations of 10% and mixed with 0.5% added surfactant (Silwet L-77), at 220 ft^2/gallon of herbicide solution.
    - Treatments will include initial actions with spring (February) and fall (September-October) maintenance treatments outside of the nesting season.

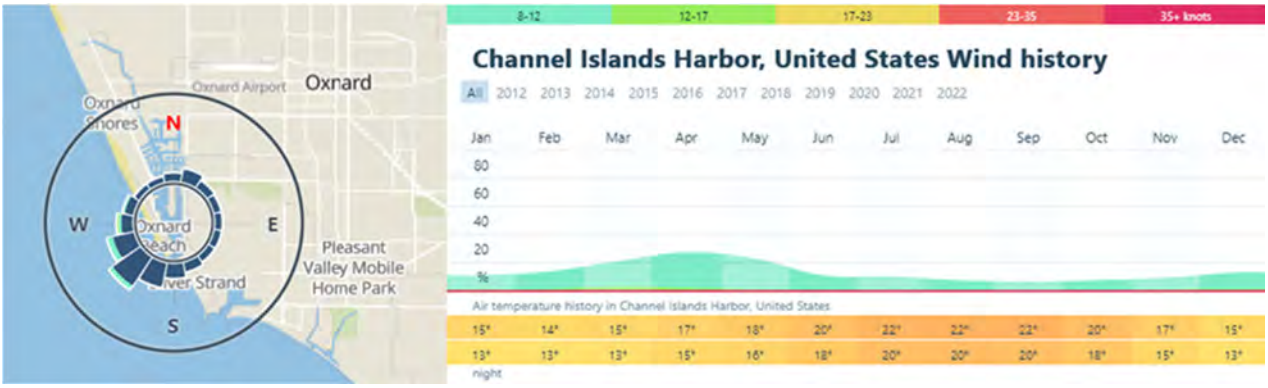
6.4. Back Dune Lowering

Stabilization of the back dunes has been accommodated by development of dense invasive and native dune plants that retain sediment and prevent dune erosion. These dunes were not impacted by the 2005 combined effects of maintenance dredging and ENSO storms and sea level rise. As a result they have persisted and continued to build in mass and elevation since the late 1990s. At the present time there are several dunes that are now 10 or more feet above the surrounding grade, that notably has also been building through the years such that the crest elevation of some of the dunes near 25 feet MLLW. This will involve lowering of the elevation of approximately 1.25 acres of stabilized dunes supporting a dominance of invasive beachgrass and hottentot fig. The volume of sand to be removed in the dune lowering is approximately 15,000-25,000 cubic yards that will be derived by lowering dune crest elevations and surrounding tail sand deposits. This sand will be moved to the fore beach where it will be buried below the mean sea level elevation by a minimum of 1-foot (elevation of approximately +2 feet MLLW). Alternatively, this sand may be screened to remove beachgrass rhizomes, and placed in the sand trap for dredging.

6.5. Dune Expansion

Capacity for Dune Development

Dune development at Hollywood Beach is not anticipated to be difficult to achieve. The wind patterns are generally from the southwest and are mild with a rising frequency of 8-12 knot winds increasing in March-May, with lower frequency winds in this range extending throughout the rest of the year. High winds are generally uncommon on the beach.

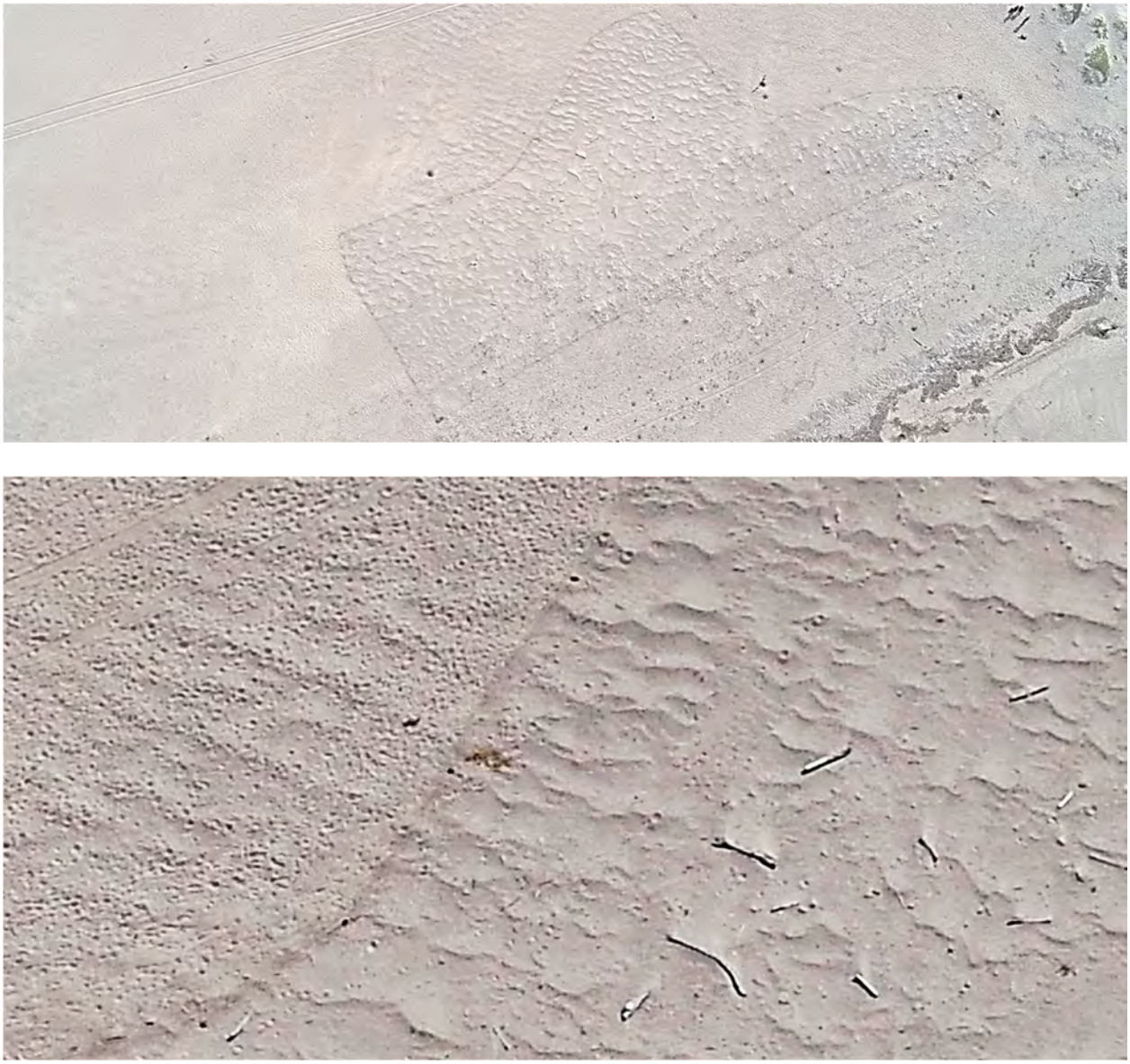


Wind rose and seasonal frequency of wind velocities by month illustrating generally low wind velocities from the southwest (windy.app)

The winds at Hollywood Beach are adequate to regularly move sand across the beach creating dunes in response to accumulated debris, or fixed features on the landscape. Where dunes are not present, sand migrates eastward and accumulates adjacent to the residential neighborhood and migrates through access corridors and out on to the streets well into the neighborhood.

Previously the increasing width of Hollywood Beach was noted, however due to aeolian transport of the sand from the beach face to the top of the beach and eastward, the elevation of the beach is also increasing over time. As of 2023, several portions of the high beach extend 5 or more feet above the patio elevations of the houses abutting the beach. This results in on-going needs to push sand away from the residential neighborhood.

The existing winds and abundant sand along with woody debris on the south end of the beach provide the precursors for dune development with limited intervention. This can be seen in viewing the results of erecting seasonal symbolic fencing to provide for plover nesting on the beach north of the existing dunes. In 2023, a 0.38-acre open mesh fence exclosure was placed around a portion of the dry upper beach adjacent to the forebeach. This fencing was present from March 30 through September 22, 2023. During this period, the trampling effect of pedestrians, dogs, and vehicles was kept down and over the 6-month period dune initiates were beginning to develop without intervention. This pattern would be expected to continue and could be fostered through a combination of symbolic fencing localized sand placement, and incorporation of selected woody debris to form hardened features to anchor dunes and generate desirable mounding patterns.



Photograph showing the initiation of aeolian dune formation within seasonal symbolic fence exclosure placed on March 30 and removed on September 22, 2023 to protect nesting western snowy plover nest sites. Photo taken at the time the fencing was removed.

Following beach loss due to the 2023 dredging cycle, beach rebuilding has commenced. Heavy woody debris wrack loading has occurred on the lower beach with the drier upper beach that is now supratidal due to wave building coupled with blow sand movement, starting to recruit new seedling and vegetative establishment of dune plants.

Hollywood Beach sand trap high beach redevelopment March 15, 2024 following beach removal via dredging in 2023. Seedling native sand verbena and non-native sea rocket are present along with woody debris that influence sand accretion patterns.

The development of dunes could further be supplemented by minor seeding effort derived by harvesting seed from existing dune fields and raking this into sand placed at the back of the fenced areas. Native plants that are currently plentiful on Hollywood Beach include beach-bur (*Ambrosia chamissonis*), beach saltbush (*Atriplex leucophylla*), beach morning-glory (*Calystegia soldenella*), red sand verbena (*Abronia maritima*), and beach evening primrose (*Camissonia cherianthifolia*).

Adaptive Management to Avoid Dune Evolution to Stability

While there is little concern for the ability to develop dunes within areas that are protected from trampling, there is a concern that the dunes that do develop will become overly stable and advance to conditions that are less favorable for use by WSP and CLT. This would be expected for several reasons. First, the proposed dune development location is located back from the actively eroding and accreting shoreline. The natural storm damage that occurs seasonally washes away dunes, while depositing wrack. This provides for a rejuvenation of foredunes. However, such exposure would jeopardize the symbolic fencing, displace shoreline beach uses, and render the long-term habitat area that is developed uncertain as it would be coupled with unpredictable short-term seasonal storm events. However, moving the habitat expansion area away from the more dynamic fore beach will allow the area to stabilize, dunes to increase in height, and vegetation to expand in coverage. The net result would be expected to be development of quality dunes that have low utility for targeted avian species habitat enhancement.

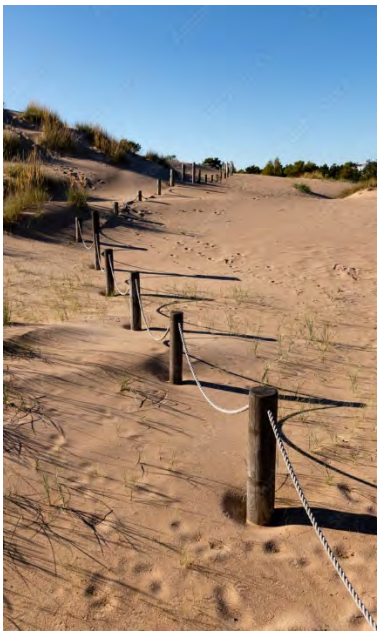
To effectively control the serial progression of the habitat towards a climax condition, it is necessary to integrate disturbance of the habitat through adaptive management actions. In the case of the dunes adjacent to the sand trap, this occurs through dredging and subsequent shoreline erosion and restabilization and rebuilding. These factors would not be available to the north of the sand-trap area. As a result, an alternative source of disturbance is required to be implemented on a periodic and recurrent basis to keep the dunes in an early successional state. This is to be achieved by using the visiting public on Hollywood Beach to infrequently damage the dunes by trampling and use of the area.

This will be accomplished by posting interpretive and informational signage at pass through trail areas and providing information on dune development and maturation, and how different dunes function for plants and wildlife. The signage would note the role of intermediate disturbance in refreshing the dunes and keeping them in an early state of development. The signage would ask for the public's assistance in securing habitat for plovers by abiding by the symbolic fencing conditions. When the top rope is strung the areas should be avoided. However, when the rope is down, the public would be encouraged to access, recreate, and fully utilize the beach/dune habitat. The signage would inform the public that their use of the areas when the ropes are down, serves to better the habitat quality for endangered and threatened birds. The management of access by removing or installing the rope barrier is expected to be required every few years and the rope would be lowered after any breeding season is completed and reinstalled prior to the next season. Should there be a need for further disturbance than can be achieved by pedestrian trampling, then mechanized action inside the fencing and replacing woody debris may be used to refresh the area. To employ a pubic access encouragement as a maintenance strategy to avoid dune over-development will require installation of approximately three large interpretive sign kiosks at the trail crossings through the habitat.

6.6. Symbolic Fencing and Signage

Symbolic Fencing

Permanent symbolic fencing is proposed to be placed landward of the highest wet beach boundary in the past 30-years and seaward of the 1939 OHWM. Fencing is intended to be open in structure such that it does not impede wind yet provides a guide to the using public that areas within the fencing are to be avoided. Proposed fencing will consist of 4x4 posts, or 5-inch diameter posts set at 8-foot centers with a single 1-inch rope. Posts will be set a minimum of 40 inches into the beach and will extend to a height of 36-42-inches above grade. The fence will be designed to allow the top rope to be removed and replaced as needed and as dictated by maintenance and adaptive management activities. Example fences are shown below.



Photographs of example post and rope symbolic fencing to be used at Hollywood Beach. Only one fence type would be used.

Fencing is not planned to be placed within proximity to the sand trap Area D since this area will continue to be used to maintain harbor navigation channels and to bypass sand to down coast beaches. As a result, localized erosion is expected to continue to occur. The results of this erosion would be to fail fencing and then bury the fencing in accreted sand as the beach relaxes and then rebuilds. Fencing in this area is not considered to be necessary as the existing dunes provide the intended reduction in pedestrian and vehicular traffic within the areas adjacent to the sand trap.

Example of symbolic fencing damage on an erosive beach. To avoid this result, fencing will not be placed near the sand trap.

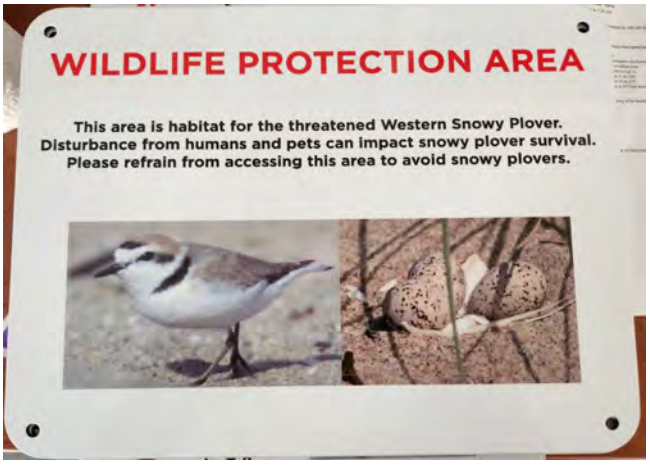
Signage

Signage proposed under the plan includes two types, resource protection advisory signage and informational interpretive panels.

Resource Protection Advisory Signage

Resource protection advisory signage is intended to include regular distribution of signs to be posted on the symbolic fencing to discourage access when the rope is up. This is an informational semi-regulatory advisory sign that would be posted approximately every 10 posts (80 feet) along the perimeter of the symbolic fence. These signs would only be up when the rope barrier is present and would include English and Spanish language versions.

This signage would be printed on a stiff aluminum stock that is laid out to be well supported by the symbolic fencing posts such that there is limited risk of vandalism and damage to the signs. Surplus signs would be printed up for replacement seasonally as required to supplement the signage as needed.



Signage to be used on symbolic fencing to be placed every 80 feet along the fence line.

Informational-Interpretive Panel

Habitat expansion and resource management can be greatly benefited by information dissemination to the using public. This will provide a greater understanding and appreciation of the resource management concerns and needs on the beach and will foster increased user support. To accomplish this, informational-interpretive panel signage is to be erected at the inland side of the multiple pathway crossing through the habitat expansion area and the existing dunes. It is expected that this will include four signs. These signs would either be three free-standing panels or a triangular kiosk design with three panels around a free-standing structure, co-located with trash cans.

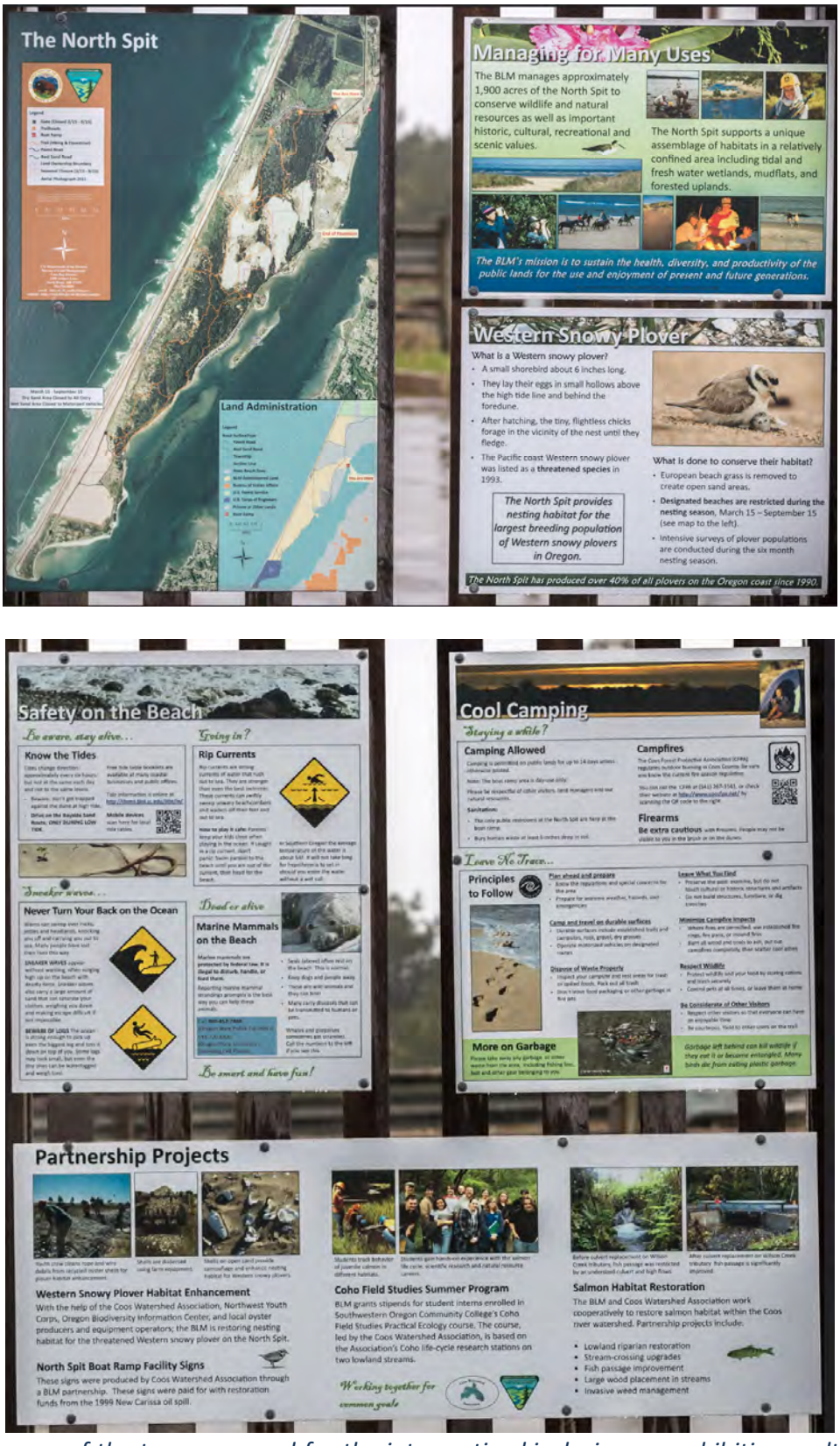
This signage is to include the following messages but should be further developed with partnership groups and stakeholders that are engaged in beach use, management, and stewardship including the County of Ventura, Ventura Audubon Society, U.S. Fish & Wildlife Service, California Coastal Commission, and adjacent property owners.

This signage is intended to convey information regarding the beach and dunes. The signage would communicate the meaning of the rope barrier being present or absent relative to habitat and species conservation practices. The signage would also provide for integration of information on beach rules and enlist the public's assistance on maintaining the expanded habitat by staying out when the rope is up- and utilizing the area to its fullest when the rope is down. The language and design for this interpretive signage has not been developed yet as the messaging will be very important and should be developed along with partners and collaborators that participate in the management of the natural resources and beach uses.

Primary messages anticipated to be covered by the signage include:

- Information on beach dynamics;
- Natural resources present on the beach/dunes including WSP and CLT and native dunes;
- Purpose of the rope fencing and requests to abide by the fencing for protection of resources;
    - Meaning of rope fence up versus rope fence down relative to access;
- Beach use rules and etiquette;
- Safety, emergency services and contact information;
- Potential coverage of special management programs underway;
    - Army Corps of Engineers maintenance dredging
    - Ventura Audubon Society Hollywood Beach Dog Rangers
    - Ventura County Beach Grooming and Trash Control
    - Back beach blow-sand management

There is potential for one of the panels to differ across the various locations so that more information can be conveyed without increasing the signage needs.



Example signage of the type proposed for the interpretive kiosk signage exhibiting multiple themes relating the restoration and stewardship of multi-resource uses at Hollywood Beach.

Example signage option configurations to be considered and selected based on further interaction with stakeholders, agency partners to consider information content, weathering and vandalism, maintenance, and viewshed impact, and content change expectations.

7.0 5-YEAR ESTABLISHMENT PERIOD MAINTENANCE AND MONITORING

Following initial implementation, the Corps will complete 5-years of follow-up implementation maintenance and stewardship activities to foster the development of the habitat functions and practices intended under the Plan and to assess the degree of success in achieving the Plan objectives. This section outlines these elements.

7.1. MAINTENANCE ACTIONS

Fencing and Sign Maintenance

It is anticipated that fencing and signage will require some annual maintenance. It is expected that the maintenance requirements will diminish with time due to a reduction in vandalism to fencing and signage. However, it is expected that the overall service life of the fence will be between 6-10 years, prior to requiring significant repairs or replacement.

Fencing repairs anticipated during the 5-year maintenance period are expected to include a need to replace up to 5 percent of the fence posts and rope per year. Losses are expected due to vandalism or erosion failure, or dune development requiring posts to be dug out or raised.

Resource protection advisory signage is expected to be vandalized and stolen such that up to 10-20 percent of these signs may be lost each year, requiring replacement. Anti-tampering hardware may curb this loss but would not be used initially as it adds to the difficulty of completing regular replacement maintenance and may raise costs higher than the anticipated losses of damage of signs warrants. Instead, it is intended that signage be printed in bulk to account for anticipated losses by providing a surplus for maintenance installation.

Fencing and signage maintenance is planned to be performed prior to the onset of each plover nesting period (February-March), when present seasonal symbolic fencing is established on the beach north of the dunes.

Invasive Species Eradication/Control

Invasive species eradication/control is intended to be performed twice per year for 5-consecutive years following implementation of the Plan improvements. This work will occur in the spring prior to the commencement of nesting by plovers (February-March), and in the fall (October-November) following the end of the peak summer season recreational uses.

Beach Wrack and Debris Removal

Annually in the spring debris and wrack are removed from Hollywood Beach following expulsion from the Santa Clara River. Wrack is beneficial to WSP as it attracts forage organisms such as amphipods, isopods, and kelp flies among other insects. It also provides shade and structure that benefits WSP and CLT when present at managed levels. For this reason, retaining some wrack is a beneficial habitat element for plovers. The Corps will coordinate with the County on beach debris removal in order to retain or augment wrack within the symbolic fenced areas and along the upper beach margin within the sand trap when the County removes debris. Anthropogenic debris (trash) will not be retained within the Plan area. Managing overall beach grooming and clean-up of wrack is beyond the scope of the present plan, but coordination with the County and capitalizing on available wrack assets over

the 5-year post-implementation process will begin to foster a local program for wrack and debris management that is supportive of public use objectives, as well as natural resource goals. It is expected that this collaboration will provide operational benefits long-term that extend beyond the plan objectives. This work will occur in the spring prior to the commencement of nesting by plovers (February-March).

Nesting Season Preparation and Maintenance Actions

The Corps will implement a habitat maintenance program for CLT and WSP prior to commencement of the breeding season during each of the 5-years following plan implementation. The program will include site inspection to confirm adequate bare ground and woody and algal wrack debris is present within the exclusion areas and that signage and fencing is in place. When the nesting season begins, weekly monitoring events will be undertaken until eggs are laid then this will switch to at least twice weekly monitoring events. Where appropriate, due to nesting outside of the symbolic fencing or elevated predation risk, the Corps will place micro-exclosures (MEs) over plover nests.

7.2. Monitoring Program

As noted in Section 5.3, several performance metrics have been established against which the project is to be evaluated. Many of these are beyond the control of the Corps and thus are not obligatory performance metrics (e.g., nesting counts or hatching success), other elements are generally within the Corps' control (e.g., invasive species control levels, and implementation scale, fencing, and signage). The program performance metrics represent goals for the project, against which the effectiveness of the enhancement will be assessed. However, the relative capacity for the Corps' to control the degree of performance of the project relative to the established metrics will be used to assess the Corps' achievement of the obligations.

Performance metrics further served to guide adaptive management actions over the course of the 5-year post-implementation period. The metrics will serve as guides for implementing adaptive actions, but do not themselves dictate the actions to be taken. Rather, annual monitoring reports will be prepared that assess WSP wintering and nesting metrics, CLT nesting metrics, habitat development, invasive species status, and condition of fencing/signage and effectiveness of the human management aspects of the project.

The annual reports will be shared with partner agencies and non-governmental organizations in December of each of the 5-years to summarize the observations and assessment of performance against articulated metrics for the prior year. This report findings and any recommended adaptive management actions derived from the monitoring will be discussed in a meeting with partners. The Corps will then use feedback in its evaluation and determination of those actions the Corps' plans on taking in the coming year or plans to not implement at the present time. In some instances, recommended actions may not be practically implemented during the same year prior to nesting and summer peak activities. Where any adaptive management actions exceed the authorization of present work, the requisite agencies would be requested to provide guidance on how to proceed, or if the action should be undertaken.

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United States Department of the Interior
U.S. FISH AND WILDLIFE SERVICE
Ecological Services
Ventura Fish and Wildlife Office
2493 Portola Road, Suite B
Ventura, California 93003

IN REPLY REFER TO:
08EVEN00-2022-0085983-S7

December 15, 2022

Maricris Lee
Deputy Chief, Planning Division
Department of the Army
U.S. Army Corps of Engineers, Los Angeles District
915 Wilshire Boulevard, Suite 1109
Los Angeles, California 90017-3409

Subject: Biological Opinion on the Channel Islands/Port Hueneme Harbors Maintenance Dredging Increased Quantity Project, Ventura County, California

Dear Maricris Lee:

This document transmits the U.S. Fish and Wildlife Service's (Service) biological opinion based on our review of the U.S. Army Corps of Engineers' (Corps) proposed Project, pursuant to section 404 of the Clean Water Act, of the Channel Islands/Port Hueneme Harbors Maintenance Dredging Increased Quantity Project (project) on the federally endangered California least tern (*Sterna antillarum browni*) and the federally threatened western snowy plover (*Charadrius nivosus nivosus*) and its critical habitat, in accordance with section 7 of the Endangered Species Act of 1973, as amended (Act) (16 U.S.C. 1531 et seq.). We received your August 24, 2022, request for formal consultation on August 24, 2022.

On July 5, 2022, the U.S. District Court of the Northern District Court of California vacated the 2019 regulations implementing section 7 of the Endangered Species Act. On September 21, 2022, the Ninth Circuit Court of Appeals granted a request to stay the U.S. District Court of Northern California's July 5, 2022, order that vacated the 2019 Act regulations. As a result, the 2019 regulations are again in effect, and the Service has relied upon the 2019 regulations in rendering this biological opinion. However, because the outcome of the legal challenges to the regulations is still unknown, we considered whether our substantive analyses and conclusions in this consultation would have been different if the pre-2019 regulations were applied. Our analysis included the prior definition of "effects of the action," among other prior terms and provisions. We considered all the "direct and indirect effects" and the "interrelated and interdependent activities" when determining the "effects of the action." As a result, we determined the substantive analysis and conclusions would have been the same, irrespective of which regulations applied.

We have based this biological opinion on information that accompanied your August 24, 2022, request for consultation, including the biological assessment (Corps 2022), and previous documents in our files (Corps 2018a, 2018b; Service 2006a, 2012a, 2018)

Consultation History

On October 18, 2004, the Corps initiated formal consultation on maintenance dredging of the sand trap at Hollywood Beach because surveys conducted in the previous spring and summer found 51 pairs of California least tern and 5 pairs of western snowy plover had used the sand trap area for breeding and nesting. The Service issued a biological opinion (1-8-05-F-1) on October 21, 2004, that pertained only to dredging operations for the 2004/2005 cycle.

The Corps initiated formal consultation on April 14, 2006, for the next 5-year maintenance dredging cycle, 2006-2011. The Service issued a biological opinion on September 20, 2006 (1-8-06-F-22).

The Corps initiated formal consultation on July 30, 2012, for the next 6-year maintenance dredging cycle, 2012-2018. On September 10, 2012, the Service extended the time period covered by the 2006 biological opinion for this 6-year cycle.

The Corps initiated formal consultation on August 16, 2018, for the next 6-year maintenance dredging cycle, 2018-2024. On August 23, 2018, the Service issued an amendment to the 2006 biological opinion, as extended in 2012, that extended coverage for this 6-year cycle and included revised avoidance and minimization measures from the 2018 Environmental Assessment (Corps 2018a) and the implementation of a Biological Monitoring Contingency Plan should work need to be extended beyond March 1st in any given year due to minor delays from equipment failure or late-winter storms.

BIOLOGICAL OPINION

DESCRIPTION OF THE PROPOSED ACTION

Maintenance dredging of the Federal navigation channels and sand trap is conducted routinely at Channel Islands Harbor. The purpose of dredging is to maintain channel configurations, restore and assure safe navigability within the harbors, sustain current recreational opportunities, and provide materials for shoreline protection and beach replenishment.

In this proposed project, the Corps plan to use the existing project ([Service 2006, Service 2018] incorporated by reference) and authorized equipment and extend the duration and magnitude of the impact by removing an additional 0.5 million cubic yards of sand from the action area (Figure 1). This will be done by using a dredge and pipeline to remove 0.5 million cubic yards

from the dredge template and place the sand on Hueneme Beach in winter 2023. The dredging action consists of dredging the entrance channel, sand traps, entrance basin, and inner basin (Figure 1). This proposed action will increase the sand placed on Hueneme Beach and other downcoast beaches, and avoid sand being lost to the adjacent submarine canyon. The action would occur once and would occur over a period of 4 weeks.

Measures Intended to Avoid, Minimize or Offset Effects of the Proposed Action

The following measures are included as part of the proposed action in order to avoid, minimize, or offset potential impacts. Measures 1-8 below are carried forward from the Environmental Assessment (Corps 2018a):

1) The Contractor will keep construction activities under surveillance, management, and control to avoid pollution of surface and ground waters.
2) The Contractor will implement a Water Quality Monitoring Plan at the dredge and beach placement sites.
3) The dredge contractor will be required to have in place a Spill Prevention and Cleanup Plan that includes measures to prevent spills and to cleanup any spills that could occur.
4) All dredging and fill activities will remain within the boundaries specified in the plans. There will be no dumping of fill or material outside of the project area or within any adjacent aquatic community. This includes the restriction on placement in the nearshore area to depths greater than -10 feet mean lower low water.
5) The Contractor will keep construction activities under surveillance, management, and control to minimize interference with, disturbance to, and damage of fish and wildlife.
6) Dredging may begin as early as October 1. Should dredging extend past March 1 the following measures will be implemented:
    a) The Corps will coordinate with concerned federal and state resource agencies concerning possible impacts to threatened or endangered species;
    b) Beach placement will be limited to a diked, single-point placement site to minimize turbidity and grunion smothering;
7) The following avoidance and minimization measures will be implemented to ameliorate potential impacts from dredging and placement activities in the proposed action area:
    a) The limits of the dredging and placement activities will be clearly marked to prevent heavy equipment from entering areas beyond the smallest footprint needed to complete the project;
    b) Vehicles and all dredging activities will remain within the defined activity area and use only designated access points and staging areas;
    c) The work area will be kept clean to avoid attracting predators. All food and trash will be disposed of in closed containers and removed from the project site;
    d) No pets will be allowed on the construction site;
    e) No dredging activities will be conducted in the sand trap area (adjacent to Hollywood Beach) during the shorebird/seabird nesting season (March 1 – September 30);

f) At all times a qualified snowy plover monitor will walk ahead of the vehicle(s) and equipment to assure that all snowy plovers are out of harm's way before the vehicle(s) or equipment can proceed. Qualified monitors will be those individuals who attend the on-site plover training that will be provided by the Ventura Port District and the Corps;
g) If dredge material placement activities take place on Silver Strand and Hueneme Beaches during the nesting season (March 1 through September 30), measures described in the Biological Monitoring Contingency Plan (Appendix F) will be implemented;

8) Training will be provided to the Contractor personnel to review and ensure full understanding of all project environmental protection requirements. Training will include, but not limited to, methods of detecting and avoiding pollution, identification and avoidance measures for endangered species and notification requirements.

Proposed Dune Restoration

To offset potential impacts to western snowy plover designated critical habitat, the Corps proposes to restore 13.47 acres (1:1 impact restoration ratio) of foredune habitat adjacent to the action area as agreed to with the Service. The restoration effort will include beach grass (*Ammophilla* spp.) control to zero density, recontouring of sand dunes to approximate natural dune contours using heavy equipment, restoration of native beach species using plants or seeds, and manual removal of non-native plant species. The Corps will manage this area for a period of 5 years. Management activities will include installation and maintenance of native dune vegetation, manual removal of non-native plant species, strategic fencing, predator exclosures for shorebird protection, and other measures intended to protect any nesting or foraging activities that may occur in this area without significantly impacting authorized recreational beach use. The purpose of the restoration site is to provide comparable habitat function and value for the western snowy plover to offset the temporary and recurring loss of beach that would occur whenever the Corps excavates “sand trap D”. At a minimum, weekly monitoring for California least tern and western snowy plover will occur during the proposed action and for 5 years post - dune restoration completion to verify the restoration site is fulfilling the purpose as stated above. Annual metrics monitoring of the dune restoration will occur for 5 years post - dune restoration completion to verify the restoration site will remain functional habitat for the intended species.

The final site selection and management strategy have not been completed by the Corps. Details of the restoration plan are in development with the Service, Ventura County and other stakeholders.

Avoidance and minimization measures will be implemented for any restoration construction work taking place during California least tern and western snowy plover breeding seasons, as described below.

During implementation:

1) If vehicles are required to drive on Hollywood Beach, a biological monitor will be present to clear the path of any vehicles by walking ahead and verifying no birds are present. If birds are present the monitor will signal and stop vehicles.
2) If birds do not move out of vehicle traffic path, the biological monitor will attempt to guide vehicles on an alternate path to avoid grounding birds and walk ahead of vehicle to ensure the path is cleared while maintaining a minimum 50-yard buffer.

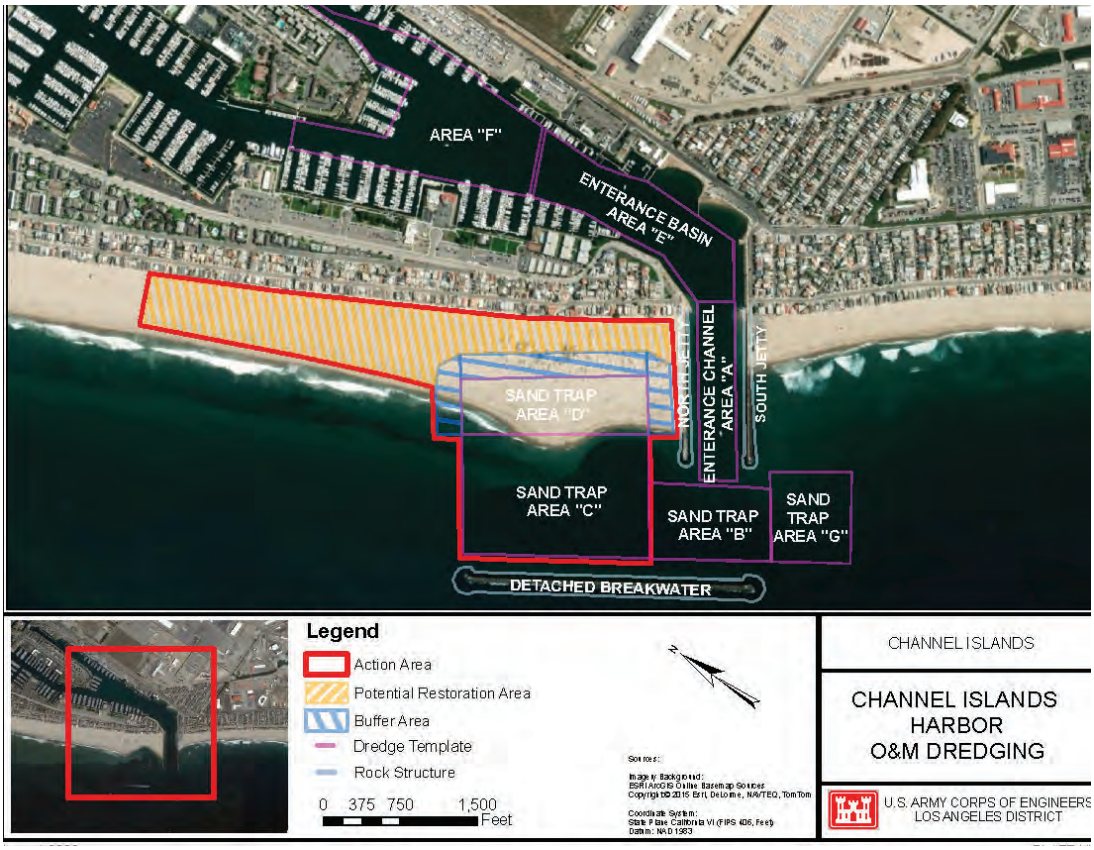

Figure 1. Map of action area, Hollywood Beach, California. Blue hatched area indicates area of potential slope failure due to projected dredging activity (Corps 2022).

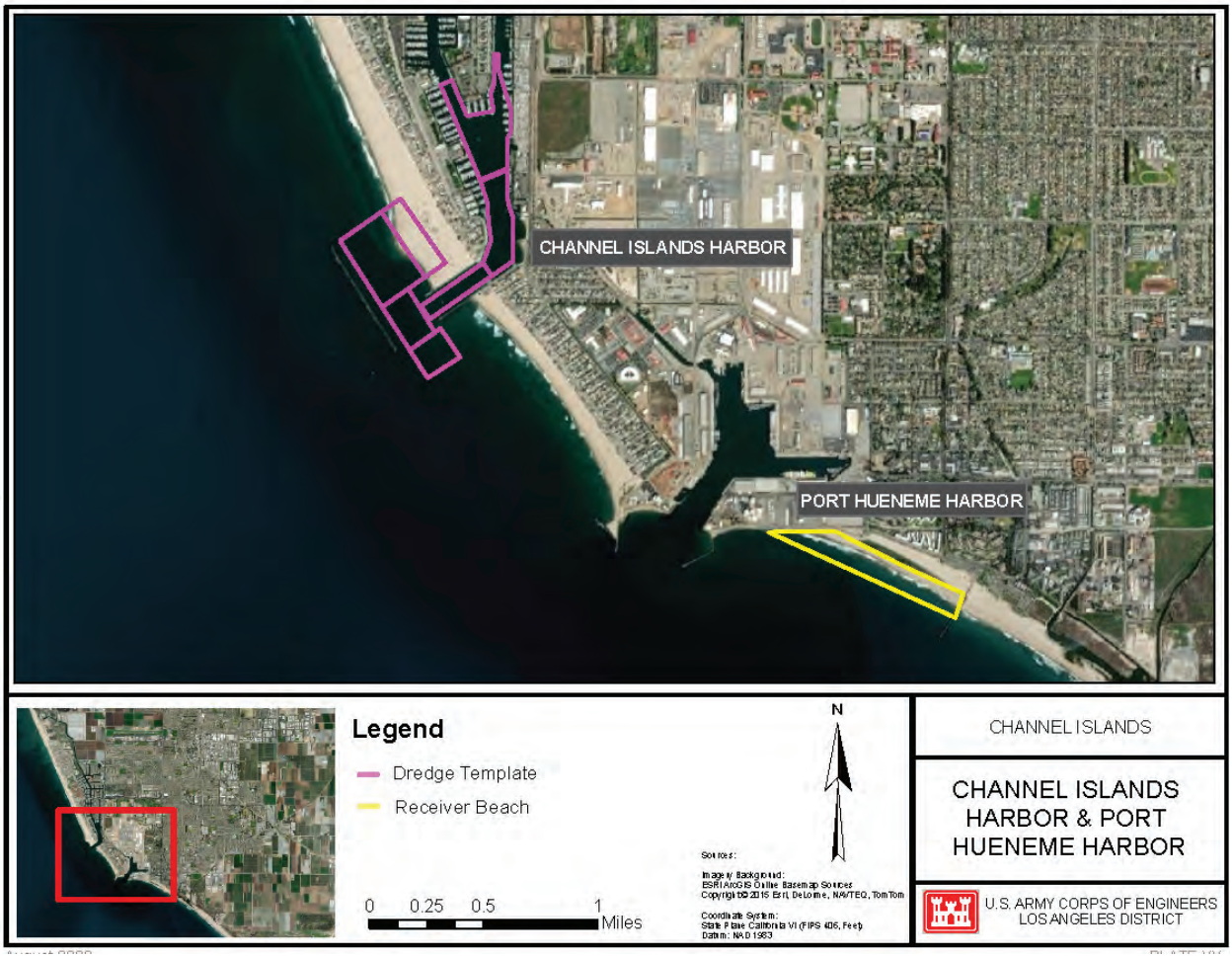

Figure 2. Channel Islands Harbor, California, with detached breakwater depicted in upper left, Port Hueneme and Hueneme beach in image center illustrating proximity between dredge area and receiver beach (Corps 2022).

ANALYTICAL FRAMEWORK FOR THE JEOPARDY AND ADVERSE MODIFICATION DETERMINATIONS

Jeopardy Determination

Section 7(a)(2) of the Act requires that Federal agencies ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of listed species. “Jeopardize the continued existence of” means “to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species” (50 CFR 402.02).

The jeopardy analysis in this biological opinion relies on four components: (1) the Status of the Species, which describes the current rangewide condition of the California least tern and western snowy plover, the factors responsible for that condition, and its survival and recovery needs; (2) the Environmental Baseline, which analyzes the condition of the California least tern and western snowy plover in the action area, the factors responsible for that condition, and the relationship of the action area to the survival and recovery of the California least tern and western snowy plover; (3) the Effects of the Action, which determines all consequences to the California least tern and western snowy plover caused by the proposed action that are reasonably certain to occur in the action area; and (4) the Cumulative Effects, which evaluates the effects of future, non-Federal activities, that are reasonably certain to occur in the action area, on the California least tern and western snowy plover.

In accordance with policy and regulation, the jeopardy determination is made by evaluating the effects of the proposed Federal action in the context of the current status of the California least tern and western snowy plover, taking into account any cumulative effects, to determine if implementation of the proposed action is likely to reduce appreciably the likelihood of both the survival and recovery of the California least tern and western snowy plover in the wild by reducing the reproduction, numbers, and distribution of that species.

Adverse Modification Determination

Section 7(a)(2) of the Act requires that Federal agencies ensure that any action they authorize, fund, or carry out is not likely to destroy or to adversely modify designated critical habitat. Destruction or adverse modification means a direct or indirect alteration that appreciably diminishes the value of critical habitat as a whole for the conservation of a listed species.

The destruction or adverse modification analysis in this biological opinion relies on four components: (1) the Status of Critical Habitat, which describes the rangewide condition of the critical habitat for the western snowy plover; (2) the Environmental Baseline, which evaluates the condition of the critical habitat in the action area, the factors responsible for that condition, and the recovery role of the critical habitat in the action area; (3) the Effects of the Action, which are all consequences to critical habitat caused by the proposed action that are reasonably certain to occur in the action area; and (4) Cumulative Effects, which evaluate the effects of future non-Federal activities in the action area that are reasonably certain to occur.

For the section 7(a)(2) determination regarding destruction or adverse modification, the Service begins by evaluating the effects of the proposed Federal action and the cumulative effects. The Service then examines those effects against the condition of all critical habitat described in the listing designation to determine if the proposed action’s effects are likely to appreciably diminish the value of critical habitat as a whole for the conservation of the species.

Maricris Lee

STATUS OF THE SPECIES AND CRITICAL HABITAT

California Least Tern

Legal Status

The Service listed the California least tern as endangered on June 2, 1970 (Service 1970). We issued a revised recovery plan for the species in 1985 (Service 1985) and 5-year status reviews in 2006 and 2020 (Service 2006, 2020). The Service has not designated critical habitat for the species.

Natural History

Foraging Behavior

California least terns forage in nearshore oceans, harbors, marina channels, tidal estuarine channels, and sheltered shallow bays (Atwood and Kelly 1984, pp. 35–36). Adults forage mostly within 2 miles of breeding colonies, and at many sites foraging is primarily in nearshore ocean waters less than 60 feet deep (Service 1985, p. 18). They feed on small fish that they catch by plunging into the water from flight. In a study of fish dropped by California least tern at 10 nesting areas, researchers found 49 species of fish, all individuals less than 1 year old. Northern anchovy (*Engraulis mordax*) and silverside species (Atherinidae) represented 67 percent of the total sample (Atwood and Kelly 1984, p. 38).

Breeding

California least terns are migratory colonial nesters, usually arriving in breeding areas by late April and departing in August (Massey 1974, pp. 6, 43). They exhibit a high degree of nest site fidelity from year to year. Individuals often return to breed where they previously bred successfully or to their natal sites (i.e., where they hatched) significantly more than one would predict if birds nested randomly (Atwood and Massey 1988, pp. 391–393). After the initial nesting period that begins on their arrival in April, a second wave of nesting may occur from mid-June to early August. These are mainly re-nests after initial failures and second-year birds nesting for the first time (Massey and Atwood 1981, p. 596).

Nesting California least terns usually occupy a sand-shell beach relatively free of plant growth (Massey 1974, p. 5). The nest is typically a shallow, round depression, constructed by a bird sitting and kicking its feet backwards while rotating its body. This may occur several times before the bird lays an egg (Massey 1974, pp. 10–11; Wolk 1974, p. 52). California least terns may use “sideways building” after scrape construction, which consists of the sitting bird reaching

out with its bill to pick up additional nest material, such as small shells and shell fragments, and depositing them into the nest (Wolk 1974, p. 53).

Early in the breeding season, California least terns display night roosting behavior. Prior to incubation, they will sleep at night at varying distances from the nesting sites. Once incubation begins, birds roost at night on the nest. California least terns use roosting sites away from breeding colonies prior to egg laying, apparently for predator avoidance. By not sleeping within the colony until they lay eggs, they may delay nocturnal predators discovering the colony by 2 to 3 weeks (Service 1985, p. 7).

California least terns begin incubation after laying the first egg. Both parents participate in incubation, which lasts 20 to 25 days (Massey 1974, pp. 15–16). Clutch size ranges from one to three eggs, with two eggs being most common (Massey 1974, p. 13; Ehrlich et al. 1988, p. 186).

California least tern chicks are semi-precocial (capable of a high degree of independent activity from birth) and parents can feed small fish to chicks within hours of hatching (Massey 1974, p. 17; Ehrlich et al. 1988, p. 18). Chicks will begin leaving the nest in1 to 2 days (Massey 1974, p. 17) and fledge at approximately 20 days. Juveniles and adults will fish, loaf, preen, and roost together for several weeks after fledging; adults will continue to feed juveniles during this period (Massey 1974, p. 20).

Wintering

California least terns leave nesting areas by August to spend winter months along the west coast of Baja California, the west coast of Mexico, and farther south, possibly from the Gulf of California to Guatemala (AOU 1957, p. 239; Service 1985, p. 17; Thompson et al. 1997, Distribution, Migration, and Habitat).

Rangewide Status

The historical breeding range of the California least tern extends along the Pacific coast from central California (Moss Landing) to southern Baja California (San Jose del Cabo). Observers documented potentially vagrant birds farther north in Alameda County, California (Grinnell and Miller 1944, p. 175; AOU 1957, p. 239). Since 1970, records of nesting sites extend from San Francisco Bay to Bahia de San Quintin, Baja California. The nesting range in California has been discontinuous, with most birds nesting in southern California from Santa Barbara County south through San Diego County (Service 1985, p. 3).

In 1969 and 1970, Craig (1971, pp. 1, 5) conducted breeding surveys in San Mateo, Orange, and San Diego Counties. Craig estimated 300 pairs at 15 sites in the 3 counties and made recommendations to prevent the extirpation of the California least tern in California, principally

to protect existing sites from human disturbance and create new sites in areas protected from disturbance and development (Craig 1971, entire). In 1980, 1981, 1982, and 1983, the California least tern breeding population in California was approximately 890 to 1,215; 963 to 1,171; 1,015 to 1,245; and 1,180 to 1,299 pairs, respectively (Service 1985, p. 21). Several studies attributed fluctuations in the number of breeding pairs and productivity to the El Niño Southern Oscillation, which results in limited food availability (Massey et al. 1992, pp. 982–983; Caffrey 1995, p. 12; Robinette et al. 2015, pp. 5, 10, 21–52). The effects on California least terns after a severe El Niño event may last several years (Massey et al. 1992, pp. 976, 978, 982).

Surveys have become more standardized and frequent since the 1990s (Sin 2021, p. 5). Sin reported 4,097 to 5,598 breeding pairs across 45 nesting sites in California over the 2017 breeding season (Sin 2021, p. 3). Six sites contained most of the breeding activity in California during the 2017 season: Camp Pendleton, Naval Base Coronado, Batiquitos, Point Mugu, Huntington, and Alameda Point (Sin 2021, p. 3), a trend consistently observed in previous years (Frost 2016, p. 12; 2017, p. 11). These 6 sites represented 75 percent of the state nest total and contributed 65 percent of California's fledgling production. The California Department of Fish and Wildlife (CDFW) provides annual reports of nesting California least terns in California; reports include numbers of breeding pairs, nesting sites, and fledglings to breeding pair ratios (Table 1).

Table 1. Numbers of California least tern breeding pairs and nesting sites across California; data compiled from CDFW reports (Craig, 1971, p. 1; Bender 1974a, p. 1, b, p. 1; Johnston and Obst 1992, pp. 3, 6; Obst and Johnston 1992, pp. 3, 5; Caffrey 1993, p. 2, 1994, p. 2, 1995, p. 3, 1997, p. 3, 1998, p. 3; Keane 1998, p. 3, 2000, p. 3, 2001, p. 5; Patton 2002, p. 3; Marschalek 2005, p. 3, 2006, p. 3, 2007, p. 3, 2008, p. 3, 2009, p. 3, 2010, p. 3, 2011, p. 3, 2012, p. 3; Frost 2013, p. 3, 2015, p. 3, 2016, p. 3, 2017, p. 3; Sin 2021, p. 3).

Year	*Approximate Number of Breeding Pairs*	*Number of Nesting Sites*
2017	4,097–5,598	45
2016	3,989–4,661	42
2015	4,202–5,295	41
2014	4,232–5,786	41
2012	4,293–6,421	41
2011	4,826–6,108	40
2010	6,437–6,699	41
2009	7,130–7,352	41
2008	8,223–8,226	36
2007	6,744–6,989	35
2006	7,006–7,293	31
2005	6,865–7,341	28
2004	6,354–6,805	32
2000	4,521–4,790	37
1999	3,451–3,674	36
1998	4,141–4,182	30
1997	4,017	38
1996	3,330–3,392	35
1995	2,585–2,611	37
1994	2,792	36
1993	2,400	35
1992	2,106	38
1991	1,830	26
1990	1,706	28
1974	582	20
1973	624	19
1969–1970	300	15

Recovery and Threats

The primary goals outlined in the 1985 recovery plan are to prevent extinction and return the California least tern population to a stable, non-endangered status. We state the Service may consider reclassification to threatened status if 1,200 breeding pairs in California occur in 15 secure management areas with a 3-year mean reproduction rate of 1.0 (one fledgling per breeding pair) (Service 1985, p. 26). We also state the Service may consider delisting if the

population reaches 1,200 breeding pairs distributed in at least 20 of 23 coastal management areas with the following provisions:

1) Sufficient habitat to support at least one viable colony (consisting of a minimum of 20 breeding pairs with a 5-year mean reproductive rate of at least 1.0 young fledged per year, per breeding pair) at each of the 20 coastal management areas managed to conserve California least terns (which must include San Francisco Bay, Mission Bay, and San Diego Bay); and
2) Assured land ownership and management objectives for future habitat management for the benefit of California least terns, and assessment of the security and status of Baja California colonies for incorporation into recovery objectives (Service 1985, pp. 25–26).

The breeding population of California least terns currently exceeds Objective 1. The estimated number of California least tern breeding pairs has increased from approximately 624 pairs in 1973 to a peak of approximately 7,100 pairs in 2009. The number of breeding pairs has dropped in the past few years from the peak to estimates of 3,989 pairs in 2016 and 4,097 pairs in 2017. In the 2006 5-year Review, we acknowledged the species had far exceeded this population objective (Service 2006, p. 3).

Objective 2 does not identify explicitly specific threats to alleviate but rather is a proxy for whether there is a reduction in threats to reproduction and fecundity. In the 2006 5-year review, we concluded that based on the population data at that time, the Service could likely consider the species recovered without meeting this goal (Service 2006, p. 5), as the sharp growth in pairs had occurred while estimated fledgling rates were below 1.0 fledglings per pair. Objective 2 utilizes this same definition of viability for secure nesting site requirements, though it is unclear from the recovery criteria if sites must maintain this level of viability for 3 or 5 years (Service 1985, pp. 25–26).

Overall, progress is being made toward satisfying the recovery criteria. However, as we concluded in the 2006 5-year review and based on recent data, we should revise the recovery plan and update it to provide threats-based recovery criteria and address the other shortcomings of the recovery plan. Areas of the plan that need updating include inclusion of Mexico populations of California least terns, further analysis of the fledgling per pair ratio, and future impacts from a changing climate, such as seal level rise (Service 2020, p. 62).

In the five-factor analysis in our 2020 5-year status review, we found that rising sea levels as a result of climate change (Factor A) may in the future pose a substantial threat to nesting habitat of the California least tern; that predation (Factor C) continues to threaten the California least tern (this threat is reduced, though not eliminated, by predator management conducted at the majority of active colonies, and predator management is confounded when the predator is a protected species); that food availability (Factor E) poses a threat to California least terns though

its impact varies from year to year with an uncertain overall magnitude; and that cumulative impacts of food availability, predation, and destruction of nesting habitat together pose a substantial threat to the persistence of the California least tern, although management at a majority of the U.S. nesting sites helps to reduce the impact of these combined threats. Though there are few data available on nesting areas in Mexico, lack of legal protection and conservation measures result in a higher degree of threats attributable for nesting California least terns than in the United States (Service 2020, p. 69).

While the California least tern has met the population size recommended in the recovery plan for downlisting, the population has been recently declining and exhibiting poor reproductive success, and multiple ongoing threats continue to impact the species. Primary threats include ongoing habitat loss and degradation attributed to perpetual human disturbance, urban development, introduced beachgrass and expanding predator populations. Therefore, we determined that current information does not support reclassifying the California least tern at this time. Additional information on threats, management techniques, and current population models should be obtained before reassessing the taxon again in the future (Service 2020, p. 70).

Western Snowy Plover

Legal Status

The Service listed the Pacific coast population of the western snowy plover as threatened on March 5, 1993 (58 FR 12864). We designated critical habitat in 1999 (64 FR 68508 68544) and redesignated it in 2005 (70 FR 56970 57119). In 2012, we issued a revised critical habitat designation which included a change in taxonomic nomenclature (Service 2012b, 77 FR 36727 36869). We completed a 5-year status review in 2006 and 2019 (Service 2006c, 2019), and issued a recovery plan in August 2007 (Service 2007).

Natural History

The western snowy plover is a small shorebird in the family Charadriidae, a subspecies of the snowy plover (*Charadrius nivosus*). It is pale gray-brown above and white below, with a white collar on the hind neck and dark patches on the lateral breast, forehead, and behind the eyes. The bill and legs are black.

Foraging Behavior

Western snowy plovers are primarily visual foragers, using the run-stop-peck method of feeding typical of most plover species. They forage on invertebrates in the wet sand and amongst surf-cast kelp within the intertidal zone, in dry sand areas above the high tide, on saltpans, on spoil

sites, and along the edges of salt marshes, salt ponds, and lagoons. They sometimes probe for prey in the sand and pick insects from low-growing plants (Service 2007, pp. 17–18).

Breeding

The Pacific coast population of the western snowy plover breeds primarily on coastal beaches from southern Washington to southern Baja California, Mexico. The main coastal habitats for nesting include sand spits, dune-backed beaches, beaches at creek and river mouths, and saltpans at lagoons and estuaries (Wilson 1980, p. 23; Page and Stenzel 1981, p. 12). Western snowy plovers nest less commonly on bluff-backed beaches, dredged material disposal sites, salt pond levees, dry salt ponds, and gravel river bars (Wilson 1980, p. 9; Page and Stenzel 1981, pp. 12, 26; Tuttle et al. 1997, pp. 1–3; Powell et al. 2002, pp. 156, 158, 164).

Their nests consist of a shallow scrape or depression, sometimes lined with beach debris (e.g., small pebbles, shell fragments, plant debris, and mud chips). As incubation progresses, western snowy plovers may add to and increase the nest lining. Driftwood, kelp, and dune plants provide cover for chicks that crouch near objects to hide from predators. Because invertebrates often occur near debris, driftwood and kelp are also important for harboring western snowy plover food sources (Page et al. 2009a, Breeding).

Along the west coast of the United States, the nesting season of the western snowy plover extends from early March through late September. The breeding season may be 2 to 4 weeks earlier in southern California than in Oregon and Washington. Fledging (reaching flying age) of late-season broods may extend into the third week of September throughout the breeding range (Service 2007, p. 11).

The approximate periods required for western snowy plover nesting events are: 3 days to more than a month for scrape construction (in conjunction with courtship and mating), usually 4 to 5 days for egg laying, and incubation averaging 28.4 days in the early season (before May 8) to 26.9 days in the late season (Warriner et al. 1986, pp. 23–24). The usual clutch size is three eggs with a range from two to six (Page et al. 2009a, Breeding). Both sexes incubate the eggs, with the female tending to incubate during the day and the male at night (Warriner et al. 1986, pp. 24–25). Adult western snowy plovers frequently will attempt to lure people and predators from hatching eggs and chicks with alarm calls and distraction displays.

Western snowy plover chicks are precocial, leaving the nest with their parents within hours after hatching (Service 2007, p. 14). They are not able to fly for approximately 1 month after hatching; fledging requires 29 to 33 days (Warriner et al. 1986, p. 26). Broods rarely remain in the nesting area until fledging (Warriner et al. 1986, p. 28; Lauten et al. 2010, p. 10). Casler et al. (1993, pp. 6, 11–12) reported broods would generally remain within a 1-mile radius of their nesting area; however, in some cases would travel as far as 4 miles.

Wintering

In winter, western snowy plovers are found on many of the beaches used for nesting, as well as beaches where they do not nest. They also occur in man-made salt ponds and on estuarine sand and mud flats. In California, the majority of wintering western snowy plovers concentrate on sand spits and dune-backed beaches. Some also occur on urban and bluff-backed beaches, which they rarely use for nesting (Page and Stenzel 1981, p. 12; Page et al. 1986, p. 148). South of San Mateo County, California, wintering western snowy plovers also use pocket beaches at the mouths of creeks and rivers on otherwise rocky (Page et al. 1986, p. 148). Western snowy plovers forage in loose flocks. Roosting western snowy plovers will sit in depressions in the sand made by footprints and vehicle tracks, or in the lee of kelp, driftwood, or low dunes in wide areas of beaches (Page et al. 2009b, Behavior). Sitting behind debris or in depressions provides some shelter from the wind and may make the birds more difficult for predators to detect.

Rangewide Status

Historical records indicate that nesting western snowy plovers were once more widely distributed and abundant in coastal Washington, Oregon, and California (Service 2007, p. 21). In Washington, western snowy plovers formerly nested at five coastal locations (Washington Department of Fish and Wildlife 1995, p. 14) and at over 20 sites on the coast of Oregon (Service 2007, p. 24). In California, by the late 1970s, nesting western snowy plovers were absent from 33 of 53 locations with breeding records prior to 1970 (Page and Stenzel 1981, p. 27).

The first quantitative data on the abundance of western snowy plovers along the California coast came from window surveys conducted during the 1977 to 1980 breeding seasons by Point Reyes Bird Observatory (Page and Stenzel 1981, p. 1). Observers recorded an estimated 1,593 adult western snowy plovers during these pioneering surveys. The results of the surveys suggested that the western snowy plover had disappeared from significant parts of its coastal California breeding range by 1980 (Service 2007, p. 27).

Breeding season and winter window survey data from 2005 to 2017 includes approximately 250 sites in Washington, Oregon, and California, with the majority of the sites located in California. In California, 1,807 western snowy plovers were counted during the 2016 breeding window survey, and 3,8021 western snowy plovers were counted during the 2016 to 2017 winter window survey (Service 2016, 2017). Across the Pacific coast range, the 2016 breeding window survey estimated 2,284 western snowy plovers, and the 2016 to 2017 winter window survey estimated 4,214 western snowy plovers in Washington, Oregon, and California (Service 2016, 2017). These numbers demonstrate that a large percentage of all western snowy plovers in the Pacific coast range were counted in California during both winter and breeding window surveys.

1 This number likely includes wintering inland birds that are not part of the listed Pacific coast population.

Table 2. Pacific Coast western snowy plover breeding window survey results, in descending order 2019 to 2005, for each recovery unit (RUl through RU6) and the U.S. Pacific coast (excludes the Baja California peninsula). All counts are breeding age adults and are uncorrected (raw). Recovery Units are RU1: Washington and Oregon; RU2: Northern California; RU3: San Francisco Bay; RU4: Monterey Bay area; RU5: San Luis Obispo area; RU6: San Diego area (Service 2019, p. 3).

Year	*RU1-*	*RU2*	*RU3*	*RU4*	*RU5*	*RU-6*	*TOTAL (U.S. Pacific Coast)*
2019	479	41	190	303	807	397	2,217
2018	402	52	235	361	874	451	2,375
2017	342	56	246	369	856	464	2,333
2016	477	46	202	366	820	373	2,284
2015	340	38	195	348	963	376	2,260
2014	269	27	178	374	822	346	2,016
2013	260	23	202	261	754	326	1,826
2012	234	21	147	324	771	358	1,855
2011	202	28	249	311	796	331	1,917
2010	196	19	275	298	686	311	1,785
2009	182	15	147	279	707	257	1,587
2008	147	18	133	257	717	269	1,541
2007	175	26	207	270	676	183	1,537
2006	158	45	102	357	917	298	1,877
2005	137	41	124	337	969	209	1,817

Critical Habitat

The phrases “primary constituent elements” (PCEs) and “physical and biological features” (PBFs) are synonymous. Critical habitat rules published before February 11, 2016, used the term PCE, while critical habitat rules published after that date use the term PBF. In cases where a critical habitat rule numbers PCEs specifically (e.g., PCE-1, PCE 1), we will use the terms as defined in the critical habitat designation to avoid confusion.

The current critical habitat designation (77 FR 36727) includes 60 units totaling 24,527 acres in Washington, Oregon, and California. The primary constituent elements (PCEs) of critical habitat (77 FR 367474) for the western snowy plover include sandy beaches, dune systems immediately inland of an active beach face, salt flats, mud flats, seasonally exposed gravel bars, artificial salt ponds and adjoining levees, and dredge spoil sites, with:

1) Areas that are below heavily vegetated areas or developed areas and above the daily high tides;
2) Shoreline habitat areas for feeding, with no or very sparse vegetation, that are between the annual low tide or low water flow and annual high tide or high water flow, subject to inundation but not constantly under water, that support small invertebrates, such as crabs, worms, flies, beetles, spiders, sand hoppers, clams, and ostracods, that are essential food sources;
3) Surf- or water-deposited organic debris, such as seaweed (including kelp and eelgrass) or driftwood located on open substrates that supports and attracts small invertebrates described in PCE 2 for food, and provides cover or shelter from predators and weather, and assists in avoidance of detection (crypsis) for nests, chicks, and incubating adults; and
4) Minimal disturbance from the presence of humans, pets, vehicles, or human-attracted predators, which provide relatively undisturbed areas for individual and population growth and or normal behavior.

Recovery and Threats

The primary objective of the recovery plan (Service 2007, p. vi) is to remove the Pacific coast population of the western snowy plover from the list of endangered and threatened wildlife and plants by:

1) Increasing population numbers distributed across the range of the Pacific coast population of the western snowy plover;
2) Conducting intensive ongoing management for the species and its habitat and developing mechanisms to ensure management in perpetuity; and
3) Monitoring western snowy plover populations and threats to determine success of recovery actions and refine management actions.

Delisting criteria for the Pacific coast population of the western snowy plover are outlined below (Service 2007, p. vii):

1) An average of 3,000 breeding adults has been maintained for 10 years, distributed among 6 recovery units as follows: Washington and Oregon, 250 breeding adults; Del Norte to Mendocino Counties, California, 150 breeding adults; San Francisco Bay, California, 500 breeding adults; Sonoma to Monterey Counties, California, 400 breeding adults; San Luis

Obispo to Ventura Counties, California, 1,200 breeding adults; and Los Angeles to San Diego Counties, California, 500 breeding adults. This criterion also includes implementing monitoring of site-specific threats, incorporation of management activities into management plans to ameliorate or eliminate those threats, completion of research necessary to modify management and monitoring actions, and development of a post-delisting monitoring plan.

2) A yearly average productivity of at least one (1.0) fledged chick per male has been maintained in each recovery unit in the last 5 years prior to delisting.
3) Mechanisms have been developed and implemented to assure long-term protection and management of breeding, wintering, and migration areas to maintain the subpopulation sizes and average productivity specified in Criteria 1 and 2. These mechanisms include establishment of recovery unit working groups, development and implementation of participation plans, development and implementation of management plans for Federal and State lands, protection and management of private lands, and public outreach and education.

Our current estimate (2,217 breeding adults) remains below the population size of 3,000 birds listed as a recovery objective in the recovery plan (Service 2007), although some local population sizes have surpassed recovery objectives for some areas (e.g., Monterey Bay, Oregon-Washington). Yearly average productivity (Criterion 2; number of fledglings/per male) are not compiled annually for the entire U.S. Pacific coast; however, the best available information indicates that the yearly average productivity has not been met (Service 2019, p. 6).

Threats to the western snowy plover include widespread habitat loss and degradation attributed to human disturbance, urban development, introduced beachgrass, and expanding predator populations. Efforts to improve habitat at current and historical breeding beaches, and efforts to reduce the impacts of human recreation and predation on nesting plovers, have improved plover numbers. Active vegetation and predator management and habitat restoration should be continued. Because of active management efforts, including increased monitoring, use of predator exclosures at some sites, predator management, and expanded beach closures, western snowy plover population numbers have increased at some locations. However, despite active vegetation and predator management, ongoing and projected changes in sea level and climate is expected to affect coastal habitat suitability, nest survival, overwinter survivorship, and quality of nesting and roosting habitats (Service 2019, p. 7).

Western Snowy Plover Critical Habitat

The final rule for western snowy plover critical habitat describes the physical and biological attributes that are essential to the conservation of the species, activities that could adversely affect critical habitat areas, and the specific areas designated as critical habitat. Hollywood

Beach is included in critical habitat unit CA 19 (Oxnard Lowlands), subunit CA 19A (Mandalay Beach to Santa Clara River) and extends into the proposed action area of this project (Figure 1).

The primary constituent elements of critical habitat for the western snowy plover have been defined as those habitat components that are essential for the primary biological needs of foraging, nesting, rearing of young, roosting, and dispersal, or the capacity to develop those habitat components. The constituent elements are found in areas that support or have the potential to support intertidal beaches, associated dune systems, and estuaries. Important components of the beach/dune/estuarine ecosystem include surf-cast kelp, sparsely vegetated foredunes, interdunal flats, spits, washover areas, blowouts, intertidal flats, salt flats, and flat rocky outcrops. Several of these components (sparse vegetation, salt flats) are mimicked in artificial habitat types used less commonly by western snowy plovers (i.e., dredge spoil sites, salt ponds, and adjoining levees). The suitability of areas containing the features listed above is also contingent upon isolation from human disturbance and predation. These attributes are considered essential to the conservation of the coastal population of the western snowy plover (70 FR 56970).

ENVIRONMENTAL BASELINE

The implementing regulations for section 7(a)(2) (50 CFR 402.02) define the environmental baseline as “the condition of the listed species or its designated critical habitat in the action area, without the consequences to the listed species or designated critical habitat caused by the proposed action. The environmental baseline includes the past and present impacts of all Federal, State, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early section 7 consultation, and the impact of State or private actions which are contemporaneous with the consultation in process. The consequences to listed species or designated critical habitat from ongoing agency activities or existing agency facilities that are not within the agency’s discretion to modify are part of the environmental baseline.”

Action Area

The implementing regulations for section 7(a)(2) of the Act (50 CFR 402.02) define the “action area” as all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action. The action area for this biological opinion is the Channel Islands Harbor federal dredge template, Hollywood Beach, including potential impact area immediately adjacent to the dredge template due to slope failure of the dredge cut boundaries, the potential restoration area and Hueneme Beach. The entire action area encompasses approximately 60 acres and will depend on the amount of submerged emerged material accepted by the receiver area. Of that, 60 acres, the action may impact 26.94 acres of habitat used by listed species. The potential impact area is 200 feet on each side of sand trap area D (Figure 1). This

200-foot buffer is the coastal engineering projection of potential impacts due to the increased dredge quantity, comprising 10 acres. (Figures 1 and 2). The receiver beach of the dredged material is Hueneme Beach, a southern downcoast beach and adjacent to Point Mugu. The beach is constructed during bi-annual dredge cycles. Listed species and habitat are not known to occur in that area. The additional quantity of sand dredged will be reciprocally placed onto Hueneme Beach (Figure 2).

Hollywood Beach is located in the city of Oxnard and is adjacent to Channel Islands Harbor. Harbor structural features consist of a detached breakwater, entrance jetties, and an entrance channel leading to the harbor interior. The offshore detached breakwater and entrance jetties form a sand trap. A series of sand dunes ranging from 2 to 7 feet tall are located on northeast border of the sand trap. The sand dunes, the harbor jetty, and the shoreline leave the sand trap area relatively isolated from human activity compared to the rest of the beach. This makes the sand trap area proposed for dredging an ideal breeding location for the California least tern and western snowy plover.

Approximately 13.47 acres of the sand trap area at Hollywood Beach lie within unit CA-19A of western snowy plover designated critical habitat (70 FR 56970).

Habitat Characteristics of the Action Area

The action area includes open water and sandy beaches, and dune systems immediately inland of an active beach face with areas that are below heavily vegetated areas or developed areas and above the daily high tides. There is shoreline habitat for feeding, with no or very sparse vegetation, that are between the annual low tide or low-water flow, subject to inundation but not constantly under water, that supports small invertebrates, such as crabs, worms, flies, beetles, spiders, sand hoppers, clams, and ostracods, that are essential food sources. Surf- or water-deposited organic debris, such as seaweed or driftwood are routinely located on open substrates that supports and attracts small invertebrates for food, and provides cover or shelter from predators and weather, and assists in avoidance of detection for nests, chicks, and incubating adults.

Beach grass (*Ammophila breviligulata*) is present in the restoration site. This species provides high cover for predators and its presence may increase predation risk to shorebirds.

Existing Conditions in the Action Area

Maintenance dredging is routinely conducted within the dredge template at Channel Island Harbor (Figure 1). The required dredging is accomplished in biennial dredging cycles. Each dredging cycle has removed up to 2.0 million cubic yards of material from the Channel Islands Harbor dredge template. To avoid potential direct impacts on protected federal trust resources,

no dredging activity is conducted in the sand trap area, adjacent to Hollywood Beach, from March 1 through September 30.

By the end of each two-year dredge cycle, sand builds up in the sand trap extending the existing beach, sand buildup has narrowed the channel into Channel Islands Harbor, and the down coast beaches have lost sand. The northern end of Hueneme Beach erodes back to the revetment fronting city property. The dredging cycle is maintained at two years to provide the maximum benefit with minimum environmental impacts.

Figure 3 illustrates the dynamic nature of beachfront in the sand trap both within and between dredge cycles. Sand builds up in the off-dredge years according to littoral and cross shore deposition (yellow dashed line) and is subsequently dredged out the following year. The amount dredged out is dependent on quantity of available sand and the amount of funding designated for that year's dredge cycle.

Humans frequently recreate on the beach surrounding the action area and sometimes dogs are present. The primary constituent elements for the western snowy plover within the project area include the presence of surf-cast kelp, sparsely vegetated foredunes, interdunal flats, spits, washover areas, and intertidal flats. Currently, much of unit CA-19A is subject to beach grooming conducted by the County of Ventura Harbor District, which removes surf-cast kelp, vegetation, and re-contours foredunes on a periodic basis. Additionally, this unit is subject to disturbance from human recreational use on a regular basis. According to information provided in the critical habitat designation (70 FR 56970), the role of this unit in the conservation of the western snowy plover consists of providing wintering and nesting habitat.

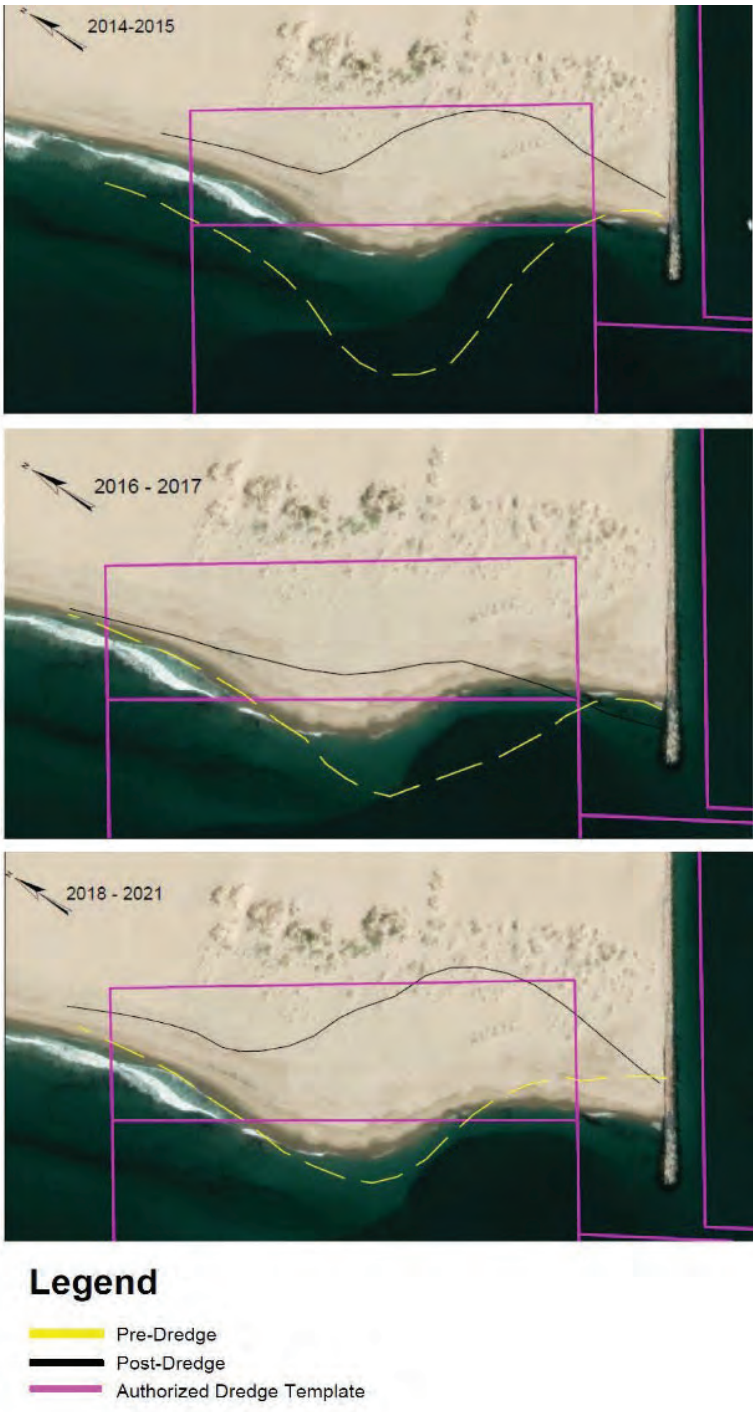

Figure 3. Aerial images of sand trap accretion and erosion including slope failure and sloughing over the last three dredge cycles, Hollywood Beach, California. Authorized dredge template is overlaid to illustrate the extent of beachfront buildup and retreat (Corps 2022).

Condition (Status) of the Species in the Action Area

California least tern

California least tern utilize Hollywood Beach and the component sand traps. California least tern demonstrate site fidelity to previous nesting areas and have reoccupied the sand trap in off-dredge years when the sand trap beach has built up (Figure 4). Specifically, the last years that least terns attempted to nest at Hollywood beach were 2013 and 2014, when dredging did not occur, and the sand trap beach was much larger than in dredge years. In 2013 and 2014, 209 and 120 nests were initiated, and 31 and 29 fledglings were observed in each respective year (Barringer 2013,2014). Since dredging resumed in 2015, terns have not been known to nest at Hollywood beach. Use of the site has continued but nesting has not occurred (Barringer 2021).

Recovery

The action area is identified in the recovery plan, is designated breeding habitat, and terns have historically bred on Hollywood Beach. Nests were typically discovered next to or within the action area when Corps did not dredge in the previous winter, which is inclusive of the only preferred habitat on the beach (i.e. native plants; Figure 4). Degradation of the habitat and the potential losses of nesting habitat may impede the recovery of the California least tern. The lack of nesting behavior on Hollywood Beach since 2014 is evidence of the potential impact of this project on recovery.

Western snowy plover

Weekly surveys conducted since 2003 indicate the area provides important migrating, nesting, foraging, resting and winter roosting western snowy plover habitat (Barringer 2021). Western snowy plovers are regularly observed in within and surrounding the action area (Figures 5 and 6). The number of nests initiated at Hollywood Beach was 3 to 4 times greater in 2013 and 2014 (27-30 nests) when the dredging had not occurred for 2 and 3 years respectively, and when the sand trap beach was much larger than in dredge years. When dredging resumed in 2015 nesting attempts declined (5-10 nests; Figure 7).

Recovery

The action area is in western snowy plover Recovery Unit 5 of the recovery plan and is designated breeding and over-wintering habitat. Western snowy plovers have attempted to breed on Hollywood Beach each year between 2003-2022 (Barringer 2021, p. 10, Hartley and Barringer 2022, p. 6). Nests are typically discovered next to or within the action area, which is inclusive of the only preferred habitat on the beach (i.e. native plants; Figures 5 and 6). Recent data show that an increasing number of birds are attempting to nest to the west of the action area

on unvegetated beach that lack food resources (Barringer 2021 p. 10). This may be due to reoccurring disturbances occurring next to or within the action area.

Monitoring data indicate that the area may provide important connectivity habitat between northern and southern populations of western snowy plover in October - March. Banded birds sighted in and around the action area during winter surveys primarily originated from Monterey County, Humboldt County, and Oregon state (Barringer 2021, p. 9). The continuous/repeating degradation of the habitat and the potential losses of wintering and nesting habitat may impact the recovery of the western snowy plover.

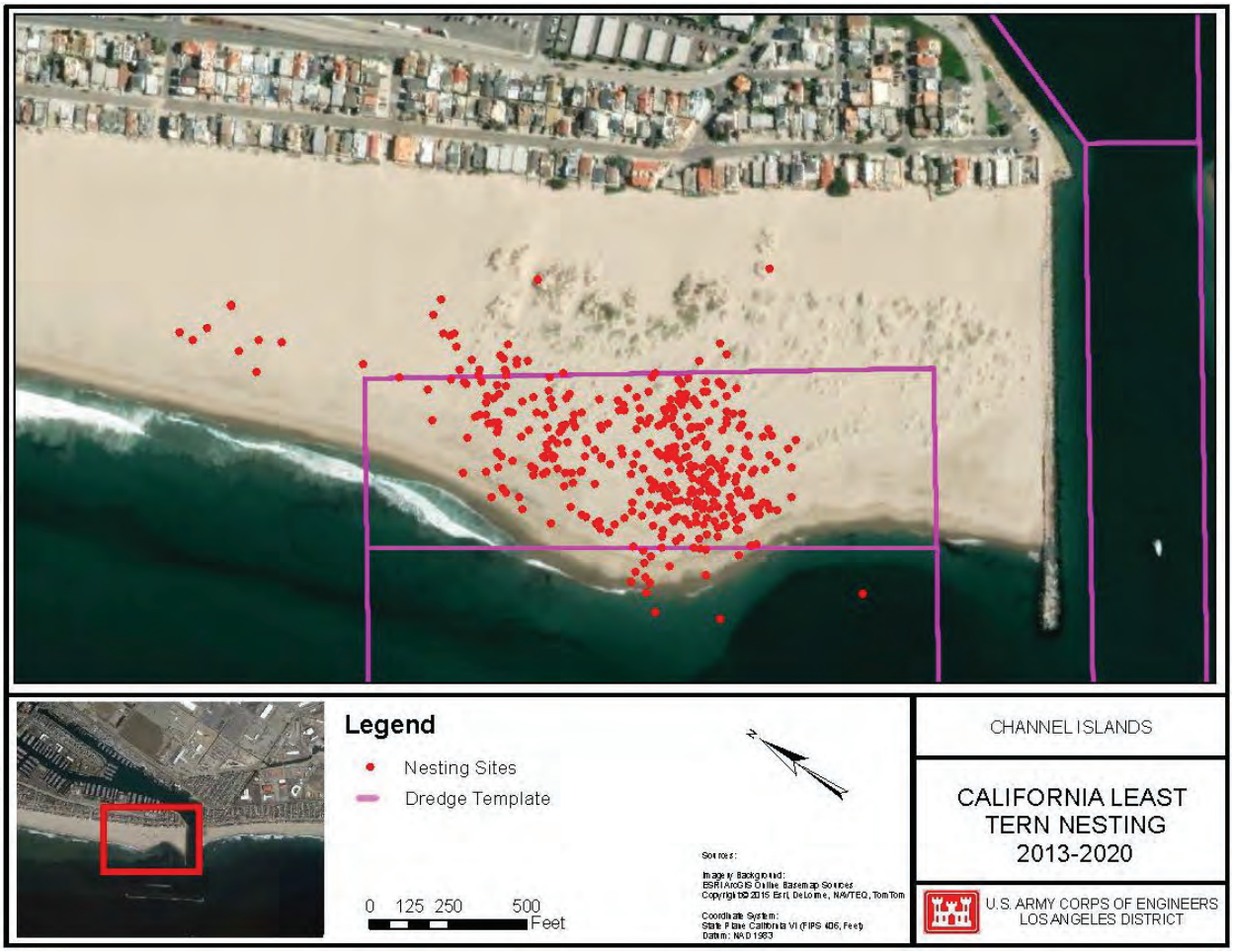

Figure 4. California least tern nest sites 2013-2021 on Hollywood Beach, California (Barringer 2020).

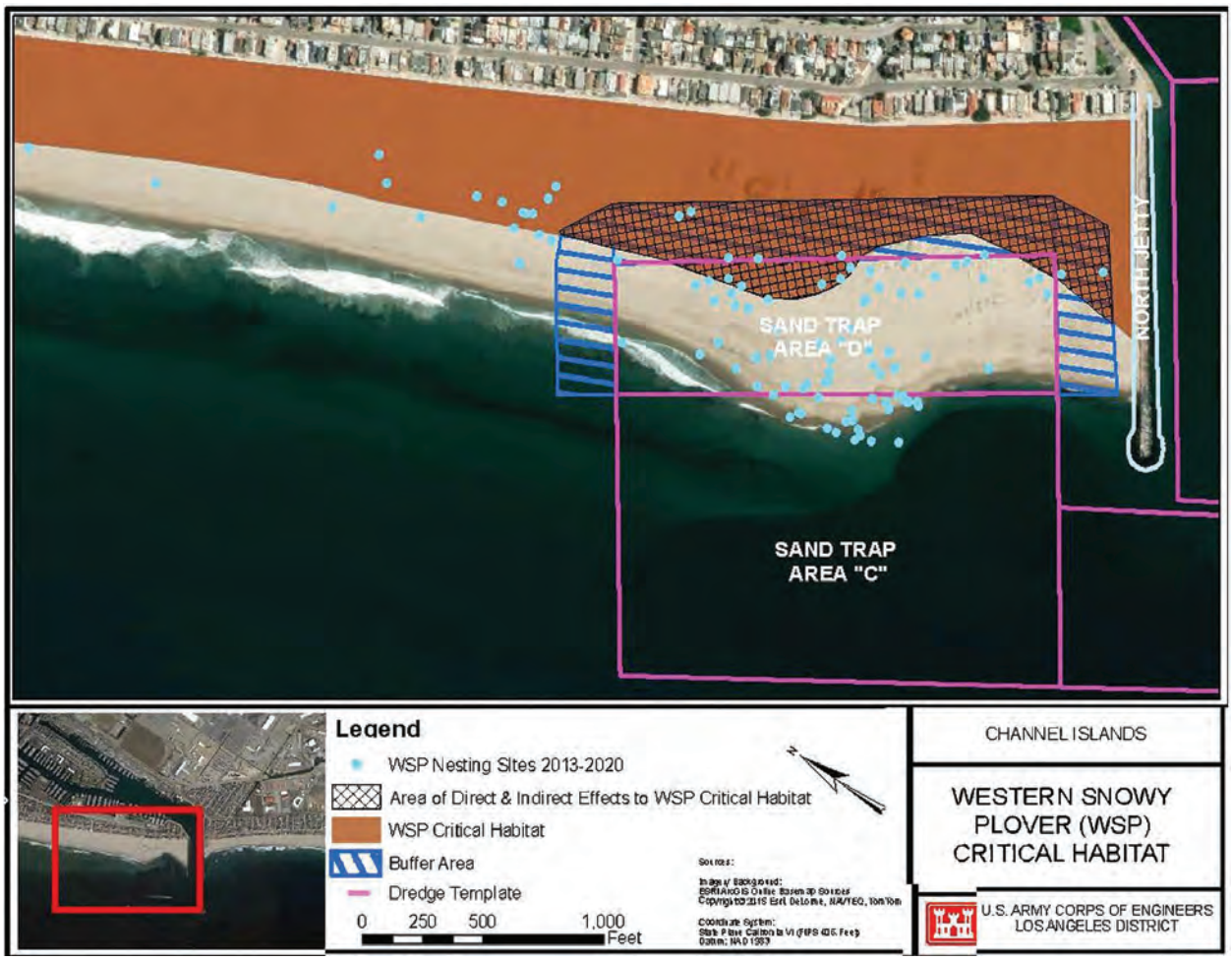

Figure 5. Map illustrating the overlap of the dredge impact area with western snowy plover critical habitat and western snowy plover nest sites from 2013-2020, Hollywood Beach, California.

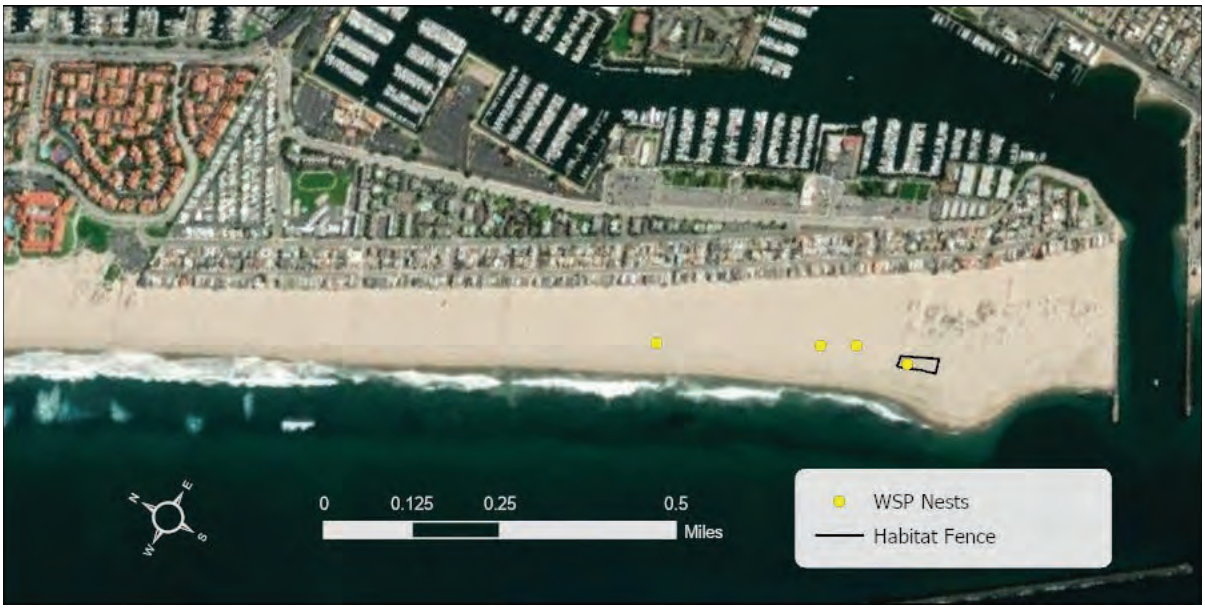

Figure 6. Map illustrating western snowy plover nest sites detected May-June 2022, Hollywood Beach, California (Hartley and Barringer 2022).

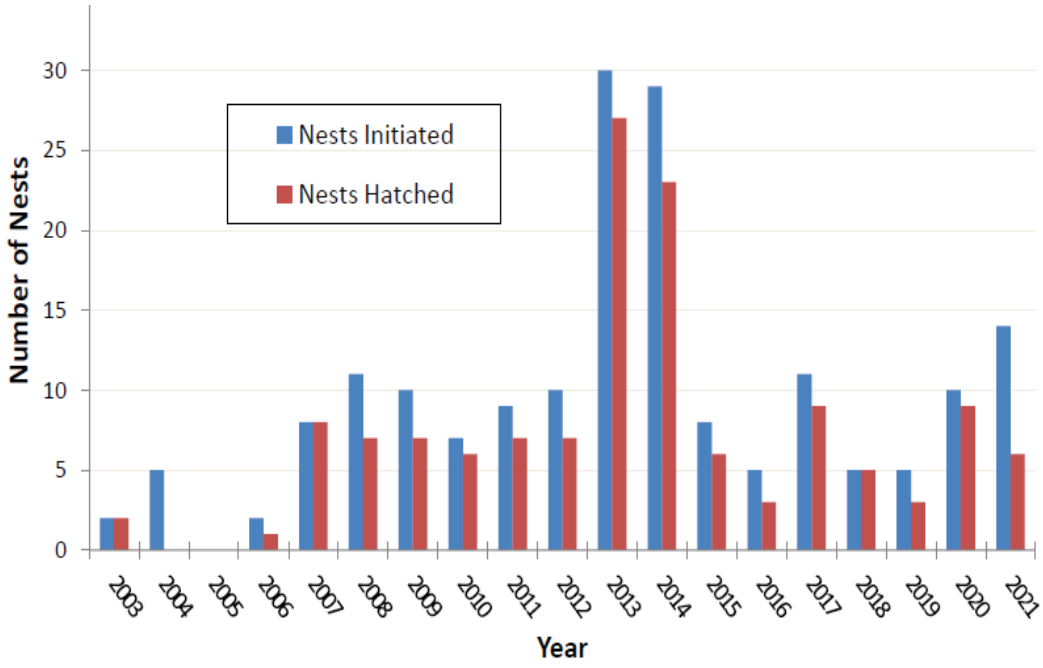

Figure 7. Hollywood Beach, California western snowy plover nest attempts and success 2003-2021 (Barringer 2021).

Condition (Status) of Critical Habitat in the Action Area

Portions of Hollywood Beach are designated as western snowy plover critical habitat and contain the supporting physical and biological features (PBFs) essential to western snowy plover conservation. The historical dredging activity affects critical habitat function, such that habitat quality varies depending on quantity of material dredged, prevailing cross-shore sediment transport and whether the sand trap has been dredged during the dredge cycle (Figure 3).

EFFECTS OF THE ACTION

The implementing regulations for section 7(a)(2) define effects of the action as "all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action" (50 CFR 402.02).

In conducting this analysis, we have considered factors such as previous consultations, Federal Register rules, National Environmental Policy Act documents, published scientific studies and literature, professional expertise of Service personnel, in determining whether effects are reasonably certain to occur. We have also determined that certain consequences are not caused by the proposed action, such as the increase or spread of disease, poaching, or collecting, because they are so remote in time, or geographically remote, or separated by a lengthy causal chain, so as to make those consequences not reasonably certain to occur.

Effects of the Proposed Action on the California Least Tern

Effects in September through February

California least terns are not expected to be in the action area while project activities are taking place because they are typically absent from California breeding sites between September and February.

Beach Disturbance Effects

The increased dredge quantity removed in this project may result in increased loss of potential breeding and roosting habitat for California least tern when they return to breeding sites in March. Specifically, additional material taken from Sand trap "D" may reduce the size of the beach more than is typically done in bi-annual dredge cycles (Figure 3).

The species exhibits high nest site fidelity and have attempted to breed in the action area in the past (Figure 4). The action area and immediate surrounding area contains the only native vegetation on Hollywood Beach and is historically the preferred nesting area. Disturbance of this area, including potential slope failure outside of the action area and resulting disturbance to native vegetation and cover, may increase predation risk, likelihood that adults choose to nest, quality of nesting sites, nest outcome and/or chick survival. If birds choose not to nest, the reproductive potential for the species in that area will be zero for that year. If adults choose to nest near the action area and outside of the area impacted by slope failures, it will place them closer to either the beach grass or the jetty. Both areas are more likely to conceal predators and increase predation risk to eggs, chick and adults could increase. This would reduce the number of California least terns in the region.

Effects of the Proposed Action on the Western Snowy Plover

Effects in September through February

Disturbances of the open water and beach in the action area may impact foraging and resting behaviors of western snowy plover. Disturbed foraging or resting plovers could deplete energy otherwise used to improve biological fitness (Lafferty 2001, p. 323). When beach use is high, western snowy plovers will suspend feeding and remain motionless in the roosting area. If the disturbance continues, roosting plovers become alert, begin to walk away, and supplant each other from the depressions where they sit. They may elevate their wings or bob as a sign of distress and may eventually run or take flight. If put to flight, flocks' wheel back and forth for several minutes in tight low altitude formations. After landing, they remain nervous and will take wing with little prompting (Lafferty 2001, pp. 319-322). The western snowy plover's reaction to disturbance may reduce their ability to effectively forage and maintain enough fat reserves to successfully reproduce and cause them to expend additional energy on actions besides foraging/survival.

The proposed activities such as material dredging and dune restoration may reduce reproductive success because other studies show that shorebirds may experience reduced reproductive success when disturbances increase. Lafferty (2001) studied the piping plover (which is ecologically similar to the western snowy plover) and found reduced reproductive success in areas with high human disturbance because of reduced foraging efficiency and the depletion of fat reserves (Flemming et al. 1988, p. 329). In areas where people were absent, piping plovers spent 90 percent of their active time feeding. In areas where people were common, the birds spent less than 50 percent of their active time feeding (Burger 1994). Thus, the presence of people engaging in typical activities resulted in birds expending energy in movement, flight, or vigilance, leading to reduced foraging time and depletion of energy reserves. Further, Lafferty et al. (2006; p. 2223) found that disturbance reduction increased breeding attempts in western snowy plovers. Similar effects are expected to occur in western snowy plovers because of the

increased duration of dredging activity and the proposed dune restoration effort. While these effects already occur as part of ongoing dredge activities and are not new, the increased dredge volume is expected to prolong the duration of effects, and thus increase the impacts to individual birds. Further, the proposed dune restoration would necessitate frequent presence of people at the site and a period of heavy equipment use. Any western snowy plovers present during implementation of the proposed action (including dredging, placement activities and dune restoration) are expected to display the energy intensive behaviors described above. It is also possible that western snowy plovers may be injured or killed as a result of heavy equipment used in the proposed dune restoration effort although the use of monitors at the site is intended to reduce that risk.

During the September to February period, the dredging activity will remove sand, depleting the beach and thus depleting and altering the potential foraging area for the species. While this is unlikely to reduce food availability, as the wrack will occur on the beach regardless of the dredging, there may be some effect on western snowy plover behavior as a result of this loss of beach.

March to August Effects

The increased dredge quantity removed in this project, would result in more beach removed, which would result in temporary increased loss of potential breeding habitat for western snowy plover when they return to breeding sites in March. Specifically, additional material taken from sand trap “D” may reduce the size of the beach more than is typically done in bi-annual dredge cycles (Figure 3). When dredging concludes, material from northern beaches will be naturally moved by the tides, will fill sand trap “D” over time and reconstitute the beach.

Migrating western snowy plover must endure long flight distances and conditions between their wintering and breeding areas and are physiologically stressed when they arrive at their breeding areas. Disturbances at breeding areas from the construction vehicles and workers may not allow birds to rest and recover sufficiently to complete their reproductive cycle. For example, Guglielmo et al. (2001) found that migrating western sandpipers (*Calidris mauri*) frequently do not gain mass in the first days after arrival at breeding areas because they expend significant energy locating feeding areas that are safe and resource-rich. Birds that forage slowly or ineffectively may not build the requisite fat reserves that are critical to migrants with depleted survival and reproductive capabilities (Flemming et al. 1988, p. 329). Lafferty (2006, p. 2223) found that disturbance protection improves breeding habitat suitability, so conversely, the disturbances in the action area will likely degrade breeding habitat suitability.

The species exhibits high nest site fidelity (Patton and Edwards 1996) and have attempted to breed in the action area in the past (Figures 5 and 6). The action area and immediate surrounding area contains the only native vegetation on Hollywood Beach and is historically the preferred

nesting area. Disturbance of this area could include potential slope failure because of increased dredging, which may occur outside of the action area (Figure 1). The resulting disturbance to native vegetation may decrease food availability, the quality of the nesting site, nest outcome and/or chick survival. Alternatively, birds may choose to nest further from native vegetation to avoid high density nesting conspecifics in historical nesting areas, but may unintentionally place nests too far from the food sources required by chicks (i.e. insects found in native vegetation). Nests placed to avoid the action area could lead to increased chick mortality due to reduce food availability near to the nest, energy expenditures in locating food away from the nest, and risk of trampling by people when traveling from the nest to food (Barringer 2021).

Effects on Recovery

California Least Tern

The California least tern recovery plan (Service 1985) states that habitat loss and disturbances on California beaches is the largest threat to the species. To reach recovery, suitable habitat of sufficient size must be available for nesting purposes; foraging, roosting and wintering habitat must be preserved and properly managed. Recovery actions proposed in the action area will include actions that would reduce disturbances to nesting habitat such as symbolic fencing, increased suitable nesting and foraging habitat area such as the proposed dune restoration effort, and reduced predation on adults and chicks such as the use of predator exclosures around nests.

The proposed dredging action will physically reduce the area of available habitat for nesting and foraging, increasing competition for high-quality nesting sites at Hollywood Beach. Depleting nesting areas tend to reduce the species' chances of recovery.

Western Snowy Plover

The western snowy plover recovery plan (Service 2007) states that habitat degradation caused by human disturbances and expanding predator populations have resulted in a decline in active nesting areas and in the size of the breeding and wintering populations. To reach recovery, populations must reach an average of 3,000 breeding adults for 10 years, a yearly average productivity of at least one fledged chick per male has been maintained in each recovery unit in the last 5 years, and mechanisms have been developed and implemented to assure long-term protection and management of breeding, wintering, and migration areas to maintain the subpopulation sizes and average productivity described above. Recovery actions proposed in the action area will include actions that would reduce disturbances to nesting habitat such as symbolic fencing, increased suitable nesting and foraging habitat area such as the proposed dune restoration effort, and reduced predation on adults and chicks such as the use of predator exclosures around nests.

The proposed action increases will physically reduce the area of available habitat for winter nesting, foraging, and resting. This will increase competition for high-quality nesting sites at Hollywood Beach and may reduce nesting and fledging success and thus population size. Depleting these critical resources will tend to reduce the species' chances of recovery.

Effects of the Proposed Action on Critical Habitat of Western Snowy Plover

The proposed action will temporarily render approximately up to 13.47 out of 672 acres in unit CA 38 of western snowy plover critical habitat unusable by the species by removing the PBFs. The additional dredging of the sand trap area will remove additional habitat that includes surf-cast kelp, sparsely vegetated foredunes, an interdunal flat, a washover area, and intertidal flats. In off-dredge years, the sand trap accretes and builds beachfront and a PBFs that were previously removed during dredging return to the action area. The additional dredge quantity of 500,000 cubic yards on top of the historical 2,000,000 cubic yards is expected to increase the damage to critical habitat above what is usually observed in dredge years. This damage may be more extensive in scale and impact native plants not typically impacted by dredging. The native plants may not recover to their historic status before dredging occurs again, which may degrade the historic damage and recovery cycle established at the site.

CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. We do not consider future Federal actions that are unrelated to the proposed action in this section because they require separate consultation pursuant to section 7 of the Act.

Recreational activities are likely to frequently occur in the action area. The presence of humans and canines can have negative impacts on shorebird abundance likely because those birds that remain must spend more energy on vigilance and escape at the expense of foraging and rest (Lafferty 2001, p. 319). These recreational activities are likely to decrease shorebird abundance and nesting success either directly (via crushing or death of birds or eggs) or indirectly (via disturbance).

CONCLUSION

The regulatory definition of "to jeopardize the continued existence of the species" focuses on assessing the effects of the proposed action on the reproduction, numbers, and distribution, and their effect on the survival and recovery of the species being considered in the biological opinion. For that reason, we have used those aspects of the California least tern and western snowy plover statuses as the basis to assess the overall effect of the proposed action on the species.

California Least Tern

Reproduction

Though adverse effects are likely, we anticipate project-related adverse effects to nesting California least terns would be minimal and temporary, with pre-project conditions returning in 2024 or 2025. We expect that the proposed action would not appreciably reduce the reproductive capacity of the California least tern in Ventura County or rangewide.

Numbers

The proposed activities have a potential to contribute to the loss of individual California least tern eggs, chicks, or adults during the breeding season; however, based on results of past reporting, this loss would represent a very small portion of California least tern numbers over time. The California least tern population in the action area accounts for a small percentage of nesting adults in the range. We expect that the proposed action would not appreciably reduce the numbers of California least terns rangewide.

Distribution

This project will not appreciably change breeding area locations. There will be no change in distribution of the species as a result of this action.

Recovery

Though Hollywood Beach has not achieved its recovery goals, and has not recorded breeding terns in recent years, the rangewide numbers of California least terns have exceeded recovery goals of 1.0 fledgling per breeding pair for an overall population increase.

We expect this action may preclude successful breeding within the action area in 2023. However, consequences of the proposed action would not appreciably interfere with recovery goals or overall recovery of the California least tern because the species has not nested in the area in recent years under existing conditions.

After reviewing the current status of the California least tern, the environmental baseline for the action area, the effects of the proposed increased dredging quantity and the cumulative effects, it is the Service's biological opinion that the increased dredging quantity as proposed, is not likely to jeopardize the continued existence of the California least tern because:

1) The project would have a locally moderate, but rangewide minimal effect on reproduction of the species but would not appreciably reduce reproduction of the species

rangewide.
2) The project would cause a low decrease in the number of individuals.
3) The project would not reduce the species' distribution rangewide.
4) The project would not cause any effects that would preclude our ability to recover the species.

Western Snowy Plover

Reproduction

Though adverse effects are likely, we anticipate project-related adverse effects to nesting western snowy plovers would be temporary and moderate, with pre-project conditions returning 2024 or 2025. We expect that the proposed action would not appreciably reduce the reproductive capacity of the western snowy plover in Ventura County or rangewide.

Numbers

The proposed activities have a potential to contribute to the loss of individual western snowy plover eggs, chicks, or adults during the breeding season, but it is unknown how the reduction in wintering and breeding habitat will impact individual survival. When workers are present on the beach, the birds might flush more often, and this could lead to a reduction in fitness via increase in energy expenditure. However, we anticipate project-related adverse effects would be temporary and consequences to western snowy plovers due to the proposed action will be small relative to other impacts experienced in the region due to predation and disturbance.

RU5 comprises nearly 40 percent of breeding western snowy plovers rangewide, and we expect these sites within RU5 will continue to be managed and monitored. We expect that effects of the proposed action would not appreciably reduce the numbers of western snowy plovers rangewide.

Distribution

We expect that effects of the proposed action may have a low and temporary effect on the distribution of western snowy plovers, and therefore the proposed action would not appreciably reduce the distribution of western snowy plovers rangewide.

Recovery

Hollywood Beach represents a small portion of expected breeding pairs in the RU5 region (Service 2007). A reduction of successfully fledged chicks in this area, and reduced fitness in adult birds as a consequence of the proposed action, if temporary, would not appreciably interfere with recovery goals or overall recovery of the western snowy plover.

After reviewing the current status of the western snowy plover, the environmental baseline for the action area, the effects of the proposed increased dredging quantity and the cumulative effects, it is the Service's biological opinion that the increased dredging quantity as proposed, is not likely to jeopardize the continued existence of the western snowy plover because:

1) The project would have a locally moderate, but rangewide low effect on reproduction of the species but would not appreciably reduce reproduction of the species rangewide.
2) The project would cause a low decrease in the number of individuals.
3) The project would not reduce the species' distribution rangewide.
4) The project would not cause any effects that would preclude our ability to recover the species.

Western Snowy Plover Critical Habitat

The regulatory definition of "adverse modification" focuses on assessing if the proposed action will result in alterations that appreciably reduce the value of critical habitat for the conservation of a listed species. This includes assessing the impacts of the proposed action on the physical or biological features essential to the conservation of a listed species or assessing if those alterations preclude or significantly delay development of such features. For that reason, we have used those aspects of the western snowy plover critical habitat status as the basis to assess the overall effect of the proposed action on the critical habitat.

The proposed action will reduce the quality and quantity of the various physical and biological features (surf-cast kelp, sparsely vegetated foredunes, interdunal flats, spits, washover areas, and intertidal flats) required by western snowy plover within 13.47 acres of designated critical habitat. The reductions will likely be temporary, because 1) the open water disturbance is a single occurrence; and 2) sand tends to backfill the Sand Trap D area where beach, habitat and invertebrate prey currently occur. However, data pictured in Figure 3 pictures how the beach recovers after the historical dredging of 2,000,000 cubic yards. The additional dredge quantity of 500,000 cubic yards on top of the historical dredging may increase the damage to critical habitat, the time to recover PBFs in the critical habitat, and the likelihood of complete recovery of PBFs in the action area.

After reviewing the current status of the critical habitat of western snowy plover, the environmental baseline of critical habitat for the action area, the effects of the proposed increased dredge on critical habitat, and the cumulative effects, it is the Service's biological opinion that dredging increased quantity as proposed, is not likely to result in the destruction or adverse modification of critical habitat of the western snowy plover because:

1. The project would have a moderate effect on the various physical and biological features on Hollywood Beach, which are areas below heavily vegetated areas above the daily high

tides that include essential food sources and nesting beach habitat and native plant and invertebrate food resources.

2. The project would have a low effect on the conservation value and function of critical habitat, due to the likely recovery of the nesting habitat and shoreline habitat areas for feeding with no or very sparse vegetation that are between the annual low tide or low water flow and annual high tide or high water flow.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened wildlife species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm in the definition of "take" in the Act means an act which actually kills or injures wildlife. Such [an] act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering (50 CFR 17.3). Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not the purpose of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this incidental take statement.

AMOUNT OR EXTENT OF TAKE

We anticipate that some California least terns and western snowy plovers could be taken as a result of the proposed action. We expect the incidental take to be in the form of harm or kill.

We cannot quantify the precise number of California least terns and western snowy plovers that may be taken as a result of the action that the Corps has proposed because California least terns and western snowy plovers move over time; for example, animals may have entered or departed the action area since the time of pre-construction surveys. Other individuals may not be detected due to their cryptic nature, small size, and low mobility. In addition, finding a dead or injured California least tern or western snowy plover, particularly a chick once mobile, would be difficult or unlikely. The protective measures proposed by Corps are likely to prevent mortality or injury of most individuals. However, the activities are more likely to disturb and move the animals out of the action area where they cannot be detected by monitors.

Consequently, we are unable to reasonably anticipate the actual number of California least terns and western snowy plovers that would be taken by the proposed action; however, we must provide a level at which formal consultation would have to be reinitiated. The Environmental Baseline and Effects Analysis sections of this biological opinion indicate that adverse effects to California least terns and western snowy plovers would likely be low given the nature of the

proposed activities, and we, therefore, anticipate that take of California least terns and western snowy plovers would also be low. We also recognize that for every California least tern or western snowy plover found dead or injured, other individuals may be killed or injured that are not detected, so when we determine an appropriate take level we are anticipating that the actual take would be higher and we set the number below that level.

Therefore, if three California least tern of any life stage (egg, chick, or adult), or if three western snowy plovers of any life stage (egg, chick, or adult) are found dead or wounded, the Corps must contact our office immediately to reinitiate formal consultation. Project activities that are likely to cause additional take should cease as the exemption provided pursuant to section 7(o)(2) may lapse and any further take could be a violation of section 4(d) or 9.

REASONABLE AND PRUDENT MEASURES

The measure described below is non-discretionary, and must be undertaken by the Corps as appropriate, for the exemption in section 7(o)(2) to apply. The Corps has a continuing duty to regulate the activity covered by this incidental take statement. If the Corps (1) fails to assume and implement the term and condition of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. To monitor the impact of incidental take, the Corps must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement [50 CFR 402.14(i)(3)].

The Service believes the following reasonable and prudent measure is necessary and appropriate to minimize the impacts of the incidental take of California least tern and western snowy plover:

> The 13.47-acre dune restoration activities will be timely and benefit the California least tern and western snowy plover.

TERMS AND CONDITIONS

To be exempt from the prohibitions of section 9 of the Act, the Corps must comply with the following term and condition, which implements the reasonable and prudent measure described above and outline reporting and monitoring requirements. This term and condition is non-discretionary.

> The Corps will present a draft site selection and habitat restoration plan to the Service within 1 year of the project start date. Within 1 year of the Service’s acceptance and signature on the final plan, the Corps will complete the restoration of the selected area.

REPORTING REQUIREMENTS

Pursuant to 50 CFR 402.14(i)(3), the Corps must report the progress of the action and its impact on the species to the Service as specified in this incidental take statement.

The Corps must submit a final project report to the Service's Ventura Fish and Wildlife Office via electronic mail within 90 days following completion of the proposed project. The report should be sent to fw8venturasection7@fws.gov and must describe all activities that were conducted under this biological opinion, including activities and conservation measures that were described in the proposed action and required under the term and condition, and discuss any problems that were encountered in implementing conservation measures or term and condition and any other pertinent information. The report must also include the number of California least terns and western snowy plovers observed, and the number killed or injured during project activities, if any, and the dates and times of capture, mortality, or injury.

Additionally, the Corps must submit monitoring reports at the end of the California least tern and western snowy plover breeding seasons by October 30 of 2023 and 2024, and for 5 years post-dune restoration completion. The reports will contain weekly observed abundance estimates, mortality occurrences, nest location (latitude and longitude) and nest fate during the breeding season (March – August), and a map of exclusion fencing and predator fencing placed during nesting season for California least tern and western snowy plover. Annual monitoring reports of the dune restoration will include species of non-native plants removed each year and their approximate area pre-removal, a description of observed native plant mortality and actions taken to optimize native plant coverage for use by California least tern and western snowy plover.

DISPOSITION OF DEAD OR INJURED SPECIMENS

As part of this incidental take statement and pursuant to 50 CFR 402.14(i)(1)(v), upon locating a dead or injured California least tern or western snowy plover, initial notification within 3 working days of its finding must be made by telephone and in writing to the Ventura Fish and Wildlife Office (805-644-1766). The report must include the date, time, location of the carcass, a photograph, cause of death or injury, if known, and any other pertinent information.

The Corps must take care in handling injured animals to ensure effective treatment and care, and in handling dead specimens to preserve biological material in the best possible state. The Corps must transport injured animals to a qualified veterinarian. Should any treated California least tern and western snowy plover survive, the Corps must contact the Service regarding the final disposition of the animal(s).

The remains of California least terns or western snowy plovers must be placed with educational or research institutions holding the appropriate State and Federal permits, such as

the Western Foundation of Vertebrate Zoology (Contact: Linnea S. Hall,Ph.D., Executive Director, Western Foundation of Vertebrate Zoology, 439 Calle San Pablo Camarillo, CA 93012, (805) 388-9944) or Santa Barbara Natural History Museum (Contact: PaulCollins, Santa Barbara Natural History Museum, Vertebrate Zoology Department, 2559 Puesta Del Sol, Santa Barbara, California 93460, (805) 682-4711, extension 321).

REINITIATION NOTICE

This concludes formal consultation on the action(s) outlined in the request. As provided in 50 CFR 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, the exemption issued pursuant to section 7(o)(2) may have lapsed and any further take could be a violation of section 4(d) or 9. Consequently, we recommend that any operations causing such take cease pending reinitiation.

If you have any questions about this biological opinion, please contact Christina Boser of my staff at 805-677-3342, or by electronic mail at Christina_Boser@fws.gov.

Sincerely,

STEPHEN HENRY Digitally signed by STEPHEN HENRY
Date: 2022.12.15 11:49:15 -08'00'

Stephen P. Henry
Field Supervisor

LITERATURE CITED

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