

**Final  
Environmental Assessment  
for the  
Combat Aircraft Loading Area  
Naval Auxiliary Landing Field  
San Clemente Island, CA**

**June 2020**



**Prepared for:  
United States Department of the Navy**

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FINDING OF NO SIGNIFICANT IMPACT FOR THE COMBAT AIRCRAFT LOADING AREA  
AT NAVAL AUXILIARY LANDING FIELD SAN CLEMENTE ISLAND, CALIFORNIA

DEPARTMENT OF DEFENSE  
DEPARTMENT OF THE NAVY

FINDING OF NO SIGNIFICANT IMPACT FOR THE COMBAT AIRCRAFT LOADING  
AREA AT NAVAL AUXILIARY LANDING FIELD SAN CLEMENTE ISLAND,  
CALIFORNIA

Pursuant to the Council on Environmental Quality (CEQ) regulations (40 Code of Federal Regulations Parts 1500-1508) implementing the National Environmental Policy Act, Department of the Navy (Navy) Regulations (32 Code of Federal Regulations Part 775), and the Office of the Chief of Naval Operations Manual 5090.1, the Navy gives notice that an Environmental Assessment (EA) has been prepared and an Environmental Impact Statement is not required to implement the construction and operation of a Combat Aircraft Loading Area (CALA) at Naval Auxiliary Landing Field (NALF) San Clemente Island (SCI), Naval Base Coronado, California.

**Proposed Action:** The purpose of the Proposed Action is to provide compatible and dependable helicopter ordnance loading/off-loading infrastructure in support of Naval Air Force combat helicopter operations at NALF SCI. The Proposed Action consists of constructing two helipads, an ordnance staging area, and an improved access road located near the main NALF SCI airfield. The Proposed Action is needed to reduce delays and gaps in operational capabilities. In this regard, the Proposed Action furthers the Navy's execution of its Congressionally-mandated roles and responsibilities under 10 U.S. Code section 5062. Implementation of the Proposed Action would improve operational efficiencies by reducing transit time for helicopter and crew members, and improve safety by reducing foreign object debris hazards and by improving emergency response times.

**Public Participation:** The Navy published a Notice of Availability of the Draft EA in the San Clemente Times on Thursday, 9 January 2020, and in the San Diego Union Tribune from Friday, 10 January to Sunday, 12 January 2020. The Navy made the Draft EA available for public review at the San Diego Central Library and on the Navy Region Southwest public website. The public comment period was from 9 January to 25 January 2020. The Navy did not receive any public comments.

**Alternatives Analyzed:** The Navy analyzed the Proposed Action and the No Action Alternative in the EA: *Proposed Action*. Under the Proposed Action, the Navy would construct the CALA and

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supporting access road south of the Main Airfield. The CALA would consist of two, 125-foot by 125-foot square helipads, an ordnance staging area, and a connection road. A concrete access road would connect the two helipads to West Cove Road. The Navy would construct soil and drainage stabilization features around the helipads. Once constructed, helicopters would directly fly in/fly out of the helipads. Personnel would then load/unload, but not arm ordnance temporarily staged in the ordnance staging area.

*No Action Alternative.* The No Action Alternative represents the status quo in which, the Navy would not construct a CALA at NALF SCI.

The Navy considered but did not carry forward several alternatives including:

*Upgrade the Existing VC-3 CALA,* which considered repaving the current CALA at VC-3. This alternative would not meet compatibility, proximity, accessibility, capacity, and flexibility requirements. Therefore, the Navy determined that this alternative would not be suitable.

*Several CALA and Taxiway Alternatives,* in which the Navy considered several preliminary design iterations that included a CALA and adjacent taxiway connected to NALF Taxiway Alpha. Due to steep terrain and an abrupt change in elevation, these potential alternatives would require enormous amounts of fill and engineering structures. Therefore, the Navy determined that these alternatives would not be suitable.

*Additional Location Near Main NALF SCI Airfield,* in which Navy planners evaluated several potential locations adjacent to or nearby the existing main NALF SCI airfield. Due to overlap of Explosive Safety Quantity Distance arcs and impacts to airfield operations, the Navy determined that this alternative would not be suitable.

*Other Locations at NALF SCI,* in which Navy planners considered other potential locations within a few mile radius of the main NALF SCI airfield. However, because these potential locations would not provide sufficient accessibility, capacity, or constructability, the Navy determined that this alternative would not be suitable.

*Perform CALA Operations at Naval Air Station North Island,* in which the Navy evaluated the potential to conduct CALA loading and offloading operations at other regional military installations. The only potential military installation would

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have been Naval Air Station North Island (NASNI). However, because CALA operations occur at and around SCI, the estimated cost for flying to/from NASNI to SCI to load/off-load ordnance would be approximately 3.7 million dollars annually in flight hour costs for MH-60R aircraft alone, and result in additional air emissions. In addition, the additional time spent flying back and forth from NASNI would result in substantial lost training time, opportunity, and readiness. Therefore, the Navy determined that this alternative would not be suitable.

**Alternative to Be Implemented:** The Navy has selected the Proposed Action for implementation as it best meets the purpose and need of the project and would have no significant impacts.

**Environmental Effects:** The EA addressed the following resource areas in detail: water resources, geological resources, and biological resources. Because potential impacts were considered to be negligible or nonexistent, the EA did not evaluate the following resources in detail: cultural resources, air quality, land use, airspace, noise, infrastructure, transportation, public health and safety, hazardous materials and wastes, socioeconomics, and environmental justice.

**Water Resources:** Construction activities would result in a potential for an increase in storm water runoff and erosion; however, the Navy would implement best management practices to minimize the potential for impacts. Post-construction, there would be an increase in impervious surface of approximately 1.24 acres. The Navy would install permanent storm water management infrastructure to minimize the potential for storm water runoff impacts. The Navy determined that there would be no adverse effects on coastal resources or uses. Therefore, the Proposed Action would not have significant impacts to water resources.

**Geological Resources:** Construction activities would result in a temporary disturbance of soils during grading, fill, and soil stabilization activities. Post-construction, erosion stabilization and storm water management measures would minimize the potential for erosion and offsite sedimentation. Therefore, the Proposed Action would not have significant impacts to geological resources.

**Biological Resources:** The Proposed Action would permanently impact 3.26 acres of vegetation, of which 2.27 acres are either disturbed or developed. The 0.98 acre of permanently impacted plant communities consist of maritime desert succulent scrub - boxthorn dominated and non-native grassland, both of which are relatively common on SCI. Proposed construction activities would

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temporarily impact an additional 3.93 acres within the limit of construction, of which 3.37 acres are disturbed or developed and the remaining 0.56 acre is non-native grassland. Construction activities would temporarily displace wildlife, including individual special status species.

The Endangered Species Act (ESA) is complied with in the implementation of the Proposed Action, which would impact up to 1.54 acres of occupied San Clemente Bell's sparrow nesting habitat, resulting in harm to two Bell's sparrows from habitat loss, two Bell's sparrows from operation-related habitat degradation, and one individual per 5-year period from operations-related disturbance. There would also be direct impacts to vegetation from rotor wash and indirect impacts to wildlife from helicopter noise and rotor wash during operations.

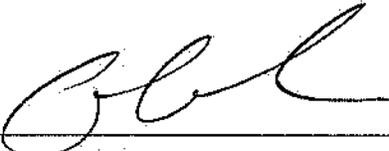
In February 2020, the Navy initiated ESA Section 7 formal consultation with the U.S. Fish and Wildlife Service (USFWS) for potential impacts to the San Clemente Bell's sparrow by submitting a Biological Assessment. On 8 June 2020, in their Biological Opinion, the USFWS concurred with the Navy's assessment that construction and operation of the CALA is not likely to jeopardize the continued existence of the San Clemente Bell's sparrow. With the continuation of the Navy's overall stewardship and conservation program for the San Clemente Bell's sparrow, and implementation of the identified impact avoidance and minimization measures, implementation of the Proposed Action would not result in an appreciable reduction in the numbers, reproduction, or distribution of the Bell's sparrow. Therefore, the Proposed Action would not have significant impacts to biological resources.

*Cumulative Impacts:* Potential cumulative effects of the Proposed Action in combination with other past, present and foreseeable actions were analyzed and found to be not significant. Therefore, implementation of the Proposed Action would result in no significant cumulative impacts.

**Finding:** Based on the environmental impacts analysis presented in the EA, the Navy finds that implementation of the Proposed Action will not significantly affect the quality of the human or natural environment. Therefore, preparation of an EIS is not necessary. Interested parties may obtain a copy by contacting Attn: NAVFACSW Environmental (Code EV21.LD), 937 N. Harbor Drive, San Diego, CA, 92132, or [lorie.m.duplantier@navy.mil](mailto:lorie.m.duplantier@navy.mil).

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AT NAVAL AUXILIARY LANDING FIELD SAN CLEMENTE ISLAND, CALIFORNIA

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B. BOLIVAR  
Rear Admiral, U.S. Navy  
Commander, Navy Region Southwest

## Abstract

**Designation:** Environmental Assessment

**Title of Proposed Action:** Construction of a Combat Aircraft Loading Area

**Project Location:** Naval Auxiliary Landing Field San Clemente Island, California

**Lead Agency:** Department of the Navy

**Affected Region:** Los Angeles County, California

**Action Proponent:** Commander Navy Installations Command

**Point of Contact:** Naval Facilities Engineering Command Southwest  
Environmental Core Team, Code EV21.LD  
1220 Pacific Highway  
San Diego, CA 92132

**Date:** June 2020

The Department of the Navy has prepared this Environmental Assessment in accordance with the National Environmental Policy Act, as implemented by Council on Environmental Quality regulations and Navy regulations for implementing the National Environmental Policy Act. The Proposed Action would construct a Combat Aircraft Loading Area and access road at Naval Auxiliary Landing Field San Clemente Island, California. This Environmental Assessment evaluates the potential environmental impacts associated with the Proposed Action and the No Action Alternative to the following resource areas: water resources, geological resources, and terrestrial biological resources.



## EXECUTIVE SUMMARY

### Proposed Action

The United States (U.S.) Department of the Navy (Navy) proposes to construct a Combat Aircraft Loading Area (CALA) at Naval Auxiliary Landing Field (NALF) San Clemente Island (SCI) to support helicopter ordnance loading and off-loading operations. The proposed CALA would consist of two helipads, an ordnance staging area, and an improved access road located near the main NALF SCI airfield.

Implementation of the Proposed Action would improve operational efficiencies by reducing transit time for helicopter and crew members, and improve safety by reducing foreign object debris hazards and by improving emergency response times. Construction is currently estimated to begin in late 2020 and be completed by mid-2021. The proposed CALA would only be used by MH-60 or smaller helicopters (i.e., AH-1 and UH-1 helicopters). The potential future use of the CALA by other aircraft and/or the potential future expansion of the proposed CALA would only occur subsequent to additional National Environmental Policy Act (NEPA) documentation.

### Purpose of and Need for the Proposed Action

The purpose of the Proposed Action is to provide compatible and dependable helicopter ordnance loading/off-loading infrastructure in support of combat helicopter operations at NALF SCI. The Proposed Action is needed to reduce delays and gaps in operational capabilities. In this regard, the Proposed Action furthers the Navy's execution of its congressionally mandated roles and responsibilities under 10 U.S. Code section 5062.

### Alternatives Considered

This Environmental Assessment (EA) carries forward for detailed analysis one action alternative that meets the purpose and need for the Proposed Action and the alternative screening criteria. Under the Proposed Action, the Navy would construct a CALA at NALF SCI to support helicopter ordnance loading and off-loading. This EA also carries forward the No Action Alternative for detailed analysis. The No Action Alternative represents the status quo in which the Navy would not build a new CALA at NALF SCI.

### Summary of Environmental Resources Evaluated in the EA

Council on Environmental Quality regulations, NEPA, and Navy instructions for implementing NEPA, specify that an EA should address those resource areas potentially subject to impacts. In addition, the level of analysis should be commensurate with the anticipated level of environmental impact.

Resources carried forward for detailed analysis in this EA include water resources, geological resources, and terrestrial biological resources. This EA does not carry forward the following resource areas for detailed analysis because potential impacts would be non-existent or negligible: air quality, cultural resources, marine biological resources, land use, visual resources, airspace, noise, transportation, public health and safety, hazardous materials and wastes, socioeconomics and environmental justice, and infrastructure and utilities.

### Summary of Potential Environmental Consequences of the Action Alternatives and Major Mitigating Actions

Table ES-1 summarizes potential impacts to resources associated with the alternatives analyzed and a summary of impact avoidance and minimization measures.

**Table ES-1 Summary of Potential Impacts**

<b>Resource Area</b>	<b>No Action Alternative</b>	<b>Proposed Action</b>
<b>Water Resources</b>	No Impact. There would be no change in existing conditions; therefore, no impacts would occur.	No Significant Impact.
		<ul style="list-style-type: none"> <li>• Construction activities would result in a potential for increases in stormwater runoff and erosion; best management practices would be implemented to minimize the potential for impacts.</li> <li>• Post-construction increase in impervious surface by approximately 1.24 acres; permanent stormwater management infrastructure would minimize potential for stormwater runoff impacts.</li> </ul>
<b>Geological Resources</b>	No Impact. There would be no change in existing conditions; therefore, no impacts would occur.	No Significant Impact.
		<ul style="list-style-type: none"> <li>• Temporary disturbance of soils during grading and fill.</li> <li>• Import of fill from Mt. Morgan.</li> </ul>
<b>Terrestrial Biological Resources</b>	No Impact. There would be no change in existing conditions; therefore, no impacts would occur.	No Significant Impact.
		<ul style="list-style-type: none"> <li>• Up to 3.26 acres (1.31 hectares [ha]) would be permanently impacted, of which 2.27 acres (0.91 ha) are either disturbed or developed. The remaining 0.98 acre (0.39 ha) of plant communities that would permanently be impacted are relatively common on SCI. An additional 3.93 acres (1.58 ha) would be temporarily impacted by the construction staging/batch plant areas, of which 3.37 acres (1.36 ha) are disturbed or developed and the remaining 0.56 acre (0.22 ha) is non-native grassland.</li> <li>• Wildlife, including individual special status species, would be temporarily displaced during construction activities and permanently displaced in areas where habitat would be removed.</li> <li>• Impacts to 1.54 acres (0.62 ha) of occupied San Clemente Bell’s sparrow nesting habitat, resulting in harm to two Bell’s sparrows from habitat loss, two Bell’s sparrows from operation-related habitat degradation, and one individual per 5-year period from operations-related disturbance.</li> <li>• Indirect impacts wildlife from helicopter noise and rotor wash during operations. Direct impacts to vegetation from rotor wash.</li> </ul>

**Final  
Environmental Assessment  
Construction of a Combat Aircraft Loading Area  
Naval Auxiliary Landing Field San Clemente Island, California**

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## Abbreviations and Acronyms

Acronym	Definition	Acronym	Definition
BO	Biological Opinion	kph	kilometers per hour
CALA	Combat Aircraft Loading Area	MBTA	Migratory Bird Treaty Act
CEQ	Council on Environmental Quality	MDSS	Maritime Desert Succulent Scrub
CFWO	Carlsbad Fish and Wildlife Office	NALF	Naval Auxiliary Landing Field
CO	carbon monoxide	NASNI	Naval Air Station North Island
CO <sub>2</sub>	carbon dioxide	Navy	U.S. Department of the Navy
cy	cubic yard(s)	NBC	Naval Base Coronado
CZMA	Coastal Zone Management Act	NEPA	National Environmental Policy Act
DoD	United States Department of Defense	NO <sub>2</sub>	nitrogen dioxide
EA	Environmental Assessment	NPDES	National Pollutant Discharge Elimination System
EIS	Environmental Impact Statement	OEIS	Overseas EIS
EISA	Energy Independence and Security Act	PM <sub>2.5</sub>	particulate matter less than or equal to 2.5 microns in diameter
EO	Executive Order	PM <sub>10</sub>	particulate matter less than or equal to 10 microns in diameter
ESA	Endangered Species Act	SCAB	South Coast Air Basin
ESQD	explosive safety quantity distance	SCI	San Clemente Island
ha	hectare(s)	SO <sub>2</sub>	sulfur dioxide
HARP	Helicopter Advanced Readiness Program	SOCAL	Southern California
HSC	Helicopter Sea Combat Squadron	U.S.	United States
HSM	Helicopter Maritime Strike Squadron	U.S.C.	United States Code
INRMP	Integrated Natural Resource Management Plan	USEPA	U.S. Environmental Protection Agency
		USFWS	U.S. Fish and Wildlife Service
		USGCRP	U.S. Global Change Research Program

# 1 Purpose of and Need for the Proposed Action

## 1.1 Introduction

The United States (U.S.) Department of the Navy (Navy) proposes to construct a Combat Aircraft Loading Area (CALA) at Naval Auxiliary Landing Field (NALF) San Clemente Island (SCI) to support helicopter ordnance loading and off-loading. Currently, helicopter ordnance loading/off-loading at NALF SCI occurs at VC-3, an unfinished surface located approximately 6.5 miles (10.5 kilometers) from the main NALF SCI airfield. Ordnance loading/offloading is subject to frequent and unnecessary delays due to inclement weather at VC-3. Located adjacent to the main NALF SCI airfield, the proposed CALA would consist of two helipads, an ordnance staging area, and an improved access road. Construction is currently estimated to begin in late 2020 and be completed by mid-2021.

The U.S. Navy has prepared this Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA), as implemented by Council on Environmental Quality (CEQ) regulations and Navy regulations for implementing NEPA.

## 1.2 Location

NALF SCI is owned by the federal government, operated by the Navy, and is managed by Naval Base Coronado. It is the southernmost island of an archipelago of eight major Channel Islands in the Southern California (SOCAL) Bight. SCI is located 68 nautical miles (126 kilometers [km]) west of San Diego and 55 nautical miles (102 km) south of Long Beach, CA, within the boundaries of the SOCAL Range Complex. SCI is oriented northwest to southeast (Figure 1-1). It is approximately 21 miles (34 km) long, 4 miles (6 km) at its widest point, and 56 square miles (145 square km) or 35,840 acres (14,504 hectares [ha]) in total (Navy, 2013a; 2013b).

The primary mission of NALF SCI is to provide military departments with air, land, and sea space to conduct realistic training and testing events in support of operational readiness requirements in a maritime environment (Navy, 2013a).

Based on an initial constraint analysis, the Navy defined a study area in which to evaluate the placement of a CALA. The study area depicted on Figure 1-1 displays the region in which the Navy considered placing the CALA, as informed by the screening factors (see Section 2.2). The approximately 18-acre study area is located adjacent to the Main Airfield at NALF SCI (Figure 1-1). The study area consists of developed/disturbed areas, roads, a vehicle marshalling area (used to stage tactical vehicles), and native and non-native vegetation. The central portion of the study area has been used for other military activities, as indicated by the presence of materials and equipment. The study area is adjacent to, but avoids overlapping a nearby habitat restoration area.

The Navy has operated **San Clemente Island** as a tactical training range and testing area for over 70 years. Tactical training ranges and operational areas provide space and facilities where U.S. military forces can conduct exercises in a safe, controlled environment (Commander, Navy Installations Command 2019).

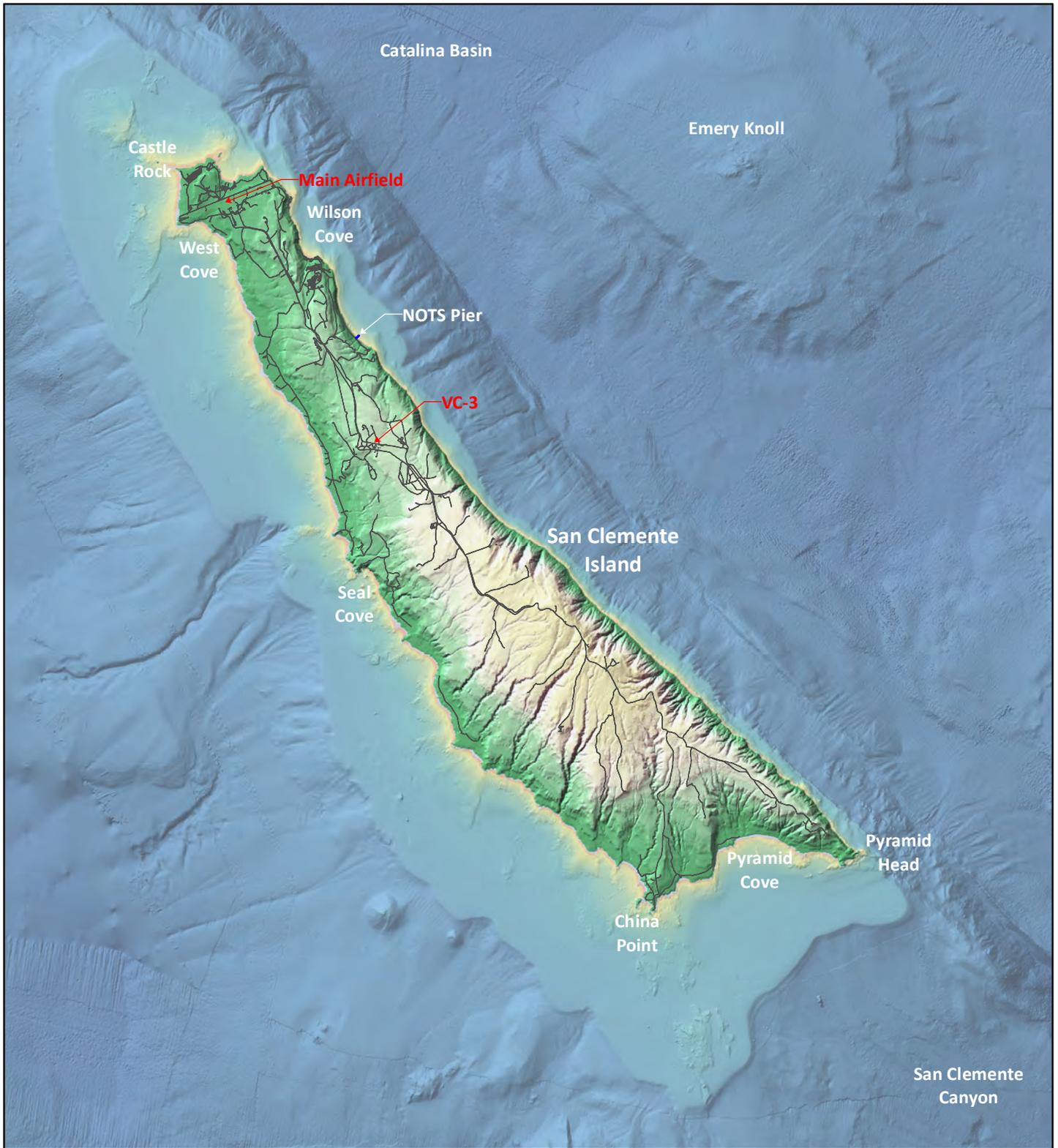
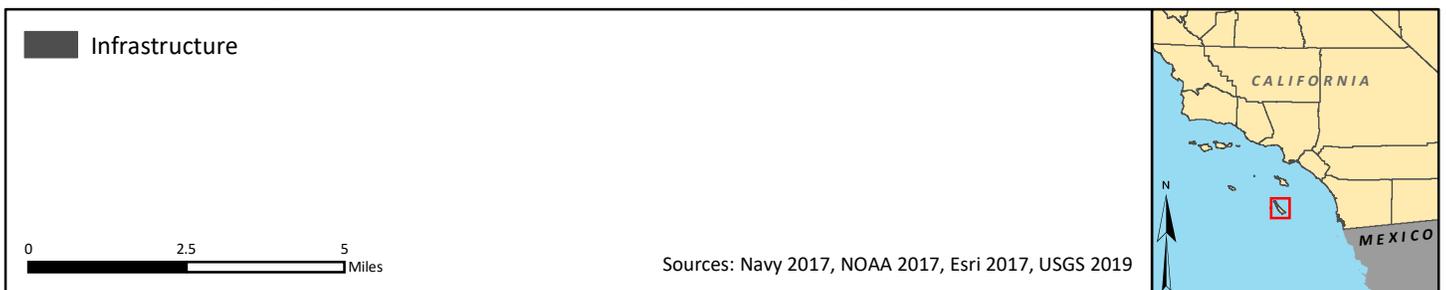


Figure 1-1. Location of Naval Auxiliary Landing Field San Clemente Island



Sources: Navy 2017, NOAA 2017, Esri 2017, USGS 2019

### 1.3 Purpose of and Need for the Proposed Action

The purpose of the Proposed Action is to provide compatible and dependable helicopter ordnance loading/off-loading infrastructure in support of combat helicopter operations at NALF SCI. A CALA is a designated location where personnel load/off-load helicopter ordnance.

Currently, loading and off-loading ordnance for aircrew combat weapons training is completed at a CALA located 6.5 miles (10.5 km) south of the main NALF SCI airfield, referred to as VC-3 (refer to Figure 1-1). VC-3 is established on a remnant of a decades-old runway and is deteriorating to an inoperative state. The location of the CALA at VC-3 is problematic for the following reasons:

- *Lack of Proximity to Main NALF SCI Airfield.* Due to VC-3's distance from the main NALF SCI airfield, each crew loses at least one hour training time because the helicopters and the associated paperwork must be parked at the airfield. The pilot starts up the aircraft and ferries over the crews to VC-3, located about 15 minutes away. When a new crew is ready for training, the process starts again. Furthermore, emergency services are located at the main NALF SCI airfield.
- *Limited Surface Area.* Because the VC-3 CALA is small, only one aircraft can load at a time, causing additional delays in training of roughly 1 hour per person. For example, for a representative 12-crew Helicopter Advanced Readiness Program (HARP) training event, these delays can add up to 8-12 hours of lost training time per crew/per day or 144 hours/year.
- *Exposure to Impactful Weather.* VC-3 is located on the ridge crest of the island's central plateau approximately 6.5 miles (10.5 km) south of the northern end of the island. The relatively higher elevation of VC-3 means that when low clouds blanket the Island, as they tend to do with no notice, they make it impossible for aircraft to land or depart. These "fogged in" events often prevent loading operations from taking place during their scheduled times, while the lower elevation of the main NALF SCI airfield allows it to remain open. Because the VC-3 CALA is the only approved site on SCI for ordnance loading and offloading, if VC-3 is unavailable, crews must load or offload ordnance at NAS North Island, located over 70 nautical miles away (a 45-minute flight).
- *Poor Condition of VC-3.* VC-3 is a remnant of an old runway. As shown in Photo 1-1, the pavement continues to deteriorate, weeds are growing through multiple cracks, and large dirt holes are visible where the pavement has totally eroded. This unprepared surface is a major foreign object debris safety hazard.



Photo 1-1: Photo of VC-3

The Proposed Action is needed to reduce training delays and gaps in training capabilities. In this regard, the Proposed Action furthers the Navy's execution of its congressionally mandated roles and responsibilities under 10 U.S. Code (U.S.C.) section 5062.

Two major Naval Air Force components, the Helicopter Maritime Strike Squadron (HSM) and Helicopter Sea Combat Squadron (HSC) complete training to prepare squadrons for tactical readiness through their Weapons School Pacific. The squadrons fly the MH-60 "Seahawk" helicopter and perform their HARP training at NALF SCI.

Typical HARP exercises for HSM consists of a detachment bringing five aircraft per event and 12 combat crews. Two or three combat crews are assigned to each aircraft, repeating exercises until all crews have completed the training. Ordnance load teams for HSM typically load 12 Hellfire missiles and 12 torpedoes, and each loading/off-loading event takes approximately one hour. The HSC teams loads/off-loads a more extensive ordnance list and requires approximately 3 hours for each event.

The VC-3 CALA is the primary, and only, site to load and off-load ordnance for such training events. HSM and HSC use VC-3 four to six times and three to five times a year, respectively, for HARP. Other aircraft may also use the VC-3 CALA. Thus, it is essential that aircraft have the necessary infrastructure to complete their training now and in the future.

**10 U.S.C. section 5062:** "The Navy shall be organized, trained, and equipped primarily for prompt and sustained combat incident to operations at sea. It is responsible for the preparation of naval forces necessary for the effective prosecution of war except as otherwise assigned and, in accordance with integrated joint mobilization plans, for the expansion of the peacetime components of the Navy to meet the needs of war."

#### 1.4 Scope of Environmental Analysis

This EA includes an analysis of potential environmental impacts associated with the Proposed Action and the No Action Alternative. The environmental resource areas analyzed in this EA include: water resources, geological resources, and biological resources. The study area for each resource analyzed may differ due to how the Proposed Action interacts with or impacts the resource. For instance, the study area for geological resources may only include the construction footprint whereas the biological resources study area would expand out to include areas that may be impacted by construction-related activities such as noise, vibration and fugitive dust.

#### 1.5 Key Documents

Key documents are sources of information incorporated into this EA. These documents are considered to be key because they may describe similar actions, analyses, or impacts that may apply to this Proposed Action. CEQ guidance encourages incorporating documents by reference. Documents incorporated by reference in part or in whole include:

- **EA for the Relocation of Aerial Target Launch Site, NALF SCI, CA.** In 2018, the Navy analyzed the potential effect of relocating the Aerial Target Launch site from the Red Label Area at NALF SCI (Navy, 2018a). The existing aerial target launch site on NALF SCI is used for conducting Navy missile exercise training within the SOCAL Range Complex. The purpose of the proposed action

is to unencumber the NALF SCI air operations by the aerial target launches from its current location. The Navy signed the Finding of No Significant Impact for the EA on July 20, 2018.

- **EA Addressing Maintenance, Repair, and Upgrades to Infrastructure at NALF SCI, CA.** In June 2017, the Navy completed an EA to conduct maintenance, repair, and upgrades at NALF SCI for existing infrastructure, including fences and gates, roads and crossovers, drainage structures, utility infrastructure (i.e., electrical and water systems), and existing and temporary facilities (buildings, airfield, landfill, and borrow pit) (Navy, 2017a).
- **Hawaii-Southern California Training and Testing Environmental Impact Statement/Overseas Environmental Impact Statement (EIS/OEIS).** In 2013, the Navy completed the Hawaii-Southern California Training and Testing EIS/OEIS (Navy, 2013) addressing the potential environmental impacts associated with the current, emerging, and future training and testing activities in the Hawaii-Southern California Study Area. The Navy recently completed a follow-on EIS/OEIS (Navy, 2018).
- **Integrated Cultural Resources Management Plan for San Clemente Island Range Complex, CA.** Prepared in 2012, this plan documents the procedures and processes through which Naval Base Coronado fulfills its commitment to compliance with applicable laws, regulations, and policies, in the spirit of faithful stewardship of cultural resources on SCI (Navy, 2012).
- **Integrated Natural Resources Management Plan (INRMP), Naval Auxiliary Landing Field San Clemente Island, CA.** In 2013, the Navy completed an INRMP (Navy, 2013b) and associated EA (Navy, 2013a) for NALF SCI. The INRMP provides NALF SCI with an implementable framework for managing natural resources on the land and water it owns or controls. The EA addressed the potential environmental impacts associated with the implementation of natural resource management strategies outlined in the 2013 INRMP for NALF SCI.
- **Southern California Range Complex Environmental Impact Statement/Overseas Environmental Impact Statement.** In 2008, the Navy completed the SOCAL Range Complex EIS/OEIS (Navy, 2008). The SOCAL Range Complex EIS/OEIS addressed the potential environmental impacts associated with ongoing and proposed naval activities within the Navy's existing SOCAL Range Complex. The SOCAL Range Complex encompasses surface and subsurface ocean operating areas, over-ocean military airspace, and NALF SCI.

## 1.6 Relevant Legal Requirements and Policies

The Navy has prepared this EA in compliance with legal requirements and policies that are pertinent to the implementation of the Proposed Action, including the following:

- NEPA (42 U.S.C. sections 4321-4370h), which requires an environmental analysis for major federal actions that have the potential to significantly impact the quality of the human environment
- CEQ Regulations for Implementing the Procedural Provisions of NEPA (40 Code of Federal Regulations [CFR] parts 1500-1508)
- Navy regulations for implementing NEPA (32 CFR part 775), which provides Navy policy for implementing CEQ regulations and NEPA
- Clean Air Act (42 U.S.C. section 7401 et seq.)

- Clean Water Act (33 U.S.C. section 1251 et seq.)
- Coastal Zone Management Act (CZMA) (16 U.S.C. section 1451 et seq.)
- National Historic Preservation Act (NHPA) (54 U.S.C. section 306108 et seq.)
- Endangered Species Act (ESA) (16 U.S.C. section 1531 et seq.)
- Migratory Bird Treaty Act (MBTA) (16 U.S.C. section 703-712)
- Bald and Golden Eagle Protection Act (16 U.S.C. section 668-668d)
- Executive Order (EO) 11988, Floodplain Management
- EO 12088, Federal Compliance with Pollution Control Standards
- EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations
- EO 13045, Protection of Children from Environmental Health Risks and Safety Risks
- EO 13175, Consultation and Coordination with Indian Tribal Governments
- Unified Facilities Criteria (UFC) 3-210-10, *Low Impact Development*
- Energy Independence and Security Act (EISA) of 2007

A description of the Proposed Action's consistency with legal requirements and policies, as well as the names of regulatory agencies responsible for their implementation, is presented in Chapter 5.

### **1.7 Public and Agency Participation and Intergovernmental Coordination**

Regulations from the CEQ (40 CFR part 1506.6) direct agencies to involve the public in preparing and implementing their NEPA procedures. The Navy published a Notice of Availability for the Draft EA in the San Diego Union Tribune and the San Clemente Times on 10, 11, and 12 January 2020 and 9 January 2020, respectively. The Notice of Availability described the Proposed Action and Alternatives, solicited public comments on the Draft EA, provided dates of the 15-day public comment period, and announce that a copy of the EA was available for review at local libraries and via the Navy Region Southwest website (<http://www.cnic.navy.mil/regions/cnrsw.html>, now: <https://www.cnic.navy.mil/navysouthwestprojects>). The Navy did not receive any public comments.

The Navy completed consultation with the U.S. Fish and Wildlife Service in June 2020 (see Appendix C for the U.S. Fish and Wildlife Service's Biological Opinion).

## 2 Proposed Action and Alternatives

### 2.1 Proposed Action

The Navy proposes to construct a Combat Aircraft Loading Area (CALA) for helicopters at Naval Aircraft Landing Field (NALF) San Clemente Island (SCI), California. The Proposed Action is an urgent requirement to address a critical capability gap to provide safe and efficient training at NALF SCI. Implementation of the Proposed Action would improve operational efficiencies by reducing transit time, and improve safety by reducing foreign object debris hazards, and by improving emergency response times.

The Proposed Action would construct a new CALA. The CALA would consist of two helipads, an ordnance staging area, and an improved access road covering a total of approximately 1.24 acres (0.50 hectares [ha]). In addition, a permanent vegetation maintenance area would be established between the helipads covering 1.48 acres (0.60 ha). Helicopters would directly fly in/fly out from the helipads as there would be no taxiway connecting the helipads to the Main Airfield. Construction is currently estimated to begin in late 2020 and be completed by mid-2021.

This Proposed Action considers a change in helicopter training operation locations at NALF SCI. Current helicopter ordnance loading/off-loading operations are addressed in the Navy's Southern California (SOCAL) EIS/OEIS (Navy, 2008). Helicopters currently involved in ordnance loading/off-loading operations at NALF include the Navy's MH-60S and MH-60R and the United States (U.S.) Marine Corps' AH-1 Cobra and UH-1 Iroquois helicopters. The helicopters would be flown to the proposed helipads for ordnance loading and offloading. There would be no proposed increase or decrease to the current number of ordnance loading/off-loading operations at NALF. The proposed CALA would only be used by MH-60 or smaller helicopters (i.e., AH-1 Cobra and UH-1 Iroquois helicopters). The potential future use of the CALA by other aircraft and/or the potential future expansion of the proposed CALA would only occur subsequent to additional NEPA documentation.

### 2.2 Screening Factors

NEPA's implementing regulations provide guidance on the consideration of alternatives to a proposed action and require rigorous exploration and objective evaluation of reasonable alternatives. Only those alternatives determined to be reasonable and meet the purpose and need require detailed analysis. Potential alternatives that met the purpose and need were evaluated against these screening factors:

1. *Compatibility*. A potential alternative must not be in a location that would encumber (overlap) operations at the Main Airfield with explosives safety quantity distance (ESQD) arcs, nor be encumbered by existing ESQD arcs from other activities.
2. *Proximity*. A potential alternative must minimize delays to training associated with aircraft travel to and from the main NALF SCI airfield to the location.
3. *Safety*. A potential alternative must meet foreign object debris safety standards, address explosive safety, and be located near emergency services.
4. *Accessibility*. A potential alternative must be in a location where weather conditions would not substantially disrupt training activities.

5. *Capacity*. A potential alternative must provide sufficient surface area to allow at least two aircraft to park at the same time, but not load ordnance at the same time.
6. *Flexibility*. A potential alternative must accommodate rotary wing aircraft.
7. *Constructability*. A potential alternative must be located in a flat or generally flat area that would not require extensive grading and/or fill to provide a level surface.

## 2.3 Alternatives Carried Forward for Analysis

Based on the reasonable alternative screening factors and meeting the purpose and need for the Proposed Action, the Navy has identified one action alternative that is analyzed in this Environmental Assessment (EA).

### 2.3.1 No Action Alternative

Under the No Action Alternative, the Proposed Action would not occur. Helicopter crews would continue to suffer delays in training time due to travel time between the main NALF SCI airfield and VC-3. Weather would continue to delay training. The VC-3 CALA would continue to deteriorate causing the potential for an unsafe ordnance handling environment due to the potential for foreign object debris damage. The No Action Alternative would not meet the purpose and need for the Proposed Action; however, as required by NEPA, the No Action Alternative is carried forward for analysis in this EA and provides a baseline for measuring the environmental consequences of the action alternatives.

### 2.3.2 Proposed Action: CALA (Option 3)

#### 2.3.2.1 Construction and CALA Elements

Under the Proposed Action, the CALA and supporting access road would be constructed south of the Main Airfield (Figure 2-1). As shown on Figure 2-2 the CALA would consist of two, 125-foot by 125-foot square helipads, ordnance staging area, and an access road. These features would be constructed of prepared subgrade material, 12 inches (30 centimeters [cm]) of cement treated base, and 12 inches (30 cm) of Portland cement concrete. A concrete access road would connect the two helipads to West Cove Road. The ordnance staging area would be located between the two helipads and improvements to West Cove Road. Due to steep topography, soil stabilization features would be constructed around the north and west sides of the northern helipad.

The Navy would implement the Proposed Action within the study area depicted on Figure 2-2. The Proposed Action would not encroach upon the existing habitat restoration area located to the southwest of the study area. The Proposed Action would overlap the existing Marshalling Area. As such, future marshalling activities would be relocated to a previously analyzed and suitable location (e.g., an established and approved low-erosion Assault Vehicle Maneuver Area). Relocated marshalling activities not already addressed under the SOCAL Range Complex EIS/OEIS would be analyzed under a separate NEPA document (e.g., the in-progress SCI Terrestrial Testing and Training EA).

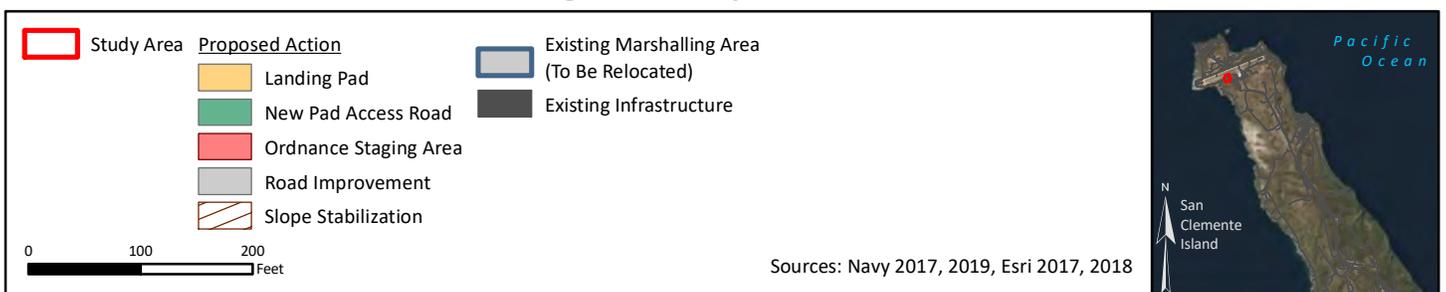


Figure 2-1. Study Area Location at NALF SCI





Figure 2-2. Proposed Action



The moderately uneven terrain in the study area, and in particular within the area identified for the northern helipad, would require fill material to level the ground prior to improvements. The Navy currently estimates earthwork would include a total of 18,000 cubic yards (cy), comprising 8,000 cy of onsite excavation and 10,000 cy of fill. The fill material would come from a stockpile of native soil on the island known as Mt. Morgan, located southeast of the Main Airfield (Figure 2-1). Mt. Morgan is comprised of the excess soil from project P-704F, which the Navy completed in 2016.

The CALA would include aircraft tie-downs, a grounding grid with contact points, aircraft and personnel signs, electrical power supply, airfield lighting, fencing, two emergency phones and painted deck markings. No apron or street lighting, water, or sewer is currently proposed. Electricity and communications would be provided from an existing power pole to the CALA site underground. The utilities would be placed within existing road shoulders. No utility poles would be installed.

To minimize the potential for foreign object debris damage and dust during landings/takeoffs, a 50-foot (15-meter) wide vegetation maintenance area would be established around all of the permanent CALA features. The area would be treated with a soil stabilizing polymer and would be regularly maintained to minimize vegetation within the area. The 50-foot (15-meter) wide vegetation maintenance area would also preclude the encroachment of sensitive species (e.g., nesting birds) adjacent to the CALA.

### 2.3.2.2 Temporary Construction Elements

Figure 2-3 depicts the location of the temporary supporting elements associated with the Proposed Action. These areas include a temporary bulk material staging area, located near the drive on/off loading wharf at Wilson Cove, a contractor equipment staging area/concrete batch plant located just south of the Airfield Terminal, and a second contractor equipment staging area and rock crusher would be located in a gravel area to the south of the airfield and east of the proposed CALA, within the study area. The height of the batch plant/staging area elements would comply with Main Airfield height restrictions. All of these supporting elements would be located on previously disturbed areas with no sensitive biological or cultural resources.

Construction materials would be barged from the Port of San Diego and the Port of Long Beach. Barged materials would then be delivered via truck from Wilson Cove. Any additional fill material needed beyond what is available at Mt. Morgan would be shipped from the Port of San Diego and the Port of Long Beach then be delivered via truck from Wilson Cove (Figure 2-3). Figure 2-3 also depicts the haul routes for soil from Mt. Morgan and materials from Wilson Cove. All earthmoving and vegetation removal activities would comply with the impact avoidance and minimization measures presented in Section 3.4.



**Figure 2-3. Location of Proposed Action and Supporting Temporary Elements**



### 2.3.2.3 Operations

Because there would be no taxiway connecting the helipads to the Main Airfield, helicopters would directly fly in/fly out of the helipads. Upon landing, personnel would load, but not arm, ordnance from the ordnance staging area. Once loaded with ordnance, in accordance with Naval Base Coronado (NBC) Instruction 8020.2M, Enclosure 2, the helicopters would fly (“hover taxi”) to the designated NALF SCI Red Label Area where the ordnance would be armed. The Red Label Area specifies aircraft heading restrictions to indicate clear areas. The helicopters would then takeoff to conduct their operations. Helicopters would reverse the process when returning with any unfired ordnance. In addition, operations would be coordinated with area users to reduce the potential for operational conflicts.

Once construction of the new CALA is complete, the existing VC-3 CALA would continue to support other on-going training as authorized under the SOCAL Range Complex EIS/OEIS (Navy, 2008) or the SCI Terrestrial Training and Testing EA (in progress). Most likely, it would be used as an unprepared helicopter landing zone with no ordnance operations, be demolished, or left in place. Any change to the existing VC-3 CALA would be subject to separate NEPA compliance documentation, as needed.

While the Proposed Action meets the minimum requirements for the Navy, the Navy may in the future consider constructing a taxiway from the proposed CALA to the Main Airfield. If the Navy proposes construction of a taxiway adjacent to the CALA in the future, the Navy would prepare separate NEPA compliance documentation at that time.

## 2.4 Alternatives Considered but Not Carried Forward for Detailed Analysis

The following alternatives were considered, but not carried forward for detailed analysis in this EA as they did not meet the purpose and need for the project and/or satisfy the reasonable alternative screening factors presented in Section 2.2.

### 2.4.1 Upgrade Existing VC-3 CALA

Under this alternative, the Navy would repave the current CALA at VC-3. This alternative was considered but ultimately not carried forward for detailed analysis in the EA because it does not meet screening factors 1, 2, and 4 – 6. Therefore, the potential upgrade of the existing VC-3 CALA is not being carried forward for detailed analysis in this EA.

### 2.4.2 CALA and Taxiway Alternatives

Under these similar alternatives, the Navy considered several preliminary design iterations that included a CALA and adjacent taxiway connected to NALF Taxiway Alpha. The alternatives would be located within a limit of effort (the EA study area) covering approximately 18 acres (7.3 ha). Due to steep terrain and an abrupt change in elevation in this area, these potential alternatives would require enormous amounts of fill and engineering structures to construct the taxiway (see Photo 2-1). These CALA plus taxiway alternatives were considered but ultimately not carried forward for detailed analysis in the EA at this time, because they do not meet screening factor 7, *Constructability*. Therefore, the potential construction of CALA with an associated taxiway is not being carried forward for detailed analysis in this EA.



Photo 2-1: Main Airfield Taxiway Slope

### **2.4.3 Additional Location Near Main NALF SCI Airfield**

Navy planners evaluated several potential locations adjacent to or nearby the existing main NALF SCI airfield. The airfield is built on a low plateau and mostly surrounded by steep topography. Furthermore, existing ESQD arcs encumber large areas of the airfield and adjacent areas. While Navy planners could identify small areas that could serve as a CALA and meet the proximity, safety, and accessibility screening factors, the resulting limiting size due to compatibility and topography considerations would result in a CALA being too small to provide sufficient capacity and/or flexibility. Furthermore, the runway/taxiway at NALF SCI cannot be used for CALA operations because doing so results in a temporary shutdown of the entire airfield, resulting in unacceptable impacts to other flight operations. Therefore, the potential for locating a new CALA in another location near the main NALF SCI airfield is not being carried forward for detailed analysis in this EA.

### **2.4.4 Other Locations at NALF SCI**

Navy planners considered other potential CALA locations within a few miles of the main NALF SCI airfield (to meet the proximity factor). However, these potential locations would not meet the accessibility, capacity, or constructability screening factors. Therefore, the potential for locating a new CALA in another location on NALF SCI is not being carried forward for detailed analysis in this EA.

### **2.4.5 Perform CALA Operations at Naval Air Station North Island**

The Navy evaluated the potential to conduct CALA loading and offloading operations at other regional installations. The only potential installation would be Naval Air Station North Island (NASNI). However, because operations occur at and around SCI, the estimated cost for flying to/from NASNI to SCI to load/off-load ordnance would be approximately 3.7 million dollars annually in flight hour costs for MH-60R aircraft alone, and result in additional air emissions. In addition, the additional time spent flying back and forth from NASNI would result in substantial lost training time, opportunity, and readiness. Therefore, the potential for performing CALA loading and offloading operations at NASNI would result in unacceptable delays and inefficiencies and is not being carried forward for detailed analysis in this EA.

### 3 Affected Environment and Environmental Consequences

This chapter presents a description of the environmental resources and baseline conditions that could be affected from implementing any of the alternatives and an analysis of the potential direct and indirect effects of each alternative.

All potentially relevant environmental resource areas were initially considered for analysis in this Environmental Assessment (EA). In compliance with the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ), and 32 CFR part 775 guidelines, the discussion of the affected environment (i.e., existing conditions) focuses only on those resource areas potentially subject to impacts. Additionally, the level of detail used in describing a resource is commensurate with the anticipated level of the potential environmental impact.

“Significantly,” as used in NEPA, requires considerations of both context and intensity. Context means that the significance of an action must be analyzed in several contexts such as society as a whole (e.g., human, national), the affected region, the affected interests, and the locality. Significance varies with the setting of a proposed action. For instance, in the case of a site-specific action, significance would usually depend on the effects in the locale rather than in the world as a whole. Both short- and long-term effects are relevant (40 CFR part 1508.27). Intensity refers to the severity or extent of the potential environmental impact, which can be thought of in terms of the potential amount of the likely change. In general, the more sensitive the context, the less intense a potential impact needs to be in order to be considered significant. In this sense, context also encompasses cumulative impacts in that it reflects impacts that have occurred and potential for recovery. Likewise, the less sensitive the context, the more intense a potential impact would be expected to be significant.

The Navy has previously analyzed Combat Aircraft Loading Area (CALA) operations that occur within the Southern California (SOCAL) Range Complex in the Southern California Range Complex Environmental Impact Statement/Overseas Environmental Impact Statement (EIS/OEIS) (Navy, 2008). The Proposed Action does not alter the number or frequency of CALA operations currently conducted at Naval Auxiliary Landing Field (NALF) San Clemente Island (SCI). The Proposed Action would however result in a change in the location of the operations from VC-3 to the new CALA site. MH-60 aircraft currently involved in ordnance loading/off-loading operations would be flown to and from the new CALA site. The potential environmental consequences of constructing the CALA in a new location as well as the change of operational noise and rotor wash are analyzed in this EA.

This section includes air quality, water resources, geological resources, and biological resources. The potential impacts to the following resource areas are considered to be negligible or non-existent so they were not analyzed in detail in this EA:

Cultural Resources: The proposed CALA and temporary contractor staging/batch plant locations are in an area previously disturbed during the construction of the Main Airfield with no documented archaeological resources or traditional cultural properties. While the Programmatic Agreement (PA) with the California State Historic Preservation Officer regarding operational and developmental undertakings at SCI expired in May 2019, the Navy conducted a Section 106 review of the Proposed Action prior to the PA’s expiration. At the time of Section 106 review, the Navy’s Cultural Resources Program approved the

Proposed Action with a finding of No Historic Properties Affected, consistent with Stipulation III.D.2 of the PA and therefore, further consultation under the National Historic Preservation Act is not required.

Any inadvertent discovery of archaeological materials would be handled in accordance with the Navy's management practices, which include provisions for stopping work and notifying the appropriate parties. If human remains are inadvertently discovered, then the procedures established under the Native American Graves Protection and Repatriation Act and Office of the Chief of Naval Operations Instruction 11170.2 series, *Navy Responsibilities Regarding Undocumented Human Burials*, would be followed. Under the No Action Alternative there would be no change to existing conditions. Therefore, implementation of the Proposed Action or the No Action Alternative would not affect cultural resources. Accordingly, cultural resources is not carried forward for detailed analysis in this EA.

Air Quality: SCI is located within the South Coast Air Basin (SCAB), covering the counties of Los Angeles, Orange, Riverside and San Bernardino. The SCAB is in nonattainment for a number of criteria pollutants, including: (CO), nitrogen dioxide (NO<sub>2</sub>), ozone (O<sub>3</sub>), suspended particulate matter less than 10 microns (PM<sub>10</sub>), and fine particulate matter less than or equal to 2.5 microns in diameter (PM<sub>2.5</sub>) (U.S. Environmental Protection Agency [USEPA], 2019; CARB, 2016).

Due to the nonattainment status of these criteria pollutants within the SCAB, the use of *de minimis* thresholds to define the limit at which a formal Conformity Determination under the CAA General Conformity Rule is required. Air quality is further regulated in the SCAB by the South Coast Air Quality Management District. Rules set forth by the South Coast Air Quality Management District regulate diesel vehicle emissions, dust generating activities, vehicle idling time limits, and the emissions allowable from heavy construction equipment. The non-attainment status of the SCAB is also the context from a NEPA perspective, and the *de minimis* thresholds are measures of intensity appropriate to the context. Therefore, if the predicted construction emissions are estimated to below *de minimis* levels, emissions are presumed not to be significant under NEPA. Conversely, if the emissions are estimated to above *de minimis* levels, they would require further analysis under NEPA,

Although the Proposed Action would have relatively minor effects to air quality, and associated criteria pollutant emissions would not substantially contribute to air basin pollution, a quantitative analysis was conducted for comparison with the applicable *de minimis* threshold levels. The emissions modeled for the Proposed Action include the use of construction equipment to prepare/grade the area, the operation of a temporary concrete batch plant (operating on existing power supply), the barging of certain raw materials not available on the island from the Port of Long Beach (approximately 13 trips), and the construction of the CALA and associated infrastructure.

Total emissions resulting from construction activities were estimated using the construction scope, surface area, and duration data presented in Chapter 2, general air quality assumptions, and emission factors compiled from the following sources: OFFROAD Emission Factors (CARB, 2017); CARB EMFAC2014 Model (CARB, 2014); and Emission Factors from Analysis of Commercial Marine Vessel Emissions and Fuel Consumption Data (USEPA, 2000).

Table 3.0-1 presents a summary of the modeled emissions for the Proposed Action. Appendix A contains detailed emission factors, assumptions, and results. As demonstrated in Table 3.0-1, implementation of the Proposed Action would result in emissions below *de minimis* thresholds and would not require a formal Conformity Determination under the CAA. In addition, potential impacts from fugitive dust would

be minimized through watering and/or other appropriate measures during construction, and again during operations with the application of a soil stabilizing polymer. VC-3 and the proposed CALA are located within the same airshed (SCAB). While helicopters would no longer be flying to VC-3 from the Main Airfield to shuttle crew members, this slight decrease in emissions associated with the reduced flight time would result in a negligible beneficial impact to overall air quality within the SCAB. Therefore, implementation of the Proposed Action would result in a negligible impact to air quality. Accordingly, air quality is not carried forward for detailed analysis in this EA.

**Table 3.0-1 Proposed Action – Combined Emissions with Evaluation of Conformity**

Emission Source	Emissions (tons/year)					
	CO	VOC	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Site Preparation - Equipment	0.07	0.02	0.06	0.00	0.00	0.00
Site Preparation - Dust Generation	--	--	--	--	7.94	7.15
On-Site Construction	0.95	0.30	0.79	0.00	0.03	0.03
On-Site Concrete Plant	--	--	--	--	0.20	0.18
Material Movement (Vessel Support)	1.11	0.11	7.75	0.49	0.24	0.22
Material Movement (Trucks)	0.11	0.03	0.20	0.00	0.00	0.00
Worker Trips	0.48	0.02	0.04	0.00	0.00	0.00
Total Emissions	2.71	0.48	8.84	0.49	8.43	7.58
Annual Conformity <i>de minimis</i> Threshold <sup>3</sup>	100	100	100	N/A	100	100
Exceeds Conformity <i>de minimis</i> Threshold?	No	No	No	N/A	No	No

**Land Use:** Construction of the CALA and associated elements under the Proposed Action would be consistent with existing land uses at NALF SCI and would not change existing land use designations. The proposed CALA and temporary construction elements (i.e., the batch plant) would comply with Main Airfield height restrictions. The Proposed Action would be compliant with existing land use controls such as safety danger zones and explosive safety quantity distance (ESQD) arcs. Future marshalling activities would be relocated to a previously analyzed and suitable location (e.g., an established and approved low-erosion Assault Vehicle Maneuver Area. Relocated marshalling activities not already addressed under the SOCAL Range Complex EIS/OEIS, would be analyzed under a separate NEPA document (e.g., the in-progress SCI Terrestrial Testing and Training EA). Under the No Action Alternative there would be no change to existing conditions. Therefore, implementation of the Proposed Action or the No Action Alternative would not affect land use. Accordingly, land use is not carried forward for detailed analysis in this EA.

**Visual Resources:** Construction of the CALA would be visually consistent with the surrounding existing visual environment, which is characteristic of a military airfield. In addition, the location of the Proposed Action is not associated with a scenic vista and all proposed construction under the Proposed Action would be confined to areas that are dedicated to on-going Navy training. Under the No Action Alternative there would be no change to existing conditions. Therefore, implementation of the Proposed Action or the No Action Alternative would have a negligible impact to visual resources. Accordingly, visual resources are not carried forward for detailed analysis in this EA.

**Airspace:** Implementation of the Proposed Action would not affect the use or designation of airspace, would occur outside of the imaginary surfaces associated with the Main Airfield, and would not create vertical obstructions that may impact airfield operations. Under the No Action Alternative there would

be no change to existing conditions. Therefore, implementation of the Proposed Action or the No Action Alternative would not affect airspace. Accordingly, airspace is not carried forward for detailed analysis in this EA.

Noise: Aircraft operations constitute the predominant source of noise on NALF SCI, especially at the proposed project location due to its proximity to the Main Airfield. Aircraft-generated noise dominates the area. Noise generated by small arms and other training also contributes to the noise environment. The Proposed Action would generate temporary construction noise that would be less than the overriding noise environment. Based on the anticipated mix of construction equipment, construction noise levels at 50 feet (15 meters [m]) would be approximately 80 decibels (akin to a moving heavy truck). These noise levels would be transient and temporary and construction workers would use appropriate hearing protection, as needed. The Proposed Action also includes the continuation of MH-60 loading/unloading operations, currently conducted at the VC-3. These activities would include aircraft landing/taking off at the new CALA site, but would not increase the number or frequency of ongoing operations. Although noise related to CALA operations would move from VC-3 to the new CALA, there would not be a net increase of operational noise above ambient noise levels at the new CALA because the existing noise environment at the proposed CALA location is currently and would continue to be, dominated by on-going aircraft operations at the Main Airfield. Therefore, implementation of the Proposed Action or the No Action Alternative would have a negligible impact to noise. Accordingly, noise is not carried forward for detailed analysis in this EA. The potential impacts of noise on wildlife are discussed in Section 3.3, *Biological Resources*.

Infrastructure: Public access to NALF SCI is restricted by the Navy and no public services exist. On-island personnel provide fire and police services on NALF SCI (Navy, 2013b). No impacts on community/emergency services are expected on NALF SCI; however, due to the proposed project location proximity to the Main Airfield, emergency response services would be more readily and easily available as compared to existing conditions. Conversely, when the CALA is in use, emergency services to the training sites west of the CALA (e.g. West Cove Landing Site, Cable Termination Shelter, and BQM Launch Site) would be delayed due to limited access to West Cove Road during CALA operations. Similarly, when Perimeter Road is temporarily closed, access to the Naval Special Warfare side would be delayed as responders would use an alternate route. CALA users would coordinate and inform emergency services in advance of CALA operations for awareness and to minimize response times to potential emergencies during CALA operations. The Proposed Action would not increase the utility demand other than a negligible increase for a power supply and navigational/directional lighting. Under the No Action Alternative there would be no change to existing conditions. Therefore, implementation of the Proposed Action or the No Action Alternative would have a negligible impact to infrastructure. Accordingly, infrastructure is not carried forward for detailed analysis in this EA.

Transportation: Under the Proposed Action, the number of personnel stationed or employed at NALF SCI would not change. There would be no change in the number of personally owned vehicles or commercial vehicles. The proposed use of marine transportation resources (e.g., a tug and barge) for no more than 13 trips from Long Beach Harbor to Wilson Cove would be insignificant when compared to the existing marine transportation volumes in the Southern California Bight. During construction, vehicular traffic would be temporarily routed around the construction site. In addition, there may be temporary road closures or escorts between Wilson Road and the project location to transport large

loads of construction materials/equipment. The construction contractor would coordinate material/equipment deliveries with the Navy in advance to minimize impacts to on-island transportation. During CALA operations, access on West Cove Road through the CALA would be temporarily limited (to the periods immediately prior to through to immediately following completion of operations) with the use of gates. Operations would also be coordinated in advance to inform potential users (e.g., emergency services) of the temporary road closure. Under the No Action Alternative there would be no change to existing conditions. Therefore, implementation of the Proposed Action or the No Action Alternative would have a negligible impact to transportation. Accordingly, transportation is not carried forward for detailed analysis in this EA.

Public Health and Safety: Under the Proposed Action, proposed construction activities would be implemented in accordance with Navy and NALF SCI regulations and plans, and only authorized Navy and contractor personnel would be allowed near work areas. The construction contractor would develop a site-specific safety plan, including procedures for job hazard analysis, vehicle and equipment maintenance, and proper use of personal protective equipment. These documents would be developed for each phase of construction. Prior to construction, the area subject to disturbance would be evaluated for unexploded ordnance (UXO) potential and all necessary measures would then be taken to assess and remove any potential UXO. In accordance with Naval Base Coronado (NBC) Instruction 8020.2M, Enclosure 2, the helicopters would fly ("hover taxi") to the designated NALF SCI Red Label Area where the ordnance would be armed and de-armed. Under the No Action Alternative there would be no change to existing conditions. Therefore, implementation of the Proposed Action or the No Action Alternative would have a negligible impact to public health and safety. Accordingly, public health and safety are not carried forward for detailed analysis in this EA.

Hazardous Materials and Wastes: Hazardous materials or wastes used or produced during construction would be stored, managed, and disposed of in accordance with local, state, and federal regulations and the Commander Navy Region Southwest Hazardous Waste Management Plan. Under the Proposed Action, the Navy and the construction contractor would take appropriate precautions to properly dispose of materials characterized as hazardous materials or waste. Under the No Action Alternative there would be no change to existing conditions. Therefore, implementation of the Proposed Action or the No Action Alternative would have a negligible impact to hazardous materials and wastes. Accordingly, hazardous materials and wastes are not carried forward for detailed analysis in this EA.

Socioeconomics: Implementation of the Proposed Action would generate a temporary, marginal increase in demand for construction crews that would most likely be drawn from coastal Southern California (i.e., from Santa Barbara through San Diego counties) during project construction. Construction crews would commute to SCI via plane transportation, likely on a weekly basis for the duration of the project (approximately six months). As such, the temporary demand for construction services would not stimulate long-term changes in the socioeconomic environment (i.e., population, employment, income, housing, or schools) of Southern California. Under the No Action Alternative there would be no change to existing conditions. Therefore, implementation of the Proposed Action or the No Action Alternative would have a negligible impact to socioeconomic indicators, including population, employment, income, housing, or schools. Accordingly, socioeconomics is not carried forward for detailed analysis in this EA.

Environmental Justice: Implementation of the Proposed Action would occur on NALF SCI, a military facility with no permanent civilian population. There are no minority or low-income populations or children as no civilians reside on NALF SCI. Under the No Action Alternative there would be no change to existing conditions. Therefore, implementation of the Proposed Action or the No Action Alternative would not disproportionately affect minority or low-income populations or children (Executive Order (EO) 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations* and EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*). Accordingly, environmental justice is not carried forward for detailed analysis in this EA.

### **3.1 Water Resources**

This discussion of water resources includes surface water. Surface water resources generally consist of wetlands, lakes, rivers, and streams. Surface water is important for its contributions to the economic, ecological, recreational, and human health of a community or locale.

#### **3.1.1 Regulatory Setting**

The Clean Water Act establishes federal limits, through the National Pollutant Discharge Elimination System (NPDES) program, on the amounts of specific pollutants that can be discharged into surface waters to restore and maintain the chemical, physical, and biological integrity of the water. The NPDES program regulates the discharge of point (i.e., end of pipe) and nonpoint sources (i.e., storm water) of water pollution.

Waters of the United States are defined as (1) traditional navigable waters, (2) wetlands adjacent to navigable waters, (3) nonnavigable tributaries of traditional navigable waters that are relatively permanent where the tributaries typically flow perennially or have continuous flow at least seasonally (e.g., typically 3 months), and (4) wetlands that directly abut such tributaries under Section 404 of the CWA, as amended, and are regulated by USEPA and the U.S. Army Corps of Engineers.

Section 438 of the Energy Independence and Security Act (EISA) establishes storm water design requirements for development and redevelopment projects. Under these requirements, federal facility projects larger than 5,000 square feet (464 square meters) must “maintain or restore, to the maximum extent technically feasible, the predevelopment hydrology of the property with regard to the temperature, rate, volume, and duration of flow.”

The NPDES storm water program requires construction site operators engaged in clearing, grading, and excavating activities that disturb 1 acre (0.4 ha) or more to obtain coverage under a NPDES Construction General Permit for storm water discharges. Construction or demolition that necessitates an individual permit also requires preparation of a Notice of Intent to discharge storm water and a Storm Water Pollution Prevention Plan (SWPPP) that is implemented during construction. The Construction General Permit requires the development and implementation of a SWPPP and a Storm Water Monitoring Program.

### 3.1.2 Affected Environment

There are no wetlands or mapped floodplains located in or near the study area; therefore, these water resources are not discussed further. Little information is available about groundwater resources on SCI. The island's volcanic geology is generally monolithic (i.e., a single stone or block), limiting the potential for a drinking water aquifer (Navy, 1954). Marine waters are located approximately half a mile from the nearest point of the study area (Figure 3.1-1). The waters surrounding SCI are recognized for their relatively pristine condition and designated an Area of Special Biological Significance by the State Water Resources Control Board. Due to their distance from the study area and the highly-porous soil within the area, and with construction stormwater BMPs, marine waters and marine sediments would not be impacted by the Proposed Action.

There are no streams on NALF SCI that support constant water flow year-round. SCI averages 6.6 inches (16.8 cm) of rain. All of the drainages on NALF SCI are confined within narrow channels that flow for relatively brief periods in immediate response to rainfall and discharge directly into the ocean (NAVFAC SW, 2016).

The natural drainage patterns of the study area were altered by the construction of the NALF runway. Prior to development, most of the drainage from the east end of the study area flowed northwest through the current location of the Main Airfield, to the Northwest Harbor. At present, the study area drains towards West Cove through a series of man-made ditches. Gullies have formed, most likely as a result of altering the drainage during construction of roadways and the NALF runway (NAVFAC SW, 2013).

On September 24, 2019, in support of this EA, contractors surveyed the study area to identify the potential presence and extent of potential wetlands and non-wetland waters subject to federal jurisdiction under Section 404 of the CWA. The survey area for the delineation encompassed the limit of effort and a 300-foot buffer. The delineation confirmed the four ephemeral drainage features identified in a 2016 study (NAVFAC SW, 2016). The contractors also concluded that the drainages are non-jurisdictional features due to lack of indicators of ordinary high water marks and/or bed/banks and connection with the Pacific Ocean. Furthermore, the drainages contained no obligate wetland classified plants and lacked wetland soil and hydrology indicators. Therefore, all drainage features in and in the vicinity of the study area (Figure 3.1-1) were determined to be erosional features that are not jurisdictional waters of the U.S.

The Navy has submitted their jurisdictional survey report to the U.S. Army Corps of Engineers, Los Angeles District and requested their concurrence that no jurisdictional features occur within the project area.

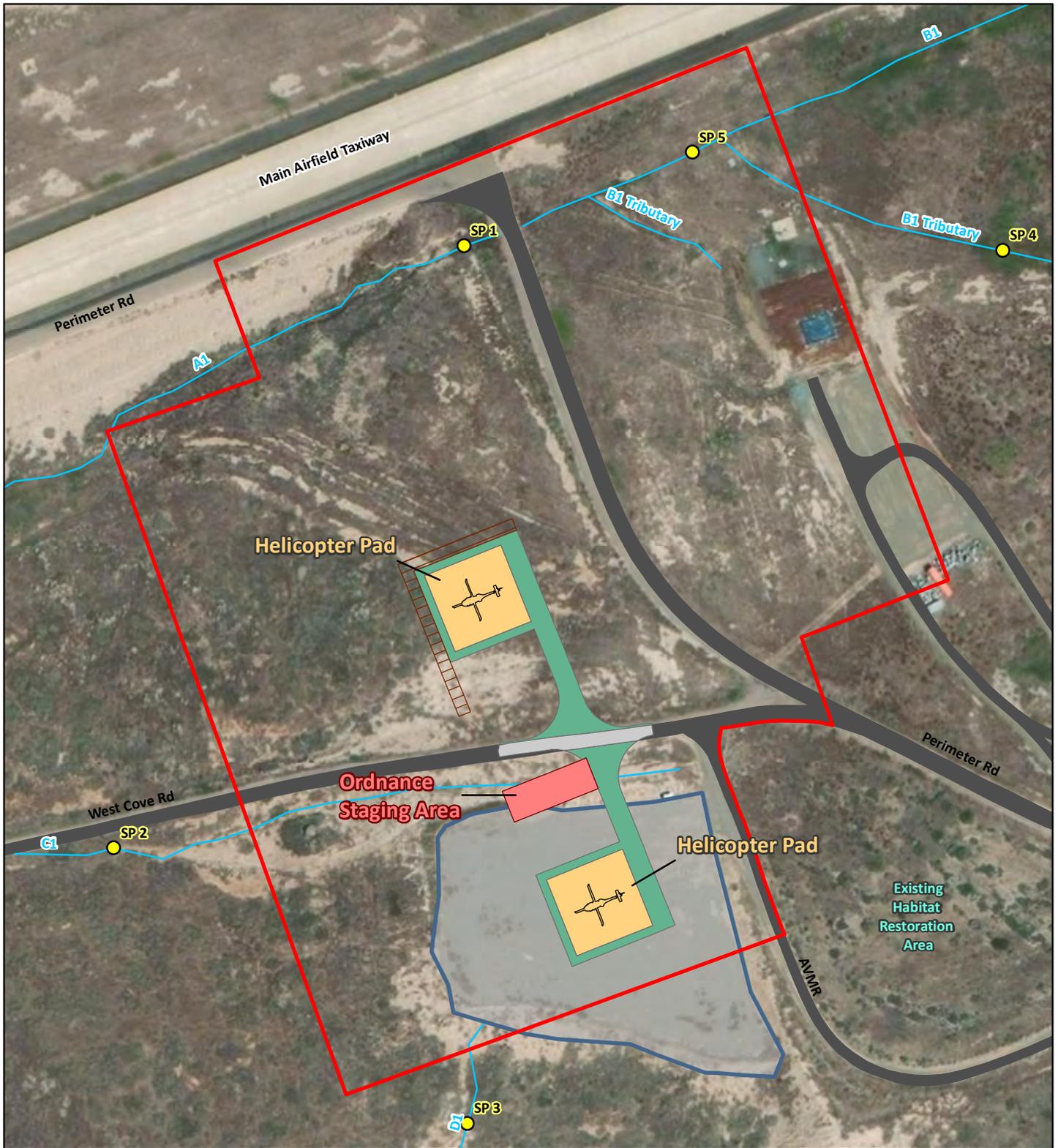
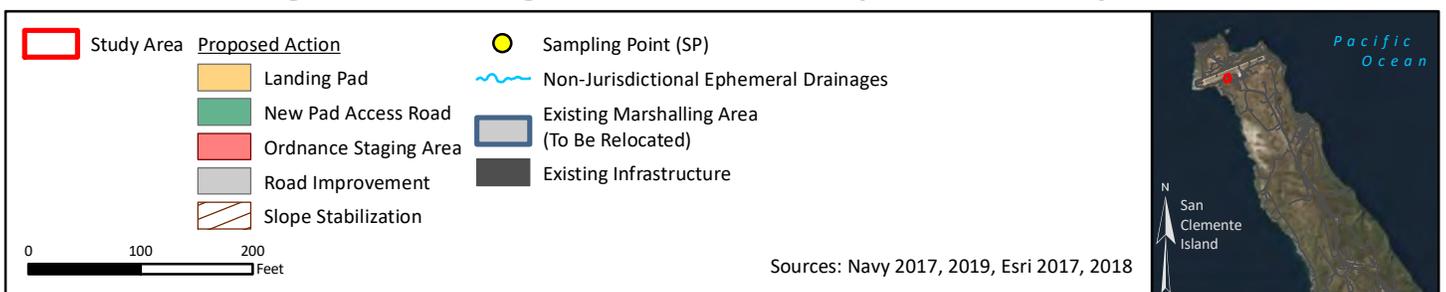


Figure 3.1-1. Drainage Features within and adjacent to the Study Area



**3.1.3 Environmental Consequences**

The following analysis evaluates the potential for the Proposed Action to result in long-term irreversible changes to water chemistry, availability of fresh water supply, or overall water quality.

**3.1.3.1 No Action Alternative**

Under the No Action Alternative, the Proposed Action would not occur and there would be no change to existing water resources. Therefore, no impacts to water resources would occur with implementation of the No Action Alternative.

**3.1.3.2 Proposed Action**

The Navy is coordinating with the U.S. Army Corps of Engineers regarding the potential for jurisdictional waters within the project area. Based on preliminary feedback from the U.S. Army Corps of Engineers, no jurisdictional waters would be impacted by the Proposed Action. Therefore, no Clean Water Act permits would be required.

**Water Resources Potential Impacts:**

- Potential increase in stormwater runoff and erosion
- Increase of approximately 1.24 acres of impervious surface area

Implementation of the Proposed Action would increase the amount of impervious surface (i.e., concrete) within the study area by approximately 1.24 acres (0.5 ha). While an additional approximately 1.48 acres (0.60 ha) would be managed to minimize vegetation and dust around the helipads, the managed surface would not constitute an impervious surface.

Implementation of the Proposed Action would impact more than 1 acre (0.4 ha); therefore, the construction contractor would be required to prepare and implement a SWPPP under compliance with the California Construction General Permit (Order No. 2009-0009-DWQ) and follow BMPs to minimize erosion and impacts to surface water resulting from construction activities.

Implementation of the Proposed Action would occur within a highly erosive area. Despite the fact that the study area is subject to low annual rainfall (approximately 6.6 inches [16.8 cm] [NAVFAC SW, 2016]) and contains no jurisdictional drainages, BMPs would be required as part of the California Construction General Permit. Potential BMPs could include the installation of fiber rolls, sediment traps, jute netting, check dams, and other measures. The construction contractor would coordinate with NALF SCI Natural Resources Office staff, the Construction Manager, and the Engineering Technician to ensure the proper BMPs are not only installed, but maintained. For example, fiber rolls slow down the flow of water, capture sediment and organic matter, and diffuse water flow across the land surface. But runoff barriers such as fiber rolls can malfunction rather quickly and require frequent inspection, maintenance, and replacement. Of particular concern within the study area is the tendency for soil piping to occur, given the highly erosive nature of the soils. When water is pooled behind an impediment, it may drain through subsurface soil cracks. With the additional flow, the soil cracks can widen to form permanent soil pipes. Eventually the subsurface flow may undermine the runoff barrier and the soil pipe may collapse and initiate a gully. Therefore, it will be especially important to monitor and inspect all fiber rolls (and other BMPs) frequently for effectiveness.

Construction activities associated with the Proposed Action would have the potential for the generation of pollutants including sediment and other construction-related constituents (such as nutrients, trace metals, oil and grease, miscellaneous waste, and other toxic chemicals). Any runoff would then have the potential to transport suspended sediment and other constituents away from the area. As such, the project design would include BMPs and engineering controls to stabilize cut slopes and measures to revegetate exposed surfaces upon construction completion, to minimize soil loss and impacts to surface water quality.

Erosion control is an ongoing process and the most efficient methods are designed to prevent erosion from occurring in the first place and react to potential erosion problems prior to escalation. This process consists of installing erosion control BMPs prior to the disturbance, monitoring and inspecting the BMPs on a periodic basis and after each rainstorm, and if any failures of the BMPs are noted, performing immediate repair. To prevent both long term and short term erosion, the preferred method is to establish and maintain vegetative cover. For example, the implementation of vegetated diversion dikes might be employed. These consist of constructed channels lined with suitable vegetation for the stable conveyance of runoff. These conveyance channels can convey excess runoff water where flows are of a sufficiently short duration to allow the vegetation to withstand the inundation period.

Implementation of the Proposed Action would result in an increase in stormwater runoff during rain events. Contractors would slope the CALA to shunt stormwater runoff through stormwater management and velocity-reducing infrastructure, to include permanent BMP features, to minimize potential offsite impacts. In addition, the project would be constructed in accordance with UFC 3-210-10, *Low Impact Development*, which provides technical criteria, technical requirements, and references for the planning and design for projects to comply with storm-water requirements under Section 438 of the EISA enacted in December 2007 and the Deputy Under Secretary of Defense Department of Defense (DoD) policy on implementation of stormwater requirements under EISA Section 438.

The ephemeral drainages immediately adjacent to the completed CALA are anticipated to be subject to an increase in stormwater runoff intensity and volume. However, due to the well-drained nature of the soil in the area, the low average annual rainfall, and the distance to the Pacific Ocean (over one half-mile), the increase in stormwater discharge from the implementation of the Proposed Action is not anticipated to substantially change the physical dimensions, features, or jurisdictional status of the existing ephemeral drainages. Therefore, no significant impacts to water resources would occur with implementation of the Proposed Action.

### **3.2 Geological Resources**

This section discusses the existing conditions related to topography, geology, soils, and seismicity within the study area. Topography is typically described with respect to the elevation, slope, and surface features found within a given area. The geology of an area may include bedrock materials, mineral deposits, and fossil remains. The principal geological factors influencing the stability of structures are soil stability and seismic properties. Soil refers to unconsolidated earthen materials overlying bedrock or other parent material. Soil structure, elasticity, strength, shrink-swell potential, and erodibility determine the ability for the ground to support structures and facilities. Soils are typically described in terms of their type, slope, physical characteristics, and relative compatibility or limitations.

### 3.2.1 Regulatory Setting

There are no specific federal regulations related to geologic conditions. No federal plans, policies, regulations, or laws related to mineral resources apply to the Proposed Acton.

### 3.2.2 Affected Environment

The following discussions provide a description of the existing geological conditions at NALF SCI and within the study area.

#### 3.2.2.1 Topography

The terrestrial topography of SCI includes coastal terraces, upland marine terraces, a plateau, an escarpment, major canyons, sand dunes, and sandy beaches. The coastal and upland marine terraces dominate the western side of SCI as well as its northern and southern ends and include over 20 distinct wave-cut marine terraces (Navy, 2008). Within the study area, the eastern, northern, and southern portions are on generally flat land. However, the portion of the study area west of Perimeter Road and just south of the Main Airfield taxiway is very steep (refer to Photo 2-1) as the topography falls off to the west towards the Pacific Ocean.

#### 3.2.2.2 Geology

SCI is an exposed portion of an uplifted fault block composed primarily of a stratified sequence of submarine volcanic rock, including andesite, dacite, and rhyolite. The volcanic rock is over 1,969 feet (600 m) thick (Navy, 2008). These volcanic rocks are overlain and interbedded with local sequences of marine sediments. Marine sedimentary rocks mostly overlay the volcanic rocks, are exposed in some places on the island, and vary in thickness from 250 to 300 feet (76 to 91 m) (Navy, 2013a).

#### 3.2.2.3 Soils

Based on the draft soil survey conducted for SCI by the Natural Resources Conservation in 1982, soils on SCI can generally be defined as finely textured and highly friable, making them well drained and subject to severe shrink-swell characteristics which can be damaging to roads, dams, building foundations, and other structures (NAVFAC SW, 2016). In addition, the soils on the western slopes of the island, including the majority of the study area, have a distinctive silt loam surface cap or surface horizon that likely formed. This horizon is a thin, light colored layer, approximately two to eight inches with a silt loam texture, likely formed from the windblown transport of airborne dust, presumably from the Mojave Desert (NAVFAC SW, 2016). A silt loam is a combination of sand, silt, and clay.

Soils within the study area are classified as Urban Land/Undefined and are well drained with low permeability while also exhibiting severe shrink-swell characteristics. Erosion occurs via either mass movement or soil erosion. On SCI, erosion by both wind and water is of concern; however, erosion by water is more common and can occur in multiple ways including raindrop splash, sheet erosion, rilling, gullying, stream channel erosion, and most notably groundwater erosion also known as piping (NAVFAC SW, 2016).

Remnants of sand dune deposits that once covered the western edge of the study area are present at West Cove. Topographically above these sand dune deposits is a series of marine terraces on rhyolite bedrock. The terraces were disturbed and graded during the construction of the NALF runway. The soils

in this area are classified as disturbed alfisols. Exposed cut slopes of the semi-consolidated sand of the old dune deposits are rilled and gullied. Flat areas have a low erosion potential while steep surfaces in the study area have a moderate to high erosion potential. Overall, the soils in the study area are highly susceptible to gully erosion with minimal disturbance (NAVFAC SW, 2013).

**3.2.2.4 Geologic Hazards**

According to the California Department of Conservation geological hazard mapping application, SCI is not located in the Alquist-Priolo Fault Hazard Zone. In addition, the Proposed Action would not include the construction of buildings; therefore, geological hazards are not discussed further.

**3.2.3 Environmental Consequences**

Geological resources are analyzed in terms of topography, soils, drainage, and erosion. The analysis of topography and soils focuses on the area of soils that would be disturbed, the potential for erosion of soils from construction areas, and the potential for eroded soils to become pollutants in downstream surface water during storm events. BMPs are identified to minimize soil impacts and prevent or control pollutant releases into stormwater.

**3.2.3.1 No Action Alternative**

Under the No Action Alternative, the Proposed Action would not occur and there would be no change to baseline geology, topography, or soils. Therefore, no significant impacts to geological resources would occur with implementation of the No Action Alternative.

**Geological Resources Potential Impacts:**

- Temporary disturbance of soils
- Import of fill from Mt. Morgan
- Potential for increase in erosion

**3.2.3.2 Proposed Action**

Under the Proposed Action the Navy would construct a concrete surface covering approximately 1.24 acres (0.50 ha). As shown on Figure 2-2, the proposed CALA would avoid the excessively steep slopes within the study area; however, fill would still be needed to completely level the project footprint. Initially the construction contractor would grade the project footprint and then bring native soil from Mt. Morgan to level the site.

To the west, the study area drops off to steeply sloped terrain where highly erodible soils are covered with limited vegetation. Clearing and grading of the project footprint would remove the thin protective cover of vegetation and expose the cut slopes (and the underlying “severely” erodible soil) to erosion. The loss of soil components to erosion could affect the stability of the slopes, as well as the productivity of the soil itself and impair revegetation. To minimize the potential impact to soils and topography, the final project design would include engineered measures to stabilize the cut slopes, protect and revegetate exposed surfaces, and reduce/convey stormwater in a controlled manner. These measures would be implemented for the CALA, and access road.

The Proposed Action would comply with the Construction General Permit (refer to Section 3.1, *Water Resources*) and a project-specific SWPPP would be prepared and implemented along with associated BMPs. The BMPs would be implemented to minimize erosion resulting from construction activities (and post-construction stormwater/erosion management) and prevent transport of sediment downstream.

The affected area would then be compacted to engineering standards and graded to approximate existing slope contours to support stormwater runoff to the west, via stormwater drainage and management infrastructure. Exposed slopes and disturbed areas would be revegetated and/or engineered to minimize the potential for soil erosion. The grading and construction of the CALA and access road would result in a consistent surface (nearly flat topography) between the CALA and the Main Airfield. Post-construction, the stormwater management infrastructure would reduce the potential for impacts to geological resources. Therefore, no significant impacts to geological resources would occur with implementation of the Proposed Action.

### 3.3 Biological Resources

Biological resources include living, native, or naturalized plant and animal species and the habitats within which they occur. Plant associations are referred to generally as vegetation, and animal species are referred to generally as wildlife. Habitat can be defined as the resources and conditions present in an area that support a plant or animal.

Within this EA, biological resources are divided into two categories: (1) terrestrial vegetation and (2) terrestrial wildlife. Threatened, endangered, and other special status species are discussed in their respective categories. Marine biological resources would not be impacted and are not discussed further.

#### 3.3.1 Regulatory Setting

For the purposes of this EA, special-status species are federally or state listed as threatened or endangered under the Federal or State of California Endangered Species Act (ESA, CESA respectively), and those species afforded federal protection under the Migratory Bird Treaty Act (MBTA).

The purpose of the ESA is to conserve the ecosystems upon which threatened and endangered species depend and to conserve and recover listed species. Section 7 of the ESA requires action proponents to consult with the U.S. Fish and Wildlife Service (USFWS) or National Oceanic and Atmospheric Administration (NOAA) Fisheries to ensure that their actions are not likely to jeopardize the continued existence of federally listed threatened and endangered species, or result in the destruction or adverse modification of designated critical habitat. Critical habitat cannot be designated on any areas owned, controlled, or designated for use by the DoD where an Integrated Natural Resources Management Plan (INRMP) has been developed that, as determined by the Department of Interior or Department of Commerce Secretary, provides a benefit to the species subject to critical habitat designation. The Navy has adopted an INRMP for NALF SCI. The INRMP provides conservation objectives and strategies to ensure natural resources are managed in support of the Mission and regulatory compliance (Navy, 2013a). The Navy is currently revising the 2013 SCI INRMP.

Birds, both migratory and most native-resident bird species, are protected under the MBTA. Their conservation by federal agencies is mandated by EO 13186 *Migratory Bird Conservation*. Under the MBTA, it is unlawful by any means or in any manner, to pursue, hunt, take, capture, kill, attempt to take, capture, or kill, [or] possess migratory birds or their nests or eggs at any time, unless permitted by regulation. The 2003 National Defense Authorization Act (NDAA) gave the Secretary of the Interior authority to prescribe regulations to exempt the Armed Forces from the incidental taking of migratory birds during authorized military readiness activities. Because the proposed vegetation removal, grading and construction activities are not exempt under the 2003 NDAA, the Proposed Action is subject to the

MBTA. Appendix B lists migratory bird species known to visit SCI. Bald and golden eagles are protected by the Bald and Golden Eagle Protection Act. This act prohibits anyone, without a permit issued by the Secretary of the Interior, from taking bald eagles, including their parts, nests, or eggs. The Act defines "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb."

**3.3.2 Affected Environment**

The following discussions provide a description of the existing conditions within the approximately 17.98-acre (7.28-ha) "action area," which is comprised of a 300-foot buffer around the proposed CALA site. The action area is a specific term used to define the potential area of impact as analyzed in this biological resources discussion. The action area is different from the study area as described in Section 1.1, which was the broader area initially considered by the Navy to identify the project location.

**3.3.2.1 Terrestrial Vegetation**

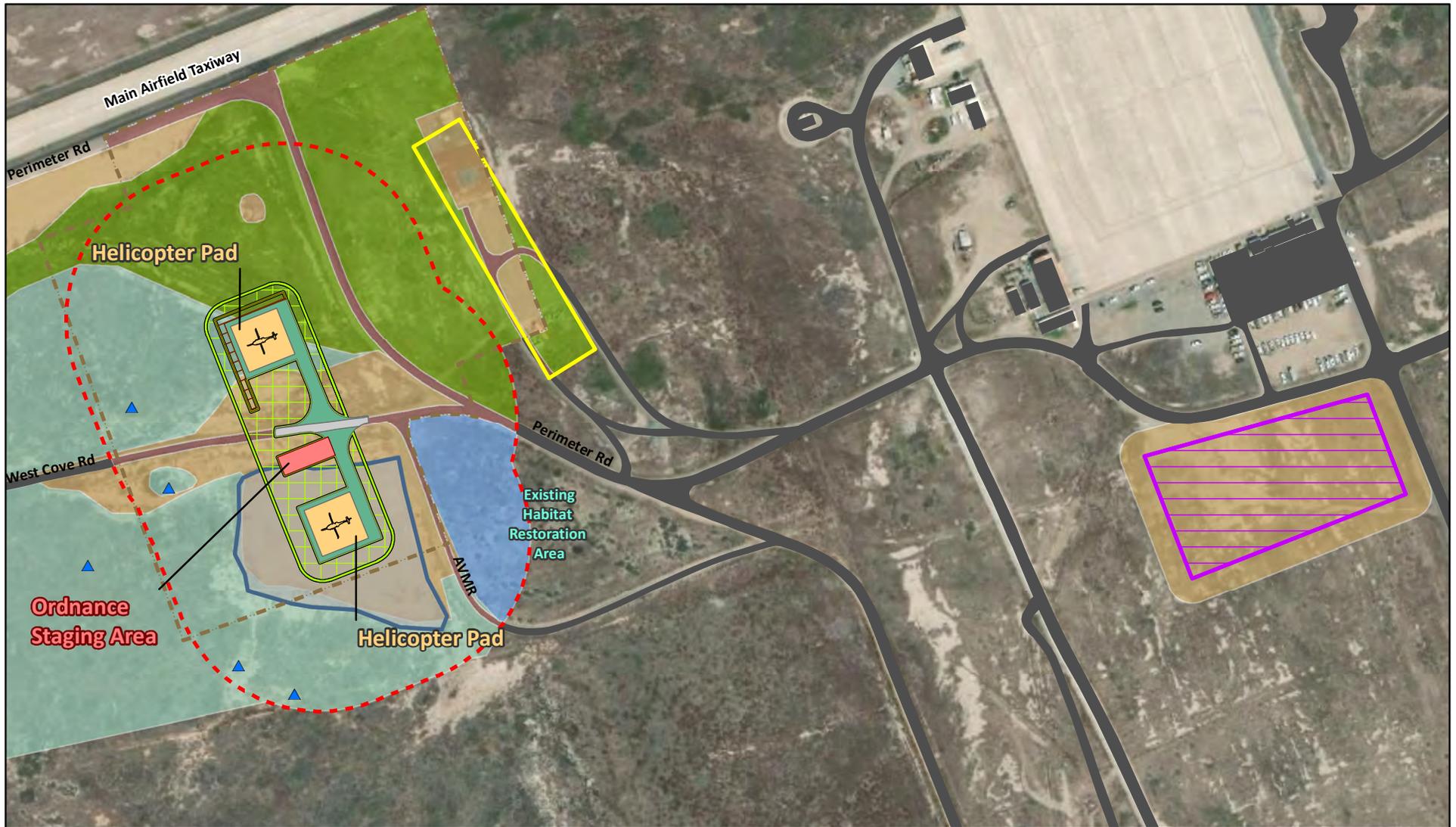
Terrestrial vegetation consists of terrestrial plant communities and constituent plant species. The most recent island-wide vegetation mapping efforts was conducted in 2011 and 2014 using the National Vegetation Classification System (RECON, 2011; HDR, 2014). More recently, vegetation communities within the area were mapped by the Navy on February 21, 2019. These vegetative communities include Maritime Desert Succulent Scrub; Non-Native Grassland and Disturbed and Developed areas (Table 3.3-1 and Figure 3.3-1). For a complete list of plant species known to occur on SCI refer to Appendix C of the 2013 SCI INRMP (Navy, 2013a).

**Table 3.3-1 Vegetation Communities Occurring in the Action Area**

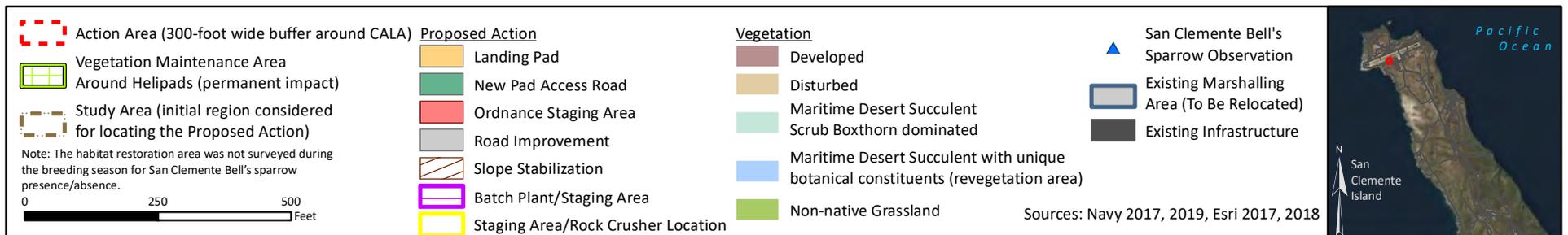
<i>Vegetation Community Type</i>	<i>Action Area (acres (ha))</i>
Maritime Desert Succulent Scrub – Boxthorn Dominated	6.06 (2.45)
Habitat Restoration Area-Maritime Desert Succulent Scrub containing Unique Botanical Constituents	1.47 (0.59)
Non-Native Grassland	5.08 (2.06)
Disturbed/Developed	5.35 (2.13)
<b>TOTAL</b>	<b>17.96 (7.27)</b>

**Vegetation Types**

Maritime Desert Succulent Scrub. The southwestern portions of the action area support Maritime Desert Succulent Scrub (MDSS) dominated by California boxthorn (*Lycium californicum*), prickly pear (*Opuntia* sp), coast cholla (*Cylindropuntia prolifera*), island tarplant (*Dienandra clementina*), pineapple weed (*Amblyopappus pusillus*), silver lotus (*Acmispon argophyllus* var. *argenteus*), common fiddleneck (*Amsinckia intermedia*), wild hyacinth (*Dichelostemma capitatum*), leafy desert dandelion (*Malacothrix foliosa* ssp. *foliosa*), with small numbers of snake cactus (*Bergerocactus emoryi*). This MDSS continues to the south uninterrupted. To the west, the MDSS continues for a short distance. Along the northwestern edge of the action area, the MDSS has a higher percentage of wild oats (*Avena* sp) and bromes (*Bromus diandrus*, and *B. madritensis*), but maintains strong representation of MDSS components. In addition to the larger, connected swaths of MDSS that continue off-site, a few isolated and small patches of MDSS persist within the disturbed areas as well.



**Figure 3.3-1. Vegetation Types and San Clemente Bell's Sparrow Locations in and Near the Action Area**



**Non-native Grassland.** Adjacent to Perimeter Road and northeast of Perimeter Road, the action area contains Non-native Grassland mixed with iceplant. Wild oats, bromes, wall barely (*Hordeum murinum*), California burclover (*Medicago polymorpha*), and mixed iceplant (*Carpobrotus edulis*, *Mesembryanthemum crystallinum*, and *Mesembryanthemum nodiflorum*) dominate these areas with Russian thistle (*Salsola tragus*) as an additional component. To the east, non-native grasses dominate with mixed iceplant.

**Disturbed and Developed.** Disturbed areas include the marshalling area, roadside edges, the sloped edge of the runaway/Perimeter Road, or areas of prior disturbance without substantial vegetative cover (i.e., less than 20 percent coverage). These areas are entirely or almost entirely bare ground but may have low levels of ice plant or non-native grasses or forbs. Developed areas include Perimeter Road, West Cove Road, and the Artillery Vehicle Maneuver Road.

**Habitat Restoration Site.** A native plant restoration site containing sensitive terrestrial plants is located to the south east of the Proposed Action (Figure 3.3-1). This established site is mapped as MDSS, but it contains unique botanical constituents including giant coreopsis (*Coreopsis gigantea*), San Clemente Island buckwheat (*Eriogonum giganteum* var. *formosum*), bush sunflower (*Encelia californica*), and bladderpod (*Isomeris arborea*). The restoration site is located outside of the project area and would not be subject to impacts.

**Federally Listed Special Status Plant Species.** Six federally listed plant species are known to occur on SCI: San Clemente Island lotus (*Acmispon dendroideus* var. *traskiae*), San Clemente Island Indian paintbrush (*Castilleja grisea*), San Clemente Island larkspur (*Delphinium variegatum* subsp. *kinkiense*), San Clemente Island woodland-star (*Lithophragma maximum*), San Clemente Island bush-mallow (*Malacothamnus clementinus*), and Santa Cruz Island rockcress (*Sibara filifolia*) (Navy, 2013a).

Table 3.3-2 presents all federally listed threatened or endangered terrestrial plants known to occur on SCI. No federally listed threatened or endangered plants are known to occur within the action area.

**Table 3.3-2 Federally Listed Threatened and Endangered Plant Species Known to Occur on SCI**

Common Name	Scientific Name	Federal Listing Status	State Listing Status	Occurs in Action Area	Critical Habitat Present?
Clemente Island lotus	<i>Acmispon dendroideus</i> var. <i>traskiae</i> (=Lotus d. <i>traskiae</i> )	FT	SE; 1B.3	No	No
San Clemente Island Indian paintbrush	<i>Castilleja grisea</i>	FE	SE; 1B.3	No	No
San Clemente Island larkspur	<i>Delphinium variegatum</i> subsp. <i>kinkiense</i>	FE	SE; 1B.1	No	No
San Clemente Island woodland-star	<i>Lithophragma maximum</i>	FE	SE; 1B.1	No	No
San Clemente Island bush-mallow	<i>Malacothamnus clementinus</i>	FE	SE; 1B.1	No	No
Santa Cruz Island rockcress	<i>Sibara filifolia</i>	FE	1B.1	No	No

Note: Selections for Listing Status Column include: FE = federal endangered, FT = federal threatened, SE= state endangered; SSC = Species of Special Concern (State designation). California Rare Plant Rank: 1B.1 - 1B.3 = (rare, threatened, or endangered in CA and elsewhere).

### 3.3.2.2 Terrestrial Wildlife

Wildlife in this subsection includes all terrestrial animal species (i.e., insects and other invertebrates, fish, amphibians, reptiles, birds, and mammals) focusing on the species and habitat features of greatest importance or interest. At least 350 bird species, including sensitive species (discussed below), have been documented on SCI (Stahl, 2012). Two reptile species occur on SCI, the side-blotched lizard (*Uta stansburiana*) and the island night lizard (*Xantusia riversiana* [Schoenherr et al., 1999]). Three native terrestrial mammals occur on SCI: San Clemente Island deer mouse (*Peromyscus maniculatus clementis*), the state threatened San Clemente Island fox (*Urocyon litteralis clementae*), and the California bat (*Myotis californicus*). Three non-native mammal species currently occur on SCI house mouse (*Mus musculus*), black rat (*Ratus rattus*), and the feral cat (*Felis domesticus*). For a complete list of wildlife species known to occur on SCI refer to Appendix C of the 2013 SCI INRMP (Navy, 2013a).

**Non-Federally Listed Special Status Species.** Non-federally listed sensitive wildlife species include those that are listed as endangered, threatened or rare under the State of California's ESA, California Species of Special Concern, and California Fully Protected Species. Six state-listed threatened and endangered wildlife species, or subspecies have been documented on SCI, including: the state threatened San Clemente Island fox (*Urocyon littoralis clementae*), the state endangered bald eagle (*Haliaeetus leucocephalus*) the state threatened Scripps's murrelet (*Synthliboramphus scrippsi*), the state endangered willow flycatcher (*Empidonax traillii*), the state threatened tricolored Blackbird (*Agelaius tricolor*) and the state threatened bank swallow (*Riparia riparia*) (Naval Base Coronado, 2019). A complete list of protected and sensitive species, including California species of special concern and birds listed on USFWS birds of conservation concern that have been documented on SCI are presented in the 2013 INRMP (Navy, 2013a). This list and the SCI INRMP are currently under revision.

**San Clemente Island Fox.** The San Clemente Island fox (island fox) is a widespread species at SCI. It forages in all habitats and dens under shrubs, in rock piles, and in association with human structures (e.g., Conex boxes). The primary known source of mortality for this species is roadkill. The population is generally stable. Typically, the population contracts, through decreased productivity and survival under strong drought conditions, and typically experiences higher pup production during periods of higher rainfall. However, the exact mechanism of correlation between climatic conditions and fox demographics remains unclear and the strength of the effects varies across the island (north to south and by habitat). Generally, the current SCI fox population ranges from 700 to 1,000 adult foxes, up from the 300s in the 1990s. This species has responded very well to Navy management captured in the Conservation Agreement between the Navy and USFWS, resulting in a stable and resilient population.

**Bald Eagle.** The bald eagle was listed as endangered under the ESA in 1967, but was subsequently delisted in 2007. The bald eagle remains protected under the Bald and Golden Eagle Protection Act and the MBTA and is a State Fully Protected species (Fish and Game Code § 4700). Although the bald eagle is known to breed on SCI, it does not occur within the action area (M. Booker pers. com., 2019).

**Scripps's Murrelet.** The Scripps's murrelet is a small seabird with a wingspan of 15 inches (38.1 cm). Although the Scripps's murrelet is known to breed on SCI, it does not occur within the action area (M. Booker pers. com., 2019). The Guadalupe murrelet is also a small seabird, 9 to 10 inches (23 to 25 cm) in length which is not a state or federally listed threatened or endangered species; however, it is protected

under the MBTA. Guadalupe murrelet breeding on SCI is suspected, but not confirmed. It does not occur within the action area (M. Booker pers. com., 2019).

Willow Flycatcher. The willow flycatcher occurs as a migrant at SCI but is not expected to occur within the action area due to poor quality habitat. Willow flycatcher is typically seen in areas of SCI with trees or shrublands (M. Booker pers. com., 2019).

Bank Swallows. Bank swallows occur at SCI only as vagrants and are not anticipated to occur within the action area due to poor quality habitat. (M. Booker pers. com., 2019).

Tricolored Blackbirds. Tricolored blackbirds occur at SCI only as vagrants and are not expected to occur within the action area due to poor quality habitat. (M. Booker pers. com., 2019).

**Federally Listed Special Status Species.** Three terrestrial wildlife species listed as federally threatened or endangered occur on SCI: the threatened San Clemente Bell’s sparrow (*Amphispiza belli clementeae*), the endangered San Clemente loggerhead shrike (*Lanius ludovicianus mearnsi*), and the threatened western snowy plover (*Charadrius nivosus nivosus*) (Table 3.3-3) (Navy, 2013a). There are no Critical Habitat designations for these species on San Clemente Island. These three species are described in detail below.

**Table 3.3-3 Threatened and Endangered Wildlife Species Known to Occur on SCI**

<b>Common Name</b>	<b>Scientific Name</b>	<b>Federal Listing Status</b>	<b>State Listing Status</b>	<b>Critical Habitat Present?</b>
San Clemente Bell’s sparrow	<i>Amphispiza belli clementeae</i>	FT	SSC	No
San Clemente loggerhead shrike	<i>Lanius ludovicianus mearnsi</i>	FE	SSC	No
Western snowy plover	<i>Charadrius nivosus nivosus</i>	FT	SSC	No

Note: Selections for Listing Status Column include: FE = federal endangered, FT = federal threatened, SSC = Species of Special Concern (State designation).

San Clemente Bell’s Sparrow. The San Clemente Bell’s sparrow is a small, non-migratory passerine endemic to SCI. It occurs in its highest densities within the maritime desert scrub community, where California boxthorn (*Lycium californicum*) is common. The recorded population dropped to a low of 38 individuals in 1984, although sampling at that time did not record all individuals. During the USFWS’s 5-year review conducted in 2008, the population was estimated at 539 adults. However, the species has expanded its range and more recent island-wide monitoring indicates a larger, more stable population. In 2018, (Meiman et al., in prep.) estimated the population to be 5,284 adult Bell’s sparrows (95% CI=3,894 – 6,673 [M. Booker pers. com., 2019]). The 2019 population estimate was 4,200 Bell’s sparrows (2,100 pairs/territories) (USFWS, 2020). The population is closely monitored by the Navy cooperatively with the Institute for Wildlife Studies. The species is a federally threatened species due to its limited distribution on SCI and habitat degradation due to overgrazing by pigs and goats (Meiman et al., 2016).

The Bell’s sparrow breeds in shrublands and scrublands, predominantly maritime succulent scrub and maritime sage scrub habitats. It also occurs in some areas that support mixed shrub, cactus, and grassland habitats (USFWS, 2020). Highest nest densities occur in areas of high boxthorn cover and low cover of bare ground (Navy, 2013a). Much of this habitat is found on SCI’s north-west facing marine terraces at low elevations.

The action area contains vegetation that can serve as nesting habitat for the Bell's sparrow. The Navy surveyed most of the area for Bell's sparrow presence/absence and breeding status on February 28, March 5, and April 3, 2019.<sup>1</sup> The 2019 surveys found evidence of five territories within or adjacent to the action area (Figure 3.3-1). While nest specific surveys were not performed as part of the 2019 surveys, behavior indicative of nesting was detected and a suspected nesting location was identified within the action area that was very close to a prior, mapped nest location. On May 1, 2019, vegetation mapping was revisited with an updated aerial photograph and another Bell's sparrow survey was completed. The Navy initiated ESA Section 7 formal consultation with the USFWS by submitting a Biological Assessment in February 2020.

San Clemente Loggerhead Shrike. The San Clemente loggerhead shrike is a small, predatory passerine that is a federally endangered subspecies endemic to SCI. It feeds on a variety of prey including insects, lizards, rodents and small birds (USFWS, 2009). Habitat alteration and non-native predators are thought to be the primary reasons for the population decline of the loggerhead shrike (Naval Base Coronado, 2019). Beginning in 1862, cattle and goat grazing drastically changed the ecosystem. Grazing animals were removed in the early 1990s leaving predation by feral cats and black rats as threats to native avian species such as the loggerhead shrike (USFWS, 2009). The San Clemente loggerhead shrike population fell to a low of 14 individuals in 1998 and has increased since then due in part to habitat recovery and captive breeding efforts on SCI. The captive breeding and release program continues to augment the wild population.

Over the past 20 years, the population estimate has ranged from a low of four breeding pairs in 1991 to a high of 82 in 2009 (Navy, 2013a). In 2013, the minimum population estimate, including only adults observed in March, was 133 individuals. The majority of shrike nesting sites occur in the canyons on the east and west side of SCI, the southeastern escarpment, and the mid-island central terrace (Navy, 2013a). Shrikes do not currently nest north of VC-3, nor do they nest on the lowest terraces of the west shore. They do not occur as a breeding or wintering population within the vicinity of the action area.

Western Snowy Plover. The western snowy plover is a small shorebird that breeds along the western coast of North America as well as the interior parts of many western states including Oregon, California, Washington, and Nevada. According to the USFWS 2019 5-year Review for Western snowy plover, the population of the species within the U.S. in 2008 was reported as 1,812 individuals (Navy, 2013a). The Pacific population of the western snowy plover was listed as threatened by the USFWS in 1993.

Typical plover nesting habitat on SCI is lacking. Plovers generally prefer to nest on the ground on sand spits, dune-backed beaches, wide beaches and open areas near river mouths. These areas are limited or non-existent on SCI. However, there have been several recorded incidents of breeding plovers on SCI. It is estimated that western snowy plover breeding on SCI will remain low due primarily to lack of nesting habitat and secondarily to the presence of native and non-native predators (e.g., island fox, feral cats,

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<sup>1</sup> The habitat restoration area was not surveyed during the breeding season for San Clemente Bell's sparrow presence/absence.

and rats) as well as temporary human activities on beaches in training areas (Navy, 2013a). Western snowy plover does not occur in the action area due to the absence of sandy beach habitat.

The island night lizard occurs throughout much of SCI with the exception of areas with sandy soils. They occur in high densities in MDSS habitat dominated by boxthorn and cactus, primarily under rocks on the western side of the island. The island night lizard is a highly sedentary, slow growing, late-maturing, and long-lived lizard. Island night lizards can live 10 years or more, with some individuals estimated to be 30 years of age.

This species was listed as a federally threatened species in 1977. It was subsequently delisted by the USFWS based on recovery in 2014 (79 Federal Register 18190-18210). Project-specific sampling for this population was not undertaken, but it is expected to occur at high densities in MDSS habitat and low densities in non-native grasslands and disturbed habitat with rocks/rock piles.

**3.3.3 Environmental Consequences**

This analysis focuses on wildlife or vegetation types within the action area that are important to the function of the ecosystem or are protected under federal or state law or statute.

**3.3.3.1 No Action Alternative**

Under the No Action Alternative, the Proposed Action would not occur and there would be no change to biological resources. Therefore, no significant impacts to biological resources would occur with implementation of the No Action Alternative.

**3.3.3.2 Proposed Action**

**Terrestrial Vegetation**

The Proposed Action would permanently impact 3.26 acres (1.31 ha) of surface area through earthmoving activities, vegetation removal or vegetation maintenance, of which 2.27 acres (0.92 ha) were either previously disturbed or developed.

The CALA construction footprint includes 1.54 acres of San Clemente Bell’s sparrow habitat (MDSS and non-native grassland). Direct impacts to 0.38 acre (0.15 ha) of MDSS would occur through permanent habitat removal from the grading and construction of the CALA. An additional 0.24 acre (0.08 ha) of permanent impacts to MDSS would result from creating a vegetation maintenance area around the CALA as presented on Figure 3.3-1.

**Biological Resources Potential Impacts:**

- Permanent impacts to 3.26 acres
- Temporary and permanent displacement of wildlife
- Impacts to 1.54 acres of San Clemente Bell’s sparrow habitat

Potential permanent impacts to plant communities from the Proposed Action construction activities are shown in Table 3.3-4. As stated in Section 3.3.2.1, no federally listed plant species occur in the action area. Therefore, implementation of the Proposed Action would not impact federally listed plant species.

**Table 3.3-4 Temporary and Permanent Impacts to Plant Communities Occurring in the Project Footprint and Vegetation Maintenance Area**

<i>Plant Community Alliance</i>	<i>Temporary Impacts (acres [ha])</i>	<i>Permanent Impacts in CALA Footprint (acres [ha])</i>	<i>Permanent Impacts in Vegetation Maintenance Area (acres [ha])</i>	<i>Total Permanent Impacts (acres [ha])</i>
Maritime Desert Succulent Scrub	0.0	0.38 (0.15)	0.24 (0.08)	0.62 (0.25)
Non-Native Grassland	0.56 (0.22)	0.16 (0.06)	0.20 (0.08)	0.36 (0.14)
Disturbed/Developed	3.37 (1.36)	0.86 (0.34)	1.41 (0.57)	2.27 (0.92)
<b>TOTAL</b>	<b>3.93 (1.58)</b>	<b>1.40 (0.56)</b>	<b>1.86 (0.75)</b>	<b>3.26 (1.31)</b>

Implementation of the Proposed Action would result in the permanent loss of approximately 0.62 acre (0.25 ha) of MDSS, or approximately 0.002 percent of the total MDSS acreage on SCI. Although more than one-half acre of MDSS would be permanently impacted, the majority of impacted vegetation is relatively disturbed and are dominated by non-native species. Based on the 2013 INRMP, there are approximately 21,441 acres (8,677 ha) of MDSS on SCI (Navy, 2013a). No temporary impacts to MDSS would occur.

Implementation of the Proposed Action would result in the permanent loss of approximately 0.36 acres (0.14 ha) of non-native grassland. In addition, there would be an estimated 0.56 acre (0.23 ha) of non-native grassland temporarily impacted at the Rock Crusher location.

In addition to the direct disturbance of vegetation associated with vegetation clearing, construction activities could disturb habitats immediately adjacent to the construction footprint resulting in the loss of habitat quality due to an expected increase in non-native species. An additional 3.93 acres (1.58 ha) would be temporarily impacted by the construction staging/batch plant areas, of which 3.37 acres (1.36 ha) are disturbed or developed and the remaining 0.56 acre (0.22 ha) is non-native grassland.

Other direct impacts to vegetation could result from rotor wash and dust from helicopter operations. Indirect impacts to native habitat could involve an increase of non-native vegetation, or soil erosion. In extreme cases, soil can be scoured to the extent that small shrubs could be uprooted. Rotor wash wind speeds vary by aircraft, distance and angle from the aircraft. According to the Naval Air Training and Operating Procedures Standardization Flight Manual of Navy Model SH-60B Helicopter, the gross weight of 21,700 pound (9,843 kilograms) on a standard sea level day, downwash below the rotor can exceed 172 mph (276 kilometers per hour [kph]). This results in the generation of a ground vortex that surrounds the helicopter just outside the rotor arc. (Naval Air Training and Operating Procedures Standardization, 2008).

Rotor wash wind speeds vary with distance and angle from the specific helicopter. As is the case with all aircraft, noise and rotor wash levels diminish substantially when the aircraft is idling or taxiing as opposed to during landing and takeoff operations. For example, the medium lift CH-46 Sea Knight helicopter (comparable to the MH-60), generates maximum wind speeds of about 37 miles per hour (59.5 kph) at 50 feet (15.2 meters) from each side of the aircraft (90 and 270 degrees). Beyond about 70 feet (21.3 meters), the wind speeds diminish symmetrically at all angles from the helicopter, eventually decreasing to 16 mph (25.7 kph) at 156 feet (47.5 meters) (NAWCAD, 1998). A wind speed of 16 mph (25.7 kph) described as a “moderate breeze” in the Beaufort Wind Scale (World Meteorological Organization, 1970), and is within the range of naturally occurring wind speeds at NALF SCI.

Rotor wash can also contribute to an increase of fugitive dust and soil erosion. Dust dispersed during landing operations can decrease plant species' ability to photosynthesize which can lead to a decrease in the viability of vegetation (Prajapati, 2012). In order to minimize dust during landings/takeoffs and the potential for foreign object debris damage, a 50-foot (15-meter) wide vegetation maintenance area surrounding all of the permanent CALA features would be implemented. The 50-foot (15-meter) wide vegetation maintenance area (as shown on Figure 3.3-1) would be maintained with the application of a soil stabilizing polymer and would be regularly maintained to minimize vegetation within the area.

Beyond the 50-foot (15-meter) wide vegetation maintenance area, impacts to vegetation would be direct, but temporary because most vegetation would tend to recover from many of these relatively minor effects. The intensity of these effects would be limited to the amount of time the vegetation is exposed to these high velocity winds, and the amount of vegetation that actually occurs near a given landing area. Adverse impacts on terrestrial vegetation would be minimized through the use of impact avoidance and minimization measures, including the 50-foot (15-meter) wide vegetation maintenance area, as presented in Section 3.4. Therefore, impacts on terrestrial vegetation would be less than significant.

### **Terrestrial Wildlife**

The majority of the proposed construction footprint is located within previously disturbed habitat. Indirect impacts associated with fragmentation of habitat are expected to be minimal, as the project area is adjacent to the Main Airfield and the resulting flat surface would not present a major barrier to dispersal or movement of wildlife.

Direct impacts to wildlife associated with construction activities under the Proposed Action would include temporary and permanent displacement of individual wildlife species from land that provides wildlife habitat. Individuals of smaller, less mobile species and those seeking refuge in burrows (e.g., invertebrates and reptiles) could inadvertently be killed during construction activities; however, long-term, permanent impacts to populations of such species would not result because these species are abundant in surrounding areas.

Operational use of the CALA may result in indirect, long-term and short-duration/event harassment of wildlife from rotor wash and noise effects when helicopters would fly to and from the proposed helipads. Specifically, noise associated with helicopter activities could mask bird calls, invoke stress in birds, and disturb nests adjacent to the CALA, putting some wildlife at risk for abandonment and depredation. Rotor wash wind speeds and noise levels vary with distance and angle from the specific aircraft. Noise and rotor wash levels diminish substantially when the aircraft is idling or taxiing as opposed to during landing and takeoff operations (USMC, 2013).

Noise and rotor wash impacts are anticipated to be nearly imperceptible over ambient conditions where much of the wildlife is habituated to low altitude aircraft operations, including fighter jets such as the F/A 18 Hornet and MH-60 operations at the adjacent Main Airfield. The most likely wildlife response to MH-60 rotor wash and noise at the CALA would be avoidance (flushing) of the area during the activity. Impacts on wildlife resulting from helicopter rotor wash and dust would be temporary.

***Non-Federally Listed Special Status Species***

San Clemente Island Fox. The Proposed Action would result in direct impacts to island fox through loss of foraging and potential denning habitat. Table 3.4-2 includes a suite of avoidance and minimization measures to protect the island fox from entrapment, roadkill, and other anthropogenic effects, as well as to educate construction workers on foxes.

Island Night Lizard. Direct impacts would occur through the loss of island night lizard habitat and potential to be directly killed through the grading and construction process. The highly sedentary nature of island night lizards means that removal of habitat could result in the loss of individuals, even if they are relocated as they may not be successful in a new territory. While measures to collect lizards and relocate them to avoid direct mortality are included herein, it is impossible to hand capture all lizards, so some direct mortality is inevitable; however, based on total population numbers at SCI and long-term population stability, it is unlikely that impacts from the CALA project would be detectable or significant on a population level. Project avoidance and minimization measures in Table 3.4-2 would minimize direct impacts to island night lizards, avoid entrapment, and educate on-site construction workers.

***Threatened and Endangered Species***

San Clemente Bell's Sparrow. The San Clemente Bell's sparrow is the only federally listed threatened or endangered species likely to be impacted from implementation of the Proposed Action. Implementation of the Proposed Action would impact 1.54 acres (0.62 ha) (0.98 acres [0.40 ha] permanently and 0.56 acres [0.29 ha] temporarily) of Bell's sparrow habitat (permanent impacts to 0.62 acres of MDSS and 0.32 acres of non-native grassland, and temporary impacts to 0.56 acres of non-native grassland); refer to Table 3.3-4.

Implementation of the Proposed Action would result in harm to two Bell's sparrows (one pair) from habitat loss, two Bell's sparrow (one pair) from operation-related habitat degradation, and one individual per 5-year period from operation-related disturbance. This impact would affect less than 0.1 percent of the approximately 4,200 Bell's sparrows (2,100 pairs/territories) estimated on San Clemente Island (2019 estimate). Therefore, implementation of the Proposed Action would not appreciably reduce the numbers, reproduction, or distribution of the Bell's sparrow (USFWS, 2020).

Temporary direct impacts during construction may result from construction noise and dust within 300 feet of the construction footprint. Temporary direct impacts from construction noise may affect additional territories. These territories overlap the project action area and may no longer support breeding Bell's sparrows or may be subject to adverse effects through displacement or territory reduction or fragmentation.

Avoidance and minimization measures for temporary impacts include siting temporary staging and concrete batch plant within disturbed and developed areas, education of contractors, use of a biomonitor to ensure conformance with the proposed footprint and all BMPs, and dust control.

Additional indirect impacts to the Bell's sparrow may occur from noise and rotor wash as helicopters fly in and out of the CALA. Helicopter noise and rotor wash could result in indirect, long-term and short-duration/event harassment. As shown on Figure 3.3-1, while the nearest known Bell's sparrow observation is more than 250 feet (76 meters) from the proposed landing pad, Bell's sparrows likely use the area on the periphery of existing territories and during dispersal or broader scale movements. Helicopter rotor wash and noise could therefore alter these movements but would be unlikely to result in lethal take or significantly impair behavior. Furthermore, the 50-foot (15-meter) wide vegetation maintenance area around the CALA would minimize potential impacts to Bell's sparrow by discouraging nesting and foraging near the helipads. In addition, the Navy would continue to manage habitats according to the INRMP, which is designed to protect and benefit threatened and endangered species.

Impacts to Bell's sparrows would be minimized through use of impact avoidance and minimization measures such as, preconstruction surveys, construction monitoring, and implementation of a 50-foot (15-meter) vegetation maintenance area around the CALA. This 50-foot (15-meter) wide zone is intended in part to discourage Bell's sparrow (and other protected birds) from nesting within 50-feet of the proposed helipads (Figure 3.3-1). A complete list of impact avoidance and minimization measures is in Table 3.4-2. Therefore, with implementation of mitigation measures, the Proposed Action would not result in significant impacts to the Bell's sparrow.

In their Biological Opinion dated 8 June 2020 (FWS-LA-20B0141-20F0808), the USFWS concurred with the Navy's assessment that construction of the Proposed Action is not likely to jeopardize the continued existence of the Bell's sparrow.

San Clemente Loggerhead Shrike. The San Clemente loggerhead shrike has never been known to either nest or winter within the action area. In addition, San Clemente loggerhead shrikes occur at very low densities at the northern end of SCI. Therefore, the San Clemente loggerhead shrike would not be affected by the Proposed Action.

Western Snowy Plover. The western snowy plover does not occur in the action area due to the absence of sandy beach habitat. Therefore, the western snowy plover would not be affected by the Proposed Action.

**Summary.** Construction of the CALA would result in direct, permanent impacts to wildlife including the Bell's sparrow through loss of habitat. Operational use of the CALA may result in indirect, long-term and short-duration/event harassment of wildlife from rotor wash and noise effects when helicopters fly to and from the proposed helipads.

Based on the BO dated 8 June 2020 (FWS-LA-20B0141-20F0808), adverse impacts on the Bell's sparrow would be minimized through the implementation of impact avoidance and minimization measures listed in Table 3.4-2. The Navy would continue to manage habitats according to the INRMP, which is designed to protect and benefit threatened and endangered species. The INRMP contains conservation objectives and strategies to ensure natural resources are managed in support of the Mission and regulatory compliance. Therefore, implementation of the Proposed Action would result in less than significant impacts to biological resources.

### 3.4 Summary of Potential Impacts to Resources and Impact Mitigation, Avoidance, and Minimization Measures

A summary of the potential impacts associated with the Proposed Action and the No Action Alternative is presented in Table 3.4-1. Table 3.4-2 provides a comprehensive list of all impact mitigation, avoidance, and minimization measures.

**Table 3.4-1 Summary of Potential Impacts to Resource Areas**

<i>Resource Area</i>	<i>No Action Alternative</i>	<i>Proposed Action</i>
<b>Water Resources</b>	No Impact. There would be no change in existing conditions; therefore, no impacts would occur.	No Significant Impact. <ul style="list-style-type: none"> <li>Construction activities would result in a potential for increases in stormwater runoff and erosion; best management practices would be implemented to minimize the potential for impacts.</li> <li>Post-construction increase in impervious surface by approximately 1.24 acres (0.50 hectares [ha]); permanent stormwater management infrastructure would minimize potential for stormwater runoff impacts.</li> </ul>
<b>Geological Resources</b>	No Impact. There would be no change in existing conditions; therefore, no impacts would occur.	No Significant Impact. <ul style="list-style-type: none"> <li>Temporary disturbance of soils during grading and fill.</li> <li>Import of fill from Mt. Morgan.</li> </ul>
<b>Terrestrial Biological Resources</b>	No Impact. There would be no change in existing conditions; therefore, no impacts would occur.	No Significant Impact. <ul style="list-style-type: none"> <li>Up to 3.26 acres (1.31 ha) would be permanently impacted, of which 2.27 acres (0.79 ha) are either disturbed or developed. The remaining 0.98 acre (0.39 ha) of plant communities that would permanently be impacted are relatively common on SCI.</li> <li>An additional 3.9 acres (1.58 ha) would be temporarily impacted by the construction staging/batch plant areas, of which 3.37 acres (1.36 ha) are disturbed or developed and the remaining 0.56 acre (0.22 ha) is non-native grassland.</li> <li>Wildlife, including individual special status species, would be temporarily displaced during construction activities and permanently displaced in areas where habitat would be removed.</li> <li>Impacts to 1.54 acres (0.62 ha) of occupied San Clemente Bell’s sparrow nesting habitat, resulting in harm to two Bell’s sparrows from habitat loss, two Bell’s sparrows from operation-related habitat degradation, and one individual per 5-year period from operations-related disturbance.</li> <li>Indirect impacts wildlife from helicopter noise and rotor wash during operations. Direct impacts to vegetation from rotor wash.</li> </ul>

**Table 3.4-2 Impact Avoidance and Minimization Measures**

<i>Resource Area</i>	<i>Measure</i>	<i>Anticipated Benefit</i>	<i>Evaluating Effectiveness</i>	<i>Implementing and Monitoring</i>	<i>Responsibility</i>	<i>Estimated Completion Date</i>
All	The contractor’s resident engineer (or construction manager on site) and all construction personnel shall ensure that all measures are implemented during the construction period of this project.	Protection of wildlife	Not applicable	Duration of construction activities	Construction contractor	Completion of construction activities
Section 3.0: Resources Dismissed from Detailed Analysis	Any inadvertent discovery of sensitive archaeological materials within will be handled in accordance with the Navy’s management practices, which include provisions for stopping work and notifying the appropriate parties.	Protect potentially sensitive cultural resources	No impacts to cultural resources	Regular communication/ notification	Construction contractor	Completion of construction activities
	To minimize the effects of dust on adjacent native habitats and wildlife therein, dust will be controlled through wetting and/or other appropriate measures on the site or access roads as necessary, without creating erosion, after consultation with the NALF SCI Natural Resources Office to ensure de-confliction with any sensitive resources.	Protection of terrestrial biological resources	Not applicable	During construction activities	Navy and construction contractor	Completion of construction activities
	Prior to the contractor transporting portable permit-required equipment to SCI, the contractor will submit copies of permit\registrations to NBC Environmental for review and approval.	Protection of air quality	Only permitted portable equipment used	Prior to and duration of construction activities	Construction contractor	Complete of construction activities
	The construction contractor will coordinate material/equipment deliveries with the Navy in advance to minimize impacts to on-island transportation.	Continued efficient on-island transportation	No major transportation issues	Regular communication/ notification	Construction contractor and Navy	Completion of construction activities
	Prior to construction, the area would be evaluated for UXO potential and all necessary measures would then be taken to assess and remove any potential UXO.	Personnel safety during construction	Project safety record	Evaluation and safety adherence	Navy and construction contractor	Completion of construction activities
Section 3.1: Water Resources	The contractor will develop and abide by site-specific Stormwater Pollution Prevention Plan, to include implementation of appropriate best management practices (BMPs).	Protection of resources	BMPs perform as designed	Regularly inspect BMPs for performance	Construction contractor	Completion of construction activities

<b>Resource Area</b>	<b>Measure</b>	<b>Anticipated Benefit</b>	<b>Evaluating Effectiveness</b>	<b>Implementing and Monitoring</b>	<b>Responsibility</b>	<b>Estimated Completion Date</b>
Section 3.1: Water Resources	Standard erosion control measures as identified in the SWRCB Construction General Permit for Construction Site BMPs will be used. These include but are not limited to silt fences, straw bale dikes, berms, surface flow directional controls, vegetation, mulch binders, sediment barriers, fiber rolls, erosion blankets, turf mats and stone bag filters. The erosion control BMPs shall be designed and implemented that contain erosion effects to the direct project footprint and prevent indirect (long-term) erosion as a result of the project.	Prevent runoff, sedimentation, and erosion	Evaluate spills on site	Maintain and monitor during use	Construction contractor and Navy	Completion of construction activities
	Adhere to NALF SCI's requirements related to storm water pollution prevention and storm water controls. The standard erosion control measures as identified in the Construction General Permit will be utilized to reduce erosion during grading and construction activities.	Spill, storm water pollution, and erosion prevention	Not applicable	Draft and implement SWPPP	Construction contractor	Completion of construction activities
	The final project design will include engineering controls to stabilize cut slopes and exposed surfaces, to minimize soil loss and impacts to surface water quality and the Area of Special Biological Significance surrounding SCI. The controls would be developed and implemented in accordance with engineering standards in UFC 3-210-10, <i>Low Impact Development</i> , and Section 438 of the EISA.	Prevent storm water pollution, runoff sedimentation, and erosion	Not applicable	Include engineering controls in project design plans. Periodically maintain and monitor.	Construction contractor	Completion of construction activities
Section 3.2: Geological Resources	To minimize impacts to soils and topography and limit erosion after project construction, the final project design will include engineered measures to stabilize the cut slopes (e.g., stepped terraces), protect exposed surfaces, and reduce/convey storm water in a controlled manner. Where appropriate as determined by the SCI Botanist and SCI Wildlife Biologist, revegetation with plant species native to SCI may occur within the project footprint to minimize erosion. In addition, an erosion control plan will be developed before, and implemented during project construction. The plan will include best management practices, such as silt fences, gravel bags, restrictions on grading during the rainy season, and other measures to control erosion and prevent the release of contaminants into the soil.	Protection of soils, waterways, and associated wildlife and plants	Not applicable	Prior to and during construction activities	Navy and construction contractor	Completion of construction activities
	If artificial fill is imported from an off-site source in order to achieve proposed grades, the chemical and physical properties of the fill soil would be evaluated prior to importing the material. All imported fill material will be clean of petroleum hydrocarbons and other contaminants. In addition, the project geotechnical engineer would verify that any imported fill material meets the required physical parameters for the Proposed Action.	Protection of waterways and associated wildlife and plants	Not applicable	Prior to and during construction activities	Navy and construction contractor	Completion of construction activities

<b>Resource Area</b>	<b>Measure</b>	<b>Anticipated Benefit</b>	<b>Evaluating Effectiveness</b>	<b>Implementing and Monitoring</b>	<b>Responsibility</b>	<b>Estimated Completion Date</b>
Section 3.3 Biological Resources	Before project initiation, the project footprint, including temporary features such as staging areas and lay down areas, will be clearly marked with flagging, fencing, or signposts. Bird species breeding habitat within the project footprint would also be marked and avoided where practicable.	Protection of habitat	Not applicable	Prior to and during construction activities	Navy and construction contractor	Completion of construction activities
	Prior to project-related activities, the Navy will require the executing agent/contractor to assure that all project work areas, including transit routes necessary to reach construction sites, are clearly identified or marked. Workers will be directed to restrict vehicular activities to roads and associated features (e.g., designated parking areas, turn-arounds, pull-outs, and staging areas).	Protection of terrestrial biological resources	Not applicable	During construction activities	Navy and construction contractor	Completion of construction activities
	All imported materials (e.g., gravel, soil, wood, pallets, straw wattles, etc.) will be inspected and to the extent feasible cleared of non-native invertebrates (e.g., insects, worms, snails, slugs) through direct removal (washing clean) or application of pesticides prior to transit to SCI.	Biosecurity (Invasive plant/pest control)	Not applicable	Prior to and during construction activities	Navy and construction contractor	Completion of construction activities
	All equipment fueling will occur in designated areas with appropriate containment/BMPs.	Protection of waterways and terrestrial biological resources	Not applicable	Duration of construction activities	Construction contractor	Completion of construction activities
	Maintenance and demolition debris will be properly disposed of and will not be discarded on site.	Protection of terrestrial biological resources	Not applicable	Duration of construction activities	Construction contractor	Completion of construction activities

Resource Area	Measure	Anticipated Benefit	Evaluating Effectiveness	Implementing and Monitoring	Responsibility	Estimated Completion Date
Section 3.3 Biological Resources	To control the spread of non-native plants, all equipment and/or vehicles will be cleaned and power-washed before entering SCI and the project area. The vehicles and equipment will be washed free of visible plant material, dirt, or mud before embarking for SCI. Equipment may be subject to inspection and may be unable to load on the barge or unload on SCI if it is not clean of visible dirt and plant material. Cleared vegetation would be disposed of in a manner specified by the Naval Base Coronado botanist. All project personnel will dry or pressure wash their boots before leaving the project area. Vehicle cabs will also be swept out during the cleaning process to remove plants or seeds. Any vehicle or construction equipment that has come into contact with vegetation or disturbed soil will be pressure washed before leaving the project area at any time. Pressure washing will focus on removal of plant materials and seeds, or mud containing seeds from the undercarriage of the vehicle or construction equipment. BMPs will be established to capture wash runoff.	Reduced potential for spread of non-native plant species	Not applicable	Duration of construction activities	Construction contractor	Completion of construction activities
	All imported materials (e.g., gravel, soil, wood, pallets, straw wattles, etc.) will be inspected and to the extent feasible, cleared of non-native invertebrates (e.g., insects, worms, snails, slugs) through direct removal (washing clean) or application of pesticides prior to transit to SCI.	Biosecurity	Not applicable	Prior to construction activities	Construction contractor	Prior to construction activities
	Materials for the project will not be staged in/at Wilson Cove, the Landfill, the Quarry, and the Airfield to avoid contamination with non-native Argentine ants. Materials will be staged only in area(s) that is/are not infested with Argentine ants.	Biosecurity	Not applicable	Duration of construction activities	Construction contractor	Completion of construction activities
	Because island foxes are scavengers, all food-related trash will be placed in sealed bins or removed from the site daily. In addition, all trash cans and dumpsters at the construction site and final project site shall be properly covered at all times to prevent foxes from becoming entrapped within trash cans and dumpsters.	Reduction of litter and protection of wildlife	Not applicable	During construction and operation activities	Navy and construction contractor	Completion of construction activities and during operations
	To reduce impacts to island night lizards ( <i>Xantusia riversiana</i> ; night lizard), following delineation of the project construction footprint, but prior to ground disturbance, the SCI Wildlife Biologist will be given 2 days of access to the site for hand removal of island night lizards.	Protection of terrestrial biological resources	Not applicable	During construction activities	Navy and construction contractor	Completion of construction activities

<b>Resource Area</b>	<b>Measure</b>	<b>Anticipated Benefit</b>	<b>Evaluating Effectiveness</b>	<b>Implementing and Monitoring</b>	<b>Responsibility</b>	<b>Estimated Completion Date</b>
Section 3.3 Biological Resources	All necessary trenching or excavation work will use a gently sloped edge or provide an improvised ramp to avoid entrapment of island foxes and island night lizards. The construction manager and project proponent shall coordinate with the NALF SCI Wildlife Biologist, regarding the construction schedule and shall provide access for hand removal of lizards if necessary. If it is infeasible for the NALF SCI Wildlife Biologist or Natural Resources Operations Manager to support trench inspection for lizard removal, then trenches and/or holes shall be inspected daily by construction personnel (briefed by NALF SCI Natural Resources Office staff) prior to re-initiating work and any entrapped lizards shall be removed by hand and placed directly outside the construction footprint.	Protection of terrestrial biological resources	Not applicable	During construction activities	Navy and construction contractor	Completion of construction activities
	Island foxes and island night lizards will not be collected, harvested (killed), or kept as pets.	Protection of terrestrial biological resources	Not applicable	During construction activities	Navy and construction contractor	Completion of construction activities
	Project contractors and support personnel will receive a pre-project brief to ensure that the contractor(s) and all maintenance personnel are fully informed of: (a) the sensitive resources in the project area, (b) project footprint and transit route delineation, and (c) conservation measures to reduce the impacts of the project. All contractors and support personnel will sign a form that acknowledges the training brief and acceptance of the conservation measures.	Protection of terrestrial biological resources	Not applicable	Prior to, during, and after construction activities	Navy and construction contractor	Completion of construction activities and entirety of operational activities
	Drivers will strictly adhere to posted speed limits (max 35 mph on hard-surfaced roads and 20 mph on dirt roads) and should (whenever safe) completely stop for foxes spotted along the road or roadside, as foxes are naïve to vehicles and typically do not move to avoid collisions.	Protection of terrestrial biological resources	Not applicable	Prior to and during construction activities	Navy and construction contractor	Completion of construction activities
	Open pits deep enough to trap island fox will be covered whenever construction is not underway.	Protection of island fox	Not applicable	During construction activities	Construction contractor	Completion of construction activities
	Pipe ends between 2 and 6 inches (5 and 15 cm) in diameter will be capped to ensure that island fox cannot be unintentionally trapped.	Protection of island fox	Not applicable	During construction activities	Construction contractor	Completion of construction activities

<b>Resource Area</b>	<b>Measure</b>	<b>Anticipated Benefit</b>	<b>Evaluating Effectiveness</b>	<b>Implementing and Monitoring</b>	<b>Responsibility</b>	<b>Estimated Completion Date</b>
Section 3.3 Biological Resources	All containers with hazardous and toxic liquids shall be appropriately covered (especially at night) and secured in designated (fox-proof) areas to prevent foxes from drinking such liquids.	Protection of terrestrial biological resources	Not applicable	During construction and operation activities	Navy and construction contractor	Completion of construction activities
	All containers used to store water and deep enough (1.5 feet [0.5 meters]) or deeper) to cause drowning of island fox shall be completely covered to prevent foxes from drowning. This includes water buffalos, which must be maintained and capped.	Protection of terrestrial biological resources	Not applicable	During construction and operation activities	Navy and construction contractor	Completion of construction activities
	All construction materials that could cause the entanglement of island foxes (e.g., nets, ropes, wires, etc.) shall be secured (especially at night) to prevent island foxes from getting trapped in such materials. The final project design and implementation shall not result in entrapment hazards for island foxes, no netting/wire mesh, bunkers, or pits shall be part of the final project unless reviewed and approved by the SCI Wildlife Biologist at (619) 545-7188.	Reduction of litter and protection of wildlife	Not applicable	During construction and operation activities	Navy and construction contractor	Completion of construction activities
	No SCI personnel, contractor, or visitor will feed island foxes.	Protection of wildlife	Not applicable	Duration of construction activities	Construction contractor	Completion of construction activities
	To the extent feasible, any road maintenance and/or construction shall leave an aggregate/dirt mound immediately adjacent to the roadside to serve as a clear boundary of the road's edge, assisting with control of off-roading, and because such features are associated with decreases in island fox road kill.	Protection of wildlife	Not applicable	Duration of construction activities	Construction contractor	Completion of construction activities
	If the project involves the movement of conex boxes or similar such large equipment or structures that have been in place for at least 30 days on SCI and movement would occur between February and April, personnel must contact the SCI Wildlife Biologist at (619) 545-7188 prior to moving the boxes to allow for an inspection for fox dens. If a fox den is located, the wildlife biologist(s) will work with the project proponent to support the needed equipment/structure movement while minimizing impacts to the fox den.	Protection of wildlife	Not applicable	Duration of construction activities	Construction contractor	Completion of construction activities
	Any island fox-vehicle collision shall be reported to the SCI Natural Resources Office Operations Manager or NALF SCI Natural Resources Office-contracted biologists, or NBC Environmental as soon as possible, not to exceed 24 hours at (619) 524-9064. (The report is for informational purposes only and would not result in any restrictions or citations).	Protection of wildlife	Not applicable	Duration of construction activities	Construction contractor	Completion of construction activities

<b>Resource Area</b>	<b>Measure</b>	<b>Anticipated Benefit</b>	<b>Evaluating Effectiveness</b>	<b>Implementing and Monitoring</b>	<b>Responsibility</b>	<b>Estimated Completion Date</b>
Section 3.3 Biological Resources	All current and new SCI personnel and visitors must be provided with the Navy’s brochure on the island fox and/or wallet card on Natural Resources regulations compliance. Brochures and/or cards can be obtained from the NALF SCI Natural Resources Office Operations Manager at (619) 524-9022 or 726-5639 or NALF SCI Wildlife Biologist at (619) 545-7188.	Protection of wildlife	Not applicable	Duration of construction activities	Construction contractor	Completion of construction activities
	Projects shall not install lighting that can adversely impact shorebirds or seabirds. Outdoor lighting will only be activated during times of facility occupation by personnel, fully downcast and down shielded to prevent off-facility illumination to the maximum extent feasible, and consistent with airfield requirements. Lighting plans will incorporate low brightness luminaires to reduce direct glare and provide adequate vertical illuminance while minimizing light pollution and trespass. Lighting plans will be submitted to and approved by the SCI Wildlife Biologist and shall meet Unified Facilities Criteria 3-530-01 standards.	Protection of terrestrial biological resources	Plan approval	During construction activities	Contracted Biological Monitor to coordinate plans with Navy; Navy to review and approve	Completion of construction activities
	To avoid impacts to ESA listed birds, and MBTA covered birds lighting standards which minimize impacts shall be followed to the extent that they are compatible with safety requirements for airfield lighting. Per UFC 3-530-01 the following are required: <ul style="list-style-type: none"> <li>• Direct Glare: Avoid direct glare from luminaires and excessive contrast of surfaces. Use shielded light sources if appropriate and as low a wattage as possible.</li> <li>• Light Pollution/Trespass: Use fully shielded or IES U0 luminaires to eliminate direct light above the horizontal plane (unless precluded by airfield safety requirements). Refer to maximum allowable uplight and backlight ratings in specific lighting zones.</li> </ul>	Protection of terrestrial biological resources	Plan approval	During construction activities	Construction contractor	Completion of construction activities
	Anti-perching materials (e.g., Nixilite) will be installed on any necessary fences, light posts, or other structures that may serve as perches for raptors.	Protection of terrestrial biological resources	Plan approval	During construction activities	Construction contractor	Completion of construction activities

<b>Resource Area</b>	<b>Measure</b>	<b>Anticipated Benefit</b>	<b>Evaluating Effectiveness</b>	<b>Implementing and Monitoring</b>	<b>Responsibility</b>	<b>Estimated Completion Date</b>
Section 3.3 Biological Resources	To reduce the potential for spread of invasive plant species from stockpiled soil to the construction site, the Navy will examine soils stockpiled at Mt Morgan for evidence of non-native plant species or propagules. If invasive plant species or propagules are detected on Mt. Morgan that are not already present in the vicinity of the construction footprint, the Navy will treat the soils with herbicide to the extent possible, prior to transport to the construction footprint. In addition, to further reduce the potential for invasive species spread, the Navy will conduct invasive plant species control on and within 25 feet of the new CALA for 5 years post-construction.	Protection of terrestrial biological resources	Successful invasive plant species control	Prior to and following construction activities	Navy (NBC Botanist)	Post-construction
	At the discretion of the Navy, the Navy will re-vegetate temporary impacts to the extent appropriate and feasible. The Navy will prioritize areas for revegetation according to erosion potential, presence or absence of invasive plants within the vicinity, pre-activity condition of the site, and other site specific relevant factors. Areas not selected for revegetation, but subject to temporary impacts, will be prioritized for invasive plant species control. The NBC Botanist and CPF Natural Resources Manager will decide the course of action for any revegetation requirement.	Protection of terrestrial biological resources	Successful revegetation and invasive plant species control	Post-construction	NBC Botanist and CPF Natural Resources Manager	Post-construction
	The Navy will notify the CFWO when construction activities are complete and report the total acreage temporarily or permanently impacted by the Proposed Action.	Accounting of final impacts	Impacts equal to or less than anticipated	N/A	Navy and construction contractor	Completion of construction activities
Section 3.3 Biological Resources - San Clemente Bell's Sparrow	Prior to vegetation clearing/grubbing, a springtime survey (around April) for the Bell's sparrow will take place and the results will be provided to the Service to confirm the number of Bell's sparrows within the action area.	Protection of the Bell's sparrow	Presence/Absence	Prior to construction activities	Navy and construction contractor	Prior to construction activities
	Vegetation clearing/grubbing will occur between 15 August and 1 December, outside of the Bell's sparrow breeding season, unless the SCI Wildlife Biologist determines and notifies the Carlsbad Fish and Wildlife Office (CFWO) that the Bell's sparrow breeding season has ended before 15 August.	Protection of Bell's sparrow	No additional harm	Prior to construction activities	Navy and construction contractor	Prior to construction activities
	Once cleared, the project area will be maintained until construction begins to prevent vegetation re-growth and assure that nests are not initiated within the construction footprint. The vegetation maintenance area would be maintained in perpetuity to minimize rotor wash impacts to species.	Protection of Bell's sparrow	Not applicable	Prior to construction activities	Navy and construction contractor	Prior to construction activities

<b>Resource Area</b>	<b>Measure</b>	<b>Anticipated Benefit</b>	<b>Evaluating Effectiveness</b>	<b>Implementing and Monitoring</b>	<b>Responsibility</b>	<b>Estimated Completion Date</b>
Section 3.3 Biological Resources - San Clemente Bell's Sparrow	A CFWO-approved biologist (Biological Monitor) will be on site: (a) during vegetation clearing/grubbing; (b) weekly during project construction outside of the Bell's sparrow nesting season, and (c) every 3-5 days during the Bell's sparrow nesting season (i.e., 2 December to 14 August), within 300 feet (91 meters) of Bell's sparrow habitat to ensure compliance with all conservation measures. The Biological Monitor will be a trained ornithologist with at least 40 hours of independent Bell's sparrow observation in the field and documented experience of at least 20 hours of locating and monitoring Bell's sparrow nests. If necessary, more than one biologist may be used.	Protection of Bell's sparrow	No additional harm	Prior to and during construction activities	Navy and construction contractor	Completion of construction activities
	The Navy will submit the biologist's name, address, telephone number, and work schedule on the project to the CFWO at least 5 working days prior to initiating project impacts. If necessary, more than one Biological Monitor may be used. The Biological Monitor will be provided with a copy of the Biological Opinion and will be available during pre-construction and construction phases to review grading plans, address protection of sensitive biological resources, monitor ongoing work, and maintain communications with the Resident Engineer to ensure that issues relating to biological resources are appropriately and lawfully managed.	Protection of Bell's sparrow	No additional harm	Prior to and during construction activities	Navy and construction contractor	Completion of construction activities
	<p>The Biological Monitor will perform the following duties:</p> <ul style="list-style-type: none"> <li>Determine the presence of Bell's sparrows in the project footprint. Prior to vegetation clearing/grubbing, the Biological Monitor will perform a minimum of three focused preconstruction surveys, on separate days. Surveys will begin a maximum of 30 days prior to initiating vegetation clearing/grubbing, and one survey will be conducted the day immediately prior to the initiation of vegetation clearing/grubbing.</li> <li>Ensure that Bell's sparrows will not be injured or killed by vegetation clearing/grubbing. The Biological Monitor will direct personnel to begin vegetation clearing/grubbing in an area away from the Bell's sparrows. The Biological Monitor will record the number and location of Bell's sparrows observed during vegetation clearing/grubbing. The Navy will notify the CFWO at least 7 days prior to vegetation clearing/grubbing to allow the CFWO to coordinate with the Biological Monitor on potential bird flushing activities.</li> </ul>	Protection of Bell's sparrow	No additional harm	Prior to and during construction activities	Navy and construction contractor	Completion of construction activities

<b>Resource Area</b>	<b>Measure</b>	<b>Anticipated Benefit</b>	<b>Evaluating Effectiveness</b>	<b>Implementing and Monitoring</b>	<b>Responsibility</b>	<b>Estimated Completion Date</b>
<p style="text-align: center;">Section 3.3 Biological Resources - San Clemente Bell's Sparrow</p>	<p>The Biological Monitor will also perform the following duties:</p> <ul style="list-style-type: none"> <li>• Conduct roadside surveys in habitat adjacent to the construction footprint and roadway to detect Bell's sparrows struck by heavy equipment or vehicles. If surveys detect a Bell's sparrow that has been struck by equipment or a vehicle, the Navy will contact the CFWO within 24 hours of the observed impact.</li> <li>• Assess the effects of construction activities during the non-breeding and breeding season. During the Bell's sparrow non-breeding season, the Biological Monitor will assess Bell's sparrow habitat use in the vicinity of the project and assure compliance with Conservation Measures. During the Bell's sparrow breeding season (after vegetation clearing), the Biological Monitor will determine the presence of nest building, egg incubation, or brood rearing activities within 300 feet of the project site. If an active Bell's sparrow nest is found adjacent to the site, construction activity may be adjusted temporarily to minimize nest disturbance, to the extent feasible without impacting the project construction schedule. If monitoring detects behavioral changes that may rise to the level of take (e.g., interruption of incubation, nest abandonment, lowered parental attendance, disruption of nesting activities), the Navy may contact the CFWO within 24 hours of the observed impact to discuss addition CMs to avoid and minimize potential impacts.</li> <li>• Submit a final monitoring report to the CFWO within 60 days of project completion demonstrating compliance with all CMs and that the limits of project impacts were not exceeded. The report will also specify numbers, locations, and sex of Bell's sparrows (if observed), observed Bell's sparrows' behavior (especially in relation to project activities), including any observed nest abandonment or project-related nest failure, and the number of Bell's sparrows detected harmed or killed due to collision with equipment or vehicles.</li> </ul>	<p>Protection of Bell's sparrow</p>	<p>No additional harm</p>	<p>Prior to and during construction activities</p>	<p>Navy and construction contractor</p>	<p>Completion of construction activities</p>

<b>Resource Area</b>	<b>Measure</b>	<b>Anticipated Benefit</b>	<b>Evaluating Effectiveness</b>	<b>Implementing and Monitoring</b>	<b>Responsibility</b>	<b>Estimated Completion Date</b>
Section 3.3 Biological Resources -San Clemente Bell's Sparrow	The Navy will monitor and report on compliance with the established take exemptions and conservation measures prior to, during, and after construction.	Protection of Bell's sparrow	No additional harm	Prior to, during, and after construction activities	Navy and construction contractor	Completion of construction activities
	Following construction of the CALA, monitor the action area for 5 years to assess Bell's sparrow occupancy and report to the CFWO the estimated number of Bell's sparrow territories observed.	Bell's sparrow response to Proposed Action	N/A	N/A	Navy	5 years are completion of construction activities.
	Notify the CFWO in writing, within 1 day of any observed construction or operation-related death or injury of any Bell's sparrow or if any other take exemption is exceeded to coordinate with the CFWO to determine if additional protective measures are required.	Protection of Bell's sparrow	No additional harm.	During construction	Navy and construction contractor	Completion of construction activities.

*Legend:* BMPs = Best Management Practices; CFWO = Carlsbad Fish and Wildlife Office; CM = Conservation Measure; CPF = Commander Pacific Fleet; EISA = Energy Independence and Security Act; ESA = Endangered Species Act; MBTA = Migratory Bird Treaty Act; NALF = Naval Auxiliary Landing Field; NBC = Naval Base Coronado; SCI = San Clemente Island; UFC = United Facilities Criteria; UXO = unexploded ordnance.

## 4 Cumulative Impacts

This section 1) defines cumulative impacts, 2) describes past, present, and reasonably foreseeable future actions relevant to cumulative impacts, 3) analyzes the incremental interaction the proposed action may have with other actions, and 4) evaluates cumulative impacts potentially resulting from these interactions.

### 4.1 Definition of Cumulative Impacts

The approach taken in the analysis of cumulative impacts follows the objectives of the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations, and CEQ guidance. Cumulative impacts are defined in 40 CFR section 1508.7.

The impact on the environment that results from the incremental impact of the action when added to the other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

To determine the scope of environmental impact statements (EISs), agencies shall consider cumulative actions, which when viewed with other proposed actions have cumulatively significant impacts and should therefore be discussed in the same impact statement.

In addition, CEQ and U.S. Environmental Protection Agency (USEPA) have published guidance addressing implementation of cumulative impact analyses—Guidance on the Consideration of Past Actions in *Cumulative Effects Analysis* (CEQ, 2005) and Consideration of Cumulative Impacts in *EPA Review of NEPA Documents* (USEPA, 1999). CEQ guidance entitled *Considering Cumulative Impacts Under NEPA* (1997) states that cumulative impact analyses should:

“...determine the magnitude and significance of the environmental consequences of the proposed action in the context of the cumulative impacts of other past, present, and future actions...identify significant cumulative impacts...[and]...focus on truly meaningful impacts.”

Cumulative impacts are most likely to arise when a relationship or synergism exists between a proposed action and other actions expected to occur in a similar location or during a similar time period. Actions overlapping with or in close proximity to the proposed action would be expected to have more potential for a relationship than those more geographically separated. Similarly, relatively concurrent actions would tend to offer a higher potential for cumulative impacts. To identify cumulative impacts, the analysis needs to address the following three fundamental questions:

- Does a relationship exist such that affected resource areas of the proposed action might interact with the affected resource areas of past, present, or reasonably foreseeable actions?
- If one or more of the affected resource areas of the proposed action and another action could be expected to interact, would the proposed action affect or be affected by impacts of the other action?
- If such a relationship exists, then does an assessment reveal any potentially significant impacts not identified when the proposed action is considered alone?

## 4.2 Scope of Cumulative Impacts Analysis

The scope of the cumulative impacts analysis involves both the geographic extent of the effects and the time frame in which the effects could be expected to occur. For this Environmental Assessment (EA), the study area delimits the geographic extent of the cumulative impacts analysis. In general, the study area will include those areas previously identified in Chapter 3 for the respective resource areas. The time frame for cumulative impacts centers on the timing of the proposed action.

Another factor influencing the scope of cumulative impacts analysis involves identifying other actions to consider. Beyond determining that the geographic scope and time frame for the actions interrelate to the proposed action, the analysis employs the measure of “reasonably foreseeable” to include or exclude other actions. For the purposes of this analysis, public documents prepared by federal, state, and local government agencies form the primary sources of information regarding reasonably foreseeable actions. Documents used to identify other actions include notices of intent for EISs and EAs, management plans, land use plans, and other planning related studies.

## 4.3 Past, Present, and Reasonably Foreseeable Actions

This section focuses on past, present, and reasonably foreseeable future projects at and near Naval Auxiliary Landing Field (NALF) San Clemente Island (SCI). In determining which projects to include in the cumulative impacts analysis, a preliminary determination was made regarding the past, present, or reasonably foreseeable action. Specifically, using the first fundamental question included in Section 4.1, it was determined if a relationship exists such that the affected resource areas of the Proposed Action might interact with the affected resource area of a past, present, or reasonably foreseeable action. If no such potential relationship exists, the project was not carried forward into the cumulative impacts analysis.

In accordance with CEQ guidance (CEQ, 2005), these actions considered but excluded from further cumulative effects analysis are not catalogued here as the intent is to focus the analysis on the meaningful actions relevant to inform decision-making. Projects included in this cumulative impacts analysis are presented in Table 4-1 and described in the following subsections.

**Table 4-1 Cumulative Action Evaluation**

<i>Action</i>	<i>Level of NEPA Analysis Completed</i>
<b>Past Actions</b>	
Southern California Range Complex	EIS complete (Navy, 2008); Record of Decision (2009)
Hawaii-Southern California Training and Testing (2014-2018)	EIS complete (Navy, 2013)
<b>Present and Reasonably Foreseeable Future Actions</b>	
Hawaii-Southern California Training and Testing (2018-2023-TBD)	EIS complete (Navy, 2018b)
Maintenance and Upgrades to Infrastructure at NALF SCI	EA complete (Navy, 2017)
Construct Flags and Gates at VC-3 (Old Airfield)	CATEX complete
Conduct Repairs to Magazine Site	CATEX complete
Relocation of the Aerial Target Launch Site at NALF SCI	EA complete (Navy, 2018c)
Addressing the Replacement of Wind Turbines	EA in-progress
Maritime Surveillance System Test Bed	Programmatic EA/Overseas Environmental Assessment complete (Navy, 2018b)
Construction of a Boat Ramp/Pier	EA in pre-planning
Construction of a Squadron Operations Facility	CATEX in progress
Construction of an Air Terminal	CATEX in-progress
SCI Terrestrial Testing and Training EA	EA In Preparation
Hawaii-Southern California Training and Testing (2023-TBD)	NEPA not started
CALA Taxiway	NEPA not started

*Legend:* CATEX = Categorical Exclusion; CALA = Combat Aircraft Loading Area; EA = Environmental Assessment; EIS = Environmental Impact Study; NALF = Naval Auxiliary Landing Field; NEPA = National Environmental Policy Act; SCI = San Clemente Island

**4.3.1 Past Actions**

**Southern California Range Complex.** In 2008, the Navy completed the Southern California (SOCAL) Range Complex EIS/Overseas (OEIS) (Navy, 2008). The SOCAL Range Complex EIS/OEIS addressed the potential environmental impacts associated with ongoing and proposed naval activities within the Navy’s existing SOCAL Range Complex. The SOCAL Range Complex encompasses surface and subsurface ocean operating areas, over-ocean military airspace, and NALF SCI.

**Hawaii-Southern California Training and Testing.** In 2013, the Navy completed the Hawaii-Southern California Training and Testing EIS/OEIS (Navy, 2013c). The Hawaii-Southern California Training and Testing EIS/OEIS addressed the potential environmental impacts associated with the current, emerging, and future training and testing activities in the Hawaii-Southern California Study Area.

**4.3.2 Present and Reasonably Foreseeable Actions**

**Hawaii-Southern California Training and Testing.** The Navy is conducting training and testing activities—which include the use of active sonar and explosives—primarily within existing range complexes and operating areas located along the coast of Southern California and around the Hawaiian Islands. Navy operating areas include designated ocean areas near fleet homeports. Activities also include sonar maintenance and gunnery exercises conducted concurrently with ship transits and which may occur outside Navy range complexes and testing ranges. The Navy completed an EIS/OEIS in 2018 (Navy, 2018b) and the activity is on-going. Although not actively being worked on now, the Navy will

soon initiate the next round of Hawaii-Southern California Training and Testing analysis for the period 2023+.

**Maintenance and Upgrades to Infrastructure at Navy Auxiliary Landing Field, San Clemente Island, CA.**

In June 2017, the Navy completed an EA to conduct maintenance, repair, and upgrades at NALF SCI for existing infrastructure, including fences and gates, roads and crossovers, drainage structures, utility infrastructure (i.e., electrical and water systems), and existing and temporary facilities (buildings, airfield, landfill, and borrow pit) (Navy, 2017).

**Construct Flags and Gates at VC-3 (Old Airfield).** The Navy proposes to construct three gates and flag poles at VC-3 at the start of North Point Road near the landfill, and the Assault Vehicle Maneuver Road on the west and south sides of VC-3. The project includes temporarily placing three road barriers in the VC-3 parking lot to prevent access to the runway during operations.

**Conduct Repairs to Magazine Site.** The Navy proposes to conduct repairs at the VC-3 magazine site (Buildings 60320, 60321, 60322, 60323, 60324, and 60325). Repairs would include the following: remove old gravel; inspect grounding and vents and repair as necessary; ensure vents and lightning protection do not get covered and are in adequate condition; install stand pipes for ground testing; regrade, recompact, and apply a new base; and re-cover magazines with the appropriate depth of gravel.

**Relocation of Aerial Target Site.** The Navy proposes to relocate the existing aerial target launch site from the Red Label Area. The launch site would be utilized for NALF SCI aerial target launch operations. The Navy completed an EA for this project in 2018 (Navy, 2018a).

**Addressing the Replacement of Wind Turbines.** The Navy proposes to demolish three existing wind turbines and construct up to five new wind turbines in the same area at NALF SCI. The purpose of the project is to increase SCI's energy security through the replacement of antiquated wind turbines with new electricity generating facilities. An EA for this proposed action is currently being prepared.

**Maritime Surveillance System (MSS) Test Bed.** The Navy proposes to install and operate an MSS Test Bed, consisting of an offshore submarine cable and an upland shore processing facility at NALF SCI. The project is needed to further the Navy's Maritime Surveillance Program with long-term in situ testing of Anti-Submarine Warfare technologies using passive acoustic monitoring and unmanned systems. The Navy completed a Programmatic EA/Overseas Environmental Assessment (EA) for this project (Navy, 2018b).

**Construction of a Boat Ramp/Pier.** The Navy is considering constructing a new boat ramp/pier north of the Main Airfield to support training.

**Construction of a Squadron Operations Facility.** The Navy is considering constructing an aircraft maintenance hangar near the Main Airfield. The Navy is currently preparing a CATEX for this proposed action.

**Construction of an Air Terminal.** The Navy is considering replacing the existing air terminal with a new larger air terminal near the Main Airfield. The Navy is currently preparing a CATEX for this proposed action.

**SCI Terrestrial Testing and Training EA.** The purpose of this EA is to analyze the potential environmental effects associated with ongoing and proposed Department of Defense (DoD) training and testing

activities to meet future operational requirements and update fire management practices on SCI. The in-progress EA proposes additional multi-use training sites and upgrading multiple existing sites throughout SCI to allow enhanced flexibility and more realistic training scenarios.

**CALA Taxiway.** Although there are currently no concrete plans or allocated funds, there is a potential for the CALA proposed in this EA to be expanded in the future to include a taxiway to the existing Taxiway Alpha and additional infrastructure. If the Navy proposes construction of a taxiway adjacent to the CALA in the future, the Navy would prepare NEPA compliance documentation at that time.

#### **4.4 Cumulative Impact Analysis**

Where feasible, the cumulative impacts were assessed using quantifiable data; however, for many of the resources included for analysis, quantifiable data is not available and a qualitative analysis was undertaken. In addition, where an analysis of potential environmental effects for future actions has not been completed, assumptions were made regarding cumulative impacts related to this EA/EIS where possible. The analytical methodology presented in Chapter 3, which was used to determine potential impacts to the various resources analyzed in this document, was also used to determine cumulative impacts. That is, it is not possible to analyze direct and indirect effects in Chapter 3 without considering context. For example, air impacts cannot be considered without reference to the attainment status of the air basin, and sensitive species cannot be considered without considering their endangered status and prospects for recovery or non-recovery. In that sense, though it is difficult to add up the impacts of individual projects without precise knowledge of timing and scope, the direct and indirect impact analysis cannot help but encompass cumulative effects.

##### **4.4.1 Water Resources**

###### **4.4.1.1 Description of Geographic Study Area**

The region of influence for water resources includes the watershed in which the study area is located on NALF SCI.

###### **4.4.1.2 Relevant Past, Present, and Future Actions**

Past, present, or reasonably foreseeable construction projects on NALF SCI in the vicinity of the Proposed Action are considered in the cumulative impact analysis for surface water.

###### **4.4.1.3 Cumulative Impact Analysis**

The Proposed Action is not anticipated to exceed water quality standards. Implementation of all other relevant projects on NALF SCI identified in Table 4-1, especially those with heavy ground-disturbing activities within the same watershed, could result in increased erosion and sedimentation. Although the other relevant projects could have similar effects on surface water, the projects would also be required to comply with applicable federal regulations and requirements, and would have to implement similar types of water quality protection measures. This would minimize long-term impacts from the Proposed Action and other projects on SCI. In addition, adherence to the Construction General Permit, including use of BMPs, would minimize the potential for construction-related cumulative effects on surface water quality. Furthermore, the Navy has prepared and is implementing an island-wide erosion control plan to assess and reduce soil erosion on NALF SCI (NAVFAC SW, 2013). Therefore, implementation of the

Proposed Action combined with the past, present, and reasonably foreseeable future projects, would not result in significant cumulative impacts to water resources.

#### **4.4.2 Geological Resources**

##### **4.4.2.1 Description of Geographic Study Area**

The geographic scope for the assessment of cumulative impacts on geological resources includes landforms within the vicinity of the CALA.

##### **4.4.2.2 Relevant Past, Present, and Future Actions**

Past, present, or reasonably foreseeable construction projects on NALF SCI in the vicinity of the Proposed Action are considered in the cumulative impact analysis for geologic resources.

##### **4.4.2.3 Cumulative Impact Analysis**

The Proposed Action is not anticipated to result in cumulative impacts to geological resources because the Proposed Action and all other construction projects involving grading on NALF SCI are required to comply with the Navy's engineering standards for grading and compaction. Each project would comply with the Construction General Permit and a project-specific SWPPP would be prepared and implemented along with associated BMPs. BMPs such as silt fences, silt basins, gravel bags, restrictions on grading during the rainy season, and other measures to control erosion or landslides would be implemented. With implementation of BMPs from each of these overlapping requirements, the Proposed Action is not expected to result in a significant impact to geology, topography, or soil. Therefore, when added to the impacts from past, present, and reasonably foreseeable future actions, the Proposed Action would not result in significant cumulative impacts to geological resources.

#### **4.4.3 Biological Resources**

##### **4.4.3.1 Description of Geographic Study Area**

The geographic scope for the assessment of cumulative impacts on biological resources is all of SCI; however, the presence of suitable habitat and known occurrences of specific resources within the vicinity of the airfield are the focus of this analysis.

##### **4.4.3.2 Relevant Past, Present, and Future Actions**

Projects identified in Section 4.3 that have occurred, are occurring, or are likely to occur in the foreseeable future have the potential for direct and indirect impacts on biological resources on SCI. Because of the small size of SCI and its unique biogeography as an island, most projects on SCI would potentially contribute to cumulative impacts on biological resources.

##### **4.4.3.3 Cumulative Impact Analysis**

As discussed in Section 3.3.3, the Proposed Action would not result in significant impacts on biological resources with implementation of impact mitigation, avoidance, and minimization measures. These measures, as presented in Table 3.4-2 would minimize impacts to biological resources.

The Proposed Action would result in the loss of approximately 1.54 acres (0.62 ha) of occupied San Clement Bell's sparrow habitat. Additional indirect impacts to the Bell's sparrow may occur from noise and rotor wash as helicopters fly to and from the proposed helipads. Helicopter noise and rotor wash could result in indirect, long-term and short-duration/event harassment, and in extreme cases, nest abandonment. However, the establishment of the adjacent vegetation maintenance area would reduce the potential for birds nesting within the area of direct impact.

The NALF SCI Integrated Natural Resource Management Plan (INRMP) (Navy, 2013a) provides an implementable framework for managing natural resources on the land and water. The INRMP provides goals and objectives for the use and conservation of natural resources on NALF SCI which integrate regional ecosystem, military, social (i.e., community), and economic concerns. The Navy is committed to avoiding or minimizing project-related environmental effects to the greatest extent feasible. As part of this commitment, avoidance and minimization measures have been developed in the INRMP to ensure that potential adverse impacts are avoided (if possible) or minimized to acceptable levels. Avoidance, minimization and mitigation measures applicable to the Proposed Action (Table 3.4-2) and identified cumulative projects are and would continue to be implemented as applicable.

The spatial and temporal extents of impacts on biological resources from other cumulative projects are expected to be limited due to implementation of impact mitigation, avoidance, and minimization measures and any other permit conditions. Therefore, when added to the impacts from past, present, and reasonably foreseeable future actions, the Proposed Action would not result in significant cumulative impacts to biological resources.

## 5 Other Considerations Required by NEPA

### 5.1 Consistency with Applicable Legal Requirements and Policies

In accordance with 40 Code of Federal Regulations section 1502.16(c), analysis of environmental consequences shall include discussion of the Proposed Action’s compliance with applicable legal requirements and policies. Table 5-1 identifies the principal federal and state laws and regulations that are applicable to the Proposed Action, and describes briefly how the Proposed Action would comply with these laws and regulations.

**Table 5-1 The Proposed Action’s Compliance with Applicable Legal Requirements and Policies**

<i>Applicable Legal Requirements and Policies</i>	<i>Status of Compliance</i>
National Environmental Policy Act (NEPA) (42 United States [U.S.] Code [U.S.C.] section 4321 et seq.); Council on Environmental Quality (CEQ) NEPA implementing regulations (40 CFR parts 1500-1508); Navy procedures for Implementing NEPA (32 CFR part 775) and Chief of Naval Operations Instruction 5090.1E, Environmental Readiness Program	This Environment Assessment has been prepared in accordance with NEPA, CEQ regulations implementing NEPA, and Navy NEPA procedures.
Clean Air Act (42 U.S.C. section 7401 et seq.)	Under the Proposed Action, no significant impacts to air quality would occur. The Navy has prepared a Record of Non-Applicability for Clean Air Act conformity (Appendix A).
Clean Water Act (33 U.S.C. section 1251 et seq.)	The Navy would implement the Proposed Action in compliance with California’s General Construction Permit. Proposed construction activities would follow best management practices to limit potential water quality impacts.
Coastal Zone Management Act (16 U.S.C. section 1451 et seq.)	The Navy has determined the Proposed Action would have no effects to the uses or resources of the state’s coastal zone and no further documentation is required.
National Historic Preservation Act (Section 106, 16 U.S.C. section 470 et seq.)	The Navy’s Cultural Resources Program approved the Proposed Action with a finding of No Historic Properties Affected, consistent with Stipulation III.D.2 of the Programmatic Agreement.
Endangered Species Act (16 U.S.C. section 1531 et seq.)	The Navy has completed consultation with the USFWS and incorporated findings and measures from the USFWS Biological Opinion (Appendix C).
Migratory Bird Treaty Act (16 U.S.C. sections 703-712)	The Proposed Action would comply with the Migratory Bird Treaty Act.
Bald and Golden Eagle Protection Act (16 U.S.C. section 668-668d)	The Proposed Action would comply with the Bald and Golden Eagle Protection Act
Executive Order 11988, <i>Floodplain Management</i>	There are no mapped floodplains on NALF SCI; therefore, no impacts to floodplains would occur.
Executive Order 12088, Federal Compliance with Pollution Control Standards	The Navy would implement the Proposed Action in compliance with Executive Order 12088.
Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations	The Proposed Action would not result in disproportionately high and adverse human health or environmental effects on minority populations and low-income populations.
Executive Order 13045, Protection of Children from Environmental Health Risks and Safety Risks	The Proposed Action would not result in environmental health risks and safety risks that may disproportionately affect children.

**Table 5-1 The Proposed Action’s Compliance with Applicable Legal Requirements and Policies**

<i>Applicable Legal Requirements and Policies</i>	<i>Status of Compliance</i>
Executive Order 13175, Consultation and Coordination with Indian Tribal Governments	The Navy’s Cultural Resources Program approved the Proposed Action with a finding of No Historic Properties Affected, consistent with Stipulation III.D.2 of the Programmatic Agreement; Indian Tribal Governments were signatories to the Programmatic Agreement.
Area of Special Biological Significance	The Proposed Action would implement BMPs and design measures to minimize the potential for marine water quality impacts.
UFC 3-210-10, <i>Low Impact Development</i> and the Energy Independence and Security Act of 2007	The Proposed Action would comply with storm-water requirements.

*Legend:* CEQ = Council on Environmental Quality; CFR = Code of Federal Regulations; EA = Environmental Assessment; NEPA = National Environmental Policy Act; U.S. = United States; U.S.C United States Code

## 5.2 Coastal Zone Management

The federal Coastal Zone Management Act (CZMA) of 1972 establishes a federal-state partnership to provide for the comprehensive management of coastal resources. Coastal states and territories develop site-specific coastal management programs based on enforceable policies and mechanisms to balance resource protection and coastal development needs.

The California Coastal Commission lays out the policy to guide the use, protection, and development of land and ocean resources within the state’s coastal zone. Under the Act, federal activity in, or affecting, a coastal zone requires preparation of a Coastal Zone Consistency Determination or a Negative Determination. In other words, any federal agency proposing to conduct or support an activity within or outside the coastal zone that would affect any land or water use or natural resource of the coastal zone must do so in a manner consistent with the CZMA or applicable state coastal zone program to the maximum extent practicable. However, Federal lands, which are “*lands the use of which is by law subject solely to the discretion of...the Federal Government, its officers, or agents,*” are statutorily excluded from the State’s “coastal zone.” If, however, the proposed federal activity affects coastal resources or uses beyond the boundaries of the federal property (i.e., has spillover effects), the CZMA Section 307 federal consistency requirement applies.

As a federal agency, the Navy must determine whether its proposed activities would affect the coastal zone. This takes the form of either a Negative Determination or a Consistency Determination.

As defined in Section 304 of the CZMA, the term "coastal zone" does not include "lands the use of which is by law subject solely to the discretion of or which is held in trust by the Federal Government." The federal government (Navy) owns and operates Naval Auxiliary Landing Field (NALF) San Clemente Island (SCI); therefore, NALF SCI is not part of the coastal zone. The Navy recognizes that actions outside the coastal zone that affect land or water uses or natural resources of the coastal zone via "spillover" are subject to the provisions of CZMA.

The Navy analyzed the impacts of the Proposed Action on the coastal zone by looking at reasonably foreseeable direct and indirect effects on the coastal use or resources and reviewing relevant management program enforceable policies (15 CFR 930.33[a][1]) and the Coastal Resources Planning and Management Policies.

The Proposed Action is comparable to recent Navy Coastal Consistency Negative Determinations prepared for similar projects at NALF SCI. The Navy has determined that the Proposed Action would have no effects to coastal uses or resources of the coastal zone and no further documentation is required.

### **5.3 Climate Change**

The U.S. Environmental Protection Agency (USEPA) developed a “State of Knowledge” website following the 2007 Intergovernmental Panel on Climate Change report. The USEPA affirms that while the contribution is uncertain, human activities are substantially increasing greenhouse gas emissions, which, in turn, are contributing to a global warming trend (USEPA, 2015). The U.S. Global Change Research Program (USGCRP) is a working group coordinating the efforts of 13 different federal agencies, including the U.S. Department of Agriculture, the Department of the Interior, the Department of Defense, and the Department of Energy. The USGCRP releases regular reports presenting the most current scientific consensus of predicted changes associated with global climate change. The 2018 National Climate Assessment report is the most recent complete report (USGCRP, 2018). This report summarizes the science of climate change and the impacts of climate change on the U.S., now and in the future.

#### **5.3.1 Predicted Future Conditions**

Relevant to the location of the Proposed Action, the “Southwest” section of the 2018 National Climate Assessment report describes how many coastal resources in the Southwest have been affected by sea level rise, ocean warming, and reduced ocean oxygen—all impacts of human-caused climate change—and ocean acidification resulting from human emissions of carbon dioxide. Homes and other coastal infrastructure, marine flora and fauna, and people who depend on coastal resources face increased risks under continued climate change (USGCRP, 2018).

Projected changes in long-term climate predict more frequent extreme events such as heat waves, intensifying droughts, and occasional large floods. Current simulations predict decreasing precipitation, snowpack, runoff, and soil moisture for the region into the future. While simulations predict that total precipitation would decrease, they also predict the frequency of extreme rain events with a high potential for flooding would increase. At the same time, the scenarios predict that extreme heat events are expected to increase in frequency and magnitude, resulting in increased heat-associated deaths and illnesses, vulnerabilities to chronic disease, and other health risks to people in the Southwest (USGCRP, 2018).

#### **5.3.2 Impact of the Proposed Action on Climate Change**

As shown in Appendix A, estimated emissions from implementation of the Proposed Action would be well below 25,000 metric tons of carbon dioxide, which is considered as a viable threshold warranting a more substantial evaluation of—but not necessarily a determination of—significance of climate change impact. Thus, the implementation of the Proposed Action would not contribute significantly to global climate change.

### 5.3.3 Impact of Climate Change on the Proposed Action

Situated on a wave-cut terrace at an elevation of approximately 140 feet, the Proposed Action is situated well above the predicted potential increase in sea level rise (approximately 3 feet in 100 years) and would not be impacted. If there is an extreme increase in rainfall such that erosion rates within the project area accelerate, the Navy would have to implement additional stormwater management and erosion control measures to both manage stormwater and ensure the continued stability of the project. However, these future conditions are considered as part of project planning and design. Therefore, the Proposed Action is not anticipated to be impacted by climate change.

### 5.4 Irreversible or Irrecoverable Commitments of Resources

Resources that are irreversibly or irretrievably committed to a project are those that are used on a long-term or permanent basis. This includes the use of non-renewable resources such as metal and fuel, and natural or cultural resources. These resources are irreversibly or irretrievably committed in that they would be used for this project when they could have been used for other purposes. Human labor is also considered an irretrievable resource. Another impact that falls under this category is the unavoidable destruction of natural resources that could limit the range of potential uses of that particular environment.

The Proposed Action would require construction materials and energy. The total amount of construction materials (e.g., concrete and steel) required for the Proposed Action would be relatively small when compared to the resources available in the region. The construction materials and energy required for construction are not in short supply. Moreover, the use of construction materials and energy would not have an adverse impact on the continued availability of these resources. The commitment of energy resources to implement the Proposed Action would not be excessive in terms of region-wide usage. Implementation of the Proposed Action would not result in significant irreversible or irretrievable commitment of resources.

### 5.5 Unavoidable Adverse Impacts

This Environmental Assessment (EA) has determined that the alternatives considered would not result in any significant impacts. No resource area would be subject to significant adverse impacts that would require mitigation. Table 3.4-2 presents the resource area impact avoidance and minimization measures.

### 5.6 Relationship between Short-Term Use of the Environment and Long-Term Productivity

NEPA requires an analysis of the relationship between a project's short-term impacts on the environment and the effects that these impacts may have on the maintenance and enhancement of the long-term productivity of the affected environment. Impacts that narrow the range of beneficial uses of the environment are of particular concern. This refers to the possibility that choosing one development site reduces future flexibility in pursuing other options, or that using a parcel of land or other resources often eliminates the possibility of other uses at that site.

As discussed in Chapter 3, the Proposed Action would result in both short- and long-term environmental effects. However, no element of the Proposed Action is expected to result in the types of impacts that would reduce environmental productivity, have long-term impacts on sustainability, affect biodiversity, or narrow the range of long-term beneficial uses of the environment. In summary, implementation of the Proposed Action would not result in any impacts that would significantly reduce environmental productivity or permanently narrow the range of beneficial uses of the environment.

## 6 References

- 79 Federal Register 18190-18210 (2014). Endangered and Threatened Wildlife and Plants; Removing the Island Night Lizard From the Federal List of Endangered and Threatened Wildlife. A Rule by the Fish and Wildlife Service. 1 April 2014.
- CARB. (2014). EMFAC Web Database. <https://www.arb.ca.gov/emfac/2014/>. Accessed on 19 June 2019.
- CARB. (2016). Ambient Air Quality Standards. [https://ww3.arb.ca.gov/research/aaqs/aaqs2.pdf?\\_ga=2.80113745.757457248.1562881014127567563.1558669873](https://ww3.arb.ca.gov/research/aaqs/aaqs2.pdf?_ga=2.80113745.757457248.1562881014127567563.1558669873). 4 May. Accessed on 17 May 2019.
- CARB. (2017). Mobile Source Emissions Inventory – Off-Road Diesel Vehicles 2017 Off-road Diesel 12 Emission Factors. <https://ww3.arb.ca.gov/msei/ordiesel.htm>. Accessed on 17 June 2019.
- CDFW. (2019). California Department of Fish and Wildlife, Natural Diversity Database. August 2019. Special Animals List. Periodic publication. 67 pp.
- Commander, Navy Installations Command. (2019). NALF SCI. [https://www.cnic.navy.mil/regions/cnrsw/installations/navbase\\_coronado/about/installations/naval\\_auxillary\\_landing\\_field\\_san\\_clemente\\_island.html](https://www.cnic.navy.mil/regions/cnrsw/installations/navbase_coronado/about/installations/naval_auxillary_landing_field_san_clemente_island.html). Accessed on 3 September 2019.
- Council on Environmental Quality. (1997). Considering Cumulative Effects Under the National Environmental Policy Act. Washington, DC.
- HDR. (2014). Biological Technical Report Addressing Upgrades to Support Maintenance and Energy and Water Supply Projects at Navy Installation San Clemente Island, California.
- Meiman, S. T, S. A. Munoz, A. S. Bridges and D.K. Garcelon. (2016). San Clemente Bell's Sparrow Monitoring Breeding Season Report – 2015, Final Report. U.S. Navy, Environmental Department, Naval Facilities Engineering Command Southwest, San Diego, California. 53 pp.
- NAVFAC SW. (2013, August). Final Erosion Control Plan for San Clemente Island.
- NAVFAC SW. (2016, November). San Clemente Island Waters of the U.S. Jurisdictional Delineation of the Assault Vehicle Maneuver Corridor. Draft Delineation of Jurisdictional Resources Report and Biological Constraints Analysis. Prepared by Merkel and Associates.
- Naval Air Training and Operating Procedures Standardization. (2008). Fight Manual of Navy Model SH-60B Helicopter. 1 April 2008.
- Naval Air Warfare Center Aircraft Division (NAWCAD). (1998). MV-22 Rotor Downwash Survey. 9 July.
- Naval Base Coronado. (2019). Personal communication. Melissa Booker, SCI Wildlife Biologist. 22 October and 2 December.
- Navy. (1954). Feasibility study at San Clemente Island. Prepared by Porter, Urquhart and Beavin Consulting Engineers.
- Navy. (2008). Southern California Range Complex Environmental Impact Statement/Overseas Environmental Impact Statement.

- Navy. (2012, July). Integrated Cultural Resources Management Plan for San Clemente Island Range Complex, California. Prepared by AECOM for Naval Base Coronado.
- Navy. (2013a, May). Integrated Natural Resources Management Plan, Naval Auxiliary Landing Field, San Clemente Island, California.
- Navy. (2013b, June). Final Environmental Assessment for Naval Base Coronado, Naval Auxiliary Landing Field, San Clemente Island Integrated Natural Resources Management Plan.
- Navy. (2013c, August). Hawaii-Southern California Training and Testing Environmental Impact Statement/Overseas Environmental Impact Statement.
- Navy. (2017, February). Environmental Assessment Addressing Maintenance, Repair, and Upgrades to Infrastructure at Navy Auxiliary Landing Field, San Clemente Island, California. Navy. (2018a, July). Final EA for Relocation of the Aerial Target Launch Site at NALF SCI.
- Navy. (2018b, December). Hawaii-Southern California Training and Testing Environmental Impact Statement/Overseas Environmental Impact Statement.
- Navy. (2018c, December). Final Programmatic EA/OEA for MSS-TB.
- Olmsted F.H. (1958) Contributions to General Geology Reconnaissance of San Clemente Island, CA.
- Prajapati, S. K. (2012). Ecological effect of airborne particulate matter on plants. *Environmental Skeptics and Critics*. 1(1):12-22.
- RECON. (2011). San Clemente Island vegetation mapping summary. Unpublished report prepared for the U.S. Navy, Southwest Division, Naval Facilities Engineering Command; San Diego, California.
- Schoenherr, A.A., C.R. Feldmeth, and M.J. Emerson. (1999). Natural history of the Islands of California. University of California Press, Berkeley, CA.
- Stahl, J. (2012). San Clemente Island Bird Checklist. Institute for Wildlife Studies.
- Sullivan, Brian and Eric Kershner. (2005). Birds of San Clemente Island. *Western Birds*. Vol. 36: 158-273.
- USEPA (2019). Current Nonattainment Counties for All Criteria Pollutants. 31 August 2019. <https://www3.epa.gov/airquality/greenbook/ancl.html>. Accessed on 16 September 2019.
- USEPA. (2000). Analysis of Commercial Marine Vessel Emissions and Fuel Consumption Data. USEPA 21 A420-R- 00-002, Chapter 5. February.
- USFWS. (2013). Amendment to the Biological Opinion on the U.S. Navy's San Clemente Island Military Operations and Fire Management Plan (FWS-LA-09B0027-09F0040), San Clemente Island, Los Angeles County, California. FWS-LA-09B0027-09F0040-R002.
- USFWS. (2019). USFWS 5-Year Review for Western Snowy Plover. [https://ecos.fws.gov/docs/five\\_year\\_review/doc6166.pdf](https://ecos.fws.gov/docs/five_year_review/doc6166.pdf). Accessed on 22 October 2019.
- USFWS. (2020). Biological Opinion for Military Construction Project P-762, Combat Aircraft Loading Area, San Clemente Island, Los Angeles County, California. FWS-LA-20BO141-20F0808. 8 June 2020.

U.S. Global Change Research Program (USGCRP). (2018). Climate Change Impacts in the United States: The Fourth National Climate Assessment. Retrieved from [https://nca2018.globalchange.gov/downloads/NCA\\$2018\\_FullReport.pdf](https://nca2018.globalchange.gov/downloads/NCA$2018_FullReport.pdf)

World Meteorological Organization. (1970). Commission for Maritime Meteorology. The Beaufort Scale of Wind Force: (Technical and Operational Aspects). Geneva: WMO, 1970.

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## Appendix A Air Quality Methodology and Calculations

# RECORD OF NON-APPLICABILITY (RONA) FOR CLEAN AIR ACT CONFORMITY

## ENVIRONMENTAL ASSESSMENT CONSTRUCTION OF A COMBAT AIRCRAFT LOADING AREA NAVAL AUXILIARY LANDING FIELD SAN CLEMENTE ISLAND, CALIFORNIA SOUTH COAST AIR BASIN

### INTRODUCTION

The U.S. Environmental Protection Agency (USEPA) published *Determining Conformity of General Federal Actions to State or Federal Implementation Plans; Final Rule* in the 30 November 1993, Federal Register (40 Code of Federal Regulations [CFR] Parts 6, 51, and 93). The U.S. Department of the Navy (Navy) published *Clean Air Act (CAA) General Conformity Guidance* in OPNAVINST 5090.1E dated 30 October 2007 and the Navy guidance for compliance with the CAA General Conformity Rule, dated 3 Sep 2019. These publications provide implementing guidance to document CAA Conformity Determination requirements.

Federal regulations state that no department, agency, or instrumentality of the Federal Government shall engage in, support in any way or provide financial assistance for, license to permit, or approve any activity that does not conform to an applicable implementation plan. It is the responsibility of the Federal agency to determine whether a Federal action conforms to the applicable implementation plan, before the action is taken (40 CFR Part 1, Section 51.850[a]).

The General Conformity rule applies to federal actions proposed within areas which are designated as either nonattainment or maintenance areas for a National Ambient Air Quality Standard (NAAQS) for any of the criteria pollutants. Former nonattainment areas that have attained a NAAQS are designated as maintenance areas. Emissions of pollutants for which an area is in attainment are exempt from conformity analyses.

The project would occur within the South Coast Air Basin (SCAB). This SCAB is currently in nonattainment for a number of criteria pollutants, including: carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), ozone (O<sub>3</sub>) (extreme), suspended particulate matter less than 10 microns (PM<sub>10</sub>), and fine particulate matter less than or equal to 2.5 microns in diameter (PM<sub>2.5</sub>). The SCAB attains the NAAQS for all other criteria pollutants. Project emissions of CO and O<sub>3</sub> (or its precursors, volatile organic compounds [VOCs] and oxides of nitrogen [NO<sub>x</sub>]) PM<sub>10</sub>, PM<sub>2.5</sub> and lead (Pb) are analyzed for conformity rule applicability.

The annual *de minimis* levels for the region are 10 tons of VOC/NO<sub>x</sub>, 100 tons of CO, and 25 tons of lead as listed in Table A-1. Federal actions may be exempt from conformity determinations if they do not exceed designated *de minimis* levels (40 CFR Part 1, Section 51.853[b]) and are not regionally significant (totals less than 10 percent of projected regional emissions for that pollutant) (40 CFR Part 1, Section 93.153[b]). Table A-1 also presents the daily construction emission thresholds (in pounds per day) as defined by the South Coast Air Quality Management District. These emission thresholds are presented for information purposes only, as these thresholds apply to projects subject to California Environmental Quality Act documentation.

**Table A-1. Conformity *de minimis* Levels for Criteria Pollutants in the San Diego Air Basin**

Criteria Pollutant	<i>de minimis</i> Level	
	(tons/year) <sup>1</sup>	(pounds/day) – Construction <sup>2</sup>
Carbon Monoxide (CO) (California Standard)	100	550
Volatile Organic Compounds (VOC)	10	75
Oxides of Nitrogen (NO <sub>x</sub> )	10	100
PM <sub>10</sub> (California Standard)	100	150
PM <sub>2.5</sub>	100	55
Lead (Pb)	25	3

Sources: 1) USEPA. <https://www.epa.gov/general-conformity/de-minimis-tables>

2) South Coast Air Quality Management District. <http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf?sfvrsn=2>

#### PROPOSED ACTION

**Action Proponent:** The U.S. Navy proposes to construct a new Combat Aircraft Loading Area (CALA). The project would create the infrastructure necessary to support modern Navy helicopter training requirements.

**Location:** Naval Auxiliary Landing Field San Clemente Island, California.

**Proposed Action Name:** Construction of a CALA at Naval Auxiliary Landing Field San Clemente Island, California.

**Proposed Action & Emissions Summary:** The Proposed Action involves the site preparation for, and construction of, a CALA and supporting infrastructure.

#### *Proposed Action Emissions:*

Annual emissions from construction activities were calculated by assuming that clearing of the site and construction of the CALA would be completed within an approximately 6-month time frame. A temporary concrete plant would be constructed for use near the project site but would operate only for the purposes of the construction activity and would not remain post construction. Included in the construction is the barging of construction materials from the Port of Long Beach, Los Angeles, or San Diego. Operational activities associated the CALA are already occurring at SCI and would not change. Therefore, operational activities are not addressed in this analysis.

Estimated construction emissions due to implementation of the Proposed Action are shown in Table A-2. Based on the air quality analysis, the maximum estimated emissions would be below conformity *de minimis* levels (Table A-2). Lead emission factors are not available for construction type activities; however, no emission source utilized leaded gasoline or includes manufacturing or industrial processes that involve lead. Therefore, emissions of Pb would essentially be 0 tons per year. In addition, daily emissions would be below the established South Coast Air Quality Management District thresholds for California Environmental Quality Act documentation.

**Table A-2. Proposed Action – Combined Emissions with Evaluation of Conformity**

Emission Source	Emissions (tons/year)					
	CO	VOC	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Site Preparation – Equipment	0.07	0.02	0.06	0.00	0.00	0.00
Site Preparation – Dust Generation	--	--	--	--	7.94	7.15
On-Site Construction	0.95	0.30	0.79	0.00	0.03	0.03
On-Site Concrete Plant	--	--	--	--	0.20	0.18
Material Movement (Vessel Support)	1.11	0.11	7.75	0.49	0.24	0.22
Material Movement (Trucks)	0.11	0.03	0.20	0.00	0.00	0.00
Worker Trips	0.48	0.02	0.04	0.00	0.00	0.00
<b>Total Year 1</b>	<b>2.71</b>	<b>0.48</b>	<b>8.84</b>	<b>0.49</b>	<b>8.43</b>	<b>7.58</b>
Annual Conformity <i>de minimis</i> Threshold	100	100	100	N/A	100	100
<b>Exceeds Conformity <i>de minimis</i> Threshold?</b>	<b>No</b>	<b>No</b>	<b>No</b>	N/A	<b>No</b>	<b>No</b>
Average Daily Emissions (pounds/day)	14.86	2.65	48.44	2.67	46.47	41.54
<b>Exceeds SCAQMD Construction Threshold?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>

**PROPOSED ACTION EXEMPTION(S)**

The Proposed Action is located within a nonattainment area; therefore, the Proposed Action is **not** exempt from General Conformity Rule Requirements.

**ATTAINMENT AREA STATUS AND EMISSIONS EVALUATION CONCLUSION**

The SCAB is an extreme nonattainment area for the 8-hour federal O<sub>3</sub> standard; VOCs and NO<sub>x</sub> are precursors to the formation of O<sub>3</sub>. The SCAB is also in moderate nonattainment for federal PM<sub>2.5</sub> standard. The SCAB is considered a nonattainment area for the state CO and PM<sub>10</sub> standards.

Emissions associated with the Proposed Action were calculated using project construction data presented in Chapter 2 of the EA, general air quality assumptions, and emission factors compiled from the following sources: *OFFROAD Emission Factors; CARB EMFAC2014 Model; and Emission Factors from Analysis of Commercial Marine Vessel Emissions and Fuel Consumption Data*. The Navy concludes that *de minimis* thresholds for applicable criteria pollutants would not be exceeded nor would the project be regionally significant (i.e. greater than 10 percent of the air basins’ emission budgets) as a result of implementation of the Proposed Action. Therefore, the Navy concludes that further Conformity Determination procedures are not required, resulting in this Record of Non-Applicability.

**RONA APPROVAL**

To the best of my knowledge, the information presented in this RONA is correct and accurate, and I concur in the finding that implementation of the Proposed Action does not require a formal CAA Conformity Determination.

Date: 19 May 2020

Signature:

KOPPEL.SAR  
AH.A.1295540  
946  
Digitally signed by  
KOPPEL.SARAH.A.129  
5540946  
Date: 2020.05.19  
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Sarah Koppel, Naval Base Coronado  
Installation Environmental Program  
Director

**Emissions Summary Criteria Pollutants**  
**Combat Aircraft Loading Area Construction: Proposed Action**

Alternative 1: Concept B/C	Emissions (tons/year)					
	CO	VOC	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Site Preparation - Equipment	0.07	0.02	0.06	0.00	0.00	0.00
Site Preparation - Dust Generation	--	--	--	--	7.94	7.15
On-Site Construction	0.95	0.30	0.79	0.00	0.03	0.03
On-Site Concrete Plant	--	--	--	--	0.20	0.18
Material Movement (Vessel Support)	1.11	0.11	7.75	0.49	0.24	0.22
Material Movement (Trucks)	0.11	0.03	0.20	0.00	0.00	0.00
Worker Trips	0.48	0.02	0.04	0.00	0.00	0.00
<b>Total Year 1</b>	<b>2.71</b>	<b>0.48</b>	<b>8.84</b>	<b>0.49</b>	<b>8.43</b>	<b>7.58</b>
<i>de minimis</i> Threshold for GCR	100	10	10	100	100	100

Note to reviewers: The No Action Alternative would not result in any change in air quality impacts from baseline. Numbers may not add precisely by hand if calculated from this table due to rounding and decimal values not shown. Values are shown in the table rounded to the nearest 100th. The actual calculation result may include values in the 1000th place, and may summarize to a value with a result in the 100th place.

PM<sub>2.5</sub> emissions are estimated as a fractional portion of PM<sub>10</sub> emissions. The fractions are based on the South Coast Air Quality Management District Final Methodology to calculate PM<sub>2.5</sub> and PM<sub>2.5</sub> significance thresholds. This guidance document indicates the following: fugitive dust PM<sub>10</sub> is 21 percent PM<sub>2.5</sub>; heavy equipment PM<sub>10</sub> is 89 percent PM<sub>2.5</sub>; and vehicular emissions of PM<sub>10</sub> are 99 percent PM<sub>2.5</sub> (SCAQMD 2006).

**Emissions Summary Construction: Proposed Action**

Equipment				Emission Factors (lb/bhp-hr) [1]						Operations			Emissions (lbs/day)						Emissions (tons/year)							
Equipment	Fuel Type	Horsepower (hp)	Load Factor	CO	VOC	NOx	SOx	PM <sub>10</sub>	PM <sub>2.5</sub>	Pieces of Equipment	Hours per day	Days in Service	CO	VOC	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO	VOC	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>		
<b>Site Clearing</b>																										
Air Compressor	Diesel	50	34	2.43E-04	2.18E-03	6.15E-03	1.08E-05	3.40E-04	--	1	8	11	0.03	0.30	0.84	0.00	0.05	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Dump Trucks	Diesel	489	38	5.95E-03	1.50E-03	2.62E-03	1.08E-05	8.38E-04	--	4	8	11	35.38	8.92	15.60	0.06	4.98	4.48	0.19	0.05	0.09	0.00	0.03	0.02		
Excavator	Diesel	250	38	5.95E-03	1.50E-03	3.22E-03	1.08E-05	1.10E-04	--	2	8	11	9.04	2.28	4.89	0.02	0.17	0.15	0.05	0.01	0.03	0.00	0.00	0.00		
Generator	Diesel	45	74	1.10E-02	3.97E-03	9.70E-03	1.08E-05	3.31E-04	--	2	8	11	5.86	2.12	5.17	0.01	0.18	0.16	0.03	0.01	0.03	0.00	0.00	0.00		
Loader	Diesel	147	44	5.95E-03	1.50E-03	5.67E-03	1.08E-05	2.65E-04	--	2	8	11	6.16	1.55	5.86	0.01	0.27	0.25	0.03	0.01	0.03	0.00	0.00	0.00		
<b>Total Site Clearing</b>													12.02	3.67	11.03	0.02	0.45	0.40	<b>0.07</b>	<b>0.02</b>	<b>0.06</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>		
<b>Construction</b>																										
Air Compressor	Diesel	50	34	2.43E-04	2.18E-03	6.15E-03	1.08E-05	3.40E-04	--	2	8	102	0.07	0.59	1.67	0.00	0.09	0.08	0.00	0.03	0.09	0.00	0.00	0.00		
Concrete Truck	Diesel	210	38	5.95E-03	1.50E-03	3.22E-03	1.08E-05	1.10E-04	--	1	8	102	3.80	0.96	2.05	0.01	0.07	0.06	0.19	0.05	0.10	0.00	0.00	0.00		
Concrete Pump Truck	Diesel	210	38	5.95E-03	1.50E-03	3.22E-03	1.08E-05	1.10E-04	--	1	8	102	3.80	0.96	2.05	0.01	0.07	0.06	0.19	0.05	0.10	0.00	0.00	0.00		
Fork Lift	Diesel	83	40	7.69E-03	2.18E-03	5.91E-03	1.08E-05	3.97E-04	--	2	8	51	4.08	1.16	3.14	0.01	0.21	0.19	0.10	0.03	0.08	0.00	0.01	0.00		
Generator	Diesel	45	74	1.10E-02	3.97E-03	9.70E-03	1.08E-05	3.31E-04	--	2	8	102	5.86	2.12	5.17	0.01	0.18	0.16	0.30	0.11	0.26	0.00	0.01	0.01		
Loader	Diesel	147	44	5.95E-03	1.50E-03	5.67E-03	1.08E-05	2.65E-04	--	1	8	102	3.08	0.78	2.93	0.01	0.14	0.12	0.16	0.04	0.15	0.00	0.01	0.01		
<b>Total Construction (Landing Pads, Ordnance Staging Area, Roads, and Veg Maintenance Area)</b>													20.69	6.56	17.02	0.03	0.76	0.68	<b>0.95</b>	<b>0.30</b>	<b>0.79</b>	<b>0.00</b>	<b>0.03</b>	<b>0.03</b>		
<b>Total</b>													32.71	10.23	28.05	0.05	1.21	1.09	<b>1.02</b>	<b>0.33</b>	<b>0.85</b>	<b>0.00</b>	<b>0.04</b>	<b>0.03</b>		

Dust Generation from Land Clearing [2]					
Area	Acres	Months of Activity	Emission Factor (tons/acre/month)	Emissions (tons/year) [PM10]	Emissions (tons/year) [PM10]
CALA Pads, +	6.62	1	1.2	7.9	7.1
<b>Total PM Emissions (assumed PM10)</b>				7.9	7.1

**Assumptions:**

- Emissions calculated based on methodology and data published in U.S. Environmental Protection Agency's (EPA) Motor Vehicle Emission Simulator, 2014a, CALEE MOD, an emissions modeling software published by the California Air Resources Board and San Diego County Air Pollution Control District, and the International Council on Clean Transportation's Working Paper 16-4, Non-road emission inventory model methodology.
- Assumed 2011 model year heavy equipment. SCAQMD requires this newer equipment engine standards for a certain percentage of a fleet versus 2011 models or older.

**Operation Assumptions:**

Start to Finish                      6 months  
 Start to Finish                      120 working days  
 Construction of concrete elements                      102 working days

**Sources:**

- [1] CARB 2017, CARB 2014
- [2] USEPA 1995.

**Emissions Summary Concrete Plant: Proposed Action**

**Central Mix Operation Concrete Plant**

**Powered by On-Base Existing Power**

**Equipment for hauling operations reflected in other tables (Off-Road, On-Road, Vessel Transport).**

Equipment	Cubic Yards of Concrete	PM <sub>10</sub> Emissions (lbs/cubic yard concrete) [1]	PM <sub>10</sub> Emissions lbs/year	PM <sub>10</sub> Emissions tons/year	PM <sub>2.5</sub> Emissions tons/year
Central Mix Plant	3,997	0.1	400	0.20	0.18

Notes:

Acres to Square Feet 43,560

**Operational Assumptions:**

**Alternative 1**

Square Foot area of Concrete (CALA) 54,014  
 Thickness (CALA) 24 Inches  
 Cubic feet of concrete (CALA) 108,029  
 Cubic yards of concrete (CALA) 3,997

Sources:

[1] San Diego APCD 1998.

Emissions Summary Onroad Vehicle Trips: Proposed Action

Phase	Vehicle Class	No. of Vehicles Trips (per day)	Speed (mph)	VMT (mi/vehicle-day)	CO		VOCs					NO <sub>x</sub>		SO <sub>x</sub>		PM <sub>10</sub>				Emissions (lbs/day)						Days of Work	Emissions (tons/year)						
					Running Exhaust (g/mi)	Start-up (g/start)	Running Exhaust (g/mi)	Start-up (g/start)	Hot-Soak (g/trip)	Resting Loss (g/hr)	Running Evaporative (g/mi)	Diurnal Evaporative (g/hr)	Running Exhaust (g/mi)	Start-up (g/start)	Running Exhaust (g/mi)	Start-up (g/start)	Running Exhaust (g/mi)	Start-up (g/start)	Tire Wear (g/mi)	Brake Wear (g/mi)	CO	VOC	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>		PM <sub>2.5</sub>	CO	VOC	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
<b>Construction of CALA and Roads</b>																																	
Transport Trucks - From Barges	Heavy-duty truck, diesel	5	25	10	11.383		3.438						21.608		0.025		0.141		0.036	0.028	1.25	0.38	2.38	0.00	0.02	0.02	120	0.0753	0.0227	0.1429	0.0002	0.0014	0.0012
Transport Trucks - from cement mixers	Heavy-duty truck, diesel	5	25	4	11.383		3.438						21.608		0.025		0.141		0.036	0.028	0.50	0.15	0.95	0.00	0.01	0.01	120	0.0301	0.0091	0.0572	0.0001	0.0005	0.0005
<b>Total Material Transportation On-Road</b>																										0.1054	0.0318	0.2001	0.0002	0.0019	0.0017		
Worker Vehicle Trips	Light-duty truck with catalyst	25	35	40	3.019	11.792	0.056	0.867	0.177	0.026	0.047	0.061	0.27	0.586	0.004	0.002	0.01	0.015	0.008	0.013	7.96	0.33	0.66	0.01	0.07	0.06	120	0.4773	0.0200	0.0396	0.0005	0.0042	0.0038

mph = miles per hour  
VMT = Vehicle Miles Traveled  
Conversion of grams to pounds (lb) 453.592

- Construction Assumptions:**
- Assume 40 miles round trip to supplier(s)
  - Assume startup after 8 hours
  - Assume 45 minutes run time per truck. Emissions are based on number of miles the truck completes.
  - Emission factors from EMFAC 2014 for older vehicles in use.

Construction Materials	Quantity	Truck Capacity	Capacity Units	Truck Trips, Total
Concrete (cubic Yards)	3,997	8 cubic yards	8 cubic yards	499.6332
<b>Total Trips</b>				499.6332
<b>Trips/Day</b>				4.996332

Sources:  
CARB 2014, CARB 2017

**Emissions Summary Barging of Materials from Long Beach: Proposed Action**

Equipment Type	Power Rating (kW)	Load (%)	No. of Units	Hours per trip	Trips/year	hrs/year	Fuel Consumption (g/kW-hr)	Emission Factors (g/kW-hr)						Emissions (lbs/trip)						Emissions (tons/year)					
								CO	VOC	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO	VOC	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO	VOC	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Tugboat for Barge	3,100	68	1	20.3	13	264	226.48	1.23	0.12	8.58	0.54	0.27	--	171.21	16.53	1,192.80	74.70	36.91	33.22	1.11	0.11	7.75	0.49	0.24	0.22
<b>Total</b>														<b>171.21</b>	<b>16.53</b>	<b>1,192.80</b>	<b>74.70</b>	<b>36.91</b>	<b>33.22</b>	<b>1.11</b>	<b>0.11</b>	<b>7.75</b>	<b>0.49</b>	<b>0.24</b>	<b>0.22</b>

Notes:

Conversion of grams to pounds (lb) 453.592

**Assumptions:**

- All vessels certified for use in California, and operate within 3 nautical miles of the South Coast Air Basin, including SCI.
- Emission Factors further described in supplement tables in this Appendix
- The fractional sulfur content of the fuel is 0.10%
- Sulfur content of fuel is based on maximum sulfur content of marine diesel fuel for oceangoing vessels promulgated by California Air Resources Board, effective January 2014. (ABS 2018)
- Per input from Navy design team, looking at 13 total trips which includes the 9 barges required for importing and exporting of equipment and 4 barges for importing of materials.

**Operational Assumptions:**

One-Way Distance SCI to Long Beach, CA	55	NM
Estimated Average Speed [1]	6	nm/hour
Operational time - trip out to SCI	9.2	hours
Operational time - Trip back to Long Beach	9.2	hours
Operational time - load/unload	2	hours
Number of Trips	13	Total

Sources:

[1] Marine Traffic 2019

**Emissions Summary: Emission Factor Support for Marine Vessels**

Marine Engine Emission Factor and Fuel Consumption Algorithms (in g/kW-hr, for all marine engines)

Taken from EPA420-R-00-002, U.S. Environmental Protection Agency Analysis of Commercial Marine Vessels Emissions and Fuel Consumption Data, Table S-1

Pollutant	Exponent (x)	Intercept (b)	Coefficient (a)
PM	1.5	0.2551	0.0059
NOX	1.5	10.4496	0.1255
NO2	1.5	15.5247	0.18865
SO2	n/a	n/s	2.3735
CO	1	n/s	0.8378
HC (VOC)	1.5	n/s	0.0667
CO2	1	648.6	44.1

Notes:

- n/a is not applicable
- n/s is not statistically significant
- All emission factor (except for SO<sub>2</sub>) equations (regressions) are in the form of  

$$\text{Emissions Rate (g/kW-hr)} = a * (\text{Fractional Load of Engine Power})^x + b$$
- SO<sub>2</sub> regression equation is:  

$$\text{Emissions Rate (g/kW-hr)} = a * (\text{Fuel Sulfur Flow in g/kW-hr}) + b = a * (\text{fuel consumption in g/kW-hr}) * (\% \text{ sulfur in fuel}/100) + b$$
 (Requires an estimate of the % sulfur in the fuel.)
- Fuel Consumption Estimation Equation is  

$$\text{Fuel Consumption (g/kW-hr)} = 14.12 / (\text{Fractional Load}) + 205.717$$
 Where Fractional Load is equal to actual engine output divided by rated engine output (provided in Table S-2 of EPA420-R-00-002)
- Non-ocean going vessels do not have separate auxiliary loads (non-engine power) of significance and auxiliary power for the tugs used to complete pier construction are not evaluated).
- 80% reduction in NO<sub>x</sub> assumed due to new engine requirements for operation along the coast of California versus the requirements for when this document was published (Port of Long Beach 2013)

Sources:

Port of Long Beach 2013  
 USEPA 2000

**GHG Emissions Summary Criteria Pollutants**  
**Combat Aircraft Loading Area Construction: Proposed Action**

Alternative 1: Concept B/C	Emissions (metric tons/year)			CO <sub>2</sub> e (metric tons/year)
	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	
Site Preparation - Equipment	10.51	0.00	0.01	13.53
On-Site Construction	227.41	0.03	0.22	294.83
Material Movement (Vessel Support)	225.59	--	--	225.59
Material Movement (Trucks)	16.75	0.00	0.01	20.63
Worker Trips	47.54	0.00	0.00	48.66
<b>Total Year 1</b>	<b>527.79</b>	<b>0.04</b>	<b>0.24</b>	<b>603.25</b>
<b>Draft NEPA Threshold</b>				25,000
<b>U.S. 2017 Baseline</b>				5,742,600,000
<b>Alternative 1 as a Percent of U.S. Emissions</b>				0.000011%

- Note to reviewers: The No Action Alternative would not result in any change in air quality impacts from baseline.

- Numbers may not add precisely by hand if calculated from this table due to rounding and decimal values not shown. Values are shown in the table rounded to the nearest 100th. The actual calculation result may include values in the 1000th place, and may summarize to a value with a result in the 100th place.

- Conversion to metric tons = 1 short ton (2000 lbs) = 0.90718474 metric tons
- CO<sub>2</sub>e = CO<sub>2</sub> equivalents = (CO<sub>2</sub> \*1)+(CH<sub>4</sub>\*21)+(N<sub>2</sub>O\*310)
- 2017 U.S. Baseline CO<sub>2</sub>e emissions from EPA 2017. U.S. EPA's Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2017

**Emissions Summary Construction: Proposed Action**

Equipment				Emission Factors (lb/hr) [1]			Operations			Emissions (lbs/day)			Emissions (Metric tons/year)		
Equipment	Fuel Type	Horsepower (hp)	Load Factor	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	Pieces of Equipment	Hours per day	Days in Service	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O
<b>Site Clearing</b>															
Air Compressor	Diesel	50	34	2.23E+01	1.05E-02	2.27E-02	1	8	11	178.40	0.08	0.18	0.89	0.00	0.00
Dump Trucks	Diesel	489	38	2.72E+02	2.25E-02	2.20E-01	4	8	11	8704.00	0.72	7.04	43.43	0.00	0.04
Excavator	Diesel	250	38	7.36E+01	1.26E-02	7.98E-02	2	8	11	1177.60	0.20	1.28	5.88	0.00	0.01
Generator	Diesel	45	74	3.06E+01	1.01E-02	2.92E-02	2	8	11	489.60	0.16	0.47	2.44	0.00	0.00
Loader	Diesel	147	44	1.01E+02	1.10E-02	9.16E-02	2	8	11	1616.00	0.18	1.47	8.06	0.00	0.01
<b>Total Site Clearing</b>										<b>2105.60</b>	<b>0.34</b>	<b>1.93</b>	<b>10.51</b>	<b>0.00</b>	<b>0.01</b>
<b>Construction</b>															
Air Compressor	Diesel	50	34	2.23E+01	1.05E-02	2.27E-02	2	8	102	356.80	0.17	0.36	16.51	0.01	0.02
Concrete Truck	Diesel	210	38	1.67E+02	1.48E-02	1.53E-01	1	8	102	1336.00	0.12	1.22	61.81	0.01	0.06
Concrete Pump Truck	Diesel	210	38	1.67E+02	1.48E-02	1.53E-01	1	8	102	1336.00	0.12	1.22	61.81	0.01	0.06
Fork Lift	Diesel	83	40	7.36E+01	1.26E-02	7.98E-02	2	8	51	1177.60	0.20	1.28	27.24	0.00	0.03
Generator	Diesel	45	74	3.06E+01	1.01E-02	2.92E-02	2	8	102	489.60	0.16	0.47	22.65	0.01	0.02
Loader	Diesel	147	44	1.01E+02	1.10E-02	9.16E-02	1	8	102	808.00	0.09	0.73	37.38	0.00	0.03
<b>Total Construction (Landing Pad and Roads)</b>										<b>5504.00</b>	<b>0.86</b>	<b>5.29</b>	<b>227.41</b>	<b>0.03</b>	<b>0.22</b>
<b>Total</b>										<b>7609.60</b>	<b>1.19</b>	<b>7.22</b>	<b>237.91</b>	<b>0.04</b>	<b>0.22</b>

**Assumptions:**

- Emissions calculated based on methodology and data published in U.S. Environmental Protection Agency's (EPA) Motor Vehicle Emission Simulator, 2014a, CALEE MOD, an emissions modeling software published by the California Air Resources Board and San Diego County Air Pollution Control District, and the International Council on Clean Transportation's Working Paper 16-4, Non-road emission inventory model methodology.
- Assumed 2011 model year heavy equipment. SCAQMD requires this newer equipment engine standards for a certain percentage of a fleet versus 2011 models or older.
- Conversion to metric tons = 1 short ton (2000 lbs) = 0.90718474 metric tons

**Operation Assumptions:**

Start to Finish                      6 months  
 Start to Finish                      120 working days  
 Construction of concrete elements                      100 working days

**Sources:**

- [1] CARB 2017, CARB 2014
- [2] USEPA 1995.

**Greenhouse Gas Emissions Summary Onroad Vehicle Trips: Proposed Action**

Phase	Vehicle Class	No. of Vehicles Trips (per day)	Speed (mph)	VMT (mi/vehicle-day)	CO <sub>2</sub>		CH <sub>4</sub>		N <sub>2</sub> O		Emissions (lbs/day)			Days of Work	Emissions (metric tons/year)		
					Running Exhaust (g/mi)	Start-up (g/start)	Running Exhaust (g/mi)	Start-up (g/start)	Running Exhaust (g/mi)	Start-up (g/start)	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O		CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O
<b>Construction of CALA and Roads</b>																	
Transport Trucks - From Barges	Heavy-duty truck, diesel	5	25	10	2,595.96		0.16		2.05		286.16	0.02	0.23	120	15.58	0.00	0.01
Transport Trucks - from cement mixers	Heavy-duty truck, diesel	5	25	4	385.95	203.87	0.03	0.05	0.03	0.06	21.51	0.00	0.00	120	1.17	0.00	0.00
Total Material Transportation On-Road											307.67	0.02	0.23		16.75	0.00	0.01
Worker Vehicle Trips	Light-duty truck with catalyst	25	35	40	385.95	203.87	0.03	0.05	0.03	0.06	873.35	0.06	0.06	120	47.54	0.00	0.00

mph = miles per hour

VMT = Vehicle Miles Traveled

Conversion of grams to pounds (lb)

453.592

**Demolition Assumptions:**

- See Emissions Summary Onroad Vehicle Trips Demolition and Construction table for more information.

- Conversion to metric tons = 1 short ton (2000 lbs) =

0.90718474 metric tons

**Greenhouse Gas Emissions Summary Barging of Materials from Long Beach: Proposed Action**

								Emission Factors (g/kW-hr)	Emissions (lbs/year)	Emissions (metric tons/year)
Equipment Type	Power Rating (kW)	Load (%)	No. of Units	Hours per Trip	Trips/Year	hrs/year	Fuel Consumption (g/kW-hr)	CO <sub>2</sub>	CO <sub>2</sub>	CO <sub>2</sub>
Tugboats	3,100	68	1	20.3	13	102	226.48	713.45	497,349.64	225.59
<b>Demolition (YEAR 1) Total</b>									<b>497,349.64</b>	<b>225.59</b>

Notes:

Conversion of grams to pounds (lb)                      453.592

Assumptions:

- See Emissions Summary Marine Vessel Support Conventional Pier Demolition and Construction table for more information.
- Conversion to metric tons = 1 short ton (2000 lbs) =                      0.907185 metric tons

## Appendix B List of Migratory Birds Known to Occur on SCI

**Table B-1 Migratory Birds Known to Occur on San Clemente Island**

<b>Common Name</b>	<b>Scientific Name</b>	<b>Federal Listing Status (ESA)</b>	<b>State Listing Status (CESA)</b>	<b>Other Conservation Listings</b>
Acorn Woodpecker	<i>Melanerpes formicivorus</i>	None	None	
Allen's hummingbird	<i>Selasphorus sasin</i>	None	None	BCC
American Avocet	<i>Recurvirostra americana</i>	None	None	
American Bittern	<i>Botaurus lentiginosus</i>	None	None	
American Coot	<i>Fulica americana</i>	None	None	
American Crow	<i>Corvus brachyrhynchos</i>	None	None	
American Golden-Plover	<i>Pluvialis dominica</i>	None	None	
American Goldfinch	<i>Spinus tristis</i>	None	None	
American Kestrel	<i>Falco sparverius</i>	None	None	
American Pipit	<i>Anthus rubescens</i>	None	None	
American Redstart	<i>Setophaga ruticilla</i>	None	None	
American Robin	<i>Turdus migratorius</i>	None	None	
American Tree Sparrow	<i>Spizelloides arborea</i>	None	None	
American Wigeon	<i>Mareca americana</i>	None	None	
Ancient Murrelet	<i>Synthliboramphus antiquus</i>	None	None	
Anna's Hummingbird	<i>Calypte anna</i>	None	None	
Arctic Tern	<i>Sterna paradisaea</i>	None	None	
Ash-throated Flycatcher	<i>Myiarchus cinerascens</i>	None	None	
Ashy storm-petrel	<i>Oceanodroma homochroa</i>	None	None	BCC / SSC
Audubon's Warbler	<i>Setophaga auduboni</i>	None	None	BCC
Baird's Sandpiper	<i>Calidris bairdii</i>	None	None	
Bald eagle	<i>Haliaeetus leucocephalus</i>	Delisted	SE	BCC
Baltimore Oriole	<i>Icterus galbula</i>	None	None	
Band-tailed Pigeon	<i>Patagioenas fasciata</i>	None	None	
Bank Swallow	<i>Riparia</i>	None	ST	SSC
Barn Owl	<i>Tyto alba</i>	None	None	
Barn Swallow	<i>Hirundo rustica</i>	None	None	
Bay-breasted Warbler	<i>Setophaga castanea</i>	None	None	
Bell's Sparrow	<i>Artemisiospiza bell</i>	None	None	
Bell's Vireo	<i>Vireo bellii</i>	None	None	
Belted Kingfisher	<i>Megaceryle alcyon</i>	None	None	
Bendire's Thrasher	<i>Toxostoma bendirei</i>	None	None	SSC
Bewick's Wren	<i>Thryomanes bewickii</i>	None	None	
Black oystercatcher	<i>Haematopus bachmani</i>	None	None	
Black Phoebe	<i>Sayornis nigricans</i>	None	None	
Black Scoter	<i>Melanitta americana</i>	None	None	
Black skimmer	<i>Rynchops niger</i>	None	None	SSC
Black storm-petrel	<i>Oceanodroma bachmani</i>	None	None	SSC
Black Tern	<i>Chlidonias niger</i>	None	None	SSC
Black turnstone	<i>Arenaria melanocephala</i>	None	None	

<b>Common Name</b>	<b>Scientific Name</b>	<b>Federal Listing Status (ESA)</b>	<b>State Listing Status (CESA)</b>	<b>Other Conservation Listings</b>
Black-and-white Warbler	<i>Mniotilta varia</i>	None	None	
Black-bellied Plover	<i>Pluvialis squatarola</i>	None	None	
Black-chinned Hummingbird	<i>Archilochus alexandri</i>	None	None	
Black-chinned Sparrow	<i>Spizella atrogularis</i>	None	None	
Black-crowned Night-Heron	<i>Nycticorax nycticorax</i>	None	None	
Black-footed albatross	<i>Phoebastria nigripes</i>	None	None	
Black-headed Grosbeak	<i>Pheucticus melanocephalus</i>	None	None	
Black-legged kittiwake	<i>Rissa tridactyla</i>	None	None	
Black-necked Stilt	<i>Himantopus mexicanus</i>	None	None	
Black-throated Blue Warbler	<i>Setophaga caerulescens</i>	None	None	
Black-throated Gray Warbler	<i>Setophaga nigrescens</i>	None	None	
Black-throated Green Warbler	<i>Setophaga virens</i>	None	None	
Black-throated Sparrow	<i>Amphispiza bilineata</i>	None	None	
Black-vented shearwater	<i>Puffinus opisthomelas</i>	None	None	BCC
Blackburnian Warbler	<i>Setophaga fusca [formerly Dendroica fusca]</i>	None	None	
Blackpoll Warbler	<i>Setophaga striata</i>	None	None	
Blue Grosbeak	<i>Passerina caerulea</i>	None	None	
Blue-footed Booby	<i>Sula nebouxii</i>	None	None	
Blue-gray Gnatcatcher	<i>Poliophtila caerulea</i>	None	None	
Blue-winged Teal	<i>Spatula discors</i>	None	None	
Bluethroat	<i>Luscinia svecica</i>	None	None	
Bobolink	<i>Dolichonyx oryzivorus</i>	None	None	
Bonaparte's Gull	<i>Chroicocephalus philadelphia</i>	None	None	
Brandt's Cormorant	<i>Phalacrocorax penicillatus</i>	None	None	
Brant	<i>Branta bernicla</i>	None	None	SSC
Brewer's Blackbird	<i>Euphagus cyanocephalus</i>	None	None	
Brewer's Sparrow	<i>Spizella breweri</i>	None	None	BCC
Broad-winged Hawk	<i>Buteo platypterus</i>	None	None	
Bronzed Cowbird	<i>Molothrus aeneus</i>	None	None	
Brown Booby	<i>Sula leucogaster</i>	None	None	
Brown Creeper	<i>Certhia americana</i>	None	None	
Brown pelican	<i>Pelecanus occidentalis</i>	Delisted	Delisted	FP, SSC
Brown Thrasher	<i>Toxostoma rufum</i>	None	None	
Brown-headed Cowbird	<i>Molothrus ater</i>	None	None	
Buff-breasted Sandpiper	<i>Calidris subruficollis</i>	None	None	
Bufflehead	<i>Bucephala albeola</i>	None	None	
Buller's Shearwater	<i>Ardenna bulleri</i>	None	None	
Bullock's Oriole	<i>Icterus bullockii</i>	None	None	
Burrowing owl	<i>Athene cunicularia</i>	None	None	BCC /SSC

<b>Common Name</b>	<b>Scientific Name</b>	<b>Federal Listing Status (ESA)</b>	<b>State Listing Status (CESA)</b>	<b>Other Conservation Listings</b>
Cackling Goose	<i>Branta hutchinsii</i>	Delisted	None	WL
California Gull	<i>Larus californicus</i>	None	None	WL
California Quail	<i>Callipepla californica</i>	None	None	
Calliope Hummingbird	<i>Selasphorus calliope</i>	None	None	
Canada Warbler	<i>Cardellina canadensis</i>	None	None	
Canvasback	<i>Aythya valisineria</i>	None	None	
Canyon Wren	<i>Catherpes mexicanus</i>	None	None	
Cape May Warbler	<i>Setophaga tigrina</i>	None	None	
Caspian Tern	<i>Hydroprogne caspia</i>	None	None	BCC /WL
Cassiar Junco	<i>Junco hyemalis</i>	None	None	
Cassin's Auklet	<i>Ptychoramphus aleuticus</i>	None	None	BCC /SSC
Cassin's Finch	<i>Haemorhous cassinii</i>	None	None	
Cassin's Kingbird	<i>Tyrannus vociferans</i>	None	None	
Cassin's Sparrow	<i>Peucaea cassinii</i>	None	None	
Cassin's Vireo	<i>Vireo cassinii</i>	None	None	
Cattle Egret	<i>Bubulcus ibis</i>	None	None	
Cedar Waxwing	<i>Bombcilla cedrorum</i>	None	None	
Chestnut-collared Longspur	<i>Calcarius ornatus</i>	None	None	
Chestnut-sided Warbler	<i>Setophaga pensylvanica</i>	None	None	
Chimney Swift	<i>Chaetura pelagica</i>	None	None	
Chipping Sparrow	<i>Spizella passerina</i>	None	None	
Chukar	<i>Alectoris chukar</i>	None	None	
Cinnamon Teal	<i>Spatula cyanoptera</i>	None	None	
Clark's grebe	<i>Aechmophorus clarkii</i>	None	None	BCC
Clay-colored Sparrow	<i>Spizella pallida</i>	None	None	
Cliff Swallow	<i>Petrochelidon pyrrhonota</i>	None	None	
Common Goldeneye	<i>Bucephala clangula</i>	None	None	
Common loon	<i>Gavia immer</i>	None	None	SSC
Common murre	<i>Uria aalge</i>	None	None	
Common Poorwill	<i>Phalaenoptilus nuttallii</i>	None	None	
Common Raven	<i>Corvus corax</i>	None	None	
Common Redpoll	<i>Acanthis flammea</i>	None	None	
Common tern	<i>Sterna hirundo</i>	None	None	
Common yellowthroat	<i>Geothlypis trichas sinuosa</i>	None	None	BCC/SSC
Connecticut Warbler	<i>Oporornis agilis</i>	None	None	
Cooper's Hawk	<i>Accipiter cooperii</i>	None	None	WL
Costa's hummingbird	<i>Calypte costae</i>	None	None	BCC
Craveri's Murrelet	<i>Synthliboramphus craveri</i>	None	None	
Dark-eyed Junco	<i>Junco hyemalis</i>	None	None	
Dickcissel	<i>Spiza americana</i>	None	None	
Double-crested cormorant	<i>phalacrocorax auritus</i>	None	None	
Dunlin	<i>Calidris alpina</i>	None	None	

<b>Common Name</b>	<b>Scientific Name</b>	<b>Federal Listing Status (ESA)</b>	<b>State Listing Status (CESA)</b>	<b>Other Conservation Listings</b>
Dusky Flycatcher	<i>Empidonax oberholseri</i>	None	None	
Dusky Warbler	<i>Phylloscopus fuscatus</i>	None	None	
Dusky-capped Flycatcher	<i>Myiarchus tuberculifer</i>	None	None	
Eared Grebe	<i>Podiceps nigricollis</i>	None	None	
Eastern Kingbird	<i>Tyrannus tyrannus</i>	None	None	
Eastern Phoebe	<i>Sayornis phoebe</i>	None	None	
Elegant Tern	<i>Thalasseus elegans</i>	None	None	WL
Eurasian Collared-Dove	<i>Streptopelia decaocto</i>	None	None	
Eurasian Wryneck	<i>Jynx torquilla</i>	None	None	
European Starling	<i>Sturnus vulgaris</i>	None	None	
Flesh-footed Shearwater	<i>Ardenna carneipes</i>	None	None	
Forster's Tern	<i>Sterna forsteri</i>	None	None	
Fox Sparrow	<i>Passerella iliaca</i>	None	None	
Gadwall	<i>Mareca strepera</i>	None	None	
Gambel's Quail	<i>Callipepla gambelii</i>	None	None	
Glaucous Gull	<i>Larus hyperboreus</i>	None	None	
Glaucous-winged Gull	<i>Larus glaucescens</i>	None	None	
Golden-crowned Kinglet	<i>Regulus satrapa</i>	None	None	
Golden-crowned Sparrow	<i>Zonotrichia atricapilla</i>	None	None	
Grasshopper Sparrow	<i>Ammodramus savannarum</i>	None	None	SSC
Gray Catbird	<i>Dumetella carolinensis</i>	None	None	
Gray Flycatcher	<i>Empidonax wrightii</i>	None	None	
Gray Vireo	<i>Vireo vicinior</i>	None	None	BCC / SSC
Gray-headed Junco	<i>Junco hyemalis</i>	None	None	WL
Great Blue Heron	<i>Ardea herodias</i>	None	None	
Great Egret	<i>Ardea alba</i>	None	None	
Greater Scaup	<i>Aythya marila</i>	None	None	
Greater White-fronted Goose	<i>Anser albifrons</i>	None	None	
Greater Yellowlegs	<i>Tringa melanoleuca</i>	None	None	
Green Heron	<i>Butorides virescens</i>	None	None	
Green-tailed Towhee	<i>Pipilo chlorurus</i>	None	None	
Green-winged Teal	<i>Anas crecca</i>	None	None	
Guadalupe Murrelet	<i>Synthliboramphus hypoleucus</i>	None	None	
Hammond's Flycatcher	<i>Empidonax hammondii</i>	None	None	
Harris's Sparrow	<i>Zonotrichia querula</i>	None	None	
Heermann's Gull	<i>Larus heermanni</i>	None	None	
Hermit Thrush	<i>Catharus guttatus</i>	None	None	
Hermit Warbler	<i>Setophaga occidentalis</i>	None	None	
Herring gull	<i>Larus argentatus</i>	None	None	
Hooded Merganser	<i>Lophodytes cucullatus</i>	None	None	
Hooded Oriole	<i>Icterus cucullatus</i>	None	None	

<b>Common Name</b>	<b>Scientific Name</b>	<b>Federal Listing Status (ESA)</b>	<b>State Listing Status (CESA)</b>	<b>Other Conservation Listings</b>
Hooded Warbler	<i>Setophaga citrina</i>	None	None	
Horned Grebe	<i>Podiceps auritus</i>	None	None	
Horned Lark	<i>Eremophila alpestris</i>	None	None	
House Finch	<i>Haemorhous mexicanus</i>	None	None	
House Sparrow	<i>Passer domesticus</i>	None	None	
House Wren	<i>Troglodytes aedon</i>	None	None	
Hutton's Vireo	<i>Vireo huttoni</i>	None	None	
Iceland Gull (Thayer's)	<i>Larus glaucooides thayeri</i>	None	None	
Indigo Bunting	<i>Passerina cyanea</i>	None	None	
Killdeer	<i>Charadrius vociferus</i>	None	None	
Lapland Longspur	<i>Calcarius lapponicus</i>	None	None	
Large-billed Sparrow	<i>Passerculus rostratus</i>	None	None	
Lark Bunting	<i>Calamospiza melanocorys</i>	None	None	
Lark Sparrow	<i>Chondestes grammacus</i>	None	None	
Laughing Gull	<i>Leucophaeus atricilla</i>	None	None	WL
Lawrence's goldfinch	<i>Carduelis lawrencei</i>	None	None	BCC
Laysan Albatross	<i>Phoebastria immutabilis</i>	None	None	
Lazuli Bunting	<i>Passerina amoena</i>	None	None	
Leach's Storm-Petrel	<i>Oceanodroma leucorhoa</i>	None	None	
Least Flycatcher	<i>Empidonax minimus</i>	None	None	
Least Sandpiper	<i>Calidris minutilla</i>	None	None	
Least Storm-Petrel	<i>Oceanodroma microsoma</i>	None	None	
Lesser Goldfinch	<i>Spinus psaltria</i>	None	None	
Lesser Nighthawk	<i>Chordeiles acutipennis</i>	None	None	
Lesser Scaup	<i>Aythya affinis</i>	None	None	
Lesser Yellowlegs	<i>Tringa flavipes</i>	None	None	
Lewis's Woodpecker	<i>Melanerpes lewis</i>	None	None	
Lincoln's Sparrow	<i>Melospiza lincolni</i>	None	None	
Little Blue Heron	<i>Egretta caerulea</i>	None	None	
Loggerhead Shrike	<i>Lanius ludovicianus</i>	None	None	SSC
Long-billed curlew	<i>Numenius americanus</i>	None	None	BCC / WL
Long-billed Dowitcher	<i>Limnodromus scolopaceus</i>	None	None	
Long-eared Owl	<i>Asio otus</i>	None	None	SSC
Long-tailed Jaeger	<i>Stercorarius longicaudus</i>	None	None	
Lucy's Warbler	<i>Leiothlypis luciae</i>	None	None	
MacGillivray's Warbler	<i>Geothlypis tolmiei</i>	None	None	
Magnolia Warbler	<i>Setophaga magnolia</i>	None	None	
Mallard	<i>Anas platyrhynchos</i>	None	None	
Manx Shearwater	<i>Puffinus puffinus</i>	None	None	
Marbled godwit	<i>Limosa fedoa</i>	None	None	BCC
Marbled Murrelet	<i>Brachyramphus marmoratus</i>	FT	SE	

<b>Common Name</b>	<b>Scientific Name</b>	<b>Federal Listing Status (ESA)</b>	<b>State Listing Status (CESA)</b>	<b>Other Conservation Listings</b>
Marsh Wren	<i>Cistothorus palustris</i>	None	None	
Masked Booby	<i>Sula dactylatra</i>	None	None	
McCown's Longspur	<i>Rhynchophanes mccownii</i>	None	None	
Merlin	<i>Falco columbarius</i>	None	None	WL
Mew Gull	<i>Larus canus</i>	None	None	
Mountain Bluebird	<i>Sialia currucoides</i>	None	None	
Mountain Plover	<i>Charadrius montanus</i>	None	None	BCC /SSC
Mourning Dove	<i>Zenaida macroura</i>	None	None	
Murphy's Petrel	<i>Pterodroma ultima</i>	None	None	
Myrtle Warbler	<i>Setophaga coronata</i>	None	None	
Northern Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>	None	None	
Nashville Warbler	<i>Leiothlypis ruficapilla</i>	None	None	
Northern Flicker	<i>Colaptes auratus</i>	None	None	
Northern fulmar	<i>Fulmarus glacialis</i>	None	None	
Northern Harrier	<i>Circus hudsonius</i>	None	None	SCC
Northern Mockingbird	<i>Mimus polyglottos</i>	None	None	
Northern Parula	<i>Setophaga americana</i>	None	None	
Northern Pintail	<i>Anas acuta</i>	None	None	
Northern Shoveler	<i>Spatula clypeata</i>	None	None	
Northern Waterthrush	<i>Parkesia noveboracensis</i>	None	None	
Olive-sided Flycatcher	<i>Contopus cooperi</i>	None	None	SSC
Orange-crowned Warbler	<i>Leiothlypis celata</i>	None	None	
Orchard Oriole	<i>Icterus spurius</i>	None	None	
Oregon Junco	<i>Junco hyemalis</i>	None	None	
Osprey	<i>Pandion haliaetus</i>	None	None	WL
Ovenbird	<i>Seiurus aurocapilla</i>	None	None	
Pacific Golden-Plover	<i>Pluvialis fulva</i>	None	None	
Pacific Loon	<i>Gavia pacifica</i>	None	None	
Pacific-slope Flycatcher	<i>Empidonax difficilis</i>	None	None	
Painted Bunting	<i>Passerina ciris</i>	None	None	
Palm Warbler	<i>Setophaga palmarum</i>	None	None	
Parasitic jaeger	<i>Stercorarius parasiticus</i>	None	None	
Pectoral Sandpiper	<i>Calidris melanotos</i>	None	None	
Pelagic Cormorant	<i>Phalacrocorax pelagicus</i>	None	None	
Peregrine Falcon	<i>Falco peregrinus</i>	Delisted	Delisted	BCC / WL
Phainopepla	<i>Phainopepla nitens</i>	None	None	
Philadelphia Vireo	<i>Vireo philadelphicus</i>	None	None	
Pied-billed Grebe	<i>Podilymbus podiceps</i>	None	None	
Pigeon Guillemot	<i>Cephus columba</i>	None	None	
Pine Siskin	<i>Spinus pinus</i>	None	None	

<b>Common Name</b>	<b>Scientific Name</b>	<b>Federal Listing Status (ESA)</b>	<b>State Listing Status (CESA)</b>	<b>Other Conservation Listings</b>
Pink-footed shearwater	<i>Puffinus creatopus</i>	BCC	None	
Pink-sided Junco	<i>Junco hyemalis ssp. mearnsi</i>	None	None	
Pomarine jaeger	<i>Stercorarius pomarinus</i>	None	None	
Prairie Falcon	<i>Falco mexicanus</i>	None	None	BCC / WL
Prairie Warbler	<i>Setophaga discolor</i>	None	None	
Prothonotary Warbler	<i>Protonotaria citrea</i>	None	None	
Purple Finch	<i>Haemorhous purpureus</i>	None	None	
Purple Martin	<i>Progne subis</i>	None	None	SSC
Red Knot	<i>Calidris canutus</i>	None	None	
Red phalarope	<i>Phalaropus fulicarius</i>	None	None	
Red-billed Tropicbird	<i>Phaethon aethereus</i>	None	None	
Red-breasted Merganser	<i>Mergus serrator</i>	None	None	
Red-breasted Nuthatch	<i>Sitta canadensis</i>	None	None	
Red-breasted Sapsucker	<i>Sphyrapicus ruber</i>	None	None	
Red-eyed Vireo	<i>Vireo olivaceus</i>	None	None	
Red-flanked Bluetail	<i>Tarsiger cyanurus</i>	None	None	
Red-naped Sapsucker	<i>Sphyrapicus nuchalis</i>	None	None	
Red-necked Phalarope	<i>Phalaropus lobatus</i>	None	None	
Red-shafted Flicker	<i>Colaptes auratus cafer</i>	None	None	
Red-shouldered Hawk	<i>Buteo lineatus</i>	None	None	
Red-tailed Hawk	<i>Buteo jamaicensis</i>	None	None	
Red-throated Loon	<i>Gavia stellata</i>	None	None	
Red-throated Pipit	<i>Anthus cervinus</i>	None	None	
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	None	None	
Rhinoceros Auklet	<i>Cerorhinca monocerata</i>	None	None	WL
Ring-billed gull	<i>Larus delawarensis</i>	None	None	
Ring-necked Duck	<i>Aythya collaris</i>	None	None	
Rock Pigeon	<i>Columba livia</i>	None	None	
Rock Wren	<i>Salpinctes obsoletus</i>	None	None	
Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>	None	None	
Ross's Goose	<i>Anser rossii</i>	None	None	
Rough-legged Hawk	<i>Buteo lagopus</i>	None	None	
Royal tern	<i>Thalasseus maximus</i>	None	None	
Ruby-crowned Kinglet	<i>Regulus calendula</i>	None	None	
Ruby-throated Hummingbird	<i>Archilochus colubris</i>	None	None	
Ruddy Duck	<i>Oxyura jamaicensis</i>	None	None	
Ruddy Turnstone	<i>Arenaria interpres</i>	None	None	
Rufous hummingbird	<i>selasphorus rufus</i>	None	None	BCC
Rusty Blackbird	<i>Euphagus carolinus</i>	None	None	
Sabine's Gull	<i>Xema sabini</i>	None	None	
Sage Thrasher	<i>Oreoscoptes montanus</i>	None	None	
Sagebrush Sparrow	<i>Artemisiospiza nevadensis</i>	None	None	

<b>Common Name</b>	<b>Scientific Name</b>	<b>Federal Listing Status (ESA)</b>	<b>State Listing Status (CESA)</b>	<b>Other Conservation Listings</b>
San Clemente Bell's sparrow	<i>Amphispiza belli clementeae</i>	FT	None	SSC
San Clemente loggerhead shrike	<i>Lanius ludovicianus mearnsi</i>	FE	None	SSC
Sanderling	<i>Calidris alba</i>	None	None	
Savannah Sparrow	<i>Passerculus sandwichensis</i>	None	None	SSC
Say's Phoebe	<i>Sayornis saya</i>	None	None	
Scaly-breasted Munia	<i>Lonchura punctulata</i>	None	None	
Scarlet Tanager	<i>Piranga olivacea</i>	None	None	
Scissor-tailed Flycatcher	<i>Tyrannus forficatus</i>	None	None	
Scott's Oriole	<i>Icterus parisorum</i>	None	None	
Scripps's Murrelet	<i>Synthliboramphus scrippsi</i>	None	None	
Semipalmated Plover	<i>Charadrius semipalmatus</i>	None	None	
Semipalmated Sandpiper	<i>Calidris pusilla</i>	None	None	
Sharp-shinned Hawk	<i>Accipiter striatus</i>	None	None	WL
Short-billed Dowitcher	<i>Limnodromus griseus</i>	None	None	
Short-eared Owl	<i>Asio flammeus</i>	None	None	SSC
Short-tailed Shearwater	<i>Ardenna tenuirostris</i>	None	None	
Siberian Stonechat	<i>Saxicola maurus</i>	None	None	
Slate-colored Junco	<i>Junco hyemalis</i>	None	None	
Smith's Longspur	<i>Calcarius pictus</i>	None	None	
Snow Bunting	<i>Plectrophenax nivalis</i>	None	None	
Snow Goose	<i>Anser caerulescens</i>	None	None	
Snowy Egret	<i>Egretta thula</i>	None	None	
Snowy Plover	<i>Charadrius nivosus</i>	None	None	
Solitary Sandpiper	<i>Tringa solitaria</i>	None	None	
Song Sparrow	<i>Melospiza melodia</i>	None	None	
Sooty Shearwater	<i>Ardenna grisea</i>	None	None	
Sora	<i>Porzana carolina</i>	None	None	
South Polar Skua	<i>Stercorarius macconnicki</i>	None	None	
Spotted Sandpiper	<i>Actitis macularius</i>	None	None	
Spotted towhee	<i>Pipilo maculatus clementae</i>	None	None	BCC
Summer Tanager	<i>Piranga rubra</i>	None	None	SCC
Surf scoter	<i>Melanitta perspicillata</i>	None	None	
Surfbird	<i>Calidris virgata</i>	None	None	
Swainson's Thrush	<i>MCatharus ustulatus</i>	None	None	
Swamp Sparrow	<i>Melospiza georgiana</i>	None	None	
Tennessee Warbler	<i>MLeiothlypis peregrina</i>	None	None	
Townsend's Solitaire	<i>Myadestes townsendi</i>	None	None	
Townsend's Warbler	Townsend's Warbler	None	None	
Tree Swallow	<i>Tachycineta bicolor</i>	None	None	
Tricolored blackbird	<i>Agelaius tricolor</i>	None	ST	BCC
Tricolored Heron	<i>Egretta tricolor</i>	None	None	

<b>Common Name</b>	<b>Scientific Name</b>	<b>Federal Listing Status (ESA)</b>	<b>State Listing Status (CESA)</b>	<b>Other Conservation Listings</b>
Tropical Kingbird	<i>Tyrannus melancholicus</i>	None	None	
Turkey Vulture	<i>Cathartes aura</i>	None	None	
Varied Thrush	<i>Ixoreus naevius</i>	None	None	
Vaux's Swift	<i>Chaetura vauxi</i>	None	None	BCC / SSC
Vermilion Flycatcher	<i>Pyrocephalus rubinus</i>	None	None	SSC
Vesper Sparrow	<i>Poocetes gramineus</i>	None	None	
Violet-green Swallow	<i>Tachycineta thalassina</i>	None	None	
Virginia Rail	<i>Rallus limicola</i>	None	None	
Virginia's Warbler	<i>Leiothlypis virginiae</i>	None	None	
Wandering Tattler	<i>Tringa incana</i>	None	None	
Warbling Vireo	<i>Vireo gilvus</i>	None	None	
Western Bluebird	<i>Sialia mexicana</i>	None	None	
Western Grebe	<i>Aechmophorus occidentalis</i>	None	None	
Western Gull	<i>Larus occidentalis</i>	None	None	
Western Kingbird	<i>Tyrannus verticalis</i>	None	None	
Western Meadowlark	<i>Sturnella neglecta</i>	None	None	
Western Sandpiper	<i>Calidris mauri</i>	None	None	
Western snowy plover	<i>Charadrius nivosus nivosus</i>	FT	None	SCC
Western Tanager	<i>Piranga ludoviciana</i>	None	None	
Western Wood-Pewee	<i>Contopus sordidulus</i>	None	None	
Whimbrel	<i>Numenius phaeopus</i>	None	None	BCC
White Wagtail	<i>Motacilla alba</i>	None	None	
White-crowned Sparrow	<i>Zonotrichia leucophrys</i>	None	None	
White-faced Ibis	<i>Plegadis chihi</i>	None	None	WL
White-tailed Kite	<i>Elanus leucurus</i>	None	None	FP
White-throated Sparrow	<i>Zonotrichia albicollis</i>	None	None	
White-throated Swift	<i>Aeronautes saxatalis</i>	None	None	
White-winged Dove	<i>Zenaida asiatica</i>	None	None	
Willet	<i>Tringa semipalmata</i>	None	None	BCC
Willow Flycatcher	<i>Empidonax traillii</i>	None	SE	BCC
Wilson's Phalarope	<i>Phalaropus tricolor</i>	None	None	
Wilson's Snipe	<i>Gallinago delicata</i>	None	None	
Wilson's Storm-Petrel	<i>Oceanites oceanicus</i>	None	None	
Wilson's Warbler	<i>Cardellina pusilla</i>	None	None	
Yellow Warbler	<i>Setophaga petechia</i>	None	None	
Yellow-billed Cuckoo	<i>Coccyzus americanus</i>	None	None	
Yellow-breasted Chat	<i>Icteria virens</i>	None	None	SCC
Yellow-crowned Night-Heron	<i>Nyctanassa violacea</i>	None	None	
Yellow-green Vireo	<i>Vireo flavoviridis</i>	None	None	
Yellow-headed Blackbird	<i>Xanthocephalus xanthocephalus</i>	None	None	

<b>Common Name</b>	<b>Scientific Name</b>	<b>Federal Listing Status (ESA)</b>	<b>State Listing Status (CESA)</b>	<b>Other Conservation Listings</b>
Yellow-rumped Warbler	<i>Setophaga coronata</i>	None	None	
Yellow-shafted Flicker	<i>Colaptes auratus</i>	None	None	
Yellow-throated Vireo	<i>Vireo flavifrons</i>	None	None	
Yellow-throated Warbler	<i>Setophaga dominica</i>	None	None	

**Non-Established Exotic Species**

<b>Common Name</b>	<b>Scientific Name</b>	<b>Federal Listing Status (ESA)</b>	<b>State Listing Status (CESA)</b>	<b>Other Conservation Listings</b>
European Goldfinch	<i>Carduelis carduelis</i>	None	None	

**Hypothetical Species**

<b>Common Name</b>	<b>Scientific Name</b>	<b>Federal Listing Status (ESA)</b>	<b>State Listing Status (CESA)</b>	<b>Other Conservation Listings</b>
Canada Goose	<i>Branta canadensis</i>	None	None	
Redhead	<i>Aythya americana</i>	None	None	SSC
White-winged Scoter	<i>Melanitta deglandi</i>	None	None	
Barrow's Goldeneye	<i>Bucephala islandica</i>	None	None	SSC
Common Merganser	<i>Mergus merganser</i>	None	None	
Red-necked Grebe	<i>Podiceps grisegena</i>	None	None	
Spotted Dove	<i>Streptopelia chinensis</i>	None	None	
Common Nighthawk	<i>Chordeiles minor</i>	None	None	
Ruby-throated Hummingbird	<i>Archilochus colubris</i>	None	None	
Golden Eagle	<i>Aquila chrysaetos</i>	None	None	BCC /FP/WL
American Oystercatcher	<i>Haematopus palliatus</i>	None	None	
Belcher's Gull	<i>Larus belcheri</i>	None	None	
Streaked Shearwater	<i>Calonectris leucomelas</i>	None	None	
American White Pelican	<i>Pelecanus erythrorhynchos</i>	Delisted	Delisted	FP
Swainson's Hawk	<i>Buteo swainsoni</i>	None	ST	BCC
Ferruginous Hawk	<i>Buteo regalis</i>	None	None	BCC / WL
Sulphur-bellied Flycatcher	<i>Myiodynastes luteiventris</i>	None	None	
Rufous-crowned Sparrow	<i>Aimophila ruficeps</i>	None	None	
Blue-winged Warbler	<i>Vermivora cyanoptera</i>	None	None	
Mourning Warbler	<i>Geothlypis philadelphia</i>	None	None	

Notes: Selections for Listing Status Columns include: **FE** = federal endangered; **FT** = federal threatened; **SE** = state endangered; **ST** = state threatened. Selections for Other Conservation Listing Column include: **BCC** = USFWS Bird of Conservation Concern; **SSC** = CDFW Species of Special Concern; **FP** = CDFW Fully Protected; **WL** = CDFW Watch List. **None** = No conservation status determined.

Sources: Species list derived from San Clemente Island Bird Checklist. © Justyn Stahl. Last update 13 November 2019. Conservation status based on the CDFW California Natural Diversity Data Base (CNDDB) Special Animals List August 2019 (CDFW 2019).

**Appendix C Biological Opinion for Military Construction Project  
P-762, Combat Aircraft Loading Area, San Clemente Island, Los  
Angeles County, California**



## United States Department of the Interior

### U.S. FISH AND WILDLIFE SERVICE

Ecological Services  
Carlsbad Fish and Wildlife Office  
2177 Salk Avenue, Suite 250  
Carlsbad, California 92008



In Reply Refer to:  
FWS-LA-20B0141-20F0808

June 8, 2020  
*Sent Electronically*

Captain John DePree  
Commanding Officer  
Naval Base Coronado  
P.O. Box 357033  
San Diego, California 92135-7033

Attention: Melissa Booker, San Clemente Island Wildlife Biologist

Subject: Biological Opinion for Military Construction Project P-762, Combat Aircraft Loading Area, San Clemente Island, Los Angeles County, California

Dear Captain DePree:

This document transmits the U.S. Fish and Wildlife Service's (Service) biological opinion regarding the development and operations of a new Combat Aircraft Loading Area (CALA), on San Clemente Island (SCI), Los Angeles County, California, in accordance with section 7 of the Endangered Species Act of 1973 (Act), as amended (16 U.S.C. 1531 *et seq.*). This consultation will address associated effects to the San Clemente Bell's (=sage) sparrow [*Artemisiospiza* (= *Amphispiza*) *belli clementeae*; Bell's sparrow].

This biological opinion is based on information provided in: (1) *Biological Assessment: Combat Aircraft Loading Area at San Clemente Island, California* (BA; Navy 2020); (2) *San Clemente Bell's Sparrow Monitoring Breeding Season Unpublished Draft Report - 2016* (Meiman *et al.* 2016); and (3) other sources of information, including previous consultations, annual reports, emails and telephone conversations with Navy biologists. The complete project file for this consultation is maintained at the Carlsbad Fish and Wildlife Office (CFWO).

### **Consistency Determination for the San Clemente Island Fox Conservation Agreement**

In 2003, the U.S. Department of Navy (Navy) and the Service signed the San Clemente Island Fox Conservation Agreement (CA; Service and Navy 2003) to address and offset potential threats that could result in a need to list the San Clemente Island fox (*Urocyon littoralis clementae*; island fox) under the Act. Consistent with the CA, the Navy proposes to include conservation measures (Appendix) that will reduce the potential for construction and operational impacts to the fox. With implementation of the proposed measures, we find the proposed project consistent with the CA.

## **CONSULTATION HISTORY**

The Navy requested formal consultation on the new CALA on February 13, 2020. The Service submitted requests for additional information on March 24, 2020 and April 3, 2020, and received information necessary to complete the consultation on March 27, 30, and April 6, 2020. We were unable to conduct a site visit due to COVID19 travel restrictions, and relied on previous familiarity with the project area, Navy staff expertise, and surveys conducted in support of the project to assess baseline conditions in the action area.

## **BIOLOGICAL OPINION**

### **DESCRIPTION OF THE PROPOSED ACTION**

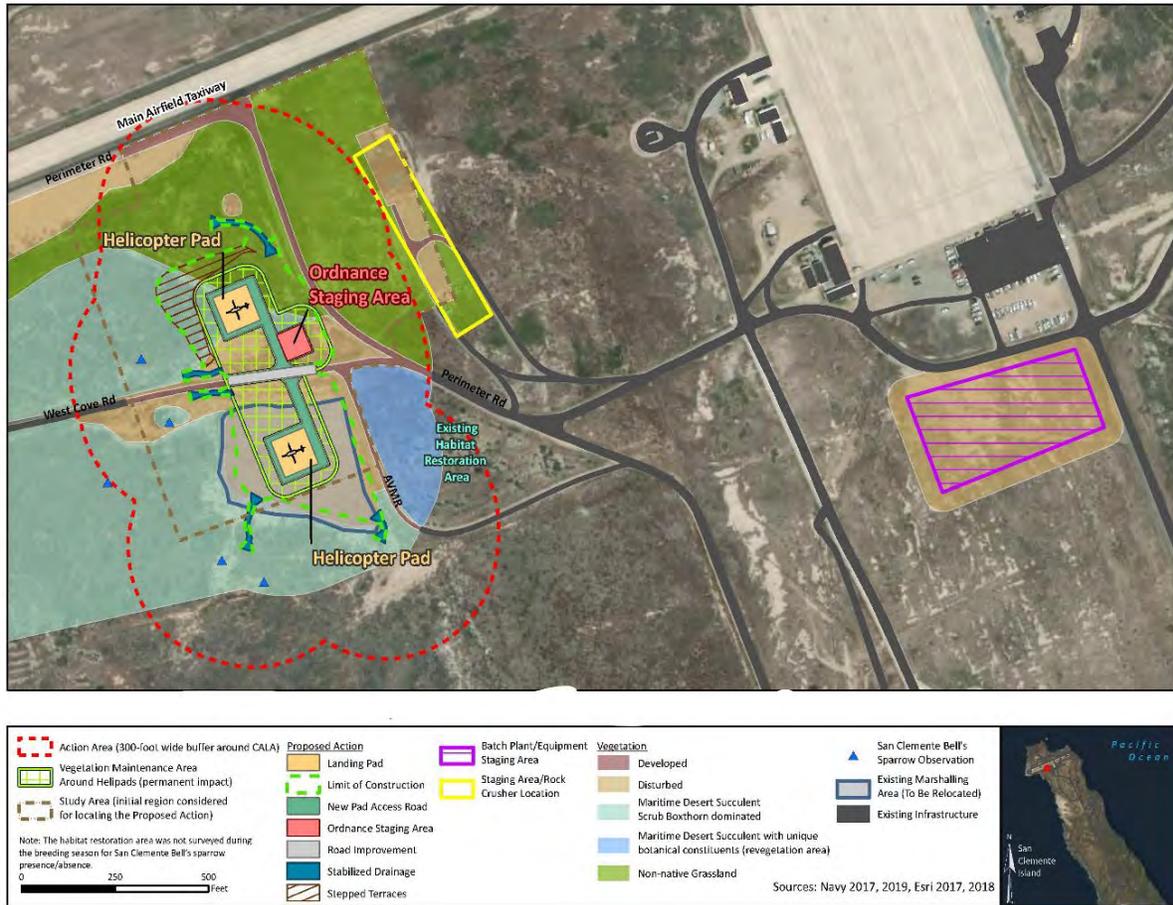
The Navy proposes to construct a new CALA on SCI in close proximity to the main airfield, and relocate training activities from an existing CALA to the new site (Figures 1 and 2). A CALA is a designated location where personnel train to load/off-load ordnance from helicopters. The proposed CALA will support Helicopter Advanced Readiness Program (HARP) training for Helicopter Sea Combat (HSC) and Helicopter Maritime Strike (HSM) squadrons. Currently, helicopter ordnance loading and unloading activities are conducted at the “VC-3” training area, in the middle of SCI or the “Red Label Area” within the Main Airfield (Figure 1); however, these locations present operational inefficiencies. VC-3 is small, in poor condition, far from the arming area, and has an increased frequency of inclement weather relative to the proposed CALA. The Red Label Area limits ingress of planes during loading and unloading activities. The new CALA will be constructed immediately south of the main SCI airfield to improve operational efficiency and safety.

### **Project Components**

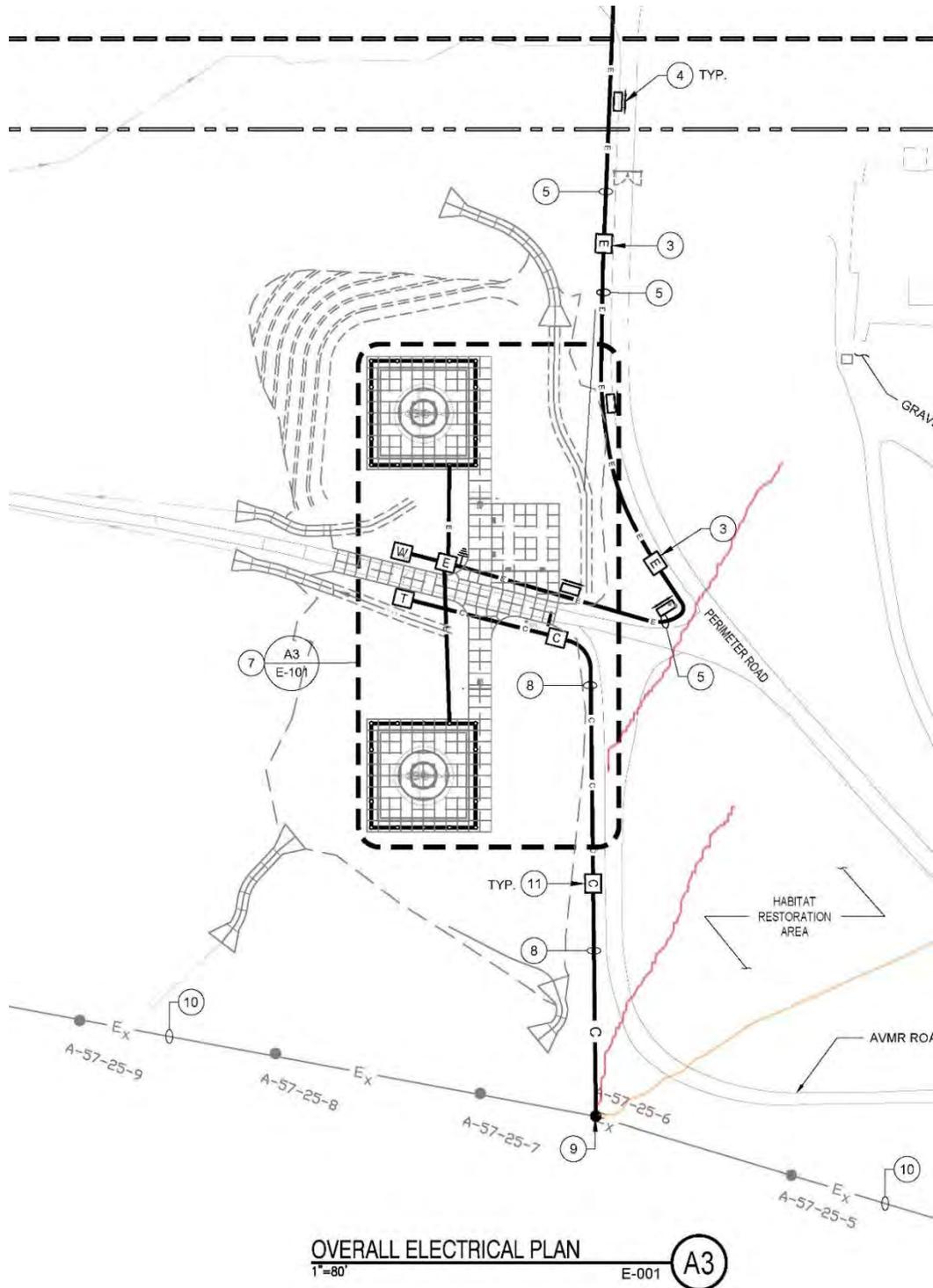
The proposed CALA will consist of two 125-foot square helipads, a 100-foot square ordnance staging area, five stabilized drainages for stormwater conveyance from the helipads, and a 20-foot wide (including a maintained shoulder) improved access road (Figure 2). The new access road will extend about 125 feet to the north and to the south of West Cove Road to connect each of the helipads to the existing roadway (Figure 2, “New Pad Access Road”). A 50-foot wide vegetation maintenance area will be established and maintained around the helipads, road, and ordnance staging area (Figure 2, “Vegetation Maintenance Area around Helipads”). The vegetation maintenance area will be treated with a soil stabilizing polymer (e.g., RhinoSnot™) to minimize re-establishment of vegetation within the area. Electricity and communications will connect from existing power sources to the north and south of the CALA site via underground cables/connectors within a 2-inch conduit installed 2 feet from the paved surface of the existing Perimeter Road and Artillery Vehicle Maneuver Road (AVMR) shoulder. (Figure 3). The open trench to accommodate the 2-inch conduit will temporarily disturb about 2000 square feet of previously disturbed road shoulder. No utility pole installation, apron or street lighting, water, or sewer is proposed.



Figure 1. Proposed new CALA site (study area) and current CALA site at VC-3.



**Figure 2.** CALA development footprint and staging areas.



**Figure 3.** Electrical Plan for CALA. Number 9 depicts existing electrical pole. Number 8 shows shoulder of AVMR. Number 5 shows shoulder of Perimeter Road.

**Construction**

Construction will involve equipment staging on three previously disturbed areas as follows: a temporary bulk material staging area will be designated near the drive on/off loading wharf at Wilson Cove; a contractor equipment staging area/concrete batch plant will be located just south of the Airfield Terminal (Figure 2, “Batch Plant/Staging Area”), and a second contractor equipment staging area and rock crusher will be located in a gravel area to the south of the airfield and east of the proposed CALA (Figure 2, “Staging Area/Rock Crusher Location”). An estimated 8,000 cubic yards (cy) of onsite excavation and 10,000 cy of off-site fill is required to level uneven terrain, primarily for the northern helipad. Fill material will come from a stockpile located southeast of the main airfield—known as Mt. Morgan—and will be transported on an existing road between it and the CALA construction site (Figure 1). Construction will also include stabilization within 5 drainages to support off-site water conveyance (Figure 2). All excavation will be contained within the permanent impact area (Figure 2, “Vegetation Maintenance Area around Helipads”).

Development of the CALA will permanently impact 3.26 acres through earthmoving activities and vegetation removal or vegetation maintenance; including: maritime desert succulent scrub (0.62 acres), non-native grassland (0.36 acre), and disturbed/developed (2.27 acres) (Table 1; Figure 2). Up to 3.93 acres will be temporarily impacted within equipment staging and batch plant areas, including 0.56 acre of non-native grassland and 3.37 acres of disturbed/developed. Construction is currently estimated to begin in late 2020 and be completed by mid-2021.

**Table 1. Permanent Impacts to Plant Communities Occurring in the Project Footprint and Vegetation Maintenance Area.**

Plant Community Alliance	Temporary Impacts (acres)	Permanent Impacts in CALA Footprint (acres)	Permanent Impacts in Vegetation Maintenance Area (acres)	Total Permanent Impacts (acres)
Maritime Desert Succulent Scrub		0.38	0.24	0.62
Non-Native Grassland	0.56	0.16	0.20	0.36
<i>Subtotal</i>	<b>0.56</b>	<b>0.54</b>	<b>0.44</b>	<b>0.98</b>
Disturbed/Developed	3.37	0.86	1.41	2.27
<b>TOTAL</b>	<b>3.93</b>	<b>1.40</b>	<b>1.86</b>	<b>3.26</b>

*Notes: The CALA Footprint consists of the landing pads, road improvement, new pad access road, ordnance staging area, and stabilized drainages. The Vegetation Maintenance Area consists of a 50-foot buffer around all CALA footprint elements except the stabilized drainages.*

**Future operations**

Once the new CALA is complete, the HARP training currently conducted at VC-3 and the Red Label Area, will be relocated to the new CALA. The existing VC-3 CALA will no longer be used or maintained in support of HARP training and the Red Label Area will be used for arming ordnance only.

Operations at the new CALA will include loading and unloading Navy and Marine Corps helicopters (models MH-60S, MH-60R, AH-1 Cobra, and UH-1 Iroquois) during squadron training for HSC and HSM squadrons. During exercises, helicopters will fly directly in and out from the helipads. Upon landing, personnel will load the helicopters with un-armed ordnance from the ordnance staging area. Once loaded with ordnance, the helicopters will fly (“hover taxi”) to the Red Label Area, where the ordnance will be armed. The helicopters will then takeoff to conduct their operations. Helicopters will reverse this process when returning with any unfired ordnance.

Multiple helicopters will be loaded simultaneously with un-armed ordnance. For example, a typical HARP exercise for HSM includes a detachment with 5 helicopters and 12 combat crews. Two or three combat crews are assigned to each helicopter and will repeat exercises until all crews have completed the training. Ordnance load teams for HSM typically load 12 Hellfire missiles and 12 torpedoes, and each loading/off-loading event takes approximately 1 hour per crew, for a total of about 12 hours; however, since 2 helipads will be available, the entire operation will take about 6 hours. The HSC teams load/off-load a more extensive ordnance list and require about 3 hours for each event. The proposed action anticipates 4 to 6 HSM exercises and 3 to 5 HSC exercises per year (7 to 11 HARP exercises in total) at the new CALA. Helicopter loading and offloading will occur at the CALA during daylight hours only (for safety reasons), up to 120 days per year.

### **Relocation of existing marshalling activities to a new site**

The proposed CALA footprint overlaps with an existing “marshalling area” that supports assembly of assault vehicles and troops after amphibious landings (Figure 2, “Existing Marshalling Area”). Marshalling will be displaced by development of the new CALA and although the exact location has not been determined, the future site will be in an existing Assault Vehicle Maneuvering Area that was addressed in the *Final Biological Opinion for Military Operations and Fire Management Plan* (Service 2008), and is not considered further in this opinion.

### **Conservation Measures**

The Navy will implement the following conservation measures (CM) during construction and operation of the new CALA to minimize adverse effects to the Bell’s sparrow:

- CM 1. Project contractors and support personnel will receive a pre-Project brief regarding: (a) the sensitive resources in the project area, (b) project footprint and transit route delineation, and (c) conservation measures to reduce the impacts of the project. All contractors and support personnel will sign a form that acknowledges the training brief and acceptance of the conservation measures.
- CM 2. Vegetation clearing/grubbing will occur between August 15 and December 1, outside the Bell’s sparrow breeding season, unless the SCI Wildlife Biologist determines and notifies the Service, that Bell’s sparrow breeding season has ended before August 15. Once cleared, the Project site will be maintained until construction begins to prevent vegetation re-growth and assure that nests are not initiated within the construction footprint.

- CM 3. Prior to vegetation clearing/grubbing, a springtime survey (around April) for Bell's sparrow will take place and the results will be provided to the Service to confirm the number of Bell's sparrows within the action area.
- CM 4. A CFWO-approved biologist (Biological Monitor)<sup>1</sup> will be on site during vegetation clearing/grubbing; weekly during project construction outside the Bell's sparrow nesting season; and every 3 to 5 days during the Bell's sparrow nesting season (i.e., December 2 to August 14), within 300 feet of Bell's sparrow habitat to ensure compliance with CMs. The Navy will provide the biologist's name, address, telephone number, and work schedule on the project to the CFWO at least 5 working days prior to initiating project impacts. If necessary, more than one Biological Monitor may be used. The Biological Monitor will be provided with a copy of this consultation and will be available during pre-construction and construction phases to address protection of sensitive biological resources, monitor ongoing work, and maintain communications with the Resident Engineer to ensure that issues relating to biological resources are appropriately and lawfully managed. The Biological Monitor will perform the following duties:
- a. Determine the presence of Bell's sparrows in the project footprint. Prior to vegetation clearing/grubbing, the Biological Monitor will perform a minimum of three focused preconstruction surveys, on separate days. Surveys will begin a maximum of 30 days prior to initiating vegetation clearing/grubbing, and one survey will be conducted the day immediately prior to the initiation of vegetation clearing/grubbing.
  - b. Ensure that Bell's sparrows will not be injured or killed by vegetation clearing/grubbing. The Biological Monitor will direct personnel to begin vegetation clearing/grubbing in an area away from the Bell's sparrows. The Biological Monitor will record the number and location of Bell's sparrows observed during vegetation clearing/grubbing. The Navy will notify the CFWO at least 7 days prior to vegetation clearing/grubbing to allow the CFWO to coordinate with the Biological Monitor on potential bird flushing activities.
  - c. Conduct roadside surveys in habitat adjacent to the construction footprint and roadway to detect Bell's sparrows struck by heavy equipment or vehicles. If surveys detect a Bell's sparrow that has been struck by equipment or a vehicle, the Navy will contact the CFWO within 24 hours of the observed impact.
  - d. Assess the effects of construction activities during the non-breeding and breeding season. During the Bell's sparrow non-breeding season, the Biological Monitor will assess Bell's sparrow habitat use in the vicinity of the project, and assure compliance with Conservation Measures. During the Bell's sparrow breeding season (after vegetation clearing), the Biological

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<sup>1</sup> The Biological Monitor will be a trained ornithologist with at least 40 hours of independent Bell's sparrow observation in the field and documented experience of at least 20 hours of locating and monitoring Bell's sparrow nests.

Monitor will determine the presence of nest building, egg incubation, or brood rearing activities within 300 feet of the project site. If an active Bell's sparrow nest is found adjacent to the site, construction activity may be adjusted temporarily to minimize nest disturbance, to the extent feasible without impacting the project construction schedule. If monitoring detects behavioral changes that may rise to the level of take (e.g., interruption of incubation, nest abandonment, lowered parental attendance, disruption of nesting activities), the Navy may contact the CFWO within 24 hours of the observed impact to discuss additional CMs to avoid and minimize potential impacts.

- e. Submit a final monitoring report to the CFWO within 60 days of project completion demonstrating compliance with all CMs and that the limits of project impacts (as defined in Figure 2) were not exceeded. The report will also specify numbers, locations, and sex of Bell's sparrows (if observed), observed Bell's sparrows' behavior (especially in relation to project activities), including any observed nest abandonment or project-related nest failure, and the number of Bell's sparrows detected harmed or killed due to collision with equipment or vehicles.

- CM 5. To minimize impacts to soils and topography and limit erosion after project construction, the final project design will include engineered measures to stabilize the cut slopes (e.g., stepped terraces), protect exposed surfaces, and reduce/convey storm water in a controlled manner. Where appropriate as determined by the SCI Botanist and SCI Wildlife Biologist, revegetation with plant species native to SCI may occur within the project footprint to minimize erosion. In addition, an erosion control plan will be developed before, and implemented during project construction. The plan will include best management practices, such as silt fences, gravel bags, restrictions on grading during the rainy season, and other measures to control erosion and prevent the release of contaminants into the soil.
- CM 6. The Navy will re-vegetate temporary impacts to the extent appropriate and feasible. The Navy will prioritize areas for revegetation according to erosion potential, presence or absence of invasive plants within the vicinity, pre-activity condition of the site, and other site specific relevant factors. Areas not selected for revegetation, but subject to temporary impacts, will be prioritized for invasive plant species control.
- CM 7. Prior to project-related activities, the Navy will require the executing agent/contractor to assure that all project work areas, including transit routes necessary to reach construction sites, are clearly identified or marked. Workers will be directed to restrict vehicular activities to roads and associated features (e.g., designated parking areas, turn-arounds, pull-outs, and staging areas).

- CM 8. To minimize the effects of dust on adjacent native habitats and wildlife therein, dust will be controlled through wetting of the site or access roads as necessary, without creating erosion.
- CM 9. All vehicles and equipment transported to SCI will be washed free of visible plant material, dirt, or mud before embarking for SCI. Equipment may be subject to inspection and may be unable to load on the barge or unload at SCI if it is not clean of visible dirt and plant material.
- CM 10. Drivers will strictly adhere to posted speed limits of 35 miles per hour (mph) maximum on hard-surfaced roads and 20 mph or lower on dirt roads as posted.
- CM 11. All imported materials (e.g., gravel, soil, wood, pallets, straw wattles, etc.) will be inspected and to the extent feasible cleared of non-native invertebrates (e.g., insects, worms, snails, slugs) through direct removal (washing clean) or application of pesticides prior to transit to SCI.
- CM 12. Outdoor lighting will only be activated during times of facility occupation by personnel, fully downcast and down shielded to prevent off-facility illumination to the maximum extent feasible, and consistent with airfield requirements. Lighting plans will incorporate low brightness luminaires to reduce direct glare and provide adequate vertical illuminance while minimizing light pollution and trespass. Lighting plans will be submitted to and approved by the SCI Wildlife Biologist and shall meet Unified Facilities Criteria 3-530-01 standards.
- CM 13. Anti-perching materials (e.g., Nixilite) will be installed on any necessary fences, light posts, or other structures that may serve as perches for raptors.
- CM 14. To reduce the potential for spread of invasive plant species from stockpiled soil to the construction site, the Navy will examine soils stockpiled at Mt Morgan for evidence of non-native plant species or propagules. If invasive plant species or propagules are detected on Mt. Morgan that are not already present in the vicinity of the construction footprint, the Navy will treat the soils with herbicide to the extent possible, prior to transport to the construction footprint. In addition, to further reduce the potential for invasive species spread, the Navy will conduct invasive plant species control on and within 25 feet of the new CALA for 5 years post-construction.

### **Action Area**

Regulations implementing the Act (50 CFR § 402.02) describe 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. For this project, the action area includes the construction footprint for the CALA and staging areas, and surrounding habitat within 300 feet of the construction footprint that may be exposed to project-related effects such as increased noise, light, dust levels, and human activity during project construction and operation of the facilities (Figures 1 and 2). In addition,

the action area includes the footprint of Mt. Morgan, and the existing road that will be used to transport soil from Mount Morgan, but not the surrounding area because project-related effects in these areas are expected to be insignificant. Subsequent analyses of the environmental baseline, effects of the action, and levels of incidental take are based upon this action area.

## **ANALYTICAL FRAMEWORK FOR THE SECTION 7(A)(2) 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 range-wide condition of the species, the factors responsible for that condition, and its survival and recovery needs; (2) the Environmental Baseline, which analyzes the condition of the species in the action area, the factors responsible for that condition, and the relationship of the action area to the survival and recovery of the species; (3) the Effects of the Action, which are all consequences to listed species caused by the proposed action that are reasonably certain to occur; and (4) the Cumulative Effects, which evaluate the effects of future, non-Federal activities in the action area on the species.

For the section 7(a)(2) determination regarding jeopardizing the continued existence of the species, the Service begins by evaluating the effects of the proposed Federal action and the cumulative effects. The Service then examines those effects against the current status of the species to determine if implementation of the proposed action is likely to reduce appreciably the likelihood of both the survival and recovery of the species in the wild.

### **STATUS OF THE SPECIES**

The life history, biology, and conservation needs of the Bell’s sparrow have been described in the *California Channel Islands Species Recovery Plan* (Service 1984), 5-year review (Service 2009), *Final Biological Opinion for Military Operations and Fire Management Plan 2008* (2008 BO; Service 2008), and annual species reports (Meiman *et al.* 2016, 2018). Please refer to these documents for detailed information on the life history requirements, threats, and conservation needs of the Bell’s sparrow. Here we include a brief summary of Bell’s sparrow biology, and updated information regarding Bell’s sparrow distribution and abundance.

The Bell’s sparrow is a non-migratory passerine and lives only on SCI. Bell’s sparrows feed upon small invertebrates, seeds, and fruits both on the vegetation and on the ground under the vegetation. Bell’s sparrows are most frequently detected in association with structural shrub cover (Meiman *et al.* 2018), and occur in a variety of plant communities on SCI. They are detected at relatively high densities in maritime desert succulent scrub characterized by California boxthorn

(*Lycium californicum*) along the northwestern half of SCI, and at moderate to high densities in sagebrush and shrub habitat near canyons and along the eastern escarpment. Bell's sparrows also occur in some areas that support mixed shrub, cactus and grassland habitats (2018, 2019). Bell's sparrow nest primarily in shrubs, particularly California boxthorn and sagebrush (*Artemisia* spp.), during the late winter and spring months. Bell's sparrows maintain breeding territories, and exhibit little movement from breeding territories during the non-breeding season. During the non-breeding season however, Bell's sparrows rarely exhibit behavior indicative of territory defense (Munoz *et al.* 2016).

The status of the Bell's sparrow on SCI was outlined in the 2008 BO and updated to reflect impacts of fuel distribution construction, maintenance activities, relocation of an aerial launch site, and construction of a maritime surveillance facility (Service 2012, 2017, 2018, 2019). Past and present human activities that affect the environmental baseline of SCI at a landscape level are the introduction, and subsequent removal, of non-native grazing animals, introduction and spread of non-native plant species, and the alteration of natural fire frequency associated with ongoing military activities (Service 2008). Localized impacts of human activities on SCI include noise and vibration associated with military training activities.

SCI is in a state of change in response to the successful removal of non-native grazing animals and ongoing elevated fire frequency in some areas. Shrub distribution has expanded on the eastern escarpment (Meiman *et al.* 2015), the central plateau, and in the canyons. Bell's sparrow abundance and distribution has also expanded on SCI as Bell's sparrows disperse into the emerging shrub habitat. Between 1999 and 2009, researchers monitored the Bell's sparrow population along transects within 5,184 acres of maritime desert scrub limited to the western marine terraces of SCI and population estimates were between 452 and 1,519 sparrows. Since 2013, the Bell's sparrow population has been assessed through the Bell's Sparrow Monitoring Project by estimating density in plots selected randomly across the entire 35,000-acre island. Results of these studies estimated 2,190 Bell's sparrow territories on SCI in 2015, 2,177 territories in 2016, 3,828 territories in 2017, 2,642 territories in 2018, and 2,100 in 2019 (Meiman *et al.* 2016, 2018, 2019, 2020). High variability in density between plots resulted in wide ranging confidence intervals around the population estimates each year. For example in 2018, the 95 percent confidence interval ranged from 1,947 to 3,336 Bell's sparrows. An abbreviated data set has been used to generate an early population estimate for 2020. Although the estimate is an early draft, the number of Bell's sparrow territories in 2020 is expected to approach 3100 (Bridges 2020, pers. comm).

The decline observed in 2018 and 2019 is consistent with previous years' short breeding seasons with low clutch size and per-nest productivity (Meiman *et al.* 2020). The 2-year decline in the Bell's sparrow population size followed by the increase in 2020 is consistent with the correlations previously associated with rainfall patterns (Kaiser *et al.* 2007). While the relationship between rainfall and Bell's sparrow population size is not completely clear, it is thought that SCI system functions similarly to others in which rainfall drives food availability, which then regulates the population size.

The Bell's sparrow on SCI is subject to localized impacts of fire, ongoing military training, and facilities/infrastructure construction and maintenance. In numerous consultations since 2008, we have exempted the anticipated incidental take of 68 to 77 Bell's sparrows on SCI due to degradation or permanent loss of 402.16 acres of habitat for facilities construction and maintenance, and ongoing anticipated incidental take of about 65 Bell's sparrows and 47 nests per 5-year period, from various causes, primarily fires in Bell's sparrow habitat on the West Shore of SCI.<sup>2</sup> However, fires outside the West Shore periodically burn occupied Bell's sparrow habitat as well. For example, fires burned habitat outside of the West Shore that supported an estimated 241 Bell's sparrow territories from 2011 to 2013, and an estimated 223 Bell's sparrow territories in 2017 (Service 2017; Meiman *et al.* 2018).

Low detection probability and lack of monitoring access in Restricted Access Areas limit the ability to accurately quantify incidental take of Bell's sparrows. There has been only one report of a Bell's sparrow harmed or killed as a direct result of military activities (struck by vehicle; Booker 2013, pers. comm.); however, fire occurrence and estimated take in Bell's sparrow habitat likely exceeds that anticipated in the 2008 Biological Opinion (Service 2018).

In addition, since their population has expanded, an increased number of Bell's sparrows may now be exposed to and affected by military operations, fires, and fire management activities than in years past, and a precise assessment of this increased potential for harm from baseline military operations has not been conducted. The Service and the Navy are working to evaluate this new baseline condition, which includes both the improved status of and operational impacts to the Bell's sparrow. Apart from the decline observed in 2018 and 2019, based on the observed increase in distribution and abundance of the Bell's sparrow since listing, it appears that baseline operations and fires are not resulting in impacts that would jeopardize the species.

## **ENVIRONMENTAL BASELINE**

The regulations implementing the Act (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

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<sup>2</sup> Quantification of anticipated take compiled from previous biological opinions (Service 2008, 2012, 2017, 2018, 2019) includes harm per 5-year period to : 52 adults due to fires, 25 nests due to fires, 5 nests due to fire suppression activities, 5 nests due to trampling, 8 individuals due to vehicle collision, 5 nests due to military training vehicles, 1 adult from projectiles, 1 nest from projectiles, 3 nests from extreme noise during launch activities, and loss of reproduction of 2 pairs as a result of maintenance, repair, and vegetation management activities; and harm per 3-year period to 2 nests as a result of rotor-wash. Modified habitat includes 374 acres degraded for maintenance on road shoulders and around facilities/infrastructure, 21.72 acres degraded or permanently modified for navy fuel storage and distribution, and 6.44 acres permanently removed for a marine surveillance facility.

ongoing agency activities or existing agency facilities that are not within the agency's discretion to modify are part of the environmental baseline (50 CFR § 402.02).

### **Status of the Species in the Action Area**

The action area is located south of the main airfield on SCI, and includes the construction footprint and staging areas, and surrounding habitat within 300 feet of the construction footprint (Figure 2). The action area at and surrounding the CALA construction footprint includes disturbed/developed areas (5.64 acres), non-native grassland (5.08 acres), and Maritime Desert Succulent Scrub (7.53 acres, including a 1.47-acre restoration site that was established by the Navy in 1993 to support native plant re-establishment on SCI (Table 2; Howe *et al.* 2011). The CALA construction footprint includes 1.54 acres of Bell's sparrow habitat (maritime desert succulent scrub and non-native grassland; Table 1). In addition, the action area includes the footprint of the Mt. Morgan stockpile, and the existing road that will be used to transport soil from the Mt. Morgan stockpile (Figure 1).

In the action area and adjacent areas to the south and west, Bell's sparrows occupy maritime desert succulent scrub at moderate to high densities with estimates ranging from 0.06 to 0.14 territory per acre (Mieman *et al.* 2018). Bell's sparrow monitoring reports subdivide island-wide habitat into strata, based on dominant plant species and geographic location on the island. The action area lies within strata categorized as "Northern Boxthorn" (5026.12 acres island-wide) and Grassland/Herbaceous North (5632.76 acres island-wide) together totaling 10,658.88 acres. Intensive plot monitoring conducted as part of the overall Bell's Sparrow Monitoring Project overlapped with the CALA construction footprint portion of the action area, including the restoration site, in 2015 and 2017. This monitoring revealed six territories within this portion of the action area. One territory (and an associated nest) was located primarily within the construction footprint and five additional territories, including three nest locations, overlapped this portion of the action area. In 2019, project specific surveys found evidence of four territories within this portion of the action area; however, the restoration site, was not surveyed (Navy 2020). In addition, the Mt. Morgan stockpile and existing road between it and the CALA construction footprint was not surveyed because the stockpile does not support Bell's sparrow habitat, and the existing road borders both the airfield and low density Bell's sparrow habitat. The Navy presumes one additional territory was located in the restoration site, where a territory was as recorded in 2017 (Mieman *et al.* 2018). While nest specific surveys were not performed as part of the 2019 surveys, behavior indicative of nesting was detected and a suspected nesting location was identified within the action area, very close to the prior nest location mapped in the action area (Navy 2020). Based on the past survey information, we anticipate up to six Bell's sparrow territories within the action area in and adjacent to the CALA construction footprint.

Bell's sparrows within the action area are exposed to light, noise, vibration and human activity from the nearby airfield, and may also experience disturbance from assault vehicles that periodically travel on the existing road that bisects the construction footprint. Under baseline conditions, it is possible that Bell's sparrows are infrequently struck by passing vehicles on the existing road that bisects the construction footprint; however, the action area was not considered in prior consultations that quantified and exempted incidental take of Bell's sparrows.

## **EFFECTS OF THE ACTION**

Regulations implementing the Act (50 CFR § 402.02) define the 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 § 402.17).

The regulations for section 7(a)(2) note that “a conclusion of reasonably certain to occur must be based on clear and substantial information, using the best scientific and commercial data available” [50 CFR § 402.17(a)]. When considering whether activities caused by the proposed action (but not part of the proposed action) or activities reviewed under cumulative effects are reasonably certain to occur, we consider factors such as (1) past experiences with activities that have resulted from actions that are similar in scope, nature, and magnitude to the proposed action; (2) existing plans for the activity; and (3) any remaining economic, administrative, and legal requirements necessary for the activity to go forward.

### **Death or Injury Related to Vegetation Clearing**

Vegetation clearing associated with the Project is not likely to kill, injure, or destroy Bell’s sparrows or their nests because clearing and grubbing of native habitat will be conducted between August 15 and December 1 to avoid the Bell’s sparrow breeding season, and the site will be maintained to prevent re-establishment of vegetation prior to construction. A CFWO-approved Biological Monitor with experience observing Bell’s sparrows and locating nests will be present to ensure that Bell’s sparrows are not directly killed or injured during vegetation removal and other construction activities.

### **Habitat Loss Associated with Project Construction**

Project construction will impact 1.54 acres (0.98 acre permanent and 0.56 acre temporary) of Bell’s sparrow habitat (maritime desert succulent scrub and non-native grassland; Table 1), including habitat that supports one Bell’s sparrow territory. The boundaries of the Bell’s sparrow territory have not been mapped, however estimates of Bell’s sparrow territory size ranged from 1.26 to over 5.93 acres in boxthorn dominated habitat surveyed in 2005 and 2006 (Turner 2009). Mean territory size in “high density” habitat ranged from 4.17 to 7.7 acres in 2000-2002 (Munkwitz 2004). Thus, although the precise acreage of Bell’s sparrow territories at this site have not been determined, the project is likely to remove more than 20 percent of the Bell’s sparrow territory based on the acreage of habitat within the construction footprint and given the number of territories documented within the action area (i.e., up to six).

Removal of a substantial portion of a Bell’s sparrow pair’s breeding territory will likely force the pair to expand their existing territory or establish a new territory. Expanding or establishing a new territory can lead to competitive interactions with neighboring sparrows, and reduce fitness or productivity. We lack information regarding the effect of different amounts of habitat removal on Bell’s sparrow fitness and reproductive output, so we used our best professional judgment to

estimate that the loss of more than 20 percent of the Bell's sparrow habitat within a territory will reduce fitness or interfere with breeding activity, whereas loss of less than 20 percent of a territory may force a pair to adjust its territory boundaries slightly or result in a limited increase in territorial interactions with neighboring pairs, but will not result in a reduction in fitness or reproductive output (i.e., effects will not rise to the level of "take"). For example, a Bell's sparrow pair that loses more than 20 percent of its territory may be forced to compete with other resident Bell's sparrows for nearby suitable habitat and suffer reduced fitness, or may be unable to find sufficient nearby habitat to reproduce. Displaced Bell's sparrows may also be subject to increased predation risk. Since the project will remove habitat that supports more than 20 percent of a territory, we expect one pair of Bell's sparrows to be impacted by the reduction in available resources and anticipated increase in territorial interactions, to the extent that the pair will have reduced fitness and/or productivity.

The 1.54 acres of habitat that will be impacted comprises an insignificant fraction (less than 0.1 percent) of the estimated 10,659 acres of Bell's sparrow habitat categorized as "Boxthorn North" or "Grassland-Herbaceous North" on SCI (Meiman et al. 2018). The Navy will also revegetate temporary disturbance within the project footprint, where appropriate and feasible. Thus, while we anticipate impacts to habitat, we expect no appreciable reduction in the numbers, reproduction, or distribution of Bell's sparrows on SCI as a result of the impacts to habitat.

### **Disturbance Associated with Project Construction**

Project construction will result in noise, vibration, and human activities which may disturb Bell's sparrows that inhabit the Project area during the approximate 10-month anticipated construction timeframe. Noise associated with construction is expected to range from 75-80 decibels at 50 feet, which is the range of similar construction projects (FHWA 2018). Noise and vibrations associated with the use of heavy equipment during construction and operation of the project have the potential to disrupt behaviors in adjacent habitat by masking intraspecific communication and startling birds (Dooling and Popper 2007).

Bell's sparrows remain in the vicinity of their nesting territories year round, and based on surveys conducted in support of the project, up to six pairs of Bell's sparrows are likely to be within the action area during construction (Navy 2020). They are likely to fly away from noise, vibration, and visual disturbance, and may temporarily relocate to adjacent habitat in response to Project construction. Bell's sparrows rarely exhibit behavior indicative of territorial defense during the non-nesting season (Munoz *et al.* 2016); thus, we expect temporary disruption and displacement outside the nesting season will not result in competitive interactions that will harm individuals, and the effects of noise will be insignificant due to the availability of suitable habitat adjacent to the project site.

During the nesting season Bell's sparrows will be less likely to relocate from the area if active nests are present, but they may alter breeding behavior, incubation, or parental attendance of young in response to the disturbance (e.g., presence of people, noise, and vibration from construction activities). If adults depart from an active nest, the reduction in incubation or parental attendance may impact eggs or chicks by a reduction in feeding rate, increased potential for depredation, or a reduction in incubation or brooding. In addition, since Bell's sparrows are

territorial during the nesting season, displaced individuals may experience competitive interactions that could lead to reduced fitness. The Navy will, however monitor the action area for Bell's sparrow nests and, to the extent compatible with the project schedule, implement avoidance measures such as working on project elements that are farther from the nest when possible. Based on the implementation of the Navy's avoidance measures, distribution of the Bell's sparrows observed in the action area, and the likelihood that some individuals will be more tolerant of disturbance or will nest farther from activities, we believe the risk of nest abandonment is low. Thus, we estimate that only one pair of Bell's sparrows will modify their breeding behavior in response to disturbance to the extent that reduced fitness or loss or abandonment of their nest will occur.

### **Vehicle collision**

Project construction and transport of soil from Mt. Morgan to the CALA project site will increase vehicle traffic on the access route which could increase the potential for Bell's sparrows to be struck by passing vehicles (i.e., vehicle collision). At this site, we consider the risk to be low because the access route does not bisect a known Bell's sparrow territory, and the habitat along the access route is low-density Bell's sparrow habitat. In addition, the Navy will implement a 20 mph speed limit on the access road, which will reduce the potential for collisions. Given the condition of habitat along the access route and proposed speed limit, we consider the risk of collision associated with construction vehicles at the CALA site to be discountable.

### **Erosion and Invasive Species**

Indirect effects to Bell's sparrows may result from habitat degradation associated with erosion and the introduction or spread of invasive plant and invertebrate species. The potential for erosion will be significantly reduced by the Navy's conservation measures, including the plan to prepare and implement erosion control measures such as silt fences, gravel bags, restrictions on grading during the rainy season, and other measures to control erosion and prevent the release of contaminants into the soil. In addition, the Navy will revegetate temporary disturbance to the extent feasible and prioritize areas for revegetation according to erosion potential and other site specific relevant factors. The Navy will also implement measures to reduce the potential for spread of invasive plant species. They will examine Mt. Morgan soils for invasive plant species/propagules prior to transport, and treat soils if invasive plant species (that are not already present at the construction site) are present. In addition, the Navy will conduct invasive plant species control within 25 feet of the construction footprint for 5 years post-construction to assure that the project does not result in establishment of novel non-native species in the action area.

The Navy will reduce the potential for introduction of invasive invertebrates by visually inspecting materials prior to transport to SCI and removing non-native invertebrates (e.g., insects, worms, snails, slugs) through direct removal (washing clean) or application of pesticides. To reduce the potential for introduction of invasive ant species to the project site, the Navy will stage materials only in areas that are not known to already be infested with Argentine ants. Finally, the Navy will periodically monitor the access road and project site, and treat for invasive plant species that are detected. Implementation of these measures will minimize the potential for the

project to result in erosion or introduction and spread of invasive species; therefore, we do not anticipate degradation of habitat outside the project site.

### **Operation of the CALA**

The Navy estimates that the CALA will be used for helicopter training events 120 days out of the year, and up to five remaining pairs of Bell's sparrows may use habitat within the action area during training activities. Helicopters, vehicles, and trainees will generate sound, vibration, and visual stimuli that may disturb Bell's sparrows in a manner similar to construction activities (described above). As with construction activities, Bell's sparrows may be temporarily displaced during the breeding or non-breeding season due to disturbance associated with noise, vibration, or human activities. Over time, the repeated disturbance within the action area may incrementally reduce the suitability for Bell's sparrows, and we estimate that one Bell's sparrow pair may be permanently displaced as a result of the repeated disturbances associated with training. If displaced, sparrows may establish a new territory, but competitive interactions with resident sparrows can reduce fitness or productivity, and unfamiliarity with a territory can increase risk of depredation.

Some Bell's sparrows may also continue to occupy and nest within the action area due to lack of adjacent unoccupied habitat or habituation to training activities. Bell's sparrows or nests established within the action area will be vulnerable to repeated temporary disturbances or physical harm or disturbance from rotor wash (high velocity and disrupted wind generated by helicopter rotors). The Navy estimated impacts from rotor wash and aircraft noise based on data from a CH-46 helicopter, which is comparable to a helicopter proposed for HARP training at the CALA (MH-60R). For the CH-46, maximum wind speeds of about 37 miles per hour occur at 50 feet from each side of the aircraft (Navy 2020). Beyond about 70 feet, the wind speeds diminish symmetrically at all angles from the aircraft, eventually decreasing to 16 mph at 156 feet (Navy 2020). Of the Bell's sparrows that continue to inhabit the action area, some may nest more than 156 feet from the CALA, where they would be subject to lower velocity winds and less vibration, but we anticipate in some instances, Bell's sparrows will nest in close enough proximity to the CALA to be vulnerable to high velocity winds and increased vibration during training. Thus, we anticipate that Bell's sparrows or nests in the action area may sometimes be harmed by rotor wash or experience reduced productivity associated with disturbance during the nesting season. Based on the number of Bell's sparrows in the action area and the anticipated frequency of future training events, we estimate that one Bell's sparrow may suffer injury or death from rotor wash in each 5-year period, and two nests may be lost due to reduced parental attendance or harm from rotor wash or other training-related disturbance during each 5-year period.

The CALA will include facility lighting, which could illuminate the surrounding habitat and affect Bell's sparrow behavior or detectability of nests and individuals to nocturnal predators. To reduce the potential effects of lighting, the Navy will design and build the CALA with minimal outdoor lighting to the maximum extent consistent with airfield use, and to the extent consistent with airfield use, lights will be fully downcast and down shielded to prevent off-facility illumination. We anticipate the impacts of CALA lighting on the surrounding habitat, to be insignificant.

### **Effect on Recovery**

The Bell's sparrow recovery needs are outlined in the *Recovery Plan for the Endangered and Threatened Species of the California Channel Islands*. The plan recommended: (1) protecting, enhancing, and restoring plant populations and habitat by removing feral animals and preventing their reintroduction; (2) replanting native plants; (3) controlling erosion where necessary; (4) continuing research and monitoring programs of the Bell's sparrow to delineate important habitat; (5) establishing what factors affect Bell's sparrow distribution and reproductive success; (6) determining Bell's sparrow habitat requirements; and (7) establishing baseline population estimates (Service 1984).

Conservation and recovery of the species is largely being accomplished through implementation of the Navy's *SCI Integrated Natural Resources Management Plan* (SCI INRMP; Navy 2013). We anticipate that the Navy will continue work towards recovery of the Bell's sparrow as stated in the plan: "*Conserve and maintain high quality Bell's sparrow habitat and control non-native predation pressure to meet recovery objectives for delisting,*" and "*Protect a sufficient high-density area and cover of California boxthorn and associated native shrubs and forbs to ensure the long-term viability of the San Clemente Bell's sparrow population.*" Overall Navy stewardship that supports Bell's sparrow conservation includes ongoing oversight of projects proposed in Bell's sparrow habitat; predator management; avoidance of the nesting season for construction activities, when possible, and invasive species control. These actions reduce impacts to, and support the recovery of, the species. Although the project will permanently impact 0.98 acre of Bell's sparrow habitat on the north west shore of SCI and ongoing operations are likely to periodically disrupt or harm individual Bell's sparrows and nests, when viewed within the context of the Navy's management on SCI, the impacts of construction and future operational use of the CALA are not expected to have a significant effect on recovery of the Bell's sparrow.

### **CUMULATIVE EFFECTS**

Cumulative effects are effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation (50 CFR § 402.02). Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act. Because SCI is administered wholly by the Navy, we are unaware of any non-Federal actions affecting listed species that are reasonably certain to occur in the action area considered by this biological opinion.

### **CONCLUSION**

After reviewing the current status of the Bell's sparrow, the environmental baseline for the action area, the effects of the proposed activities, and the cumulative effects, we have determined that the activities considered in this biological opinion are not likely to jeopardize the continued existence of the Bell's sparrow. We have reached this conclusion for the following reasons:

1. Bell's sparrow habitat and distribution on SCI has expanded and the population estimate has increased significantly since listing of this species.

2. Impacts to 1.54 acres (0.98 acre permanent and 0.56 acre temporary) of Bell's sparrow habitat (maritime desert succulent scrub and non-native grassland) will reduce the total acreage of these habitat types (10,659 acres) by less than 0.01 percent.
3. Harm to two Bell's sparrows (one pair) from habitat loss, two Bell's sparrows (one pair) from operation-related habitat degradation, and one individual per 5-year period from operation-related disturbance, when added to the environmental baseline will affect less than 0.1 percent of the 4,200 Bell's sparrows (2100 pairs/territories) estimated on SCI (2019 estimate) and, therefore, will not appreciably reduce the numbers, reproduction, or distribution of the Bell's sparrow.

## **INCIDENTAL TAKE STATEMENT**

### **INTRODUCTION**

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened 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. The Service further defines "harm" to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. 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 proposed protective measures and the terms and conditions of an incidental take statement and occurs as a result of the action as proposed.

The measures described below are non-discretionary, and must be undertaken by the Navy so that they become binding conditions of any grant or permit issued to a construction contractor for the exemption in section 7(o)(2) to apply. The Navy has a continuing duty to regulate the activity covered by this incidental take statement. If the Navy: (1) fails to assume and implement the terms and conditions, or (2) fails to require the construction contractor to adhere to the terms and conditions 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. In order to monitor the impact of incidental take, the Navy 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)].

### **AMOUNT OR EXTENT OF TAKE**

Take of Bell's sparrow is exempted as follows:

- IT 1. Harm to one pair of Bell's sparrows due to impacts to 1.54 acres (0.98 acre permanent and 0.56 acre temporary) of breeding, feeding, and sheltering habitat. The take exemption will be exceeded if the Biological Monitor observes more than one pair of Bell's sparrows in the project footprint during pre-construction surveys and/or during vegetation clearing/grubbing; or if more than 1.54 acres

(0.98 acre permanent and 0.56 acre temporary) of Bell's sparrow habitat is removed in the action area.

- IT 2. Abandonment of one Bell's sparrow nest with eggs and/or chicks due to interruption of incubation or parental attendance caused by construction noise, vibration, and human activities occurring during one breeding season. Detection of nest abandonment will be unlikely, despite the presence of a Biological Monitor, due to the cryptic nature of nests, and the added disruption that would be caused by regular nest monitoring. Therefore, the take exemption will be exceeded if:
- a. The Biological Monitor observes more than one Bell's sparrow nest abandoned, or
  - b. The duration of construction activities exceeds more than one breeding season.
- IT 3. Harm to one pair of Bell's sparrows due to operation-related degradation of habitat as a result disturbance associated with helicopter training activities. The take exemption will be exceeded if less than four Bell's sparrow territories are consistently recorded in the action area within 5 years following initiation of operation of the CALA.
- IT 4. Harm to two Bell's sparrow nests with eggs and/or chicks per 5-year period as a result of disturbance or high velocity winds associated with helicopter training activities. Due to the cryptic nature of nests, and the added disruption that would be caused by regular nest monitoring, the take exemption will be exceeded if less than four Bell's sparrow territories are consistently recorded in the action area within 5 years following initiation of operation of the CALA.
- IT 5. Harm to or death of one Bell's sparrow per 5-year period as a result of rotor wash from helicopters using the CALA or other training-related disturbance. Since it is unlikely that any individual birds killed or injured by this impact will be found, the take exemption will be exceeded if two individuals are found killed or injured from likely rotor wash or other training-related disturbance within the action area within a 5-year period.

## **REASONABLE AND PRUDENT MEASURES**

We have determined that the following reasonable and prudent measure is necessary and appropriate to minimize the impact of the incidental take of Bell's sparrow:

- RPM 1. The Navy will monitor and report on compliance with the established take exemptions and conservation measures prior to, during and after construction.

## TERMS AND CONDITIONS

To be exempt from the prohibitions of section 9 of the Act, the Navy must comply with the following term and conditions, which implement the reasonable and prudent measure described above and outlines monitoring and reporting requirements. These terms and conditions are non-discretionary.

- TC 1.1 The Navy will notify the CFWO when construction activities are complete and report the total acreage temporarily or permanently impacted by the project.
- TC 1.2 Following construction of the CALA, monitor the action area for 5 years to assess Bell's sparrow occupancy and report to the CFWO the estimated number of Bell's sparrow territories observed.
- TC 1.3 Notify the CFWO in writing, within 1 day of any observed construction or operation-related death or injury of any Bell's sparrow or if any other take exemption is exceeded to coordinate with the CFWO to determine if additional protective measures are required.

## DISPOSITION OF SICK, INJURED, OR DEAD SPECIMENS

Upon locating dead, injured, or sick individuals of threatened or endangered species, initial notification must be made to our Division of Law Enforcement in either San Diego, California, at 619-557-5063, or in Torrance, California, at 310-328-6307. The CFWO should also be notified via telephone (760-431-9440) and in writing via email or mail.

## CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to use their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

- CR 1. The Navy should include *Lycium californicum*, and other plant species characteristic of "high density" Bell's sparrow habitat, in the suite of species used to re-vegetate/restore temporary impacts within the project footprint.
- CR 2. The Navy should re-initiate consultation on baseline training activities throughout SCI to account for the impacts of military training and resulting wildfire, in light of the expanded distribution of Bell's sparrow, and the expanded overlap between the species' range and training impacts. Re-initiation will provide a re-evaluation of the effects of training in light of the species' current abundance and distribution.
- CR 3. The Navy should coordinate with the Service to develop and implement a long term monitoring and management strategy for the Bell's sparrow. We recommend

a voluntary Conservation Agreement which references the management plan that is currently under development by the Navy, and shall be included as an Appendix to the Navy's San Clemente Island Integrated Natural Resources Management Plan. We recommend that the long term monitoring and management strategy include at a minimum, the ongoing protection and management of essential habitat on SCI in the polygons depicted in Figure 4, identified as Upper Cave Canyon/Plateau, Dunes to Mail Point, SHOBA Eastern Escarpment, and Mid-island Eastern Escarpment.<sup>3</sup>

### **REINITIATION NOTICE**

Re-initiation of consultation is required and will be requested by the Federal agency or by the Service, where discretionary Federal involvement or control over the action has been retained or is authorized by law and:

1. If the amount or extent of taking specified in the incidental take statement is exceeded;
2. If new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered;
3. If the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this biological opinion; or
4. If a new species is listed or critical habitat designated that may be affected by the identified action.

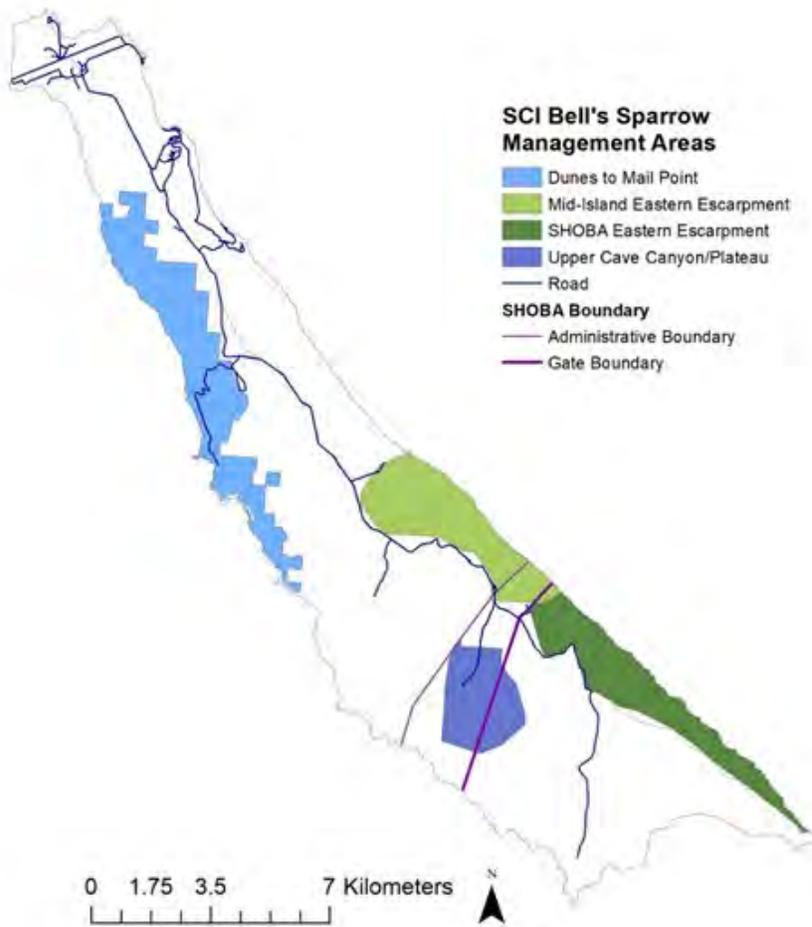
We look forward to forward to continuing our partnership to conserve the natural resources on SCI, consistent with the Navy's military training mission. If you have any questions concerning this consultation, please contact Sandy Vissman at 760-431-9440, extension 274.

Sincerely,

Scott A. Sobiech  
Field Supervisor

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<sup>3</sup> Upper Cave Canyon/Plateau (739 ac), Dunes to Mail Point (3282 ac), SHOBA Eastern Escarpment (954 ac), and Mid-island Eastern Escarpment (1460 ac)



**Figure 4.** General areas recommended for designation as Bells Sparrow Management Area.

**LITERATURE CITED**

- Dooling, R.J. and A.N. Popper. 2007. The effects of highway noise on birds. Prepared by Environmental BioAcoustics LLC for the California Department of Transportation, Sacramento, California. 74 pages.
- [FHWA] Federal Highway Administration. 2018. Construction Noise Handbook accessed at: [https://www.fhwa.dot.gov/Environment/noise/construction\\_noise/handbook/handbook09.cfm](https://www.fhwa.dot.gov/Environment/noise/construction_noise/handbook/handbook09.cfm).
- Howe, E., E.K. Merrill, T. Zink. 2011. San Clemente Island Native habitat Restoration Program Native Seed Collection, Propagation and Outplanting in Support of San Clemente Island Endangered Species Programs. N68711-05-D-3605-0077. Annual Report Draft San Clemente Island Native Habitat Restoration Program. Unpublished report prepared by Soil Ecology and Restoration Group, San Diego State University, for Natural Resources Office, Commander Navy Region Southwest, San Diego California.
- Kaiser, S.A., J.M. Turner, and D.K. Garcelon. 2007. Population Monitoring of the San Clemente Sage Sparrow-2006. Final Report. Unpublished report *prepared by* the Institute for Wildlife Studies *for* the United States Navy, Navy Region Southwest, Natural Resources Office, San Diego, California. 94 pages.
- Meiman, S.T., S.A. Munoz, A.S. Bridges and D.K. Garcelon. 2015. San Clemente Bell's sparrow monitoring breeding season report - 2016. U.S. Navy, Environmental Department, Naval Facilities Engineering Command Southwest, San Diego, California. 46 pages.
- Meiman, S.T., S.A. Munoz, A.S. Bridges and D.K. Garcelon. 2016. San Clemente Bell's sparrow monitoring breeding season report - 2016. U.S. Navy, Environmental Department, Naval Facilities Engineering Command Southwest, San Diego, California. 46 pages.
- Meiman, S.T., S.A. Munoz, A.S. Bridges and D.K. Garcelon. 2018. San Clemente Bell's sparrow monitoring breeding season report - 2017. U.S. Navy, Environmental Department, Naval Facilities Engineering Command Southwest, San Diego, California. 55. pages.
- Meiman, S.T., S.A. Munoz, A.S. Bridges and D.K. Garcelon. 2019. San Clemente Bell's sparrow monitoring breeding season report - 2018. U.S. Navy, Environmental Department, Naval Facilities Engineering Command Southwest, San Diego, California. 46 pages.
- Meiman, S.T., S.A. Munoz, A.S. Bridges and D.K. Garcelon. 2020. San Clemente Bell's Sparrow Population Monitoring Breeding Season Report - 2019. U.S. Navy, Environmental Department, Naval Facilities Engineering Command Southwest, San Diego, California. 48 pages.
- Munkwitz, N. 2004. Natal and Breeding Dispersal of the San Clemente Sage Sparrow(*Amphispiza belli clementeae*). Thesis presented to the faculty of Humboldt State University. 43 pages.

Munoz, S., S. Nefas, B. Sandstrom, S. Meiman, E. DeLeon, M. Booker, and A. Bridges. 2016. Non-breeding season behavior of the threatened San Clemente Bell's sparrow (*Artemisiospiza belli clementeae*). Poster given at 2016 Western section of the Wildlife Society. <https://susanmeiman.org/home/san-clemente-island-bells-sage-sparrow>. 1 page.

[Service] U.S. Fish and Wildlife Service. 1984. Recovery Plan for the Endangered and Threatened Species of the California Channel Islands. U.S. Fish and Wildlife Service, Portland, Oregon. 165 pages.

[Service] U.S. Fish and Wildlife Service. 2008. Final Biological Opinion for Military Operations and Fire Management Plan 2008 (FWS- LA-09B0027-09F0040), San Clemente Island. 244 pages.

[Service] U.S. Fish and Wildlife Service. 2009. San Clemente sage sparrow (*Amphispiza belli clementeae*) 5-Year Review: Summary and Evaluation. 29 pages.

[Service] U.S. Fish and Wildlife Service. 2012. Formal Section 7 Consultation on the U.S. Navy's Replacement of the Fuel Storage and Distribution System, Naval Auxiliary Landing Field, San Clemente Island, California (MILCON Project P-704F). 21 pages.

[Service] U.S. Fish and Wildlife Service. 2017. Biological Opinion on the U.S. Navy's San Clemente Island Infrastructure Maintenance and Repair Program, Los Angeles County, California. 62 pages.

[Service] U.S. Fish and Wildlife Service. 2018. Amendment to the Biological Opinion on the U.S. Navy's San Clemente Island Military Operations and Fire Management Plan (FWS-LA-09B0027-09F0040), and Consistency Determination for the San Clemente Island Fox Conservation Agreement. 18 pages.

[Service] U.S. Fish and Wildlife Service. 2019. Amendment to the Biological Opinion on the U.S. Navy's San Clemente Island Military Operations and Fire Management Plan (FWS-LA-09B0027-09F0040), San Clemente Island, Los Angeles County, California, aerial target launch site (BQM). 8 pages.

[Service] U.S. Fish and Wildlife Service and [Navy]. 2003. Conservation Agreement for the San Clemente Island Fox. 8 pages.

[Navy] U.S. Navy. 2013. Integrated Natural Resources Management Plan, San Clemente Island. June 2013. 784 pages.

[Navy] U.S. Navy. 2020. Biological Assessment: Combat Aircraft Loading Area at San Clemente Island, California. January 31, 2020. 29 pages.

Turner, J. 2009. Habitat Associations of the San Clemente Sage Sparrow (*Amphispiza belli clementeae*). A thesis presented to the faculty of Humboldt State University. December, 2009. 88 pages.

**PERSONAL COMMUNICATIONS**

Booker, M. 2013. U.S. Navy San Clemente Island Wildlife Biologist. Email July 5, 2013 regarding Bell's sparrow mortality from vehicle strike. 1 page.

Bridges, A. 2020. Andrew Bridges, Conservation program manager for Institute for Wildlife Studies, June 5, 2020 email providing early population estimate for Bell's sparrow on SCI in 2020.

## APPENDIX

### Conservation Measures for the San Clemente Island Fox

The following measures will be implemented as part of the CALA project to minimize impacts to the San Clemente island fox:

- CM 15. All necessary trenching or excavation work will use a gently sloped edge or provide an improvised ramp to avoid entrapment of island foxes and island night lizards (*Xantusia riversiana*; night lizard). The construction manager and project proponent will coordinate with the SCI Wildlife Biologist, Melissa Booker, regarding the construction schedule and will provide access for hand removal of night lizards if necessary. If it is infeasible for the SCI Wildlife Biologist to support trench inspection for night lizard removal, then trenches and/or holes will be inspected daily by construction personnel (briefed by Natural Resources staff) prior to re-initiating work, and any entrapped night lizards shall be removed by hand and placed directly outside the construction footprint.
- CM 16. Island foxes and island night lizards will not be collected, harvested (killed), or kept as pets.
- CM 17. Because island foxes are also scavengers, all trash cans and dumpsters at the construction site and final project site will be properly covered at all times to prevent island foxes from becoming entrapped within trash cans and dumpsters.
- CM 18. All containers with hazardous and toxic liquids will be appropriately covered (especially at night) and secured in designated (fox-proof) areas to prevent island foxes from drinking such liquids.
- CM 19. All containers used to store water and deep enough (1.5 ft or deeper) to cause drowning of island foxes will be completely covered to prevent foxes from drowning. This includes water buffalos, which must be maintained capped.
- CM 20. All construction materials that could cause the entanglement of island foxes (e.g., nets, ropes, wires, etc.) will be secured (especially at night) to prevent island foxes from getting trapped in such materials. The final project design and implementation will not result in entrapment hazards for island foxes, no netting/wire mesh, bunkers, or pits will be part of the final project unless reviewed and approved by the SCI Wildlife Biologist.
- CM 21. No SCI personnel, cooperators, contractors, or visitors will feed island foxes.
- CM 22. To the extent feasible, any road maintenance and/or construction will leave an aggregate/dirt mound immediately adjacent to the roadside to serve as a clear boundary of the road's edge, assisting with control of off-roading, and because such features are associated with decreases in island fox road kill.

- CM 23. If the project involves the movement of CONEX boxes or similar such large equipment or structures that have been in place for at least 30 days on SCI and movement would occur between February and April, personnel will contact the SCI Wildlife Biologist at 619-545-7188 prior to moving the boxes to allow for an inspection for island fox dens. If an island fox den is located, the wildlife biologist(s) will work with the project proponent to support the needed equipment/structure movement while minimizing impacts to the island fox den.
- CM 24. Any island fox vehicle collision will be reported to NBC Environmental 619-524-9064 as soon as possible, not to exceed 24 hours. (The report is for informational purposes only and will not result in any restrictions or citations.)
- CM 25. All current and new SCI personnel and contractors will be provided with the Navy's brochure on the island fox and/or wallet card on Natural Resources regulations compliance.