

**ENVIRONMENTAL ASSESSMENT FOR  
WILDLAND FIRE MANAGEMENT ACTIONS  
AT NAVAL BASE CORONADO,  
CAMP MICHAEL MONSOOR, CALIFORNIA**



**DRAFT  
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# ENVIRONMENTAL ASSESSMENT FOR WILDLAND FIRE MANAGEMENT ACTIONS AT CAMP MICHAEL MONSOOR

**Lead Agency:** United States Department of the Navy  
**Title of the Proposed Action:** Wildland Fire Management Actions at Camp Michael Monsoor  
**Designation:** Environmental Assessment

## Abstract

Camp Michael Monsoor (CMM) is operated by Naval Special Warfare Group One to provide training for Special Operation Forces, and is administered as part of Naval Base Coronado. It is located near the city of Campo, California, 50 miles (80 kilometers) east of San Diego. The property consists of rugged mountains that reach an elevation of nearly 3,900 feet (1,189 meters) and provide the Navy with conditions that enable mountain warfare and other Special Warfare training.

The purpose of the Proposed Action is to implement projects to reduce fuel load, restore habitat, and prevent erosion at CMM. The Proposed Action is needed to sustain mission functions at CMM to meet ongoing Navy requirements. Treatments to reduce wildland fuels are primarily needed to protect people and property, and to prevent loss of military training opportunities that would result from a large fire. Fuel treatment to protect occupied structures and high-value facilities improves fire resistance and survivability of buildings, utilities, and other infrastructure. Additionally, restoration efforts ensure post fire resource recovery and prevent high-value natural resources from being lost.

Resources that have the potential to be impacted by the Proposed Action are described and analyzed in this Environmental Assessment and include topography, geology, and soils; water resources; biological resources; noise; and public health and safety. The results of the analysis conclude that no significant impacts would occur to any resource by implementing the Proposed Action.

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## EXECUTIVE SUMMARY

The United States Department of the Navy (Navy) uses withdrawn Bureau of Land Management (BLM) lands at Camp Michael Monsoor (CMM) for training and as a safety zone for its live-fire ranges. The property consists of rugged mountains and provide the Navy with conditions that enable mountain warfare and other Special Warfare training. CMM is bordered by National Forest lands on the north and BLM lands on the remaining three sides, and a small privately held parcel to the southwest. Lands covered in this Environmental Assessment (EA) are held by the Navy under an Exclusive Use Withdrawal real estate agreement with the BLM for a live-fire range as well as numerous parcels under Right of Way (ROW) agreements with the BLM, which grant Naval Special Warfare (NSW) and the Navy non-exclusive use and access to those properties.

The responsibility and authority to conduct wildland fire planning and land management is subject to the ownership and jurisdictional boundaries of the land managing agencies. The landowners, such as the BLM, prepare their own respective planning documents to guide land management on the parcels that they own and control. In addition, the Navy is required to have its own planning documents for all lands used by the Navy for military activities, even if the respective landowners have their own land planning documents. The Navy and Naval Base Coronado (NBC) has developed an Integrated Natural Resources Management Plan (INRMP), as required by the Office of the Chief of Naval Operations Environmental Readiness Program Manual 5090.1D, to guide natural resources management.

NBC's INRMP is required to take an ecosystem approach to land management on its property, including management of wildland fire, according to U.S. Department of Defense Instruction (DoDI) 4715.03 (Natural Resources Conservation [18 March 2011]). DoDI 4715.03 directs the management of wildland fuel loads and implementation of prescribed burns where appropriate, to reduce the potential for wildfires as function as an ecosystem-based management tool. Additionally, the BLM manages their public lands through the development of Resource Management Plans, which contain objectives that call for effective fire protection, fire prevention, and vegetation management in cooperation with local communities, Fire Safe Councils, and the California Department of Forestry and Fire Protection.

To implement goals and objectives of the NBC INRMP, and comply with commitments in real estate agreements with the landowners of CMM, DoDI 6055.06 (Fire and Emergency Services Program), and DoDI 4715.03, the Navy evaluated the following values at risk from wildfire: human life, CMM facilities, infrastructure, military training, natural resources, and cultural resources. The Navy identified that fuel treatments to reduce wildland fuels are needed to protect people and property, and to prevent loss of military training opportunities that would result from a large fire. Fuel treatment to protect occupied structures and high-value facilities improves fire resistance and survivability of buildings, utilities, and other infrastructure.

The Proposed Action described within this EA consists of the following fire management projects:

- Maintain, secure access to, and enhance primary evacuation roads.
- Develop and implement a landscape plan that includes a list of approved landscaping plants and provides guidance on fuel modification zones around buildings.
- Create and maintain roadside fuel treatments.
- Undertake rehabilitation efforts for emergency stabilization and long-term erosion control.
- Perform fire prevention and escaped fire measures.

The purpose of the Proposed Action is to implement projects to reduce fuel load, restore habitat, and prevent erosion. The Proposed Action is needed to sustain mission functions at CMM to meet ongoing Navy requirements. Additionally, restoration efforts ensure post fire resource recovery and prevent high-value natural resources from being lost. Under the No Action Alternative, only fire prevention and escaped fire measures would be conducted.

Resources that have the potential to be impacted by the Proposed Action are described and analyzed in EA and include topography, geology, and soils; water resources; biological resources; noise; and public health and safety. The results of the analysis conclude that no significant impacts would occur to any resource by implementing the Proposed Action.

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## **ACRONYMS AND ABBREVIATIONS**

ac.	acre(s)	km	kilometer(s)
BLM	Bureau of Land Management	kph	kilometer(s) per hour
CAA	Clean Air Act	kV	kilovolt(s)
CalFire	California Department of Forestry and Fire Protection	L <sub>eq</sub>	Equivalent Sound Level
CEQ	Council on Environmental Quality	m	meter(s)
C.F.R.	Code of Federal Regulations	mm	millimeter(s)
CMM	Camp Michael Monsoor	mi.	mile(s)
CNF	Cleveland National Forest	MBTA	Migratory Bird Treaty Act
CNO	Chief of Naval Operations	mph	mile(s) per hour
CO <sub>2</sub>	carbon dioxide	MSUP	Master Special Use Permit
CQC	Close Quarters Combat	Navy	United States Department of the Navy
CWA	Clean Water Act	NBC	Naval Base Coronado
dB	decibel	NEPA	National Environmental Policy Act
dB(A)	decibel, A-weighted	NFDRS	National Fire Danger Rating System
DNL	Day Night Level	NSW	Naval Special Warfare
DoD	Department of Defense	NSWG-1	Naval Special Warfare Group One
DoDI	Department of Defense Instruction	OHV	Off-Highway Vehicle
DPA	Direct Protection Area	OIC	Officer in Charge
EA	Environmental Assessment	RMP	Resource Management Plan
ESA	Endangered Species Act	ROW	Right-of-Way
EIS	Environmental Impact Statement	SDG&E	San Diego Gas and Electric
EO	Executive Order	SEL	Sound Exposure Level
FR	Federal Register	SIP	State Implementation Plan
ft.	foot/feet	U.S.	United States
ha	hectare(s)	USACE	U.S. Army Corps of Engineers
INRMP	Integrated Natural Resources Management Plan	USEPA	U.S. Environmental Protection Agency
		USFWS	U.S. Fish and Wildlife Service
		WUI	Wildland Urban Interface

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# 1 PURPOSE OF AND NEED FOR PROPOSED ACTION

## 1.1 INTRODUCTION AND BACKGROUND

The United States (U.S.) Department of the Navy (Navy) has prepared this Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA) of 1969 and other applicable laws and regulations. It presents an analysis of the potential environmental impacts associated with the proposed implementation of wildland fire management actions for the Assaults and Tactical Weapons Complex Camp Michael Monsoor (CMM). The EA addresses potential environmental effects in and around CMM. The Proposed Action for CMM complies with U.S. Department of Defense Instruction (DoDI) 6055.06 Fire and Emergency Services Program and DoDI 4715.03 Natural Resources Conservation Program, and implements goals and objectives of the Naval Base Coronado (NBC) Integrated Natural Resource Management Plan (INRMP). It also fulfills Navy commitments in real estate agreements with the landowners of CMM. The Navy evaluated the following values at risk from wildfire: human life, CMM facilities, infrastructure, military training, natural resources, and cultural resources. From these values at risk, the Navy identified the following goals:

- Reduce wildfire potential, and protect human life in the event of a fire.
- Protect Navy assets, including military training integrity and capacity, through pre-emptive strategies addressing problem fire scenarios.
- Ensure ecosystem sustainability and health (including desired natural plant community structure and native biodiversity), and preservation of cultural resources by managing the adverse effects of wildland fire in concert with landowner goals and objectives.
- Cultivate and strengthen relationships with landowners, the local community, cooperators, and the public for more effective fire protection and achievement of fire management goals and objectives.

The wildland fire management actions covered in this EA include those currently taking place and future activities that are proposed to occur on Bureau of Land Management (BLM) lands, including actions to reduce fuel load, restore habitat, and prevent erosion. These actions are needed to sustain the CMM mission by protecting people and property, preventing loss of military training opportunities, and improving fire resistance and survivability of buildings, utilities, and other infrastructure. Table 1-1 presents those actions that are analyzed in this EA.

**Table 1-1: Fire Management Activity Descriptions**

Summary Name	Description and Activity
Wildland Fire Apparatus and Emergency Vehicle Access, Safe Refuge, and Evacuation	Maintain, secure access to, and enhance primary evacuation roads.
Facilities and Infrastructure	Develop and implement a landscape plan that includes a list of approved landscaping plants and provides guidance on fuel modification zones around buildings.
Fuel Treatment to Address Problem Fire Scenarios	Create and maintain roadside fuel treatments.
Post-Fire Restoration	Undertake rehabilitation efforts for emergency stabilization and long-term erosion control.

## 1.2 LOCATION AND DESCRIPTION OF CAMP MICHAEL MONSOOR

CMM is operated by Naval Special Warfare Group One (NSWG-1) to provide training for Special Operation Forces, and is administered as part of NBC. It is located near the city of Campo, California, 50 miles (mi.) (80 kilometers [km]) east of San Diego (Figure 1-1). The property consists of rugged mountains that reach an elevation of nearly 3,900 feet (ft.) (1,189 meters [m]) and provide the Navy with conditions that enable mountain warfare and other Special Warfare training. CMM is bordered by National Forest lands on the north and BLM lands on the remaining three sides, with the exception of a small parcel to the southwest, which is privately held.

The Navy uses withdrawn BLM land for training and as a safety zone for its live-fire ranges. Currently, 3,385 acres (ac.) (1,370 hectares [ha]) covered in this EA are held by the Navy under an Exclusive Use Withdrawal real estate agreement with the BLM for a live-fire range. Parcels A, B, D, F, and H are under Right of Way (ROW) agreements with the BLM, which grant Naval Special Warfare (NSW) and the Navy non-exclusive use and access to those properties.

A purchase of 220 ac. (124.4 ha) in two parcels of land contiguous to the existing CMM land parcel was made in 2006 by The Nature Conservancy. The land was purchased from a private landowner using a combination of funding from the Department of Defense (DoD), the State of California, and The Nature Conservancy. In 2013, the Trust for Public Lands purchased 280 ac. (113.3 ha) contiguous to the northeast boundary of CMM Parcel C. This land was also put into conservation with a Navy-owned easement. These parcels were purchased to act as a buffer from incompatible land use around CMM. The intent for these parcels is that they not be used by the public or the military, but instead be put into conservation under an easement issued to the Navy. The Buffer Lands Initiative Memorandum of Understanding precludes the use of this acquisition land as compensation for military impacts within the boundaries of the installation.

The facility has recently completed an expansion through a set of real estate transactions with the BLM (Table 1-2). To accommodate training increases, the Navy transferred administrative jurisdiction and withdrew certain land parcels from the BLM in 2012, as well as acquired ROWs from the BLM in 2013 for non-exclusive use on other parcels (U.S. Department of the Navy 2008). The total property, including the ROW parcels, now encompasses approximately 5,554 ac. (2,248 ha), most of which is undeveloped with natural vegetation. The Navy has no management responsibility on the ROW parcels. Currently, the Navy is constructing a new training compound while improving some existing facilities on Navy-managed lands (U.S. Department of the Navy 2008).

The responsibility and authority to conduct wildland fire planning and land management is subject to the ownership and jurisdictional boundaries of the land managing agencies. The landowners, such as the BLM, prepare their own respective planning documents to guide land management on the parcels that they own and control. In addition, the Navy is required to have its own planning documents for all lands used by the Navy for military activities, even if the respective landowners have their own land planning documents. The Navy has developed an INRMP, as required by the Office of the Chief of Naval Operations (CNO) Environmental Readiness Program Manual 5090.1D, to guide natural resources management (U.S. Department of the Navy 2013).

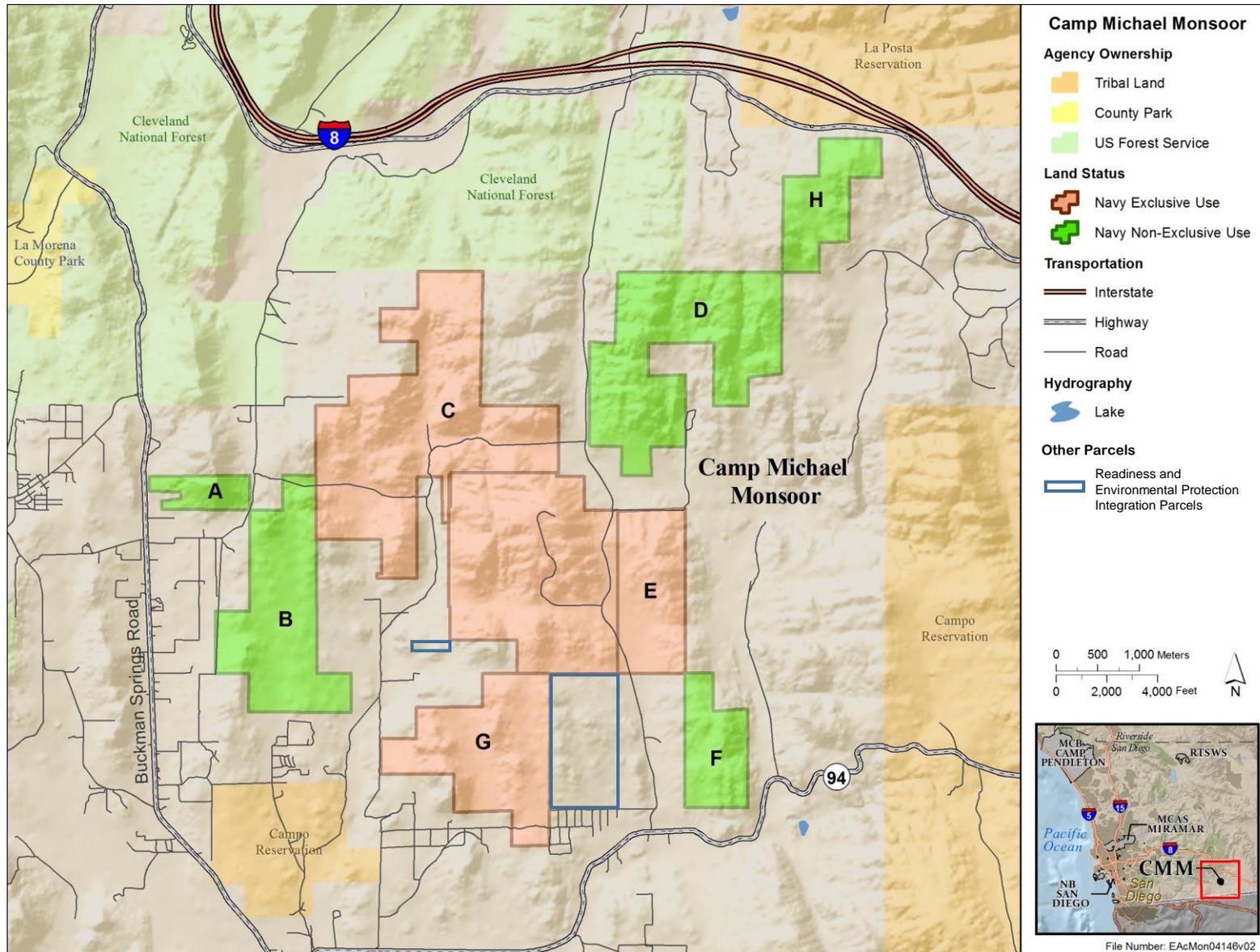


Figure 1-1: Regional Map of Camp Michael Monsoor

**Table 1-2: Camp Michael Monsoor Land Acreage and Use Agreements**

<b>Parcel</b>	<b>Parcel Size hectares (acres)</b>
<b>Lands Withdrawn from Public Use</b>	
Existing Withdrawal	437 (1,079)
C	526 (1,300)
E	158 (391)
G	249 (615)
<b>Right of Way (ROW) Non-Exclusive Use Lands</b>	
A	43 (105)
B	258 (638)
D	351 (866)
F	113 (280)
H	113 (280)
<b>Grand Total Withdrawal and ROW Lands</b>	<b>2,248 (5,554)</b>

### **1.3 PURPOSE OF AND NEED FOR THE PROPOSED ACTION**

The purpose of the Proposed Action is to implement projects to reduce fuel load, restore habitat, and prevent erosion. The Proposed Action is needed to sustain mission functions at CMM to meet ongoing Navy requirements. Treatments to reduce wildland fuels are primarily needed to protect people and property, and to prevent loss of military training opportunities that would result from a large fire. Fuel treatment to protect occupied structures and high-value facilities improves fire resistance and survivability of buildings, utilities, and other infrastructure. Additionally, restoration efforts ensure post-fire resource recovery and prevent high-value natural resources from being lost.

### **1.4 DECISION TO BE MADE**

The decision to be made as a result of the analysis in this EA is whether an Environmental Impact Statement (EIS) needs to be prepared. An EIS would need to be prepared if it is determined that the Proposed Action would have significant impacts on the human or natural environment. Should an EIS be deemed unnecessary, the Proposed Action from this EA would be selected for implementation and this decision would be documented in a Finding of No Significant Impact.

### **1.5 SCOPE OF THE ENVIRONMENTAL ANALYSIS**

In this EA, the Navy assesses the implementation of wildfire management activities conducted at CMM that could potentially impact the human and natural environment. The range of alternatives includes the No Action Alternative and one Action Alternative. In this EA, the Navy analyzes direct, indirect, cumulative, short-term, long-term, irreversible, and irretrievable impacts. Resources evaluated in detail include topography and soils; water resources; biological resources; noise; and public health and safety.

Council on Environmental Quality (CEQ) regulations require an EA to identify and evaluate all the relevant issues associated with a proposed action. The following environmental issues were evaluated in an initial screening process, and found to be not applicable to the Proposed Action. They are therefore eliminated from detailed analysis.

### **1.5.1 LAND USE, RECREATION, AND UTILITIES**

Implementation of the Proposed Action would not adversely affect land use as there would be no land use category changes as a result of the Proposed Action. The Proposed Action would not introduce any new land use controls, and public access would remain unchanged. The Proposed Action would not require water, electricity, or sewage systems beyond existing capacities and would not affect public services. No new facilities are planned. Accordingly, the Navy has omitted further detailed examination of land use, recreation, or utilities in this EA.

### **1.5.2 AIR QUALITY**

All of the assessed sites are within the National/State Ambient Air Quality Standards attainment area. The natural resources plans and projects would introduce no new sources of mobile or stationary emissions that could change attainment status. Therefore, this resource area was not carried forward for detailed analysis.

### **1.5.3 CULTURAL**

The Proposed Action would not result in any negative impacts on, or alter the cultural resources of, surrounding areas. Additionally, the area of the Proposed Action has been disturbed over the years and has a low probability of containing undisturbed archaeological material. Further, the EA for CMM for Expansion of Range and Training Facilities and Training Support Operations at Naval Base Coronado, Camp Michael Monsoor La Posta, California (U.S. Department of the Navy 2013) and La Posta Mountain Warfare Training Facility Environmental Assessment ((U.S. Department of the Navy 2008) both overlap this EA's project area and both concluded that their expansion and construction activities would not adversely affect listed, contributing, or eligible properties. Therefore, this resource area was not carried forward for detailed analysis.

### **1.5.4 TRANSPORTATION**

Transportation of students and instructors to CMM currently represents less than 1 percent of the total average monthly peak traffic volume along U.S. Highway 8. The addition of additional vehicle trips associated with implementation of the Proposed Action would not substantially increase this volume. Thus, impacts of the Proposed Action on traffic and circulation are not carried forward for detailed analysis.

### **1.5.5 SOCIOECONOMICS/ENVIRONMENTAL JUSTICE**

Implementation of the Proposed Action would not adversely affect socioeconomic resources and would comply with Executive Order (EO) 12898, *Federal Actions to Address Environmental Justice in Minority and Low-income Populations*; and EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*. No disproportionate impacts to schools, children, or minority populations would occur, and the scale of the alternatives would result in only minor effects to the economy. No minority or low-income communities are known to exist in the vicinity of the Project Area, and no such groups would be disproportionately affected. Accordingly, the Navy eliminated further detailed examination of socioeconomics and environmental justice in this EA.

## **1.6 AGENCY COORDINATION**

The Navy is the action proponent and the lead agency for preparation of the EA. The Navy is coordinating with the U.S. Fish and Wildlife Service (USFWS) for preparation of a biological assessment in support of this EA.

## **1.7 PUBLIC INVOLVEMENT**

NEPA requirements help ensure that environmental information is made available to the public during the decision-making process and before actions are taken. The premise of NEPA is that the quality of federal decisions will be enhanced if federal proponents of an action provide information to state and local governments and the public and involve them in the planning process. The public involvement process augments the Navy's opportunity to cooperate with and consider state and local views in implementing a federal proposal.

A Notice of Availability announcing the availability of the Draft EA was published in the *San Diego Union-Tribune* newspaper to initiate a 15-day public review period on April 9, 2016. The Notice of Availability solicited comments on the Draft EA and initiated public involvement in the decision-making process. The Draft EA was made available at the San Diego Central Public Library on Navy Region Southwest's website (<http://cnic.navy.mil/regions/cnrsw.html>).

## 2 DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVE

CEQ Regulations for Implementing the Procedural Provisions of NEPA establish a number of policies for federal agencies, including “using the NEPA process to identify and assess the reasonable alternatives to the Proposed Action that will avoid or minimize adverse effects of these actions on the quality of the human environment” (40 Code of Federal Regulations [C.F.R.] 1500.2(e)).

This EA carries forward for detailed analysis only those alternatives that would meet the purpose of and need for the project, as defined in Chapter 1 (Purpose of and Need for the Proposed Action) and that meet the requirements outlined in a set of criteria defined in Section 2.2 (Alternative Development and Selection Criteria). This chapter provides a detailed description of the Proposed Action, and Section 2.2.1 (No Action Alternative) describes the alternative to the Proposed Action.

### 2.1 DESCRIPTION OF THE PROPOSED ACTION

The Proposed Action is to implement wildland fire management actions and is needed to sustain mission functions at CMM to meet ongoing Navy requirements. The Proposed Action consists of the following fire management projects, shown on Figure 2-1:

- Maintain, secure access to, and enhance primary evacuation roads.
- Develop and implement a landscape plan that includes a list of approved landscaping plants and provides guidance on fuel modification zones around buildings.
- Create and maintain roadside fuel treatments.
- Undertake rehabilitation efforts for emergency stabilization and long-term erosion control.

#### 2.1.1 MAINTAIN, SECURE ACCESS, AND ENHANCE PRIMARY EVACUATION ROADS

To ensure that roads provide adequate access, firefighter safety, and evacuation capacity for human life in case of a fire emergency, the Navy proposes to upgrade primary roads on CMM designed for evacuation (Figure 2-1). Figure 2-2 displays the entire primary and potential evacuation route, including those portions that are not on CMM. Primary evacuation routes are considered fire apparatus and emergency vehicle access roads and would be modified if necessary to have an unobstructed width (which includes vegetation removal), including shoulder and surface, of not less than 20 ft. (6 m) (Table 2-1).

**Table 2-1: Approximate Area of Disturbance for Primary and Potential Evacuation Roads**

Proposed Evacuation Route**	Approximate Length of Route	Current Width	Amount of Widening Required	Approximate Length of Widening	Approximate Area Affected
Primary Route (1E1T)	16,550 ft.	15 ft. or 25 ft.	5 ft.	6,900 ft.	0.80 acre
Potential Route 1 (2E2Ta)	2,700 ft.	10 ft.	10 ft.	2,700 ft.	0.62 acre
Potential Route 2 (2E2Tb)	920 ft.	9 ft.	11 ft.	920 ft.	0.23 acre
<b>Total Area of Disturbance</b>					<b>1.65 acres</b>

\*These potential evacuation routes are also sections of road that have been selected for secondary roadside fuel treatments.

\*\*Parenthetical notes indicate route on Figure 2-1.

Notes: ft. = feet, 1E=Primary Evacuation Route, 2E=Secondary Evacuation Route, 2T=Secondary Roadside Fuel Treatment

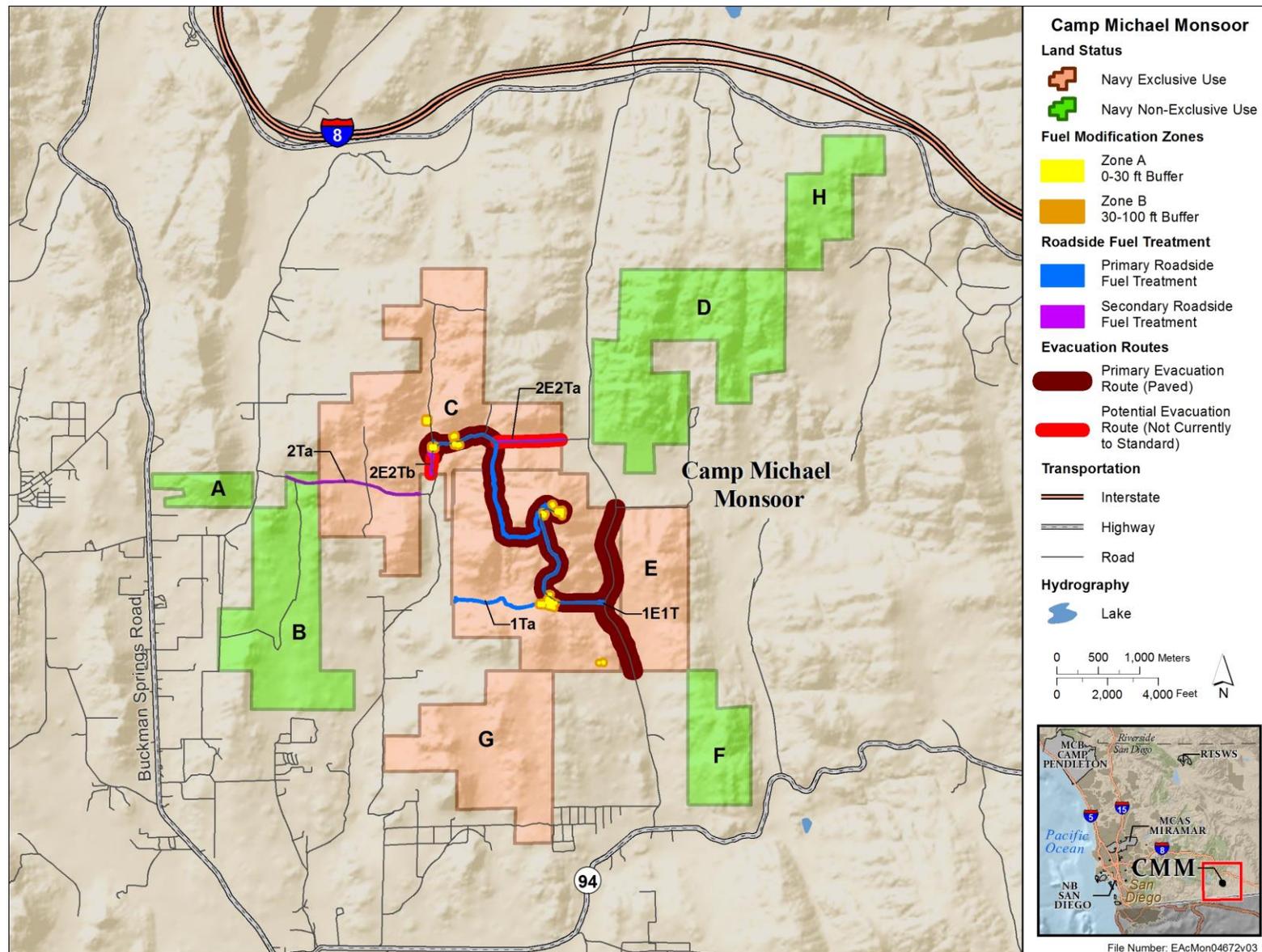


Figure 2-1: Fire Management Projects on Camp Michael Monsoor Overview

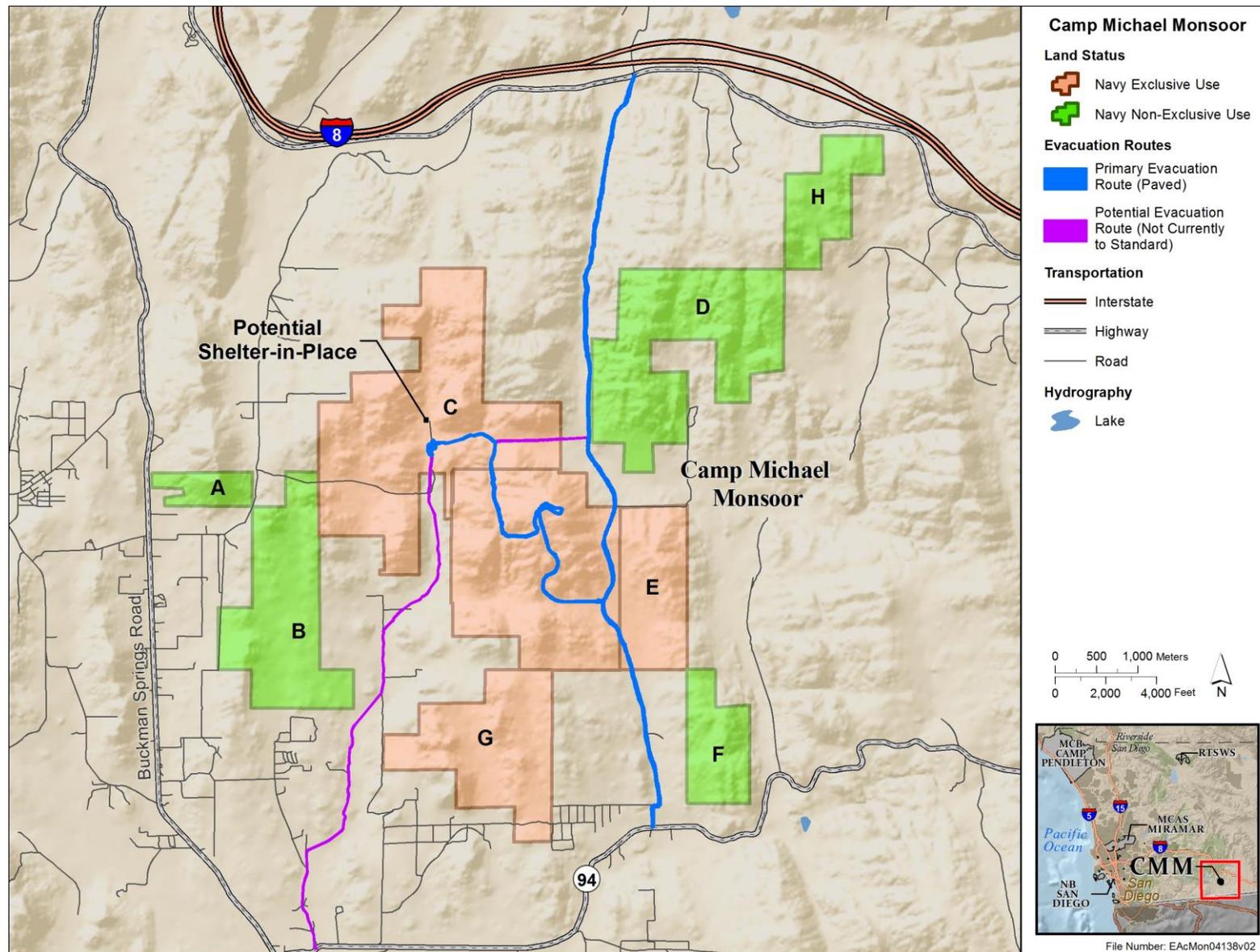


Figure 2-2: Primary and Potential Evacuation Routes

Fire apparatus access roads would be designed and maintained to support the imposed loads of Type 3 equivalent fire apparatus, since these are the engines that would respond to an emergency at CMM. Roads would be provided with an approved surface so as to provide all-weather driving conditions and therefore be accessible by four-wheel drive, high-clearance vehicles and maintained to a standard that reduces or eliminates soil erosion.

### **2.1.2 FUEL MODIFICATION ZONES AROUND FACILITIES**

Treatments to reduce wildland fuels are primarily needed to protect people and property, and to prevent loss of military training opportunities that would result from a large fire. Fuel treatment to protect occupied structures and high-value facilities improves fire resistance and survivability of buildings, utilities, and other infrastructure. The bulleted list below represents future vegetation management strategies. Some of these measures would only be implemented with approval from landowners, after NEPA analysis and determination, and following Section 7 consultation with USFWS. Except on a case-by-case basis when specifically exempted by the NBC Natural Resources Manager, vegetation treatments may need to be executed to create defensible space around occupied or potentially occupied buildings and high-value facilities. NBC Facilities, the NBC Natural Resources Manager, and tenants would collaborate and determine which structures are occupied, potentially occupied, or high-value facilities. Vegetation treatment for defensible space around these structures would be based on site-specific conditions, and final vegetation treatment would be coordinated with the landowners and California Department of Forestry and Fire Protection (CalFire) before the Navy takes any action.

In general, a 100 ft. (30.5 m) fuel modification zone has been designated around occupied and high-value structures, and must meet erosion control requirements. Zone A comprises the first 30 ft. out from the structures. Zone B extends from the edge of Zone A out to 100 ft. (30.5 m) as measured horizontally from all sides of each structure, but it cannot extend into open space. It is important to note that portions of Zone A and Zone B may already be cleared for roads, parking, or previously cleared areas. As such, approximately 0.37 ac. (0.15 ha) around high-value structures would be considered Zone A and approximately 8.26 ac. (3.34 ha) would be considered Zone B. Figure 2-3 through Figure 2-6 show the two zones surrounding assets within CMM.

The following are requirements for both Zone A and B:

- Reduce continuous ground fuels by removing dead or dry biomass and leaving “wildlife” logs (e.g., Quino checkerspot butterfly larvae may be under logs). The NBC Natural Resources Manager will be consulted prior to work commencing.
- Perform weed control annually to prevent the accumulation of thatch from invasive non-native plants.
- Create vegetation “islands” (i.e., irregularly grouped plants) by creating horizontal and vertical spacing between plants to interrupt continuous ground fuels. Leave the root structure intact. Do not completely remove all vegetation and leave the ground bare.
- Where re-vegetation efforts are required, approve the re-vegetation plant palette with the NBC Natural Resources Manager. The palette should consist of native plants that have a low probability of contributing to fuel hazards (e.g., through providing fuel ladders) while supporting

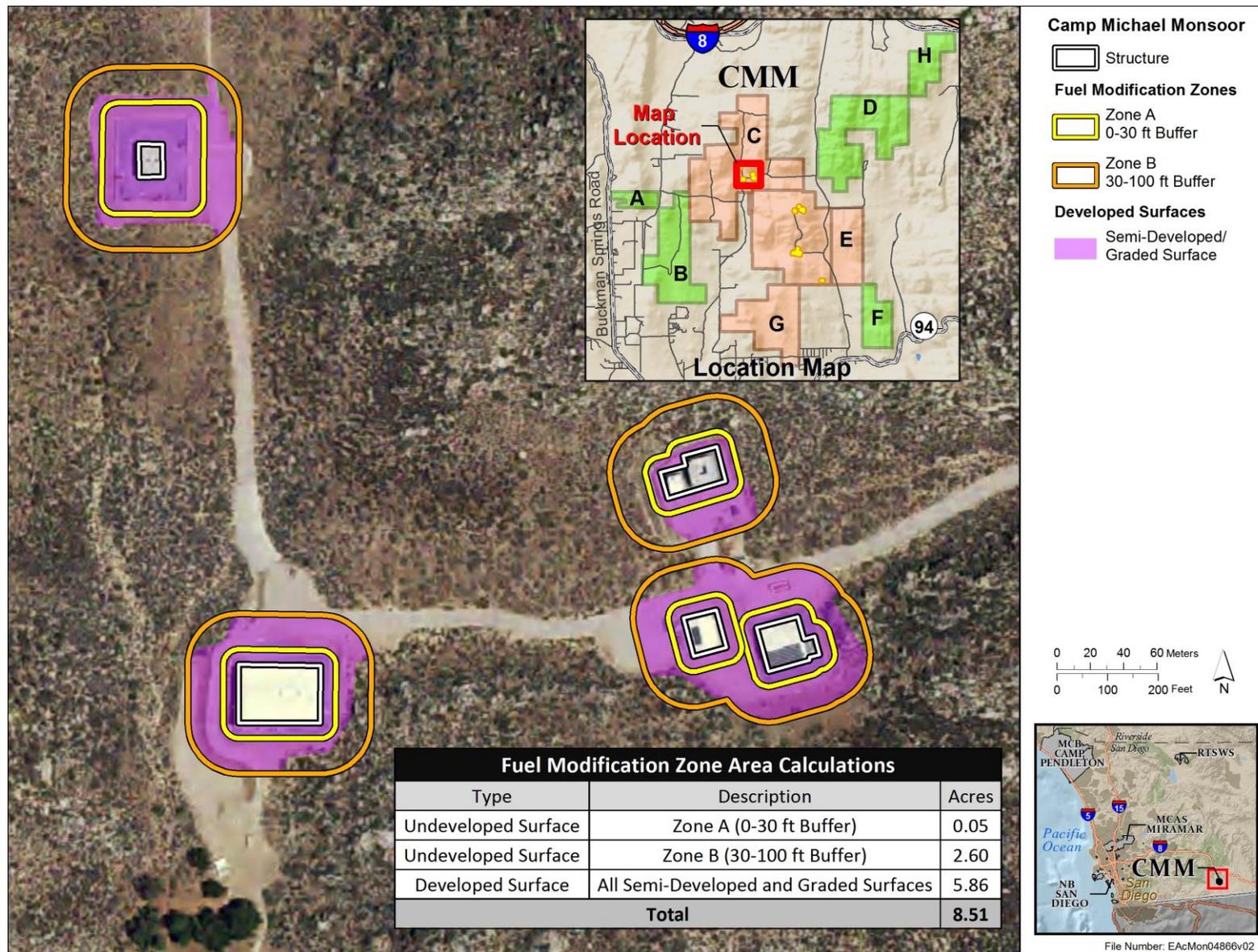


Figure 2-3: Fuel Modification Zones Map 1

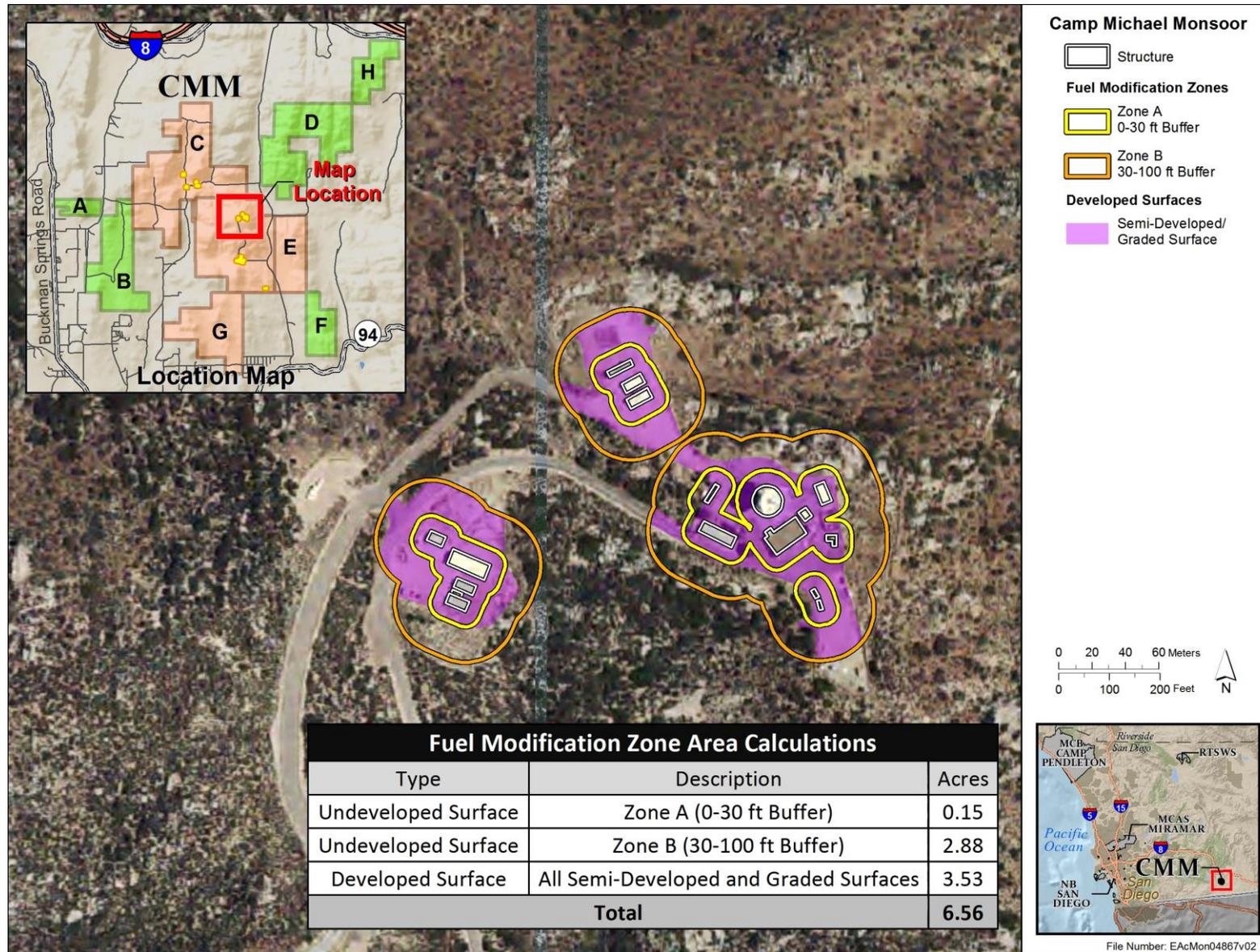


Figure 2-4: Fuel Modification Zones Map 2

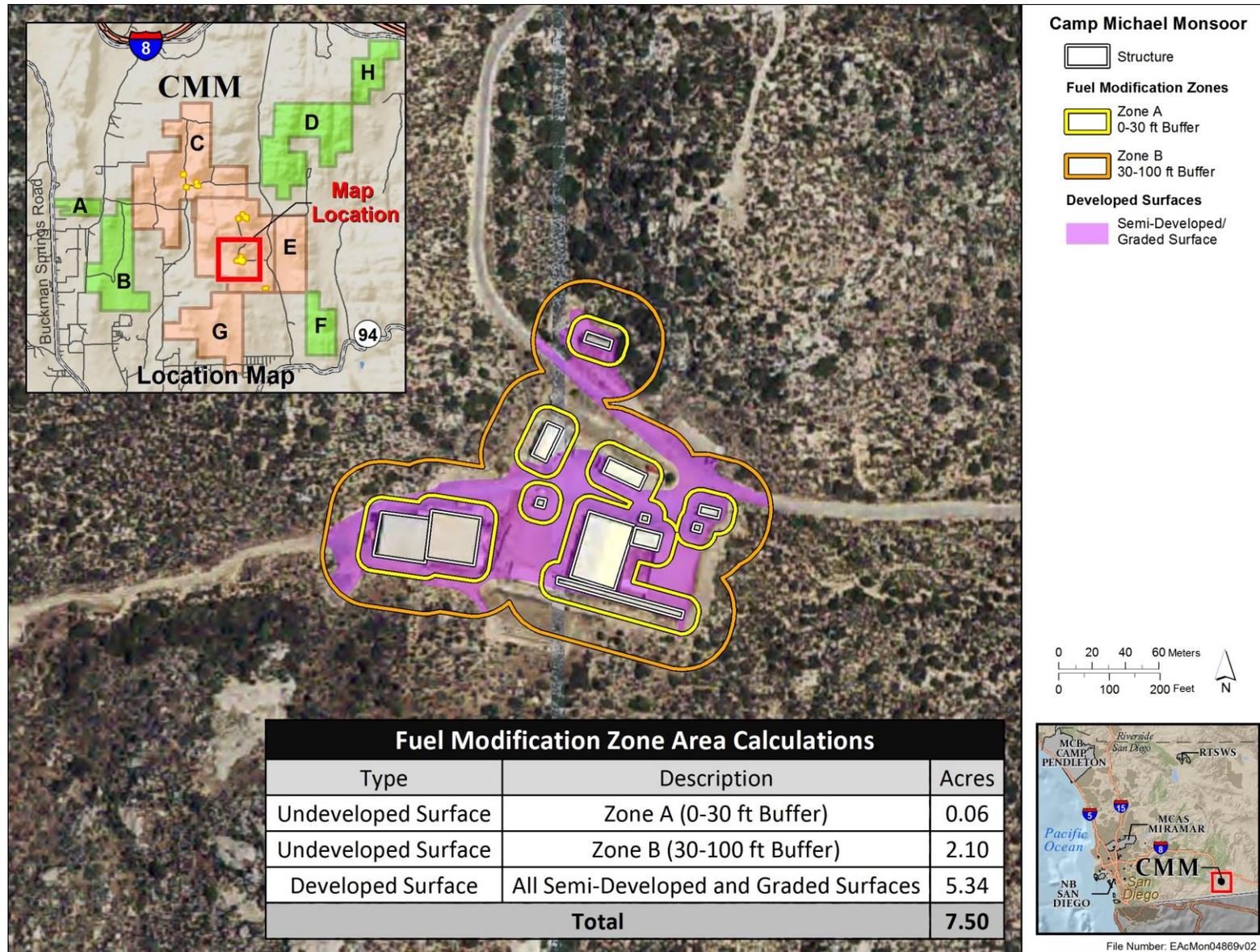


Figure 2-5: Fuel Modification Zones Map 3

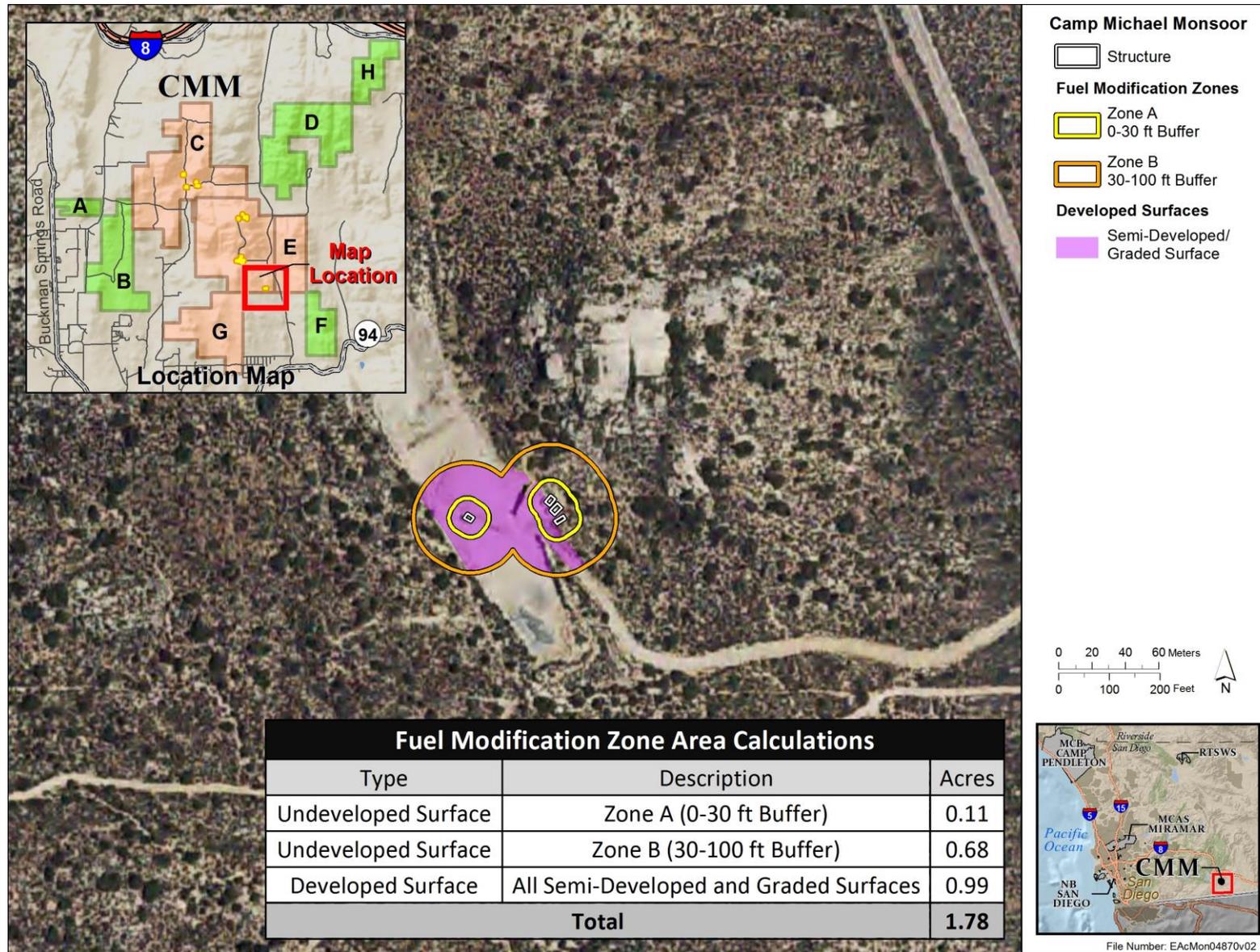


Figure 2-6: Fuel Modification Zones Map 4

habitat for federally listed plants and animals and blending with adjacent native vegetation communities.

- On all fuel modification treatments during bird breeding season (15 February–15 September), utilize nest clearance surveys in compliance with the Migratory Bird Treaty Act (MBTA).
- Quino checkerspot butterfly is a federally endangered species present within CMM. To avoid Quino checkerspot butterfly flight season, vegetation clearing will only occur between the second Saturday in May to the third week in February, and will be approved by an NBC Biologist prior to its initiation. When not presenting a fire hazard risk, efforts to avoid individual plants of *Eriogonum fasciculatum* (California buckwheat) should be made whenever possible as this is the preferred over-wintering diapause plant for the butterfly.
- Perform native vegetation (fuel) treatments, though not in riparian areas.
- Prior to commencing any potentially ground-disturbing work, the Natural Resources Manager will review proposed sites and details with Cultural Resources Program Manager to avoid direct effects to cultural resources. Where necessary to stabilize the soil and prevent erosion, do not remove grass and other vegetation; other measures can be considered to reduce fuel continuity (e.g., trimming or creating islands of vegetation).
- On a case-by-case basis, trim shrubs up away from the ground to create space between shrubs and any nearby trees such that flames could not spread as easily from one tree to the other.
- Perform year-round maintenance, inspection, and enforcement of all fuel modification zones (defense zones) and fuel treatments.

Additional Zone A (0–30 ft. [0–9.1 m]) requirements are:

- Remove all dead wood from trees adjacent to or overhanging a building.
- To reduce the risk of a vertical fire ladder where continuous ground fuels are adjacent to the tree, remove limbs from bottom third of tree, up to a maximum of 6 ft. (1.8 m) above the ground. Remove all limbs within 10 ft. (3.1 m) radius of the chimney stack opening.
- Remove leaves, needles, or other dead vegetative growth from all roofs and gutters and under trees.
- Locate firewood, propane tanks, and combustible material a minimum of 30 ft. (9.1 m) from all structures.
- Construct any future structures (e.g., windbreaks, decks, and storage sheds) with non-combustible materials. Wood fencing should not be used.
- Use existing non-flammable paved parking/storage lots, patios, driveways, walkways, boulders, rock, and gravel to break up fuel continuity.

Additional Zone B (30–100 ft. [9.1 m–30.5 m]) requirements are:

- If it is determined that the 30 ft. (9.1 m) is not sufficient to provide reasonable protection, fuels can be thinned under the direction of the NBC Natural Resources Manager. If total percent vegetation canopy cover within 100 ft. (30.5 m) of buildings is greater than 70 percent, trees and shrubs should be trimmed into islands such that total percent canopy cover of the area is reduced to 50–70 percent.
- The northeast side of facilities would be the highest priority because wildfire is more likely to be pushed by Santa Ana winds coming from the northeast.

### 2.1.3 IMPLEMENT ROADSIDE FUEL TREATMENTS

Under the Proposed Action, year-round maintenance of all prescribed fuel modification zones and roadside fuel treatments would occur. Roadside fuel treatment work would be accomplished in sections over 5 years, with sections repeated every 5–15 years depending on the accumulation of dead material on the ground. This practice is not expected to favor non-native grasses because the timing and height of mowing would be set to favor native perennials and would not disturb the soil seed bank or scalp the soil.

Roadside fuel treatments shall be by selective thinning, leaving low-lying shrubs and grasses up to 12 inches for 10 ft. (3.05 m) on both sides of any roadway expected to have firefighting apparatus on it, and designated as a fire access or evacuation route. Discontinuous fuels with flashier shrubs such as buckwheat and chamise would be removed from a second vegetation modification zone, 10 to 25 ft. (3.05 to 7.6 m) from road. All dead and down vegetation and invasive plant species would be removed. The remaining live native vegetation would be in clusters so the fuels are discontinuous. This fuel reduction also benefits habitat for the Quino checkerspot butterfly.

**Table 2-2: Approximate Area of Temporary Disturbance for Roadside Fuel Treatments**

Roadside Treatment	Approximate Length of Route	Roadside Fuel Treatment Zone 1 Area	Roadside Fuel Treatment Zone 2 Area	Approximate Total Area Affected
Primary Roadside Fuel Treatments				
1E1T	16,550 feet (ft.)	7.60 acres	11.40 acres	19.00 acres
1Ta	3,450 ft.	1.58 acres	2.38 acres	3.96 acres
Secondary Roadside Fuel Treatments				
2Tb	5,500 ft.	2.55 acres	3.79 acres	6.34 acres
2E2Ta	2,700 ft.	1.24 acres	1.86 acres	3.10 acres
2E2Tb	920 ft.	0.42 acres	0.63 acres	1.05 acres
<b>Approximate Totals</b>		<b>13.39 acres</b>	<b>20.06 acres</b>	<b>33.45 acres</b>

Notes: 1E=Primary Evacuation Route, 2E=Secondary Evacuation Route, 1T=Primary Roadside Treatment, 2T=Secondary Roadside Fuel Treatment. Note: "Temporary" disturbance indicates areas where vegetation modification will occur, but not vegetation clearing. Following fuel treatment, vegetation will remain which may potentially benefit Quino checkerspot butterfly.

These roadside fuel treatments would be generally maintained using manual labor and mechanical methods. Primary evacuation routes would be the highest priority for roadside fuel treatments because they are also access for fire apparatus and emergency vehicles and managed as fuelbreaks. Roads would be secured from erosion through routine maintenance or construction upgrades. Culverts would be of appropriate size and water bars and rolling dips would be installed for drainage on in-sloped roads.

### 2.1.4 IMPLEMENT POST-FIRE EROSION CONTROLS AND PERFORM RESTORATION OF BURNED SITES AT CAMP MICHAEL MONSOOR

Following a fire, the Navy proposes to protect headwater drainages to prevent and control soil erosion and weed invasion, prioritizing losses that cause an irreversible degradation to the landscape's ability to sustain natural cover and diversity, or threaten downstream watershed values. Post-fire rehabilitation or

restoration actions would not be undertaken until it is known that a remedial action may be required to reestablish plants that may have been eliminated only because of wildfires unusually occurring within a short interval of each other or that do not meet INRMP objectives. Post-fire actions can be very expensive and they would be considered after ensuring the system no longer responds positively to the stimulus of fire. Examples of work that might be funded include installing trash racks above culvert inlets to keep them from plugging up during winter storms, mulching using straw bales, sand bagging, and other work.

Rehabilitation and restoration efforts would be undertaken to protect and sustain ecosystems, enhance public health and safety, and to help communities protect infrastructure. Establishment of vegetative cover after a fire is the most effective form of soil stabilization. Post-fire erosion control through seeding or fertilization would not be conducted as a general practice, but only with proper justification in a written rehabilitation plan that contains success criteria. Evaluation of the need to revegetate would be conducted by BLM and the Navy for CMM and would be completed within the first few weeks following a fire, and sufficiently in advance before winter rains so that necessary arrangements could be made.

The evaluation will consider:

- Estimated desired vegetation cover and actual vegetation cover post-fire. Revegetation would be considered if cover remains less than 30 percent.
- Invasive plant condition. Revegetation would be considered if cover of weeds is greater than 20 percent.
- Steepness of slope, inherent erodibility of soil, and proximity to drainages.
- Threat to rare plant populations.
- Other uses of the site (e.g., heavily used by special status species, recreationists, or grazed by livestock).
- Rehabilitation of sites affected by suppression so that there is no permanent loss of cultural resource values.
- Effects monitoring on cultural resources of pre-suppression, suppression, and post-suppression work.

Non-native grass control would be accomplished by targeting stands in the most favorable areas during drier-than-normal winters. This would occur around rocks, on north slopes, or in culverts and low-lying areas where precipitation runoff collects. Non-native grasses targeted for control would be treated prior to seed dispersal in late spring-early summer. The most efficient treatment, especially when targeting refuges during dry years, is by spraying with glyphosate during conditions with wind velocity < 5 miles per hour (mph) (8 kilometers per hour [kph]) for 2–3 sequential years, since seeds of non-native grasses usually do not remain viable for more than 3 years in the soil seed bank. Under conditions when expected rainfall may be above normal (such as during El Niño events), control measures would rely on mechanical cutting of the grass prior to flowering, such as with a string trimmer or mower, if conditions allow. Prescribed fire on large stands of non-native grasses is also effective when conducted prior to the seed-set.

Site revegetation with native plant species and weed control activities would be overseen by a qualified biological monitor. Any activity that could potentially impact listed species would be monitored by a qualified biologist. Revegetation efforts would include pollinator-friendly plants, among them native species contained on the Naval Facilities Engineering Command Southwest's recommended plant list.

Watering, if determined to be necessary, would utilize potable or reclaimed sources that have been approved for irrigation and are applied by hand, hose, sprinkler, drip line, or soaker line. The use of herbicides, insecticides, and pesticides would be restricted wherever possible. If necessary, the following restrictions would be placed on their use:

- All herbicides will be used in accordance with the pesticide label and DoD regulations.
- Treatment within or adjacent to restoration areas will use appropriately labeled products only.
- Herbicides will not be sprayed when wind velocities at the site exceed 5 mph, or in foggy or rainy conditions when ground moisture becomes excessive. Non-target species, especially native species, will be avoided during spraying. A biological monitor familiar with the site and associated natural resources will train and direct herbicide applicators. The biological monitor will directly supervise herbicide applications within sensitive habitats.

## **2.1.5 FIRE PREVENTION AND ESCAPED FIRE MEASURES**

### **2.1.5.1 Fire Prevention Measures**

- The Navy will refer to guidelines (Table 2-3) for allowable training activities at CMM, which may be adjusted based on National Fire Danger Rating (NFDR) guidance. Activities such as field training, aircraft operations, vehicle use, and blank-firing weapons are generally unrestricted, as their potential to cause fire is low.
- The Navy will consider full or partial training closures when there is a lack of firefighter capability due to widespread fires, or extreme weather and fuel conditions that could result in unstoppable wildland fires.
- All fire building and the use of blank-firing weapons and pyrotechnics are under the supervision of a field instructor and will follow the precautions listed in Table 2-3. The instructor will notify the NSW Range Manager, when available, when a fire is to be started or pyrotechnics and blank-firing weapons are to be used, and will report when all fires are extinguished or training activities have ceased.
- Wood fires for demonstration cooking and warming will be built only in designated fire rings/sites. The Training Unit Officer in Charge (OIC) will contact the Forest Service for the NFDR and will coordinate with the NSW Range Manager on starting wood fires in designated sites during NFDR's High to Very High conditions, especially when low humidity and high winds (Red Flag conditions) are present. Under NFDR's Extreme conditions, wood fires are prohibited within training areas. In addition, the use of incendiary devices, including but not limited to pencil flares, other flares, smokes, and simulation grenades, require the Navy to exercise considerable caution that errs on the side of safety, especially during wind events. The Navy, after determining all daily federal NFDRS conditions, will decide on a case-by-case basis whether or not to undertake operations that use incendiary devices.
- Flares/pencil flares will only be used in pre-designated cleared sandy/dirt areas. The pencil flare has a maximum 15-second burn time and burns out before it hits the ground. Mk124 Day and Night flares have a 20-second burn time. The Day and Night flares remain in the dirt until they cool off and are then disposed of or saved for reuse at a later time.
- Smoke grenades will only be used in pre-designated training sites and Landing Zones. The smoke grenade has a concentrated smoke burn of approximately 8 seconds and will be placed in a container of water after use.

**Table 2-3: Forest Service National Fire Danger Ratings and CMM Precautions**

Fire Danger Rating (Hazard)	Caution To Be Exercised	Necessary Precautions
0–30 (Low)	Use normal caution.	<ul style="list-style-type: none"> <li>Blanks, flares, live rounds, heat-generating/explosive or flame-producing devices, may be used with care.</li> <li>Wood fire ignition and smoking permitted only in designated areas.</li> <li>All training unit vehicles will have fire suppression equipment on hand.</li> <li>At all times, smoking is only authorized in designated areas.</li> </ul>
31–40 (Moderate)	Use normal caution. Fires will start easily.	<ul style="list-style-type: none"> <li>Blanks, flares, live rounds, heat-generating/explosive or flame-producing devices, may be used with care.</li> <li>Wood fire ignition and smoking permitted only in designated areas.</li> <li>All training unit vehicles will have fire suppression equipment on hand.</li> </ul>
41–60 (High)	Use extra caution. Fires will start very easily.	<ul style="list-style-type: none"> <li>Blanks and live rounds permitted in training areas.</li> <li>Use of flares, grenades, heat or flame-producing devices, and wood fires within training areas to be limited to appropriately cleared areas with fire suppression equipment and supplies onsite.</li> <li>Training commands should curtail use of heat or flame-producing training devices and wood fires under Red Flag conditions (humidity &lt;15%, sustained winds of 25 mph, and/or frequent gusts of 35 mph).</li> <li>All training unit vehicles will have fire suppression equipment on hand</li> </ul>
61–80 (Very High)	Use extreme caution. Fires are very hard to control.	<ul style="list-style-type: none"> <li>Blank fire will only be permitted under calm, cool, humid conditions and in coordination with NSW Range Manager.</li> <li>Use of flares, grenades, heat or flame-producing devices, and wood fires within training areas to be limited to cleared areas under calm, cool, humid conditions with fire suppression equipment and supplies on site and in close coordination with CMM OIC. Unless essential, training commands should curtail use of heat or flame-producing training devices and wood fires under Red Flag conditions (humidity &lt;15%, sustained winds of 25 mph, and/or frequent gusts of 35 mph) and only when fire suppression equipment and supplies are on site and used in close coordination with NSW Range Manager.</li> <li>All training unit vehicles will have fire suppression equipment on hand.</li> </ul>
81 and Higher (Extreme)	Flash condition. Fires started are practically impossible to extinguish and usually continue until conditions improve.	Use of any blanks, live rounds, flares, grenades, heat or flame-producing devices, or wood fires within training areas is prohibited.

Notes: CMM = Camp Michael Monsoor, mph = miles per hour, NSW = Naval Special Warfare, OIC = Officer in Charge

Source: Bradshaw et al. 1984

- The Navy shall install fire extinguishers and firefighting apparatus of types, of capacities, in numbers, and at locations approved by the authorized officer. This equipment shall be in readiness at all times for immediate use, and shall be tested monthly by the CMM Fire Warden and annually by FFD.
- All vehicles supporting military training will have fire suppression equipment available while training in the event an unplanned ignition occurs. Suppression equipment will consist of shovels and one metal backpack type water pump (5-gallon capacity) for wildland fires, a multipurpose dry-chemical fire extinguisher (A-B-C rated) for vehicle and structure fires, and a radio. While preferred, if metal backpack type water pumps are not available, a 5-gallon water

jug with bucket will suffice. Aircraft crews shall be equipped with fire extinguishers, and aircraft ground-support units shall be equipped with shovels, fire extinguishers, bucket, and radio.

- All contractor vehicles supporting non-training activities shall have multipurpose dry chemical (A-B-C rated) fire extinguishers and shovel onboard vehicles to use in the event of a vehicle or spot fire.
- Suppression equipment such as shovels and containers of water will be present during the use of ammunition, and the areas of ammunition use will be carefully chosen so as to reduce fire risks.

### **2.1.5.2 Unplanned Ignitions and Escaped Fire Measures**

- If an unplanned ignition occurs, the unit in the field suspends all training activity and takes immediate action to extinguish the fire. Unless determined to be unsafe, the unit remains on station and attempts to control/extinguish the fire until determined to be extinguished by the watch officer on duty or responded to by the appropriate firefighting agency. An unplanned ignition would be immediately reported by radio to the OIC. The following information must be provided to the OIC:
  - Unit identification.
  - Type and size of fire and whether or not assistance is required.
  - Location of fire (digit grid coordinate, latitude/longitude, training site name, or landmark) and cause, if known.
  - Firefighting equipment on scene.
- The OIC would immediately call 911 Dispatch to report an escaped fire if assistance is required. Location of the fire would be reported to 911 Dispatch utilizing a Township and Range map or Global Positioning System coordinates. The Training Unit OIC will then call the NSW Range Manager to report the fire.

## **2.2 ALTERNATIVE DEVELOPMENT AND SELECTION CRITERIA**

Alternatives to the Proposed Action must be considered in accordance with NEPA and CEQ regulations for implementing NEPA. In accordance with CEQ regulations found at 40 C.F.R. §1502.14, each alternative must be feasible, reasonable, and reasonably foreseeable. Reasonable alternatives include those that are practical or feasible from the technical and economic standpoint. CEQ's regulations require that an EA include a brief discussion of alternatives to a proposed action that involves unresolved conflicts concerning alternative uses of available resources (40 C.F.R. 1508.9(b)). EAs that address proposals where there is heightened technical controversy surrounding potential impacts or where there is otherwise greater potential for significant environmental impacts from the proposed action may need to identify and analyze more alternatives than other EAs. Conversely, the smaller the impacts of the proposed action, the less need there is to consider alternatives. In other words, where a proposed action falls on the sliding scale will affect the alternatives analysis.

The Navy has developed criteria for assessing whether a possible alternative meets the purpose of and need for the Proposed Action. Any alternative considered for future analysis should support or employ the following:

1. Provide vegetation management around installation assets to protect from wildfire damage.

2. Protect residents and private assets on properties adjacent to CMM from fire resulting from Navy activities.
3. Keep impacts to resources to a minimum.
4. Prevent fire-related delays or disruptions in current installation mission or function.

Any alternative developed that would not implement evacuation road maintenance or fuelbreak efforts would not meet selection criteria 2, 3, and 4 and would increase the level of risk from fire impacts on residents and private assets on properties adjacent to CMM. Further, any alternative in which fuel modification zones are not implemented would not meet selection criteria 1, 3 or 4. If post-fire rehabilitation efforts were not included in an alternative, selection criteria 3 and 4 would not be met. Post-fire rehabilitation minimizes resource impacts as rehabilitation is a beneficial activity for both human and other biological resources. Post-fire rehabilitation would assist in reducing fire-related disruptions in mission or function by minimizing the amount of time that the disruption occurs. Not including this implementation would likely result in permanent disruption of installation mission and function.

Given that only one alternative meets the selection criteria, no heightened technical controversy surrounding potential impacts of the Proposed Action is expected, and environmental impacts from the Proposed Action are anticipated to be minor, the Proposed Action was identified (along with the No Action Alternative) as the only alternative for analysis within this EA.

### **2.2.1 NO ACTION ALTERNATIVE**

In accordance with 32 C.F.R. §65, the No Action Alternative is included in the EA as a benchmark to compare the magnitude of environmental effects of the action alternatives. The No Action Alternative is defined for this EA as no change from current fire management activities (i.e., current activities would continue such that no action is equal to no change in the status quo). Currently, the general measures performed by the Navy for fire prevention and control and the use at CMM of any pyrotechnic device, blank-firing weapons, or warming/cooking fire is in accordance with the procedures and protocol provided in Section 2.1.4 (Implement Post-Fire Erosion Controls and Perform Restoration of Burned Sites at Camp Michael Monsoor).

The No Action Alternative would not meet the purpose of and need for the Proposed Action; however, as required by NEPA, the No Action Alternative is carried forward for analysis in this EA.

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### **3 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES**

CEQ regulations require an EA to identify and evaluate all the relevant issues associated with a proposed action. The Affected Environment and Environmental Consequences chapter describes the current state of physical, biological, and human-related resources in the Project Area. The resources described and analyzed in this chapter are topography and sediments; water resources; biological resources; noise; and public health and safety.

#### **3.1 TOPOGRAPHY AND SEDIMENTS**

This section describes the topography, geology, and soils on CMM. Faults that are within or that may affect CMM are also identified in this section. For analytical purposes, the terms “soil” or “sediment” refer to unconsolidated materials, while “rock” refers to consolidated materials.

##### **3.1.1 AFFECTED ENVIRONMENT**

###### **3.1.1.1 Topography**

CMM lies within the geologic feature known as the Peninsular Ranges Batholith, which rises in elevation from the Coastal Plain to the east. The Peninsular Ranges Batholith includes a series of north-northwest-trending mountain ranges (plutons) formed during subduction of the Farallon oceanic plate beneath the western margin of North America. The topography in CMM consists of rugged, mountainous terrain with steep slopes, sheer rock cliffs, and frequent rock outcroppings (Figure 3-1). Elevations range between 3,200 and 4,000 ft. (975 and 1,219 m.) above mean sea level. Drainage from the intermontane valleys ultimately flows into Campo Creek to the south (U.S. Department of the Navy 2008). This portion of the batholith is characterized by large concentrically zoned plutons of immediate composition with deep levels of emplacement and associated high grade metamorphic rocks. The La Posta pluton is the largest of these plutons, consisting of leucocratic hornblende-biotite tonalite in the outer zones to granodiorite inward, and has experienced little deformation or alteration (U.S. Department of the Navy 2008).

San Diego County lies within an active seismic region capable of subjecting the area to earthquakes of Seismic Zone 4 rating, as defined in Naval Facilities Engineering Command Design Manual Two (U.S. Department of the Navy 2008). The seismic zone rating establishes building requirements for an area based on the probability of a high seismic event occurring in that region. Seismic Zone 4 is the highest rating, indicating the strictest building requirements. The seismic shaking hazard rating for the Proposed Action area is 20 to 30 percent peak ground acceleration. Major fault lines in the San Diego area tend to run northwest, although a secondary pattern of northeast-trending faults exists. There are no faults near CMM, but faults that may affect it are the Elsinore and Earthquake Valley faults, which are located approximately 9.3 and 15.5 mi. (14.9 and 25.0 km.), respectively, to the northeast. These all have been historically active, and a major seismic event (6.2 or greater on the Richter scale) can reasonably be expected in San Diego County every 100 years (U.S. Department of the Navy 2008). Three unnamed faults run north-to-south over 2.5 mi. (4 km) north of CMM and the associated parcels. The three faults occur north of the La Posta Indian Reservation in valleys of the Cleveland National Forest.

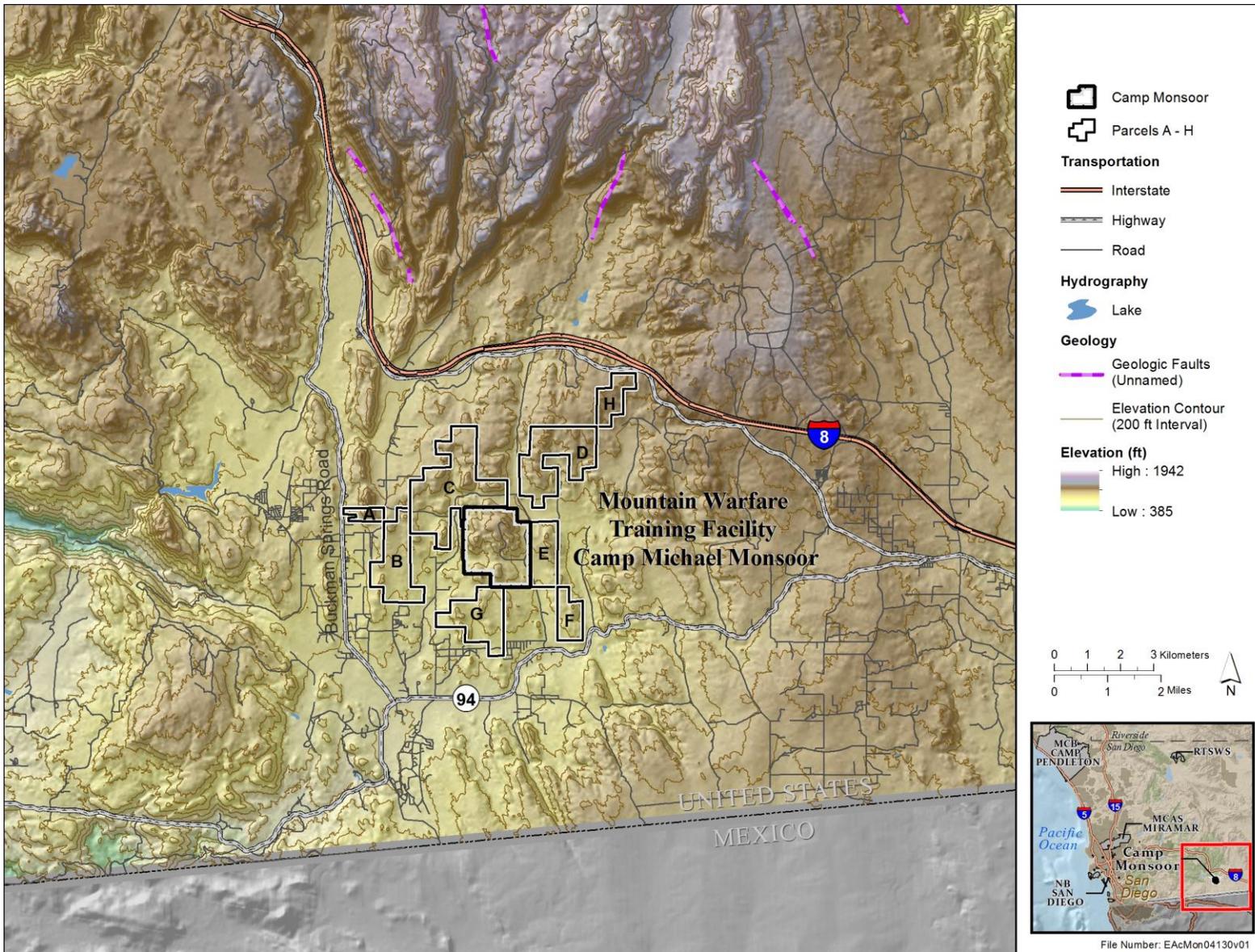


Figure 3-1: Camp Michael Monsoor Springs Topology and Faults

### 3.1.1.2 Sediments

Soils in CMM consist of Mottsville-Calpine and the Tollhouse-La Posta Rock land association. The Mottsville series consists of deep, loamy, coarse sands, occurring in valleys and on alluvial fans. The Calpine series is also granitic and occurs on alluvial fans, but consists of very deep coarse, sandy loams. Tollhouse soils are excessively drained, shallow, or very shallow coarse sandy loams. About 10 percent of the surface in this series is typically covered with rock outcrops and 20 percent with boulders (Figure 3-2, Table 3-1).

**Table 3-1: Soil Types and Erosion Hazards at Camp Michael Monsoor**

Soil	Sloping	Runoff	Erosion Hazard
Acid igneous rock land	Variable	Rapid	n/a
Calpine coarse sandy loam	5–9% slopes	Slow to Medium	Slight to Moderate
	5–9% slopes, eroded	Slow to Medium	Slight to Moderate
	9–15% slopes, eroded	Medium	Moderate
Kitchen Creek loamy coarse sand	5–9% slopes	Slow to Medium	Slight to Moderate
La Posta loamy coarse sand	5–30% slopes, eroded	Medium	Moderate
	5–30% slopes, severely eroded	Medium	Moderate to High
La Posta rocky loamy coarse sand	5–30% slopes, eroded	Medium	Moderate
Mottsville loamy coarse sand	2–9% slopes	Slow to Medium	Slight to Moderate
	9–15% slopes	Medium	Moderate
Sheephead rocky fine sandy loam	30–65 % slopes, eroded	Rapid	High
Tollhouse rocky coarse sandy loam	5–30% slopes, eroded	Medium to Rapid	Moderate to High

Note: n/a = not applicable

Source: U.S. Department of the Navy 2013, U.S. Department of Agriculture 1973

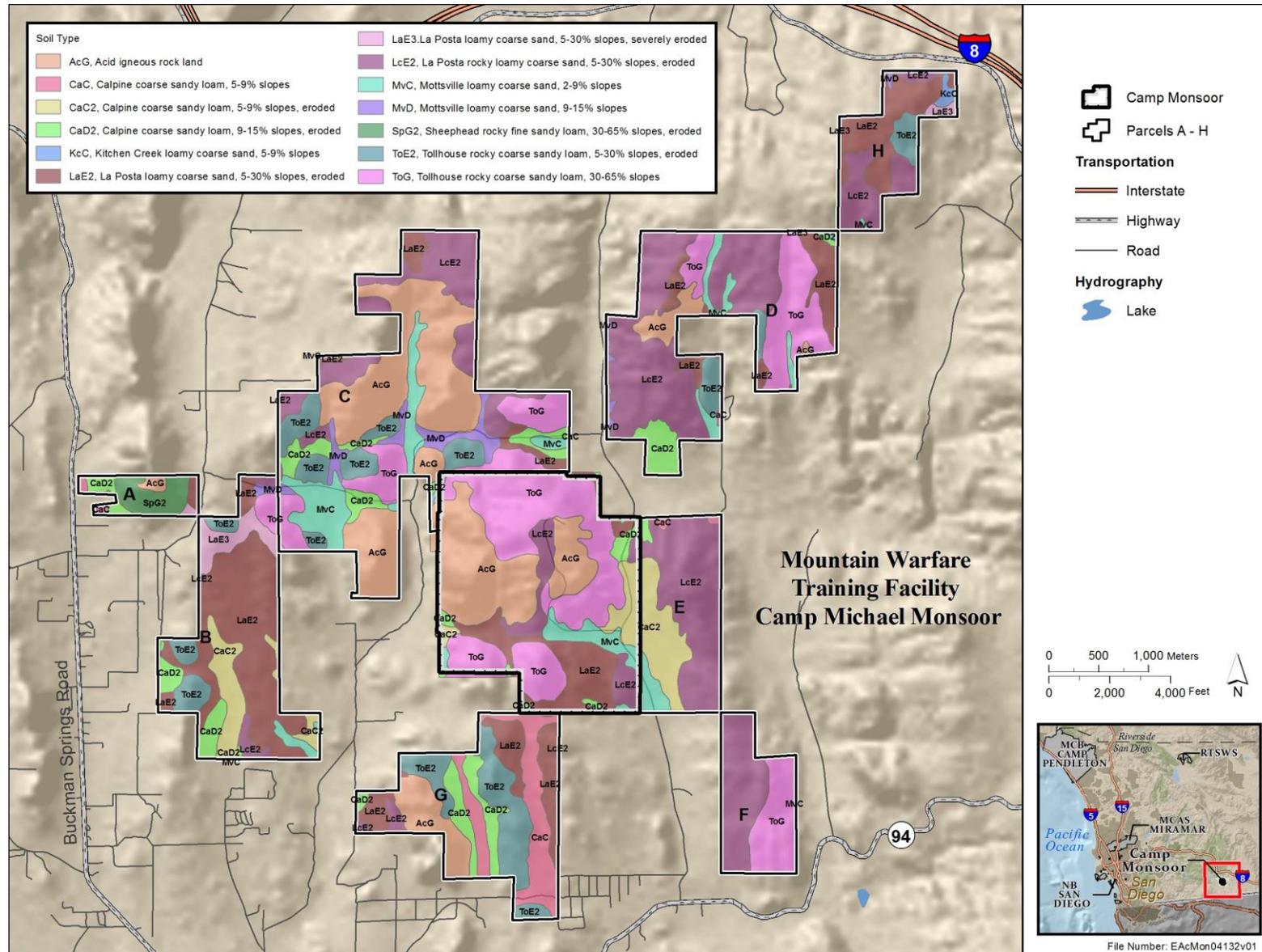


Figure 3-2: Camp Michael Monsoor Springs Soils

Permeability of these soils is rapid, runoff is medium to rapid, and the erosion hazard is moderate to high. The La Posta series consists of somewhat excessively drained loamy coarse sands. Rock outcrops cover 5 to 10 percent of the surface in some areas. The La Posta rocky loamy coarse sand is moderately sloping to moderately steep and is 16 to 32 inches (0.4 to 0.8 m.) deep. Permeability is rapid, runoff is medium, and the erosion hazard is moderate (U.S. Department of the Navy 2008). Soils on CMM are shown in Figure 3-2. Currently the access road from the Microwave Space Relay Station through the development footprint of Parcel C is experiencing erosion and requires road improvements. Proposed road enhancements that would improve this area include widening the existing dirt access road, installing engineering features along the road, such as rock-lined swales and rip rap, and installing culverts and low-water crossings.

### **3.1.2 ENVIRONMENTAL CONSEQUENCES TO TOPOGRAPHY AND SEDIMENTS**

This section evaluates potential impacts on topography and sediments associated with the Proposed Action and the No Action Alternative.

#### **3.1.2.1 Proposed Action**

The Proposed Action would include the enhancement and maintenance of primary evacuation routes, annual maintenance of the fuel modification zones around facilities, roadside fuel treatments, implementation of post-fire erosion controls and restoration of burned sites, and fire prevention and escaped fire measures.

As described in Section 2.1.1 (Maintain, Secure Access, and Enhance Primary Evacuation Roads), to ensure that roads provide adequate access, firefighter safety, and evacuation capacity for human life in case of a fire emergency, the Navy proposes to upgrade primary roads designed for evacuation. Primary evacuation routes are considered fire apparatus access roads and would be modified if necessary to have an unobstructed width, including shoulder and surface, of not less than 20 ft. (6 m.). Fire apparatus access roads would be designed and maintained to support the imposed loads of Type 3 equivalent fire apparatus, since these are the engines that would respond to an emergency at CMM. The existing and planned evacuation roadways shall be designed, constructed, and maintained to a standard that reduces or eliminates soil erosion.

The primary evacuation route (labelled as 1E1T on Figure 2-1), varies in width from approximately 15–25 ft. wide. In regions where the road width is less than 20 ft., this route would be widened by approximately 5 ft. The proposed evacuation routes (2E2Ta and 2E2Tb on Figure 2-1) are currently unpaved trails that are approximately 10 and 9 ft. wide, respectively. Under the Proposed Action, these trails would be widened into an appropriate surface road by 10 ft. (2E1T) and 11 ft. (2E2T). Portions of this area are already developed or disturbed and no adverse impacts to topography would occur. Additionally, as existing and planned evacuation roadways would be designed, constructed, and maintained to a standard that reduces or eliminates soil erosion, the potential impacts to topography and sediments are reduced to less than significant.

**Table 3-2: Approximate Area of Disturbance for Primary and Potential Evacuation Roads**

Proposed Evacuation Route**	Approximate Length of Route	Current Width	Amount of Widening Required	Approximate Length of Widening	Approximate Area Affected
Primary Route (1E1T)	16,550 feet (ft.)	15ft. or 25ft.	5 ft.	6,900 ft.	0.80 acres
Potential Route 1 (2E2Ta)	2,700 ft.	10 ft.	10 ft.	2,700 ft.	0.62 acres
Potential Route 2 (2E2Tb)	920 ft.	9 ft.	11 ft.	920 ft.	0.23 acres
<b>Total Area of Disturbance</b>					<b>1.65 acres</b>

\*These potential evacuation routes are also sections of road that have been selected for primary roadside fuel treatments.

\*\*Parenthetical notes indicate nomenclature on Figure 2-1.

Notes: 1E=Primary Evacuation Route, 2E=Secondary Evacuation Route, 2T=Secondary Roadside Fuel Treatment

As described in Section 2.1.2 (Fuel Modification Zones Around Facilities) and Section 2.1.3 (Implement Roadside Fuel Treatments), treatments around developed areas will not include any soil modification or ground movement activities. Vegetation islands will be created by creating horizontal and vertical spacing between plants to interrupt continuous ground fuels. This treatment method will not completely remove all vegetation and leave the ground bare, which minimizes the potential for erosion or sedimentation. Additionally, where necessary to stabilize the soil and prevent erosion, grass and other vegetation will not be removed; instead, other measures will be considered to reduce fuel continuity (e.g., trimming or creating islands of vegetation). The lack of ground movement activities, combined with the treatment methodology, minimizes potential impacts to topography and sediments to less than significant levels.

As described in Section 2.1.4 (Implement Post-Fire Erosion Controls and Perform Restoration of Burned Sites at Camp Michael Monsoor), in order to prevent erosion following a fire, burned areas would be stabilized using a variety of methods, such as bio-engineered bank stabilization techniques, gravel, fabrics, riprap, and recycled concrete and pavement. If bare ground were deemed a suitable restoration technique, other erosion control methods would be implemented (e.g., check dams, wind breaks, diversions). Restoration activities could also include revegetation, which would increase soil stabilization. Post-fire erosion control through seeding or fertilization would not be conducted as a general practice, but only with proper justification in a written rehabilitation plan that contains success criteria. These activities would decrease erosion and sedimentation in burned areas and reduce potential impacts to topography and sediments to less than significant.

As detailed in Section 2.1.5 (Fire Prevention and Escaped Fire Measures), the OIC provides approval for the use of pyrotechnic devices, blank-firing weapons, or cooking/warming fires at the beginning of each training day. All fire building and the use of blank-firing weapons and pyrotechnics are under the supervision of a field instructor, and each activity occurs only in designated areas. All instructors, unit personnel, and students are briefed on fire prevention measures, reporting procedures, fire danger levels, and fire safety. Additionally, all vehicular units in the field have fire suppression equipment available while training in the event an unplanned ignition occurs. Suppression equipment consists of one backpack type water pump (approximate 5-gallon capacity), shovels, fire extinguisher (chemical carbon dioxide [CO<sub>2</sub>]), bucket, and radio. While training activities at CMM could increase the risk of

unplanned ignition, such measures would prevent and control wildland fires that might occur from an unplanned ignition caused by the training activities.

If an unplanned ignition occurs, the unit in the field suspends all training activity and takes immediate action to extinguish the fire. Unless determined to be unsafe, the unit remains on station and attempts to control/extinguish the fire until determined to be extinguished by the watch officer on duty or responded to by the appropriate firefighting agency. Given the restrictions for pyrotechnics and the fire prevention measures in place, any unplanned ignition is expected to be small. In addition, fire suppression activities would be restricted to the immediate area of the ignition, with minimal soil disturbance, reducing potential impacts on topography and soils from these elements of the Proposed Action to less than significant.

Therefore, the Proposed Action would have no significant impact on topography or soils in the Project Area.

### **3.1.2.2 No Action Alternative**

The No Action Alternative would include only fire prevention and escaped fire measures at CMM. As described above for the Proposed Action, the implementation of fire prevention and escaped fire measures minimizes the potential for impacts to sediments and topography through restrictions on the use of pyrotechnic devices, blank-firing weapons, or cooking/warming fires. Additionally, all instructors, unit personnel, and students are briefed on fire prevention measures, reporting procedures, fire danger levels, and fire safety. All vehicular units in the field have fire suppression equipment available while training in the event an unplanned ignition occurs. While training activities at CMM could increase the risk of unplanned ignition, such measures would prevent and control wildland fires that might occur from an unplanned ignition caused by the training activities. Therefore, the implementation of fire prevention and escaped fire measures reduces the potential impacts on topography and soils from the No Action Alternative to less than significant.

Therefore, the No Action Alternative would have no significant impact on topography or soils in the Project Area.

## **3.2 WATER RESOURCES**

Water resource analysis incorporates the analysis of both surface and subsurface water. Surface water includes all lakes, ponds, rivers, streams, impoundments, and wetlands within a defined area or watershed. Subsurface water, commonly referred to as groundwater, is typically found in certain areas known as aquifers. Aquifers are areas of mostly high porosity soil where water can be stored between soil particles and within soil pore spaces. Groundwater is usually recharged during rain events and is withdrawn for domestic, agricultural, and industrial purposes.

Waters of the United States are potentially regulated resources and are subject to federal authority under Section 404 of the Clean Water Act (CWA). The term "Waters of the U.S." is broadly defined to include navigable waters (including intermittent streams), impoundments, tributary streams, estuaries, and wetlands. Water resources are considered important to public interest because they perform significant biological functions, such as providing nesting, breeding, foraging, and spawning environments for a wide variety of resident and migratory animal species. In addition, wetlands help improve water quality and provide flood protection and erosion control.

Water resources analyzed in this section include watersheds and aquifers associated with the CMM area.

### **3.2.1 AFFECTED ENVIRONMENT**

#### **3.2.1.1 Precipitation**

Climate conditions in the CMM area are within a Pacific montane environment with temperatures ranging from below freezing in the winter to greater than 80 degrees Fahrenheit (0 and 23.9 degrees Celsius) in the summer. Moderate amounts of snowfall are experienced in the winter and rainfall averages 20 to 30 inches (51 to 76 centimeters) annually. Surrounding areas in the lower elevations experience a Mediterranean-type climate with moderate temperatures and rainfall amounts generally less than 10 to 12 inches (25 to 30 centimeters) per year. Local flood peaks generally occur during major rainfall events, which threaten life and property during these periods. Large-scale and high-return-interval floods are associated with major sub-tropical events just north of the CMM area.

#### **3.2.1.2 Hydrology**

The Proposed Action area is within the Tijuana Hydrologic Unit. The Tijuana Hydrologic Unit is drained by Cottonwood and Campo creeks, which are tributaries of the Tijuana River. Runoff is primarily captured by Morena Reservoir and Barrett Lake on Cottonwood Creek. The Campo and Cameron Hydrologic Areas are two of eight hydrologic areas in the Tijuana Hydrologic Unit. The majority of the Proposed Action area is in the Campo Hydrologic Area (Canyon City and Clover Flat Hydrologic Sub Areas) with a small portion of Parcel C in the Cameron Hydrologic Area (Figure 3-3).

#### **3.2.1.3 Groundwater**

An aquifer is any unit of rock or sediment that is capable of both storing water and transmitting water to wells and springs. It is estimated that the alluvial deposits that are potential aquifers cover roughly 2 to 3 percent of the Cleveland National Forest, directly adjacent to the Proposed Action area to the north. The quantity of groundwater available in the Proposed Action area is unknown.

#### **3.2.1.4 Wetlands**

A jurisdictional delineation was conducted on CMM Parcel C in July 2004 (U.S. Department of the Navy 2013). No wetlands were identified. Unnamed ephemeral drainages (i.e., likely to contain water only after a storm event) were identified but, due to a lack of downstream connection to navigable waters, the drainages were determined to be isolated. Subsequently, a project-specific delineation was conducted in 2010 on Parcel C for the proposed upgrades that required construction of a new training facility, related infrastructure, and repair of existing roads. During the 2010 survey, no jurisdictional wetlands were identified, however, approximately 903 square ft. (<0.1 ac.) of potential U.S. Army Corps of Engineers (USACE) jurisdictional waterways were delineated. Seven non-wetland drainages were identified. Two drainages were identified as potential non-wetland waters of the U.S. that drain toward Campo Creek, which is located approximately 2.5 mi. (4 km) from the site. The five principal ephemeral drainages were determined to be isolated.

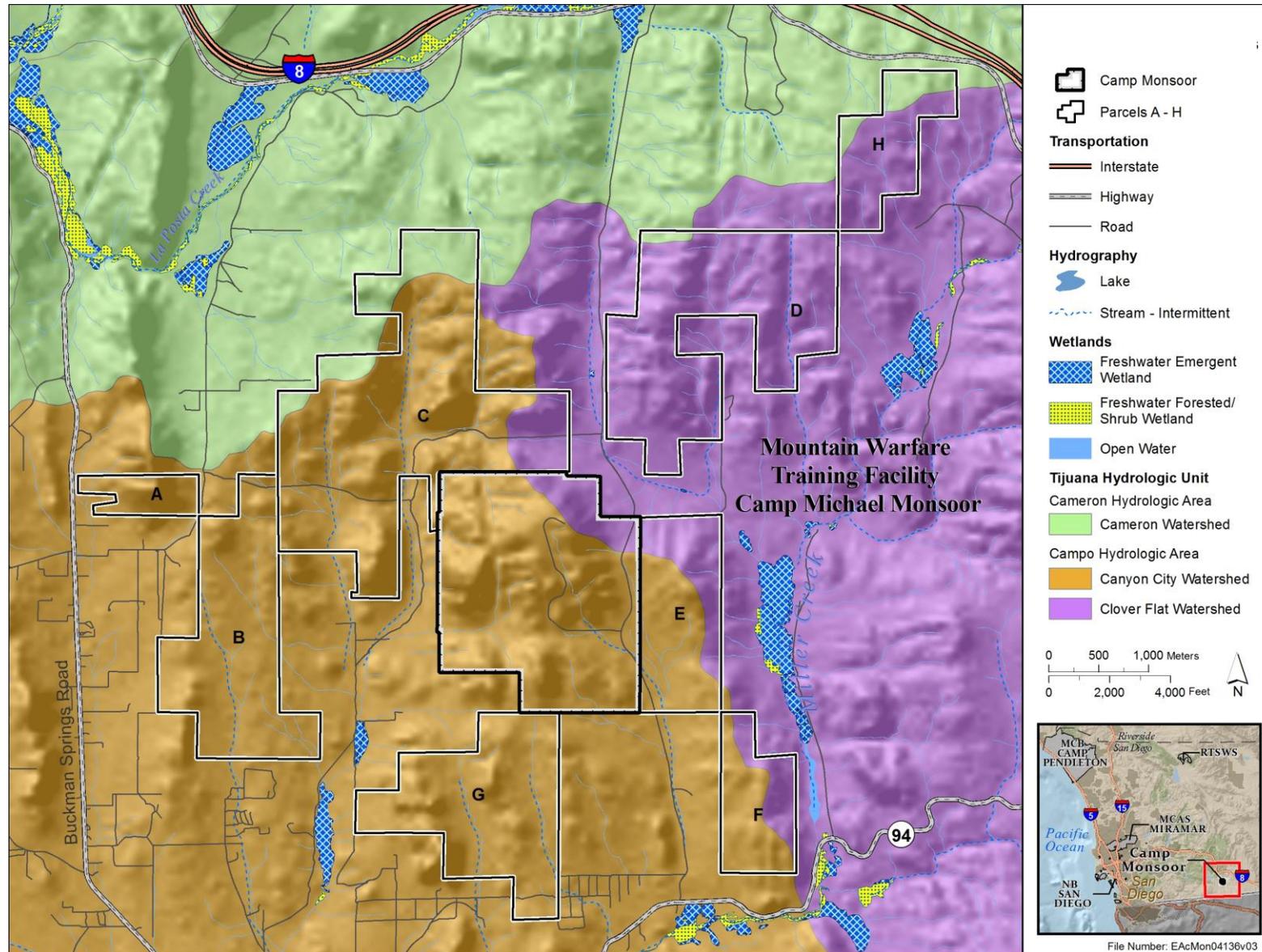


Figure 3-3: Camp Michael Monsoor Watersheds and Wetlands

The most recent USACE pre-jurisdictional waters of the U.S. delineations were conducted in 2015. A total of 31,785 linear ft. (9,688 m) of ephemeral streams was identified and mapped at CMM as 32 distinct stream segments. A total of 5,630 linear ft. (1,716 m) of streams was considered likely to be jurisdictional while the remaining 26,155 linear ft. (7,972 m) was presumed non-jurisdictional. No wetlands, as defined by the USACE, were observed at CMM. The lowest drainage points were predominantly vegetated with upland species such as oaks (*Quercus agrifolia*), big sagebrush (*Artemisia tridentata*), and chamise (*Adenostoma fasciculatum*) and lacked sufficient indicators of wetland hydrology. Future projects would require separate delineations if conditions change.

Although Federal Insurance Rate Maps for the area were not available, due to the elevation and topography it can be assumed that there are no 100-year floodplains within CMM (U.S. Department of the Navy 2013).

### **3.2.2 ENVIRONMENTAL CONSEQUENCES TO WATER RESOURCES**

This section evaluates potential impacts on water resources associated with the Proposed Action and the No Action Alternative. The analysis focuses only on impacts on surface water resources, including wetlands and riparian areas. Area groundwater resources are located at sufficient depth as to be unaffected by activities associated with either the Proposed Action or the No Action Alternative.

#### **3.2.2.1 Proposed Action**

The Proposed Action would include the enhancement and maintenance of primary evacuation routes, annual maintenance of the fuel modification zones around facilities, roadside fuel treatments, implementation of post-fire erosion controls and restoration of burned sites, and fire prevention and escaped fire measures.

As described in Section 2.1.1 (Maintain, Secure Access, and Enhance Primary Evacuation Roads), to ensure that roads provide adequate access, firefighter safety, and evacuation capacity for human life in case of a fire emergency, the Navy proposes to upgrade roads designed for fire apparatus access and primary evacuation. All primary evacuation routes are considered fire apparatus access roads and would be modified if necessary to have an unobstructed width, including shoulder and surface, of not less than 20 ft. (6 m). All fire apparatus access routes would be surfaced and be able to support imposed loads of Type 3 equivalent fire apparatus, since these are the engines that would respond to an emergency at CMM.

As existing and planned evacuation roadways will be designed, constructed, and maintained to a standard that reduces or eliminates soil erosion, the potential impacts to sediments are reduced to less than significant, limiting impact to surface waters.

As described in Section 2.1.2 (Fuel Modification Zones Around Facilities) and Section 2.1.3 (Implement Roadside Fuel Treatments), treatments around developed areas will not include any soil modification or ground movement activities, minimizing impacts to nearby surface waters. Further, the treatments around developed areas will not leave the ground bare, will not occur in riparian areas, and, where necessary to stabilize the soil to prevent erosion, grass and other understory vegetation will not be removed. Avoiding riparian areas and leaving vegetation islands will help prevent erosion and sedimentation, limiting the impact to nearby surface waters.

As described in Section 2.1.4 (Implement Post-Fire Erosion Controls and Perform Restoration of Burned Sites at Camp Michael Monsoor), in order to prevent erosion following a fire, burned areas would be stabilized using a variety of methods, such as bio-engineered bank stabilization techniques, gravel, fabrics, riprap, and recycled concrete and pavement. If bare ground were deemed a suitable restoration technique, other erosion control methods would be implemented (e.g., check dams, wind breaks, diversions). Restoration activities could also include revegetation, which would increase soil stabilization, minimizing potential impacts to nearby surface waters. Post-fire erosion control through seeding or fertilization could include watering and the use of herbicides, insecticides, and pesticides. Herbicides, insecticides, and pesticides will be used in accordance with the defined label use and DoD regulations. Additionally, they would not be sprayed when there are wind velocities above 5 mph (8 kph) or in foggy or rainy conditions. These regulations and restrictions would limit the potential for these materials to enter into any nearby surface waters.

As detailed in Section 2.1.5 (Fire Prevention and Escaped Fire Measures), all vehicular units in the field have fire suppression equipment available while training in the event an unplanned ignition occurs. Suppression equipment consists of one backpack type water pump (approximate 5-gallon capacity), shovels, fire extinguisher (chemical CO<sub>2</sub>), bucket, and radio. Given the restrictions for pyrotechnics and the fire prevention measures in place, any unplanned ignition is expected to be small. In addition, fire suppression activities would be restricted to the immediate area of the ignition, with minimal soil disturbance and water use, reducing potential impacts on surface water resources, including wetlands and riparian areas, from these elements of the Proposed Action to less than significant.

Therefore, the Proposed Action would have no significant impact on water resources in the Project Area.

### **3.2.2.2 No Action Alternative**

The No Action Alternative would include only fire prevention and escaped fire measures at CMM. As described for the Proposed Action, the implementation of fire prevention and escaped fire measures minimizes the potential for impacts on surface water resources, including wetlands and riparian areas. Restrictions on the use of pyrotechnic devices, blank-firing weapons, or cooking/warming fires, as well as the availability of fire suppression equipment, reduces the potential for impacts on surface water resources to less than significant.

Therefore, the No Action Alternative would have no significant impact on water resources.

### 3.3 BIOLOGICAL RESOURCES

#### 3.3.1 AFFECTED ENVIRONMENT

##### 3.3.1.1 Protected Species

Protected and special status species include the following:

- Species listed and proposed for listing as threatened or endangered under the Endangered Species Act (ESA);
- Species listed or proposed for listing as threatened or endangered under the California ESA;
- California Fully Protected Species;
- California Species of Special Concern;
- Plant species listed as sensitive by the California Native Plant Society;
- Nesting birds protected by the MBTA;
- Golden eagles and bald eagles protected under the Bald and Golden Eagle Protection Act; and
- Birds considered Federal Birds of Conservation Concern.

Table 3-3 lists federal and state listed wildlife and plant species and other special status species that occur or have the potential to occur within the Project Area and its vicinity. Potential occurrence was determined based on past documentation of special status species within the vicinity of the Project Area and on suitability of habitat and occurrence within the region of a particular species.

**Table 3-3: Special Status Species Observed and Listed Species with Potential to Occur on Camp Michael Monsoor**

Common Name	Scientific Name	Federal Status	State Status	Other Status
<b>Plants</b>				
Jacumba milk-vetch	<i>Astragalus douglasii</i> var. <i>perstrictus</i>		S2	CRPR 1B.2
Fremont barberry	<i>Berberis fremontii</i>		S2S3	CRPR 2B.3
Payson's jewelflower	<i>Caulanthus simulans</i>		S4	CRPR 4.2
Ramona spineflower	<i>Chorizanthe leptotheca</i>		S3	CRPR 4.2
Delicate clarkia	<i>Clarkia delicata</i>		S3	CRPR 1B.2
Tecate tarplant	<i>Deinandra floribunda</i>		S2	CRPR 1B.2
Sticky geraea	<i>Geraea viscida</i>		S3	CRPR 2B.3
San Diego sunflower	<i>Hulsea californica</i>		S2	CRPR 1B.3
Campo pea	<i>Lathyrus splendens</i>		S4	CRPR 4.3
Desert beauty	<i>Linanthus bellus</i>		S2	CRPR 2B.1
Moreno current	<i>Ribes canthariforme</i>		S2	CRPR 1B.3
Southern mountains skullcap	<i>Scutellaria bolanderi</i> ssp. <i>austromontana</i>		S3	CRPR 1B.2
Southern jewel-flower	<i>Streptanthus campestris</i>		S3	CRPR 1B.3
<b>Invertebrates</b>				
Quino checkerspot butterfly	<i>Euphydryas editha quino</i>	FE	SE	
<b>Amphibians and Reptiles</b>				
Southern California legless lizard	<i>Anniella stebbinsi</i>		SSC	
Red-diamond rattlesnake	<i>Crotalus ruber</i>		SSC	
Blainville's horned lizard	<i>Phrynosoma blainvillii</i>		SSC	
Coronado Island skink	<i>Plestiodon skiltonianus interparietalis</i>		SSC	
Coast patch-nosed snake	<i>Salvadora hexalepis virgultea</i>		SSC	
Western spadefoot	<i>Spea hammondi</i>		SSC	

**Table 3-2: Special Status Species Observed and Listed Species with Potential to Occur on Camp Michael Monsoor (continued)**

Common Name	Scientific Name	Federal Status	State Status	Other Status
<b>Birds</b>				
Tricolored Blackbird	<i>Agelaius tricolor</i>	BCC	SSC	DoD PIF
Grasshopper Sparrow	<i>Ammodramus savannarum</i>		SSC	DoD PIF
Golden Eagle	<i>Aquila chrysaetos</i>	BGEPA, BCC	CFP	DoD PIF
Long-eared Owl	<i>Asio otus</i>		SSC	
Bell's Sparrow	<i>Atemisospiza belli</i>	BCC		DoD PIF
Oak Titmouse	<i>Baeolophus inornatus</i>	BCC		
Ferruginous Hawk	<i>Buteo regalis</i>	BCC		
Lawrence's Goldfinch	<i>Carduelis lawrencei</i>	BCC		
Northern Harrier	<i>Circus cyaneus</i>		SSC	
White-tailed kite	<i>Elanus leucurus</i>		FP	
Prairie Falcon	<i>Falco mexicanus</i>	BCC		DoD PIF
Loggerhead Shrike	<i>Lanius ludovicianus</i>	BCC	SSC	DoD PIF
Sage Thrasher	<i>Oreoscoptes montanus</i>			DoD PIF
Nuttall's Woodpecker	<i>Picoides nuttallii</i>	BCC		
Black-chinned Sparrow	<i>Spizella atrogularis</i>	BCC		DoD PIF
Brewer's Sparrow	<i>Spizella breweri</i>	BCC		DoD PIF
Gray vireo	<i>Vireo vicinior</i>	BCC	SSC	DoD PIF
<b>Mammals</b>				
Dulzura pocket mouse	<i>Chaetodipus californicus femoralis</i>		SSC	
Southern grasshopper mouse	<i>Onychomys torridus ramona</i>		SSC	
Northwestern San Diego pocket mouse	<i>Chaetodipus fallax</i>		SSC	
San Diego desert woodrat	<i>Neotoma bryanti intermedia</i>		SSC	
American Badger	<i>Taxidea taxus</i>		SCC	
Western mastiff bat	<i>Eumops perotis</i>		SSC	
Pallid bat	<i>Antrozous pallidus</i>		SSC	
Pocketed free-tailed bat	<i>Nyctinomops femorosaccus</i>		SSC	
Townsend's big-eared bat	<i>Corynorhinus townsendii</i>		SSC	
San Diego black-tailed jackrabbit	<i>Lepus californicus bennettii</i>		SSC	

Notes: FT = Federally Threatened; FE = Federally Endangered; ST = State Threatened; SE = State Endangered; S2 = Imperiled; S3 = Vulnerable; S4 = Apparently Secure; CRPR = California Rare Plant Rank; CRPR 1B = Plants Rare, Threatened, or Endangered in California and Elsewhere; CRPR 2 = Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere; CRPR 3 = Plants About Which We Need More Information; CRPR 4 = Plants of Limited Distribution; BCC = Bird of Conservation Concern; SSC = California Species of Special Concern; FP = California Fully Protected Species; BGEPA = Bald and Golden Eagle Protection Act; DoD PIF = DoD Partners in Flight Priority Species

The sections below describes ESA-listed species present within the Action Area, their spatial and temporal distribution, life history, ecological requirements, and critical habitat within the Action Area that might conceivably be affected by the Proposed Action. There is one species listed as endangered under the ESA that occurs or has potential to occur in the Action Area. The ESA defines a "species" to include any distinct population segment of any species of vertebrate fish or wildlife.

### 3.3.1.1.1 Quino Checkerspot Butterfly (Federally Endangered)

#### General Description and Life History

The Quino checkerspot butterfly is a member of the brushfooted butterfly family (Nymphalidae) and the checkerspot and fritillary subfamily (Melitaenae), and is a subspecies of the Edith's checkerspot butterfly (*Euphydryas editha*). The Quino checkerspot is separable from other Edith's checkerspot subspecies by both physical characteristics and life history traits (Mattoni et al. 1997).

Adult Quino checkerspots have an approximately 4-centimeter wingspan. The dorsal wing surface features a red, black, and cream checkered pattern while the ventral wing surface has a red and cream checkered pattern. The abdomen is black with red stripes, and the antennal clubs are bi-colored with yellow tips and a darker base. First instar larvae are primarily yellow, transitioning to gray with black markings following their first molt (second instars). Following their second molt, larvae assume their characteristic dark black coloration with 8 to 9 orange tubercles down the center of their back. Pupae are pale blue-gray with black mottling.

Quino checkerspots typically have one generation of adults maturing per year. The adult flight season lasts 4–6 weeks. Exact timing of the flight season is dependent on environmental conditions such as temperature and rainfall, but adults usually start flying between January and early March with adults present as late as early May (U.S. Fish and Wildlife Service 2003). Females typically mate the day they emerge and begin laying eggs on select host plants shortly thereafter.

Quino checkerspot oviposition has been most frequently documented on California plantain (*Plantago erecta*), woolly plantain (*Plantago patagonica*), and Coulter snapdragon (*Antirrhinum coulterianum*). Larvae have been found feeding on thread-leaved bird's beak (*Cordylanthus rigidus*) and will feed on purple owl's clover (*Castilleja exserta*) in the laboratory, but it is unclear if Quino checkerspots will oviposit on these species (Pratt et al. 2001). In 2008, oviposition and larval development were recorded for the first time on Chinese houses (*Collinsia concolor*) at multiple sites (U.S. Fish and Wildlife Service 2009). Chinese houses are typically found in cooler and moister micro-habitats on north-facing slopes and in the shade, as opposed to dry open habitat favored by the other host plant species (Pratt et al. 2001). It is thought that adoption of this host plant is due to a microhabitat shift by Quino checkerspots in response to climate change (U.S. Fish and Wildlife Service 2009).

Once laid, eggs hatch in 10–14 days. Larvae feed until host plants senesce and then enter diapause (usually as third instars in May or June) (U.S. Fish and Wildlife Service 2003). Larvae will stay in diapause until winter rains trigger the germination of host plants, at which time they will resume active feeding (usually January) (Osborne and Redak 2000). Based on observations of captive larvae, approximately 50 percent of first year larvae will re-enter diapause rather than maturing (U.S. Fish and Wildlife Service 2003). Larvae have been documented re-entering diapause as many as four times (U.S. Fish and Wildlife Service 2003). It is postulated that under poor conditions such as drought, most or even all larvae at a site may re-enter diapause (U.S. Fish and Wildlife Service 2003). Field studies have found that Quino checkerspot larvae diapause at or near the base of dense, low-growing native shrubs and forbs, such as California buckwheat (*Eriogonum fasciculatum*), California everlasting (*Pseudognaphalium californicum*), and fiddleneck (*Amsinckia* sp.) as well as within leaf litter (Pratt and Emmel 2010). Diapausing larvae of other Edith's checkerspot subspecies have been found under rocks and logs, and it is possible that Quino checkerspots may use these types of retreats as well (U.S. Fish and Wildlife Service 2003).

**Habitat**

Quino checkerspot butterflies are often associated with annual forblands (grassland communities) as well as forb-dominated clearings in chaparral or scrub vegetation that support host plants of Quino checkerspot larvae as well as wildflowers on which adults feed for nectar. Within these habitats, Quino checkerspot butterflies show a tendency to occur in barren spots with sparse low-growing vegetation (U.S. Fish and Wildlife Service 2003). In cases where host plants and nectar plants do not co-occur, adult Quino checkerspot butterflies have been documented traveling several hundred meters from host plant patches to nectar sources (U.S. Fish and Wildlife Service 2003).

Adult Quino checkerspot butterflies also frequent hilltops even in the absence of larval host plants and nectar plants (U.S. Fish and Wildlife Service 2003). This behavior is known as hilltopping and involves males patrolling topographic high points and unmated females seeking out these high points in order to find mates (Scott 1968). Due to their role in mate finding, undeveloped hilltop and ridgeline habitat may be vital to population survival regardless of host plant occurrence.

**Regional Status**

The Quino checkerspot butterfly is highly endangered. Prior to listing in 1997, it was at such low densities that it was thought to possibly be extinct (U.S. Fish and Wildlife Service 2003). As of 2003, the species was known from less than 25 percent of its historic distribution, largely due to habitat loss (U.S. Fish and Wildlife Service 2003). Quino checkerspot butterflies are also known to undergo significant population fluctuations related to environmental conditions such as drought (U.S. Fish and Wildlife Service 2003), which current reduced populations are less able to rebound from. Most remaining populations are also experiencing ongoing habitat degradation and development (U.S. Fish and Wildlife Service 2003).

**Threats**

The primary threat to the Quino checkerspot butterfly is loss of habitat due to urban and agricultural development. Quino checkerspot habitat is also threatened by invasion by nonnative species, off-road vehicle use, grazing, and fire management practices (U.S. Fish and Wildlife Service 2003). Enhanced nitrogen deposition, elevated atmospheric carbon dioxide concentrations, and climate change may also be adversely affecting the Quino checkerspot and its habitat (U.S. Fish and Wildlife Service 2003).

**Status**

The USFWS listed the Quino checkerspot butterfly as endangered in 1997 (62 Federal Register [FR] 2313) for reasons related to habitat loss, degradation, and fragmentation, and the negative effects of fire management practices. Critical habitat was initially designated in 2002 (67 FR 18356–18395) but was revised in 2009 (74 FR 28776–28862). The minimum criteria for downlisting include the permanent protection of habitat within documented occurrence complexes (U.S. Fish and Wildlife Service 2003). The area at CMM is not within a known occurrence complex.

**Critical Habitat**

The project area is not within Critical Habitat for the Quino checkerspot butterfly (74 FR 28776–28862).

**Occurrence in the Action Area**

The historical distribution of Quino checkerspot butterfly includes much of coastal California south of Ventura County and inland valleys south of the Tehachapi Mountains. The current distribution is limited to western Riverside County, southern San Diego County, and northern Baja California, Mexico. Distribution of this subspecies is driven by population dynamics involving local extinctions and

population explosions, which lead to recolonization of habitat. Based on the Quino checkerspot butterfly habitat assessment protocol, potential habitat exists on nearly 3,041 ac. (1,231 ha) of the approximately 3,385 ac. (1,370 ha) area comprising the withdrawal parcels (Existing Withdrawal and Parcels C, E, and G) (U.S. Department of the Navy 2008). This assessment was used to determine in which areas to conduct focused surveys. Quino checkerspot butterfly protocol presence/absence surveys within the 500 ac. (202 ha) focused survey area in the Existing Withdrawal and Parcel C occurred between 23 March and 23 April 2004, during which time three individual adult Quino checkerspot butterfly were observed. Two individuals were observed within the Existing Withdrawal and one individual was observed within Parcel C. The two individuals observed within the Existing Withdrawal were detected near the edge of the existing firing range. The individual observed within Parcel C was within the central region of the parcel in the low-lying valley west of the merging point of two north-south dirt roads. This area supports open canopy chamise series and the individual observed was nectaring/resting in chamise.

Protocol Quino checkerspot butterfly surveys were conducted by RECON in 2006 on 1,250 ac. (506 ha) of previously unsurveyed areas of the proposed Withdrawal. Surveys covered all non-excluded habitat in Parcels E and G and the eastern portion of the Existing Withdrawal. Surveys to detect Quino checkerspot butterfly host plants were conducted by the Navy in May 2006 within 45 acres of Parcel C, within the development footprint. The focus of Navy surveys was exclusively on host plants rather than butterflies, and no Quino checkerspot butterfly were observed incidental to this work (Figure 3-4). Protocol Quino checkerspot butterfly surveys in 2010 observed three Quino checkerspot located west of the Parcel C boundary in a small valley on a gradual south-facing slope that consisted of open buckwheat scrub with gravelly soils. All three individuals were extremely worn and were grounded, except when approached. These individuals were observed southwest of a 2004 occurrence, in an area in which Quino have not been previously detected. Further, invertebrate surveys performed by AECOM in 2015 throughout CMM did not detect any Quino checkerspot butterflies, though host plants still occur at CMM.

Multiple habitat resources identified as critical to the long-term stability of Quino checkerspot butterfly populations were identified within the parcels. These include hilltops and ridgelines used by the butterfly to find mates (hilltopping), host plants on which the butterfly larvae feed, nectar sources on which adult butterflies feed, habitat patches that serve to support the metapopulation structure, and absence of barriers to migration/dispersion between habitat patches onsite or offsite, and separate colony sites (U.S. Department of the Navy 2008). The primary host plant detected was Coulter's snapdragon. During host plant surveys conducted by Navy biologists in 2006, 420 individuals of Coulter's snapdragon were detected within the 45 ac. survey area in Parcel C. Coulter's snapdragon was distributed throughout all plant communities within the survey area, though it tended to be most abundant within larger openings in chamise series and near the edges of annual grassland series at the base of slopes in areas that were relatively rich in other native annual plant species (U.S. Department of the Navy 2008). This host plant has been detected in the Existing Withdrawal, Parcel C, and Parcel G.

### **Factors Affecting Species Environment Within the Action Area**

Disturbance to suitable Quino habitat occurs from dispersed foot traffic, and helicopter operations. These actions also carry the potential for inadvertent introduction of non-native invasive plant species. General and specific measures are in place to avoid and minimize effects, which include control of invasive plants, restrictions on off-road vehicle use, and restrictions on permitted activities within potential Quino checkerspot butterfly habitat.

### 3.3.1.2 Vegetation

CMM occurs in a largely undeveloped part of San Diego County that contains expansive wild lands encompassing numerous habitats that are minimally disturbed by humans. A total of 13 plant communities were classified for mapped areas of CMM (Table 3-4 and Figure 3-4). Descriptions of each distinct vegetation alliance listed follow.

**Table 3-4: Vegetation Series Occurring on Camp Michael Monsoor**

<b>Vegetation Community</b>
<b>Chaparral communities</b>
Birchleaf Mountain Mahogany Alliance
Chamise Chaparral Alliance
Red Shank Alliance
Sugar Bush Alliance
Bigberry Manzanita Alliance
Hollyleaf Cherry Alliance
Scrub Oak-Chamise Alliance
<b>Scrub communities</b>
Big sagebrush Alliance
California buckwheat-white sage Alliance
California buckwheat Alliance
California Ephedra Alliance
<b>Woodlands community</b>
Coast live oak Alliance
<b>Grassland communities</b>
Red Brome Herbaceous Semi-Natural Alliance
<b>Others</b>
Disturbed/ruderal
Paved roads and developed areas

Chaparral characterizes most of the CMM. Approximately 40 percent of the vegetation within the Exclusive Use Withdrawal parcels is mapped as the Chamise Alliance. The Holly-Leaf, Scrub Oak-Chamise, and Chaparral Whitethorn Alliances are also conspicuous. The Hollyleaf and Chaparral Whitethorn Alliances are more prevalent on the steeper rockier slopes, while the Scrub Oak-Chamise Alliance is more common on the flatter and gentler slopes. The Coast Live Oak Alliance occurs along some of the canyon valleys and ravines with seasonal water. The Red Brome-Schismus Alliance occurs in the broader valleys.

#### 3.3.1.2.1 Scrub Communities

##### **Big Sagebrush Alliance**

This alliance occurs along the upper edges of the valley floor, typically adjacent to dirt roads and other areas that had some prior disturbance. Total shrub cover is approximately 40 percent, with Big sagebrush (*Artemisia tridentata*) as the dominant species, but chamise (*Adenostoma fasciculatum*), white sagebrush (*Artemisia ludoviciana*), and California buckwheat (*Eriogonum fasciculatum* var. *foliolosum*) may also be present. Big sagebrush is conspicuously absent from adjacent undisturbed communities, suggesting that this is a disturbance-mediated species.

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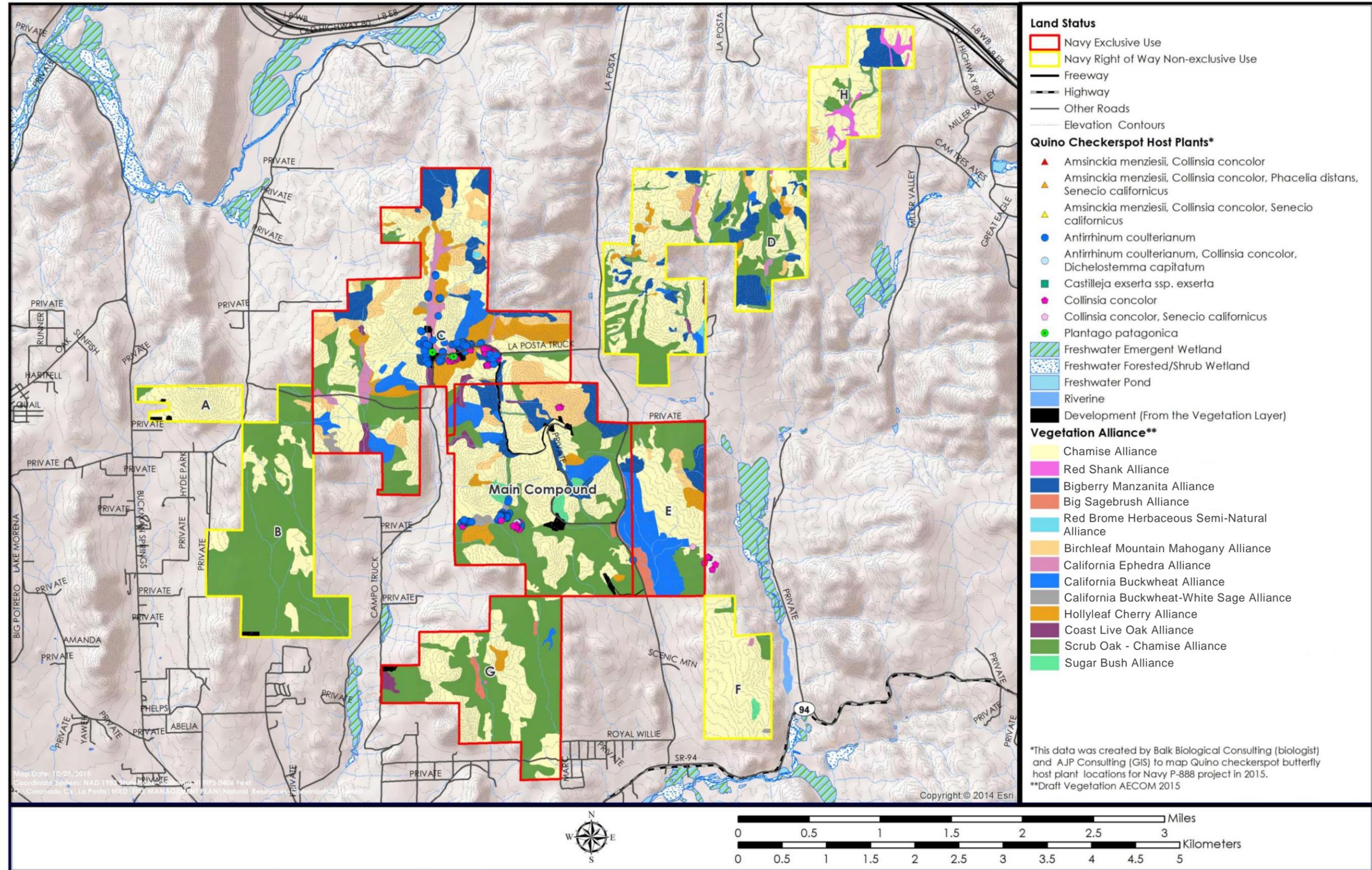


Figure 3-4: Vegetation Communities and Quino Checkerspot Host Plants Occurring on Camp Michael Monsoor

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### **California Ephedra Alliance**

This alliance occurs on the lower slopes and flats, and is relatively open (~20 percent shrub cover), allowing for the occurrence of annual grasses and herbs such as riggut grass, red brome, filaree (*Erodium* spp.), and white pincushion. California ephedra (*Ephedra californica*) represents at least  $\geq 2$  percent absolute cover in the shrub canopy. Other shrub species may include California buckwheat, big sagebrush, and California cholla (*Cylindropuntia californica*).

### **California Buckwheat Alliance**

This alliance appears to be another disturbance-mediated community. Several of the areas within CMM where California buckwheat is the dominant species are alongside dirt roads. Other areas occur on some of the higher slopes that may be periodically burned. Total shrub canopy cover is approximately 30 percent, where California buckwheat is the dominant shrub, and other shrub species may include laurel sumac (*Malosma laurina*), prickly pear (*Opuntia littoralis*), and redberry (*Rhamnus crocea*). Riggut grass (*Bromus diandrus*) and red brome (*Bromus madritensis* ssp. *rubens*) are also present.

### **California Buckwheat-White Sage Alliance**

This alliance occurs on lower slopes and is relatively open (~37 percent shrub cover), allowing for the occurrence of annual grasses and herbs such as riggut grass, red brome, popcornflower, and white pincushion (*Chaenactis artemisiaefolia*).

#### **3.3.1.2.2 Chaparral Communities**

### **Chamise Alliance**

Chamise is the most common shrub within CMM and occurs on a variety of topographic features from the flat valleys to steep slopes. Shrub cover tends to be quite high (60–80 percent). On the valley floors, big sagebrush, scrub oak (*Quercus berberidifolia*), and sugar bush (*Rhus ovata*) may be associates. On adjacent slopes, Eastwood's manzanita (*Arctostaphylos tomentosa* ssp. *eastwoodiana*), bigberry manzanita (*Arctostaphylos glauca*), hollyleaf cherry, and chaparral whitethorn are associates. Openings may support chia (*Salvia columbariae*), white pincushion, or several spineflowers (*Chorizanthe* spp.).

### **Red Shank Alliance**

This alliance is a minor component of these parcels, with relatively high shrub cover (~56 percent), where red shank (*Adenostoma sparsifolium*) is the dominant shrub species. Chamise may also be prominent. Herbaceous cover is extremely sparse (<3 percent).

### **Bigberry Manzanita Alliance**

Bigberry manzanita is much more conspicuous in these stands. This alliance appears to be more prevalent in areas of decomposing granite. Undisturbed stands are usually very dense (~67 percent shrub cover) and have low diversity, supporting very little understory (<6 percent herbaceous cover). Disturbed areas have a higher component of introduced grasses and forbs.

### **Birchleaf Mountain Mahogany Alliance**

This alliance occurs on some of the lower and upper slopes within CMM. It is relatively open (total shrub cover ~41 percent) and, though dominated by birchleaf mountain mahogany (*Cercocarpus betuloides* var. *betuloides*), scattered chamise, chaparral whitethorn (*Ceanothus leucodermis*), and hollyleaf cherry (*Prunus ilicifolia* ssp. *ilicifolia*) are also present. Because this alliance is so open, riggut grass and red brome are present in high abundance.

### **Sugar Bush Alliance**

This alliance has a relatively open shrub canopy, where sugar bush (*Rhus ovata*) accounts for at least 50 percent relative cover in the shrub canopy. Other prominent shrub species include chamise, scrub oak, and deerweed (*Acmispon glaber*). Because this alliance is so open, a diverse assemblage of herbaceous species occur in these areas.

### **Hollyleaf Cherry Alliance**

This alliance occurs on the slopes within CMM and intergrades with the Chaparral Whitethorn and Chamise alliances. Hollyleaf cherry is the dominant species but chaparral whitethorn is a common associate. Chamise, California buckwheat, and birchleaf mountain mahogany may also be present. Similar to the Chaparral Whitethorn Series, open areas support a dense cover of ripgut grass and red brome. Small islands of this community are also present on rock outcrops within the Chamise Series. On these rock outcrops, species such as monkeyflower, onion grass, silverleaf lotus, and fringed spineflower may be present.

### **Scrub Oak-Chamise Alliance**

This alliance occurs on some of the lower slopes within CMM. Though chamise is still the most common species, scrub oak is such a co-dominant that it is much more conspicuous than the chamise. Sugar bush and California peony are fairly common, but, due to density, species diversity is low.

#### **3.3.1.2.3 Grassland Communities**

### **Red Brome Herbaceous Semi-Natural Alliance**

This alliance is present in the valleys and some of the slopes of adjacent hillsides. Non-native grasses (*Bromus* spp., *Avena* spp.) are dominant. Native and non-native forbs (filaree [*Erodium* spp.], fiddleneck [*Amsinckia* sp.], and popcornflower [*Plagiobothrys* sp.]) are also present. California buckwheat is scattered throughout the areas suggesting that in the absence of disturbance to these areas they may develop into scrub or chaparral communities.

#### **3.3.1.2.4 Woodland Communities**

### **Coast Live Oak Alliance**

This alliance is best represented along the major north-south-oriented valleys within the planning area. Smaller, isolated stands are present along some of the narrower lateral canyons. Coast live oak (*Quercus agrifolia*) is the dominant species. Arroyo willow (*Salix lasiolepis*) is a minor component in at least one of these stands. Chamise, big sagebrush, and poison oak (*Toxicodendron diversilobum*) are infrequent, generally occurring along the outer edges of the canopy. Dirt roads and some structures are present beneath some of the larger stands. In these instances, the disturbance eliminated all but the most weedy understory species, such as ripgut grass, red brome, and horehound (*Marrubium vulgare*).

#### **3.3.1.3 Invertebrates**

Terrestrial invertebrates were documented throughout the various plant communities in the exclusive use area during the 2004 biological surveys, including 34 species of butterflies; harvester ant (*Pogonomyrmex* sp.); Jerusalem cricket (*Stenopelmatus fuscus*); dentate stink beetle (*Eleodes dentipes*); and species of tick, dragonfly, and grasshopper. Representative invertebrates observed within the biological study area during the 2004 surveys include the common buckeye butterfly (*Junonia coenia*),

painted lady butterfly, cabbage white butterfly (*Pieris rapae*), and Sara orangetip butterfly (*Anthocharis sara*). (U.S. Department of the Navy 2013).

In surveys performed by AECOM in 2015, a small number (14) of non-insect taxa were encountered, including Araneae (spiders), Acari (mites), Chilopoda, Diplopoda, and Isopoda. A total of 479 insect species were tabulated from the survey, including 204 species of Lepidoptera, 55 Hymenoptera, 70 Diptera, 48 Coleoptera, and 42 Hemiptera. It was noted by the surveyors that this effort likely only located a percentage of total invertebrate fauna at CMM, as many species are specialized to microhabitats, host plants, and seasons that can be overlooked in the course of a broadly focused inventory effort.

#### **3.3.1.4 Reptiles and Amphibians**

Reptiles and amphibians are anticipated to be reasonably widespread throughout the training area. Reptile species observed within the exclusive use area include relatively common species such as the garter snake (*Thamnophis* sp.), northern red diamond rattlesnake (*Crotalus ruber ruber*), western fence lizard, alligator lizard, and side-blotched lizard (*Uta stansburiana*). Also occurring onsite were the common kingsnake (*Lampropeltis getulus*), coast patch-nosed snake (*Salvadora hexalepis virgulata*), coastal rosy boa (*Lichanura trivirgata roseofusca*), western whiptail (*Cnemidophorus tigris*), granite spiny lizard (*Sceloporus orcutti*), and San Diego horned lizard (*Phrynosoma coronatum blainvillii*). Other amphibians and reptiles expected to occur onsite include San Diego gopher snake, California tree frog (*Pseudacris cadaverina*), and Pacific tree frog (U.S. Department of the Navy 2013).

During 2015 surveys performed by AECOM on CMM, one amphibian species and 20 reptile species (9 lizard species and 11 snake species) were detected during drift fence surveys, visual encounter surveys, and incidentally during other surveys. Lizard species accounted for approximately 61 percent of drift fence herpetofaunal captures and were the most abundant reptile seen during visual encounter surveys. San Diegan tiger whiptail (*Aspidoscelis tigris stejnegeri*), western fence lizard and western red-tailed skink (*Plestiodon gilberti rubricaudatus*) had the most captures (i.e., total captures) and highest capture rates (i.e., capture per fence array). Snake species accounted for approximately 39 percent of the drift fence herpetofaunal captures. California striped racer (*Coluber lateralis lateralis*) was captured most frequently and had highest capture rates. All other individual snake species were captured at less than half the rate of the California striped racer.

#### **3.3.1.5 Birds**

The diversity of bird species in San Diego County is a result of varied topography, climate, soils, and the county's location along the Pacific Flyway, a major north-south bird migration route. CMM supports a variety of resident and migratory bird species, with 48 species documented within the exclusive use area during the 2004 biological surveys, which is expected to be similar to the ROW parcels. Resident species include the spotted towhee (*Pipilo maculatus*), western scrub jay (*Aphelocoma californica*), red-tailed hawk, common raven, and song sparrow. Migratory bird species on CMM use the natural open space within the exclusive use area as a temporary stopover point during the winter or summer seasons, while other migratory species, such as the western wood-pewee (*Contopus sordidulus*), likely nest within the exclusive use area. Representative bird species observed within the exclusive use area during the 2004 wildlife surveys include the wrentit (*Chamaea fasciata*), bushtit (*Psaltiriparus minimus*), and California towhee (*Pipilo crissalis*) in the chaparral and sage scrub vegetation communities; the song sparrow, yellow-rumped warbler, and acorn woodpecker (*Melanerpes formicivorus*) in the oak woodland habitat;

and the red-tailed hawk and common raven within the grassland communities (U.S. Department of the Navy 2013).

During 2015 surveys performed by AECOM on CMM, a total of 79 avian species were detected. The most common species detected during point counts were Bewick's Wren (*Thryomanes bewickii*), spotted Towhee, western scrub-jay, California towhee, and wrenit. Species richness was highest at point count stations located within chaparral and woodland habitats.

### 3.3.1.6 Mammals

During 2015 surveys performed by AECOM on CMM, a total of 13 small mammal species were captured during the combined Sherman trapping and drift fence with box funnel trap survey effort. Based on a review of California Natural Diversity Database records, existing literature, and on-site habitat assessments, six special status terrestrial mammal species have high potential to occur on CMM. Four of these six special status mammal species were detected during biological surveys on CMM: Dulzura pocket mouse (*Chaetodipus californicus femoralis*), San Diego desert woodrat (*Neotoma bryanti intermedia*), San Diego black-tailed jackrabbit (*Lepus californicus bennettii*), and American badger (*Taxidea taxus*).

## 3.3.2 ENVIRONMENTAL CONSEQUENCES TO BIOLOGICAL RESOURCES

This section analyzes the potential for impacts on biological resources from actions associated with the Proposed Action and the No Action Alternative. The impact analysis for biological resources considers effects of the Proposed Action on individual biological resources and populations. The analysis first looked at how individuals would respond to a stressor or combination of stressors and whether the response would affect the fitness of an individual. Fitness refers to changes in an individual's growth, survival, annual reproductive success, or lifetime reproductive success. If individual fitness is not affected, then no impacts to populations would be expected. The potential for impacts to occur at the population level depends on several things including whether individual fitness has been reduced, the number of individuals affected, the size of the affected population, and numerous life history and ecological factors.

Impacts to wildlife is considered in the context of populations. A population is broadly defined as a group of biological resources (vegetation or wildlife) of one species that interbreed and live in the same place at the same time. The geographic scale used to define a particular wildlife population is influenced by species-specific life history characteristics such migratory and breeding behavior, as well as ecological factors such as habitat availability and barriers to migration or dispersal. These species-specific characteristics and ecological factors are discussed in more detail in Section 3.3.1 (Affected Environment). In particular, impacts to special status wildlife species were considered because populations of these species have declined historically or are currently declining on a regional or national level.

Impacts to wildlife are determined based on if the fitness of individual animals were affected directly or indirectly to the extent that populations would decline or become unstable. For an outcome to be biologically significant to a population, it must have a measurable impact on the population or its habitat, which could reasonably be expected to affect its stability, and as a result influence a population's viability. The scientific limitations associated with predicting the responses of individuals and populations to stressors create a relatively high degree of uncertainty.

### 3.3.2.1 Proposed Action

The Proposed Action would include the enhancement and maintenance of primary evacuation routes, annual maintenance of the fuel modification zones around facilities, roadside fuel treatments, implementation of post-fire erosion controls and restoration of burned sites, and fire prevention and escaped fire measures.

As described in Section 2.1.1 (Maintain, Secure Access, and Enhance Primary Evacuation Roads), Section 2.1.2 (Fuel Modification Zones Around Facilities), and Section 2.1.3 (Implement Roadside Fuel Treatments), vegetation treatments would be performed and maintained through vegetation removal or thinned using hand power tools (e.g., brush cutters, chainsaws), vehicles (Off Highway Vehicles [OHVs] and four-wheel drive trucks), and a towable wood chipper. It is expected that dozers, backhoes, loaders, and other heavier equipment would be utilized to assist in the enhancement of the evacuation roads. Because of the small implementation areas, the treatment efforts are expected to take several days per treatment project.

As described in Section 2.1.4 (Implement Post-Fire Erosion Controls and Perform Restoration of Burned Sites at Camp Michael Monsoor), in order to prevent erosion following a fire, burned areas would be stabilized using a variety of methods, such as bio-engineered bank stabilization techniques, gravel, fabrics, riprap, and recycled concrete and pavement. In addition to the equipment utilized for vegetation treatments, it is expected that dozers, backhoes, loaders, and other heavier equipment would be utilized to assist in the burned site restoration. Similar to above, restoration activities involving heavier equipment would be short term and temporary.

#### 3.3.2.1.1 Impacts to ESA-listed Species

##### Quino Checkerspot Butterfly

The primary evacuation routes, defense zones associated with developed areas, and roadside fuel treatments, and contain potential habitat for Quino checkerspot. If checkerspot eggs, larvae, or pupae are present during activities, they would be at risk of mortality and injury during any ground-disturbing activity, including vegetation clearing and off-road vehicle and foot traffic. Approximately 1.65 ac. of habitat would be permanently lost from development of the primary evacuation routes. Leaving wildlife logs, creating vegetation islands, and minimizing ground disturbance will help reduce the risk of impact to Quino checkerspot eggs, larvae, and pupae. If activities occur during flight season and adult checkerspots are present, they would be vulnerable to mortality or injury due to vehicle strikes. However, to the extent practicable, work would only occur between 1 June and 31 December, to avoid the period when larvae may be active which also includes the adult flight season. As a result, risk of injury due to vehicle strikes would be minimized.

Approximately 12.04 ac. (4.87 ha) of vegetation would be modified during the fuel modification around high priority buildings (Figures 2-3 through 2-6) and approximately 33.45 ac. (13.54 ha) (Table 2-2) would be modified during roadside fuel treatment efforts. There may be short-term effects to clearing of vegetation around buildings and in the roadside fuel treatments. If checkerspot eggs, larvae, or pupae are present during activities, they would be at risk of mortality and injury during any ground-disturbing activity, including vegetation clearing and off-road vehicle and foot traffic. However, there would be long-term benefits as host plants for Quino checkerspot are prone to disturbed areas. The Navy is currently consulting with the USFWS, but will continue to follow the general conservation measures in

the Biological Opinion (BO) and amendment (FWS-SDG-4452 and FWS-SD-11B0338-11F0507) for the Land Withdrawal, Facilities Construction, and Operations at Naval Special Warfare, La Posta Mountain Training Facility (a.k.a. Camp Michael Monsoor), and the terms and conditions of that BO. These measures will avoid or minimize any adverse impacts to suitable Quino habitat and potential host plants. *Pursuant to the ESA, activities associated with the development of the primary evacuation routes, maintenance of defense zones, and roadside fuel treatments may affect and are likely to adversely affect the Quino checkerspot butterfly.*

If erosion control and restoration activities are required in Quino checkerspot habitat following a fire, all Quino life stages could be vulnerable to injury and mortality during the implementation of erosion control or restoration activities. Surviving eggs, pupae, active or diapausing larvae could be killed or injured during any activities that involve the compaction of soils or crushing or removing surviving vegetation. Any off-road vehicle and foot traffic would avoid crushing native vegetation, and the removal of native vegetation shall be avoided to the extent practicable in order to avoid potential impacts to Quino checkerspot. If present, adult checkerspots would be vulnerable to injury and mortality from vehicle strikes. However, these activities would occur between 1 June and 31 December, outside of the period when larvae and adults are active and eggs may be present, and thus minimize the risk of vehicle strikes. Quino checkerspot may also be impacted either directly or indirectly by the use of pesticides. Insecticides and certain herbicides may kill all life stages of Quino checkerspot, and herbicide use may kill or injure Quino host plants. Within potential Quino checkerspot habitat, insecticides would not be applied; herbicide use would only occur between 1 June and 31 December, outside of the period when larvae and adults are active and eggs may be present; herbicides would not be applied to native vegetation; and a qualified monitor would actively monitor and directly supervise all herbicide application. Overall, erosion control and restoration activities would be temporary and are expected to result in long-term benefits to Quino checkerspot by facilitating the recovery of impacted habitat, reducing potential impacts to less than significant. *Pursuant to the ESA, post-fire erosion control and restoration activities may affect but are not likely to adversely affect the Quino checkerspot butterfly.*

#### **Vegetation, Invertebrates, Amphibians, Reptiles, and Other Non-Listed Birds and Mammals**

The disturbances from development of primary evacuation routes, defense zones associated with developed areas, and roadside fuel treatment are expected to be minimal, short term, and recoverable based on (1) relatively low intensity of the impacts, (2) localized nature of the impacts on pre-disturbed areas, (3) infrequent nature of the impacts due to the spread-out nature of the sites, and (4) the brief duration of the activities. For these reasons, long-term consequences to individual vegetation, invertebrates, amphibians, reptiles, and other non-listed birds and mammals or their populations are not expected to result from defense zone treatments.

Similarly, the Proposed Action will have no direct or indirect changes that would have a considerable negative impact on habitat. Overall, the erosion control and restoration activities would be temporary and are expected to result in long-term benefits for affected species by facilitating the recovery of impacted habitat.

Therefore, the Proposed Action would have no significant impact on biological resources in the Project Area

### **3.3.2.2 No Action Alternative**

The No Action Alternative would include only fire prevention and escaped fire measures at CMM. As described above for the Proposed Action, the implementation of fire prevention and escaped fire measures minimizes the potential for impacts to sediments and topography through restrictions on the use of pyrotechnic devices, blank-firing weapons, or cooking/warming fires. Additionally, all instructors, unit personnel, and students are briefed on fire prevention measures, reporting procedures, fire danger levels, and fire safety. All vehicular units in the field have minimal fire suppression equipment (e.g., fire extinguisher, shovel) available while training in the event an unplanned ignition occurs. While training activities at CMM could increase the risk of unplanned ignition, such measures would prevent and control wildland fires that might occur from an unplanned ignition caused by the training activities. Therefore, the implementation of fire prevention and escaped fire measures reduces the potential impacts on biological resources from the No Action Alternative to less than significant.

Therefore, the No Action Alternative would have no significant impact on biological resources in the Project Area.

## **3.4 NOISE**

### **3.4.1 INTRODUCTION TO SOUND**

This section addresses potential impacts on the human terrestrial environment in the vicinity of the CMM from sound generated by activities identified in the alternatives, including the Proposed Action.

#### **3.4.1.1 Sound Intensity**

Sound intensity is expressed in decibels (dB), a logarithmic scale that compares the power of an acoustical signal to a reference power level. A sound level of zero dB is defined as the threshold of human hearing. The human ear is not equally sensitive to all sound frequencies within the frequency range of human hearing; it cannot detect lower frequencies as well as it can detect higher frequencies. Thus, the “raw” sound intensity measured by mechanical devices is selectively weighted—or filtered—to simulate the non-linear response of the human ear. The A-weighting network is designed to duplicate the sensitivity of the human ear and heavily discounts sound energy at low frequencies and at very high frequencies. These adjusted sound levels are termed “A-weighted” sound levels, denoted as dB(A) or simply dBA. The quietest environmental conditions yield sound levels of about 20 dBA. Typical night-time sound levels in quiet residential areas have a sound level of about 35–45 dBA. Normal speech has a sound level of about 60 dBA at a distance of about 3.3 ft. (1 m). A freight train passing by at about 49.2 ft. (15 m) yields a sound level of about 85 dBA. The human pain threshold is about 120 dBA (Table 3-5).

#### **3.4.1.2 Sound Metrics**

Transient sound is defined as an “event having a beginning and an end where the sound temporarily rises above the background and then fades into it” (U.S. Army 2005). These types of sounds, measured in terms of Sound Exposure Level (SEL), are associated with vehicles driving by, aircraft overflights, or impulse noise. The SEL is based on two characteristics of transient sound, duration and intensity, where a long duration, low-intensity event can be as annoying as a high-intensity, shorter event. The SEL is the total acoustic energy in an event normalized to 1 second (U.S. Army 2005). This number represents all of the acoustic energy for the event in a 1-second period.

**Table 3-5: Sound Levels of Selected Sound Sources and Environments**

Source	Sound Level (dBA)	Human Perception of Loudness (relative to 70 dBA)
Military Jet Takeoff with afterburner at 50 ft. (15.2 m) Civil Defense Siren	130	<b>Above Threshold of Pain</b>
Commercial Jet Takeoff at 200 ft. (61 m)	120	<b>Threshold of Pain</b> 32 times as loud
Pile Driver at 50 ft. (15.2 m)	110	16 times as loud
Ambulance Siren at 100 ft. (30.5 m) Power Lawn Mower at 3 ft. (0.9 m)	100	<b>Very Loud</b> 8 times as loud
Motorcycle at 25 ft. (7.6 m) Propeller Plane at 1,000 ft. (304.8 m)	90	4 times as loud
Garbage Disposal at 3 ft. (0.9 m) Passenger car, 65 mph at 25 ft. (7.6 m)	80	2 times as loud
Vacuum Cleaner at 3 ft. (0.9 m) Living Room Stereo at 15 ft. (4.6 m)	70	<b>Moderately Loud</b> (Reference Loudness)
Normal Conversation at 5 ft. (1.5 m)	60	1/2 as loud
Light Traffic at 100 ft. (30.5 m)	50	1/4 as loud
Distant Bird Calls	40	<b>Quiet</b> 1/8 as loud
Soft Whisper at 5 ft. (1.5 m)	30	1/16 as loud
	0	<b>Threshold of Hearing</b>

Notes: dBA = decibels, A-weighted; ft. = feet; m = meter(s)

Source: Federal Interagency Committee on Noise 1992; U.S. Army 2005

A continually varying sound level over a given period can be described as a single “equivalent” sound level ( $L_{eq}$ ) that contains an amount of sound energy equal to that of the actual sound level. Thus, the  $L_{eq}$  is a measure of the average acoustic energy over a stated period. Equivalent sound levels can represent any length of time, but typically are associated with some meaningful period, such as an 8-hour  $L_{eq}$  for an office, or a 1-hour  $L_{eq}$  for a classroom lecture (U.S. Army 2005). The  $L_{eq}$  is averaged over a 1-, 8-, or 24-hour period. The  $L_{eq}$  is used to describe continuous sound sources and may be obtained by averaging sound levels over a selected period. This level is the estimation of the continuous sound level that would be equivalent to the fluctuating sound signal under consideration (U.S. Department of the Navy 1978). A  $L_{eq}$  that is a 24-hour average can also be termed the Day-Night-Level (DNL), with a caveat. The DNL is the average noise level over a 24-hour period. However, the noise between the hours of 10 p.m. and 7 a.m. is artificially increased by 10 dB. This noise is weighted to take into account the decrease in community background noise of 10 dB during this period.

### 3.4.1.3 Time-Averaged Sound Levels

Ambient sound standards regulate ambient sound levels through time-averaged sound level ( $L_{eq}$ ) limits. Sound standards for land use compatibility established by DoD and civilian jurisdictions are expressed in terms of the DNL. Based on numerous sociological surveys and recommendations of federal interagency councils, the most common benchmark for assessing environmental sound impacts is a DNL of 65 dBA

(Schomer 2005; Federal Interagency Committee on Noise 1992). Sound levels up to 65 dBA, DNL are considered to be compatible with land uses such as residences, transient lodging, and medical facilities. Appropriate sound mitigation is recommended for new development in areas where the DNL exceeds 65 dBA. A substantial increase in the number or intensity of intrusive sound events on nearby public or private land would indicate a substantial increase in distraction and interference with sound-sensitive activities.

#### **3.4.1.4 Ambient Sound Guidance Documents**

- Chief of Naval Operations Environmental Readiness Program Manual (M-5090.1) contains guidance for considering sound. Chapter 10 (Environmental Planning Under the National Environmental Policy Act and Executive Order 12114) and Chapter 11 (Environmental Readiness in the Acquisition Process) contains guidance for sound control and abatement of Navy shore activities.
- Planning in the Noise Environment (U.S. Department of the Navy 1978) provides compatibility criteria for various land uses.
- 49 U.S.C. 44715 (The Noise Control Act of 1972)

### **3.4.2 AFFECTED ENVIRONMENT**

#### **3.4.2.1.1 Sensitive Receptors**

Noise-sensitive areas are those areas where noise interferes with normal activities associated with its use. Normally, noise-sensitive areas include residential, educational, health, religious structures and sites, parks, recreational areas (including areas with wilderness characteristics), wildlife refuges, and cultural and historical sites. In the context of facilities and equipment, noise-sensitive areas may include such sites in the immediate vicinity of operations, pursuant to the Noise Control Act of 1972. Users of designated recreational areas are considered sensitive receptors.

CMM and surrounding areas are encompassed within the Mountain Empire Subregion of the San Diego County General Plan. This region is characterized by expanses of public agency lands and scattered rural residential development (County of San Diego 2011). Based on the existing Campo/Lake Morena Planning Group map, the areas near CMM are designated as National Forest, Tribal Lands (Campo Reservation – adjacent to Parcels B and G), and Rural Lands.

Local schools, operated by the Mountain Empire Unified School District, are all located away from CMM. The Campo Elementary School and Mountain Empire High School are located just over 1 mi. (1.6 km) and 3.5 mi. (5.6 km), respectively, southwest of the closest point of CMM.

The Juvenile Ranch Facility is a behavioral and drug/alcohol rehabilitative facility serving male youths between the ages of 13 and 18, operated by the County of San Diego. All wards committed to the Juvenile Ranch Facility attend school full time. An on-site state-certified high school operates 5 days a week (Rancho del Campo High School). The Juvenile Ranch Facility is located approximately 3 mi. (4.8 km) southwest of the closest point of CMM.

The surrounding local area is popular for developed, dispersed, and wilderness recreation. Developed recreation sites include the Lake Morena Park, a San Diego County Park that is located approximately 1 mi. (1.6 km) to the west of CMM and offers a variety of recreational opportunities including camping, boating, and fishing.

### 3.4.2.1.2 Ambient Noise Conditions

The project area consists mostly of open space. The most commonly occurring noise sources in the area include local vehicle traffic, occasional aircraft flyovers, and weapons firing (from military training activities at existing ranges on CMM). Traffic noise is generated by the local traffic along La Posta Road and is minimal due to the remoteness of the area. Aircraft noise is generally associated with typical commercial aircraft flying over the area.

Training operations are typically conducted in lightly-armed, small teams (two to eight individuals) moving on foot. The training refines and reinforces the skills necessary for those teams to operate in a hostile environment. Shooting skills are practiced only at the small arms ranges, a sniper range, and a Close Quarters Combat (CQC) facility.

Simunition™ and regular rounds (9 millimeter [mm]) are fired at these ranges. The following ammunition can be used on the small arms ranges, the sniper range, and the CQC house: 0.22 caliber, 0.38 caliber, 0.45 caliber, 0.357 caliber, 9 mm, 5.56 mm, 7.62 mm, and 00 buckshot. The sniper range can utilize up to 300 winmag rounds. Simunition™ and special range and training rounds can be used as well.

### 3.4.3 ENVIRONMENTAL CONSEQUENCES TO NOISE

Concerns over sound include hearing loss, non-auditory health effects, annoyance, speech interference, and sleep interference. Vehicular operation, construction and renovation activities, and operations do not generate sound at intensities that could contribute to hearing loss in off-site public areas. However, potential effects would be conversation interruption, sleep interference, distraction, and annoyance. Based on numerous sociological surveys, and recommendations of federal interagency councils, the most common benchmark for assessing environmental sound impacts is a DNL of 65 dB for A-weighted sound (Schomer 2005; Federal Interagency Committee on Noise 1992). When subjected to sound levels of 65 dBA DNL, approximately 12 percent of exposed individuals would be “highly annoyed.” A sound level of 75 dBA DNL is a threshold above which effects other than annoyance can occur.

The primary factor of potential noise impacts includes the extent or degree to which implementation of the Proposed Action would affect the baseline noise environment. The alternatives were examined to determine if they would produce one or more of the following effects:

- A long-term increase in the average hourly ambient sound level at any sensitive receptor of 5 or more dB, which would indicate a substantial degradation in the noise environment
- A substantial increase in the number or intensity of intrusive sound events on nearby public or private lands, which would indicate a substantial increase in distraction and interference with noise-sensitive activities

#### 3.4.3.1 Proposed Action

As described in Section 2.1.1 (Maintain, Secure Access, and Enhance Primary Evacuation Roads), Section 2.1.2 (Fuel Modification Zones Around Facilities), and Section 2.1.3 (Implement Roadside Fuel Treatments), vegetation treatments would be performed and maintained through vegetation removal or thinning using hand power tools (e.g., brush cutters, chainsaws), vehicles (OHVs and four wheel drive trucks), and a towable wood chipper. It is expected that dozers, backhoes, loaders, and other heavier equipment would be utilized to assist in the enhancement of the evacuation roads. Because of the small

implementation areas, the vegetation treatment efforts are expected to take several days per treatment project. Typical noise levels of commonly used equipment are presented in Table 3-6. The equipment used for the primary evacuation routes, annual maintenance of the fuel modification zones around facilities, and roadside fuel treatments, would create received noise levels of less than 70 dBA approximately 500 ft. (152.4 m) from the work sites.

**Table 3-6: Typical Equipment Noise Levels**

Equipment	Typical Noise Level (dBA) 50 ft. (15.2 m) from source	Typical Noise Level (dBA) 500 ft. (152.4 m) from source	Approximate Noise Level (dBA) 0.5 mi. (804.6 m) from source
Backhoe	80	60	46
Dozer	85	65	51
Grader	85	65	51
Loader	85	65	51
Saw	76	56	42
Scraper	89	69	55
Shovel	82	62	48
Truck	88	68	54

Notes: dBA = decibels, A-weighted; ft. = feet; m = meter(s); mi. = mile(s)

Source: U.S. Department of Transportation 2006; Federal Highway Administration 2006

Given the distance from treatment locations to adjacent sensitive receptors, noise levels from construction activities would be audible above typical background noise levels at some sensitive receptors. However, since the noise-generating events from restoration activities would be intermittent, the contribution of noise from restoration activities to the hourly sound levels ( $L_{eq}$ ) is anticipated to be low (and thus, their contribution to the DNL). Sound levels up to 65 dBA DNL are considered to be compatible with land uses such as residences, transient lodging, and medical facilities. The number of sensitive receptors impacted from sound as a result of vegetation treatment activities under the Proposed Action is expected to be low, only on an intermittent basis, and only in areas immediately adjacent to the treatment activities. Therefore, vegetation treatment noise would not significantly affect the acoustic environment under the Proposed Action.

As described in Section 2.1.4 (Implement Post-Fire Erosion Controls and Perform Restoration of Burned Sites at Camp Michael Monsoor), in order to prevent erosion following a fire, burned areas would be stabilized using a variety of methods, such as bio-engineered bank stabilization techniques, gravel, fabrics, riprap, and recycled concrete and pavement. In addition to the equipment utilized for vegetation treatments, it is expected that dozers, backhoes, loaders, and other heavier equipment would be utilized to assist in the burned site restoration. Similar to above, and presented in Table 3-6, equipment used for the restoration activities would create received noise levels of less than 70 dBA approximately 500 ft. (152.4 m) from the work site. Additionally, restoration activities involving heavier equipment would be short term and temporary.

Depending on the location of the restoration activity, noise levels from restoration activities would be audible above typical background noise levels at some sensitive receptors. However, since the noise-generating events from restoration activities would be intermittent, the contribution of noise from restoration activities to the hourly sound levels ( $L_{eq}$ ) is anticipated to be low (and thus, their

contribution to the DNL). Sound levels up to 65 dBA DNL are considered to be compatible with land uses such as residences, transient lodging, and medical facilities. The number of sensitive receptors impacted from sound as a result of restoration activities under the Proposed Action is expected to be low, only on an intermittent basis, and only in areas immediately adjacent to the treatment activities.

Therefore, restoration activity noise would not significantly affect the acoustic environment under the Proposed Action.

#### **3.4.3.2 No Action Alternative**

The No Action Alternative would include only fire prevention and escaped fire measures at CMM. There are no activities under the No Action Alternative that would create sound levels that could impact sensitive receptors.

Therefore, the implementation of fire prevention and escaped fire measures under the No Action Alternative would not significantly affect the acoustic environment at CMM.

### **3.5 PUBLIC HEALTH AND SAFETY**

Resource issues related to public health and safety at the CMM include public access, fire, and emergency services.

#### **3.5.1 AFFECTED ENVIRONMENT**

##### **3.5.1.1 Public Access**

The land surrounding the Proposed Action area consists primarily of public lands administered by the BLM and the U.S. Forest Service, private lands with a variety of owners, or is part of the Campo Indian Reservation. A portion of the Descanso Ranger District of the Cleveland National Forest is north of the main portion of the Proposed Action area. Predominant land uses in the area are rural residential, agriculture, and recreation (e.g., horseback riding, hiking, and camping). In general, the BLM property that is part of the ROW parcels is designated Public/Semi Public lands. Public access is allowed on BLM land.

##### **3.5.1.2 Fire Safety**

While the BLM owns the property on which the installation is located and the Federal Fire Department (FFD) is responsible for structural fire prevention, CalFire would be the first responder to any wildland or structural fire on the CMM. This is because CalFire fire protection resources are closest at Campo and surrounding communities. Also, all CMM parcels are in a Direct Protection Area (DPA) for CalFire, or Local DPA identified as County Service Area 112 (local fire stations in the area that partner with CalFire and the San Diego County Fire Authority). DPAs are delineated according to the California Master Cooperative Wildland Fire Management and Stafford Act Response Agreement.

#### **3.5.2 ENVIRONMENTAL CONSEQUENCES TO PUBLIC HEALTH AND SAFETY**

This section evaluates potential impacts on public health and safety associated with the Proposed Action and the No Action Alternative. The analysis focuses only on impacts on public access and fire safety.

##### **3.5.2.1 Proposed Action**

The Proposed Action would include the enhancement and maintenance of primary evacuation routes, annual maintenance of the fuel modification zones around facilities, roadside fuel treatments,

implementation of post-fire erosion controls and restoration of burned sites, and fire prevention and escaped fire measures.

The vegetation treatments around developed areas would occur in the exclusive use parcel where there is no public access. The evacuation route development and vegetation treatments that occur on ROW parcels could overlap with public access, albeit public usage of this land is considered minor. Restoration activities could include revegetation activities, involving watering and the use of herbicides, insecticides, and pesticides. Herbicides, insecticides, and pesticides will be used in accordance with the defined label use and DoD regulations. Additionally, they would not be sprayed when there are wind velocities above 5 mph (8 kph) or in foggy or rainy conditions. These restrictions would limit the potential for these materials to impact public use of the area or become a public health issue.

Therefore, the Proposed Action would have no significant impact on public health and safety at CMM.

### **3.5.2.2 No Action Alternative**

The No Action Alternative would include the implementation of post-fire erosion controls and restoration of burned sites. Restoration activities could include revegetation activities, involving watering and the use of herbicides, insecticides, and pesticides. Herbicides, insecticides, and pesticides will be used in accordance with the defined label use and DoD regulations. Additionally, they would not be sprayed when there are wind velocities above 5 mph (8 kph) or in foggy or rainy conditions. These restrictions would limit the potential for these materials to impact public use of the area or become a public health issue.

Therefore, the No Action Alternative would have no significant impact on public health and safety at CMM.

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## 4 CUMULATIVE IMPACTS

### 4.0 INTRODUCTION

The assessment of cumulative impacts (or cumulative effects<sup>1</sup>) in the Study Area follows the objectives of NEPA of 1969, CEQ regulations, and CEQ guidance. CEQ regulations (40 C.F.R. Parts 1500-1508) provide the implementing procedures for NEPA as

...the impact on the environment which 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. (40 C.F.R. §1508.7)

While a single project may have minor impacts, overall impacts may be collectively significant when the project is considered together with other projects on a regional scale.<sup>2</sup> The CEQ provides guidance on cumulative impacts analysis in *Considering Cumulative Effects Under the National Environmental Policy Act* (Council on Environmental Quality 1997) and identifies cumulative effects as those environmental effects resulting “from spatial and temporal crowding of environmental perturbations.”

This EA examines cumulative effects as a result of the implementation of wildland fire management actions at CMM. As the scope and nature of activities associated with the Proposed Action would not change from existing activities, no additional cumulative analysis is required beyond what is presented in this chapter.

### 4.1 APPROACH TO ANALYSIS

The cumulative impacts analysis in this EA focused on impacts that are “truly meaningful,” in accordance with CEQ guidance (Council on Environmental Quality 1997). The level of analysis for each resource was commensurate with the intensity of the impacts. Variable geographic boundaries were used for analyses of cumulative impacts, depending on the resource being evaluated. The current impacts of past and present actions and the potential impacts of reasonably foreseeable future actions were analyzed, to the extent they may be additive to impacts of the Proposed Action. The cumulative impacts analysis was not limited by a specific timeframe; however, this EA dismissed from further analysis the actions and environmental considerations that were considered not reasonably foreseeable. Section 4.2 (Actions Analyzed in the Study Area) presents the other actions analyzed for cumulative impacts. Section 4.3 (Potential Cumulative Impacts) summarizes those effects and makes a determination of the level of significance.

### 4.2 ACTIONS ANALYZED IN THE STUDY AREA

Various types of reasonably foreseeable future actions relevant to the Proposed Action have the potential to affect the resources identified in Chapter 3 (Affected Environment and Environmental Consequences). Descriptions of the other actions and environmental considerations carried forward for

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<sup>1</sup> CEQ regulations consider the terms “cumulative impacts” and “cumulative effects” as synonymous (40 C.F.R. §1508.8[b]); the terms are used interchangeably.

<sup>2</sup> A cumulative impact is the additive effect of all projects in the geographic area.

analysis are provided in Table 4-1. Table 4-2, at the end of this section, presents other actions not carried forward for analysis.

**Table 4-1: Cumulative Projects Retained for Analysis**

Project Name/Description	Location	Timeframe
<b>United States Forest Service</b>		
Cleveland National Forest Invasive Weed Management Plan	Cleveland National Forest	Present, and future
San Diego Gas & Electric (SDG&E) Master Special Use Permit and Permit to Construct Power Line Replacement Projects	Cleveland National Forest All Units	Present and future
Southern California National Forests Land Management Plan Amendment	Cleveland National Forest	Present, and future
Forest-Wide Unauthorized Route Decommissioning	Cleveland National Forest	Future
<b>Bureau of Land Management</b>		
South Coast Draft Resource Management Plan	Cleveland National Forest	Present, and future

The analysis of cumulative impacts included other environmental considerations as well as a review of federal, State, and local projects. This EA analyzed cumulative impacts that focused only on the relevant actions that currently affect, or reasonably could affect, the resources in the Study Area. Past and present actions are considered part of the affected environment.

#### **4.2.1.1 Cleveland National Forest Invasive Weed Management Plan**

This project is to plan for weed treatment activities for known infestations of certain invasive plant species. Weed removal efforts may include herbicides. A rapid-response weed treatment protocol for new infestations will also be developed. The Proposed Action for the 2014 Cleveland National Forest Invasive Weed Management EA includes invasive species control or eradication efforts on Cleveland National Forest lands for certain invasive weed species and specific infestations, as well as rapid response for certain species not currently known to occur, and an adaptive management framework for treating newly discovered infestations of target species or newly discovered species.

The priority species with the greatest potential to impact ecology in the Cleveland National Forest and expand are tamarisk, giant reed (*Arundo donax*), and yellow starthistle. No aerial application of herbicides would occur, and only five specific herbicides would be used (Glyphosate, Triclopyr, Imazapyr, Aminopyralid, and Fluazifop-p-butyl). This ongoing project is likely to occur for 10–20 years. The Proposed Action will also include monitoring so that there is baseline information that can determine the effectiveness of treatment, lead to quicker treatment of new populations, evaluate the restoration of treated sites, and possibly lead to adaptive management based on unanticipated effects (U.S. Department of Agriculture 2014).

Significant adverse effects are not expected on human health and safety. The Biological Assessment for the Cleveland National Forest Invasive Weed Management EA concluded that the Proposed Action may affect, but was not likely to adversely affect, three Federally listed wildlife species: the California arroyo toad (*Bufo microscaphus californicus*), least Bell's vireo (*Vireo bellii pusillus*), and southwestern willow flycatcher (*Empidonax traillii extimus*). All other federal-listed species were found to have no effect or a positive effect due to improved habitat conditions from implementation of the Proposed Action. No

negative effects are expected for the 14 federal- or state-listed endangered or threatened plant species in the study area. Sensitive plants may be affected as individuals but the action is not likely to result in a trend toward federal listing for Forest-Service-listed sensitive plant species. The Proposed Action was found to benefit all Management Indicator Species due to improved habitat conditions. The watershed could be impacted due to erosion and sediment transport to streams, use of herbicides or pesticides (which could impact soil productivity and water quality), and recent wildfires. There would be no impact to heritage or cultural resources from the Proposed Action. The Proposed Action would have short-term and temporary impacts to the degradation of the Wilderness character of the study area (U.S. Department of Agriculture 2014).

#### **4.2.1.2 San Diego Gas & Electric Master Special Use Permit and Permit to Construct Power Line Replacement Projects**

San Diego Gas & Electric Company (SDG&E) is proposing to combine over 70 existing special use permits for SDG&E electric facilities within the Cleveland National Forest (CNF) into one Master Special Use Permit (MSUP) to be issued by the Forest Service. The Final EIS was released in July 2015. The CNF MSUP study area is located within the Trabuco Ranger District in Orange County, California and the Palomar and Descanso Ranger Districts in unincorporated areas of San Diego County, California. In addition to requesting Forest Service authorization of the MSUP allowing for the continued operation and maintenance of SDG&E's existing electric facilities within the CNF, SDG&E is proposing to replace certain existing 69 kilovolt (kV) power lines and 12 kV distribution lines located within and outside of the CNF. The proposed Power Line Replacement Projects would primarily include fire hardening along with relocation and undergrounding of certain facilities. In the region of the Project Area for this EA, this effort would consist of wood to steel pole replacement (Transmission Line 629).

#### **4.2.1.3 Southern California National Forests Land Management Plan Amendment**

The Angeles, Cleveland, Los Padres, and San Bernardino national forests propose to amend their land management plans with new guidance for roadless area management and land management plan monitoring. The 2013 Final Supplemental Environmental Impact Statement Southern California National Forests Land Management Plan Amendment describes four alternative land-use zone allocations for 35 inventoried roadless areas, and three alternative monitoring strategies. The Proposed Action applies more restrictive land use zones and increases recommended wilderness allocations as well as adds new monitoring protocols. The conclusions from their effects analysis are that allocating more of the study area to restrictive land use zones would benefit resources such as watershed, wildlife, and dispersed recreation by limiting future activities. Under the Proposed Action, there would be no effects on fire suppression, law enforcement, or other emergency response, and limited effects to road access (U.S. Department of Agriculture 2013).

#### **4.2.1.4 Forest-Wide Unauthorized Route Decommissioning**

The Cleveland National Forest received funding from the California OHV Grants Program to decommission unauthorized routes, as defined by the 2008 Motorized Travel Management decision, that have the greatest resource impacts. Nearly three-quarters of known unauthorized routes pass through the habitats of federally-listed threatened and endangered species, not to mention other sensitive species. Over half of the routes cross or follow riparian areas, thereby contributing to soil erosion, habitat degradation, and water quality impacts. One-quarter of the routes lie within areas managed as Wilderness, where vehicles are prohibited altogether, or Inventoried Roadless Areas, where

road-building is particularly restricted. Fifteen percent of the routes pass through known archaeological sites, presenting obvious risks to priceless resources. Finally, unauthorized routes contribute to other illegal activities on the Forest, such as dumping, target shooting, and dispersed campfires, that can lead to costly and damaging wildfires. The purpose of this project is to decommission the highest priority unauthorized routes on the Cleveland National Forest, returning the landscape to its desired condition and educating and directing motor vehicle users to legal opportunities. There are several unauthorized routes to the northeast of the Project Area that will be decommissioned, UND548, UND9459, UND545 and UND9531.

#### **4.2.1.5 South Coast Draft Resource Management Plan**

The BLM manages a diversity of landscapes and resources in the South Coast Planning Area of Southern California. This planning area includes over 130,000 ac. (52,609 ha) of BLM-managed public lands scattered over a five-county area, which also contains over 20 million residents. The Border Mountains region of western San Diego County consists of rugged mountains generally covered by mixed chaparral and coastal sage scrub habitat. Since completion of the original South Coast Resource Management Plan (RMP) in 1994, new circumstances have prompted the need for a revision of the plan. These include continued population growth and urban development, the creation of multi-jurisdictional habitat conservation plans in San Diego and Riverside Counties, designation of wilderness, land acquisitions to support habitat conservation by the BLM and other agencies, and the changing needs and interests of the public. The revision to the RMP would:

- Provide protection and enhancement for biological values.
- Provide for effective management and protection of cultural and paleontological sites and values.
- Identify, maintain, and enhance recreational opportunities, responsive to local needs and public visitation to the area.
- Work with local community leadership and law enforcement agencies to provide for safe visits to public land and to discourage illegal uses.
- Provide for community infrastructure needs to support the residents and economy of the region, with emphasis on energy, communications and mineral materials sites.
- Coordinate management activities along the border with U.S. and Mexican agencies.
- Provide for effective fire protection, fire prevention, and vegetation management in cooperation with local communities, Fire Safe Councils, and CalFire.

**Table 4-2: Cumulative Projects Dismissed from Analysis**

<b>Project Name/Description</b>	<b>Location</b>	<b>Reason for Dismissal</b>
<b>United States Forest Service (USFS)</b>		
<i>AT&amp;T Master Permit Renewal for Telephone Lines</i> To renew AT&T's authorizations on the Cleveland National Forest land, one master permit with 135 amendments, one 50-year right-of-way, one telephone booth, and one access on private road to telephone facilities is proposed for renewal.	Cleveland National Forest All Units	Permit renewal only
<i>Alpine Community Defense</i> The Descanso Ranger District is proposing fuel treatments in the vicinity of Alpine, California to reduce vegetation levels and mitigate the potential effects of wildfire. This project was expanded beyond its original focus on the Sweetwater and Viejas Creek area.	Descanso Ranger District	Outside of the Project Area
<i>Greater Alpine Community Defense Fuels Treatment on Non-Federal Lands</i> This project involves constructing fuel breaks on private lands to reduce the risk to life, property, and resource values from an unusually severe wildland fire event in the greater Alpine area and improve fire suppression effectiveness and safety.	Descanso Ranger District	Outside of the Project Area
<i>Laguna Water System Improvement</i> Installation of a new electrical drop and service, water and control line distribution to a new reservoir site, the installation of a new 100,000-gallon reservoir, and water distribution line extension to connect to the existing Laguna water system.	Descanso Ranger District	Outside of the Project Area
<i>Lake Morena Community Defense Project</i> Create and maintain defensible space on NFS lands in the vicinity of Lake Morena Village.	Descanso Ranger District	Outside of the Project Area

### 4.3 POTENTIAL CUMULATIVE IMPACTS

A finding of a significant cumulative impact requires (1) a determination that the aggregate impact of past, present, and reasonably foreseeable future projects on a resource, including the Proposed Action, would be significant; and (2) a determination that the Proposed Action would contribute to that impact in an additive or synergistic manner. Where significance thresholds already have been exceeded by past, present, and approved future projects, this analysis assumes any incremental contribution to the existing adverse condition by the Proposed Action that impedes the reduction of that impact to a level of insignificance would be considered cumulatively significant.

#### 4.3.1 TOPOGRAPHY AND SEDIMENTS

The cumulative projects identified in Section 4.2 (Actions Analyzed in the Study Area) would have varying effects on topography and sediments within the Study Area. Wildland fire management actions, in conjunction with identified cumulative projects, would not result in significant cumulative impacts on topography and sediments. None of the cumulative projects would impact topography and sediments in the same manner or in the same areas. Therefore, in conjunction with other past, present, or reasonably foreseeable projects, the Proposed Action would not result in significant cumulative impacts on topography and sediments.

### **4.3.2 WATER QUALITY**

The cumulative projects identified in Section 4.2 (Actions Analyzed in the Study Area) would have varying effects on water quality and sediments within the Study Area. Wildland fire management actions, in conjunction with identified cumulative projects, would not result in significant cumulative impacts on water resources. None of the cumulative projects would impact surface water resources in the same manner or in the same areas. Since no construction is proposed, there is no increase in the amount of impervious surfaces or surface runoff. Therefore, in conjunction with other past, present, or reasonably foreseeable projects, the Proposed Action would not result in significant cumulative impacts on water resources.

### **4.3.3 BIOLOGICAL RESOURCES**

Cumulative direct impacts on biological resources may result from loss of habitat, impaired access to important life-cycle resources on a population scale, or wildlife disturbances from projects identified in Section 4.2 (Actions Analyzed in the Study Area) that include substantial ground disturbing activities and increased noise levels. Non-Navy project-related developments that reduce areas of vegetation communities or reduce or encroach on seasonal wildlife habitats have direct, local impacts. These adverse effects, when added to other projects occurring within the same geographic area, may have significant impacts.

The vegetation types and wildlife present in the cumulative impacts analysis area are generally widely distributed, and few limitations to their availability were identified. Indirect impacts on wildlife include the addition of NSW/Special Operations Forces training activities and associated human presence, and other disturbances that may cause changes in resting or feeding cycles, displacement from habitat, masking of sounds and related changes in vocal behavior, or disrupted breeding or young-rearing activities.

The analysis in Section 3.3 (Biological Resources) indicates that impacts of the alternatives on terrestrial biological resources would be minimal, short term, and recoverable based on the (1) relatively low intensity of the impacts, (2) localized nature of the impacts, (3) infrequent nature of the impacts, and (4) brief duration of the activities. For these reasons, long-term consequences to individuals or populations of terrestrial biological resources are not expected to result from the Proposed Action training activities. Therefore, impacts on terrestrial biological resources from proposed training activities would be less than significant.

Wildland fire management actions within the Training Study Area, in conjunction with the identified cumulative projects, would not result in significant cumulative impacts on terrestrial biological resources. Few of the cumulative projects overlap with the existing training locations and most would have only temporary, localized impacts on terrestrial biological resources. Therefore, in conjunction with past, present and reasonably foreseeable projects, the Proposed Action would not result in significant cumulative impacts on terrestrial biological resources.

### **4.3.4 NOISE**

Fuel treatment and post-fire restoration activities would increase daytime noise levels in the short term in the vicinity of those projects. Overall, cumulative increases in long-term average noise levels in the area from planned and proposed projects would not be significant. Based on information available at

this time, the action alternatives are not expected to contribute to cumulative long-term average noise levels. Therefore, further analysis of cumulative impacts on noise is not warranted at this time.

#### **4.3.5 PUBLIC HEALTH AND SAFETY**

The Proposed Action, in conjunction with identified cumulative projects, would not result in significant cumulative public health and safety impacts. Although recreational use of public lands is likely to occur in the future, the impacts of Navy wildland fire management actions on public health and safety would not increase. With implementation of Standard Operating Procedures, public safety would continue to be protected. Therefore, no additive or synergistic public safety risk would exist. In conjunction with other past, present, and reasonably foreseeable projects, the Proposed Action would not result in significant cumulative public health or safety impacts. Therefore, further analysis of cumulative impacts on public health and safety is not warranted at this time.

#### **4.4 SUMMARY OF CUMULATIVE IMPACTS**

In accordance with CEQ guidance (Council on Environmental Quality 1997), the cumulative impacts analysis focused on impacts that are “truly meaningful.” The level of analysis for each resource was commensurate with the intensity of the impacts identified in Chapter 3 (Affected Environment and Environmental Consequences). No significant contribution of military activities associated with the Proposed Action were identified when added to other past, present, and reasonably foreseeable future actions. The discussions presented in Chapter 3 (Affected Environment and Environmental Consequences) of this EA indicate that implementation of the Proposed Action would not significantly impact the resources that have been evaluated (topography and sediments, biological resources, noise, and public health and safety). The evaluation of other actions that are reasonably foreseeable in the Study Area, and other environmental considerations, indicated that procedures and processes are implemented to minimize or avoid cumulative impacts. Therefore, the proposed activities under the Proposed Action would not result in significant cumulative impacts on the resources evaluated.

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## 5 OTHER NEPA CONSIDERATIONS

### 5.1 POSSIBLE CONFLICTS BETWEEN THE PROPOSED ACTION AND THE OBJECTIVES OF FEDERAL ACTS, EXECUTIVE ORDERS, POLICIES, AND PLANS

Based on evaluation with respect to consistency and statutory obligations, the Navy's Proposed Action for CMM does not conflict with the objectives or requirements of federal, state, regional, or local plans, policies, or legal requirements. Table 5-1 summarizes environmental compliance requirements that were considered in preparing this EA.

**Table 5-1: Summary of Environmental Compliance for the Proposed Action**

Plans, Policies, and Controls	Responsible Agency	Status of Compliance
Clean Air Act (CAA) (42 U.S. Code [U.S.C.] §§7401 et seq.) CAA General Conformity Rule (40 C.F.R. §93[B]) State Implementation Plan (SIP)	United States (U.S.) Environmental Protection Agency (USEPA)	The CAA is the comprehensive federal law that regulates air emissions from stationary and mobile sources. The Proposed Action would not conflict with attainment and maintenance goals established in SIPs. A CAA conformity determination would not be required because emissions attributable to the Proposed Action would be below <i>de minimis</i> thresholds.
Clean Water Act (CWA) (33 U.S.C. 1251 et seq.)	USEPA	The CWA is an act to provide for water pollution control activities in the Public Health Service of the Federal Security Agency and in the Federal Works Agency, and for other purposes. The Act's objective is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters. The Proposed Action would not conflict with goals established in SIPs. No permits are required under the CWA Sections 401, 402, or 404 (b) (1).
NEPA of 1969 (42 U.S.C. §§4321, et seq.) Council on Environmental Quality Regulations for Implementing the Procedural Provisions of NEPA (40 C.F.R. §§1500–1508) Navy Procedures for Implementing NEPA (32 C.F.R. §775)	U.S. Department of the Navy (Navy)	This EA has been prepared in accordance with NEPA, CEQ regulations, and the Navy's NEPA procedures. The Proposed Action would not result in significant impacts, and thus an Environmental Impact Statement is not required.
Endangered Species Act (ESA) (16 U.S.C. §§1531 et seq.)	U.S. Fish and Wildlife Service (USFWS)	The ESA established protection over and conservation of threatened and endangered species and the ecosystems upon which they depend. This EA is in compliance with the ESA as the Navy is consulting with the USFWS on potential effects to the Quino checkerspot butterfly.

**Table 5-1: Summary of Environmental Compliance for the Proposed Action (continued)**

Plans, Policies, and Controls	Responsible Agency	Status of Compliance
Migratory Bird Treaty Act (MBTA) (16 U.S.C. §§703–712)	USFWS	The MBTA prohibits the taking, killing, or possessing of migratory birds or the parts, nests, or eggs of such birds, unless permitted by regulation. The 2003 National Defense Authorization Act provides that the Armed Forces may take migratory birds incidental to military readiness activities provided that, for those ongoing or proposed activities that the Armed Forces determine may result in a significant adverse effect on a population of a migratory bird species, the Armed Forces confer and cooperate with the Service to develop and implement appropriate conservation measures to minimize or mitigate such significant adverse effects. The actions presented in this EA comply with the MBTA by avoidance (i.e., vegetation management outside of breeding season or nest clearing). Implementation of the Proposed Action would cause no significant adverse effect on a population of migratory bird species. The Proposed Action would not have a significant impact on migratory birds and would comply with applicable requirements of the MBTA.
Executive Order 12898, <i>Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations</i> (58 Federal Register 7269 [16 February 1994])	Navy	The Proposed Action would not result in any disproportionately high and adverse human health or environmental effects on minority or low-income populations.

## 5.2 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

NEPA requires that environmental analysis include identification of “any irreversible and irretrievable commitments of resources which would be involved in the Proposed Action should it be implemented.” (NEPA Sec. 102 (2)(C)(v), 42 U.S.C. §4332). Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the effects that the uses of these resources have on future generations. Irreversible effects primarily result from the use or destruction of a specific resource (e.g., energy or minerals) that cannot be replaced within a reasonable time frame. Irretrievable resource commitments involve the loss in value of an affected resource that cannot be restored as a result of the action (e.g., the disturbance of a cultural site). For the Proposed Action, most resource commitments are neither irreversible nor irretrievable. Most impacts are short term and temporary or, if long lasting, are negligible.

## 5.3 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 of 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 option reduces future flexibility in pursuing other options, or that giving over a parcel of

land or other resource to a certain use eliminates the possibility of other uses being performed at the site. The Proposed Action would occur on government-owned lands operated by the Navy. The nature of activities for the Proposed Action would not differ from current uses of these areas. Therefore, implementation of the Proposed Action would not result in significant impacts on sensitive resources. As a result, it is not anticipated that the Proposed Action would result in any environmental impacts that would permanently narrow the range of beneficial uses of the environment or pose long-term risks to health, safety, or the general welfare of the public.

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