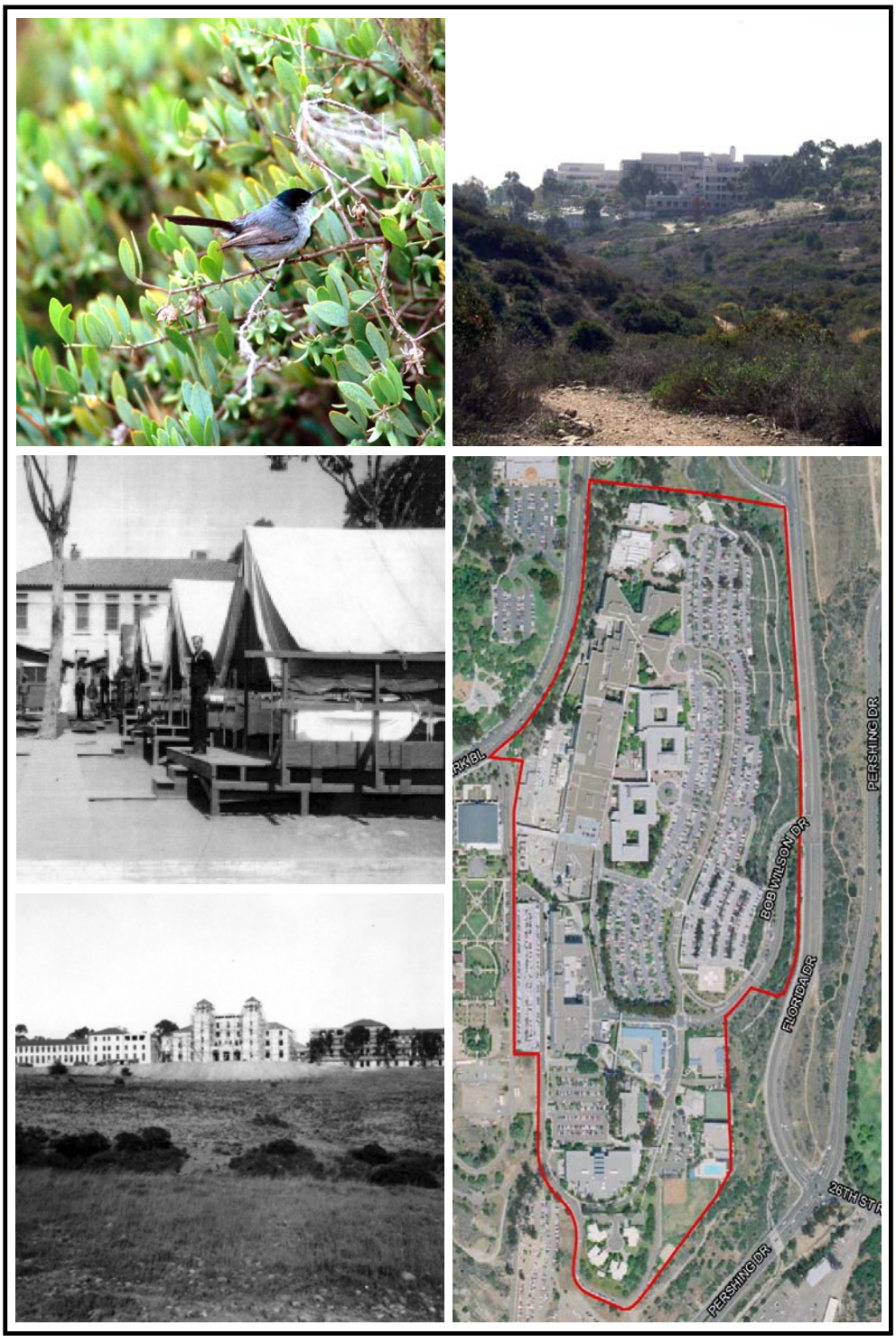
Draft Integrated Natural Resources Management Plan for Naval Medical Center San Diego



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Draft
Integrated Natural Resources Management Plan for Naval Medical Center San Diego

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Executive Summary

The purpose of this Integrated Natural Resources Management Plan (INRMP) is to provide Naval Medical Center San Diego (NMCSD) with a framework for managing natural resources for long-term sustainability. This document updates the Integrated Natural Resources Management Plan prepared for NMCSD in 2001. The INRMP facilitates compliance with natural resource protection laws, integrates the natural resource components of all NMCSD plans, and meets the requirements of all applicable laws and regulations including the Sikes Act Improvement Act of 1997 (as amended through 2003) and Naval Operations Instruction 5090.1C. It also preserves the military mission of NMCSD which is to deliver quality health services in support of U.S. Armed Forces and to maintain medical readiness.

NMCSD occupies approximately 75 acres within the southeast corner of Balboa Park in the City of San Diego. The majority of NMCSD property comprises developed land, which consists of buildings, parking lots, and streets. The natural habitat on-site includes approximately 9 acres of manufactured slopes that have been revegetated with 7 acres of native habitat dominated by coastal sage scrub. This Plan describes the state of the natural resources at NMCSD including its ecological position within surrounding Florida Canyon.

The management of all natural resources on NMCSD is addressed within the INRMP, with a focus on some key issues including erosion control, removal of non-native vegetation, pest control, native plant and wildlife population management. Erosion control measures have been successful in eliminating erosion on many parts of NMCSD, but some sites still need to be addressed. Exotic, invasive plant species need to be removed from the revegetated coastal sage scrub habitat before they set seed. Pigeons and rodents have recently been a problem on NMCSD, although pest control measures have been successful in reducing their presence. Numerous native wildlife species inhabit the eastern slope of NMCSD and move between the property and habitat along Florida Canyon. This Plan also discusses how routine planning, maintenance, and landscaping tasks can affect natural resources on NMCSD and provides new ideas for promoting conservation awareness of NMCSD's resources.

As a federal landowner, Bureau of Medicine and Surgery (BUMED) must practice responsible stewardship of sensitive plants and animals occurring on their property. The revegetated area on the eastern slope of NMCSD is inhabited by coastal California gnatcatchers (CAGN) (*Polioptila californica californica*), which are a federally listed threatened species protected under the Endangered Species Act. The presence of the gnatcatcher in this area places importance on careful management of this habitat. This plan includes a summary of recent and past biological surveys of the CAGN on NMCSD and guidelines for proper management of this species.

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1.0 Purpose and Background

The protection and management of the natural resources of Naval Medical Center San Diego (NMCSD) are essential to guarantee NMCSD's continued service and support to the military mission of the United States. This Integrated Natural Resources Management Plan (INRMP) is intended to provide the basis and criteria for sound land use and natural resource decisions in support of the NMCSD mission.

1.1 INRMP Purpose

The purpose of this INRMP is to provide NMCSD with a viable framework for managing natural resources for long-term sustainability. The INRMP facilitates compliance with natural resource protection laws, integrates the natural resource components of all NMCSD plans, and meets the requirements of all applicable U.S. Department of Defense (DoD), U.S. Department of the Navy (DoN), Bureau of Medicine and Surgery (BUMED), and NMCSD regulations (see Appendix 1 for a list of acronyms).

1.2 Scope

The Sikes Act Improvement Act (SAIA) of 1997 (as amended through 2003) stipulates that INRMPs provide for:

- Conservation and rehabilitation of the natural resources on the military installation;
- Sustainable, multipurpose use of the resources;
- Public access to facilitate the use of natural resources subject to safety requirements and military security;
- Wetland protection, enhancement, and restoration where necessary for support of fish or wildlife; and
- Specific natural resource goals and objectives and timeframes for acting on them.

This INRMP meets the requirements of the SAIA and fulfills the requirements of Naval Operations Instruction (OPNAVINST) 5090.1C *Navy Environmental and Natural Resources Program Manual*, which calls for Naval installations with land and water resources suitable for conservation and management to establish INRMPs.

BUMED is the responsible land owner of NMCSD. This INRMP provides a practical framework to support decisions of the NMCSD Commanding Officer and specific

management activities which can be implemented by the Environmental Division of the Facilities Management Department. The purpose of this INRMP is to provide NMCSD with a viable framework for managing natural resources for a minimum period of the next 5 years on lands it administers.

This INRMP will support NMCSD's institutional and operational mission by:

1. Serving as a strategic land use and natural resource planning tool;
2. Providing a framework for daily land use and resource management decision-making;
3. Anticipating land use problems and conflicts;
4. Communicating land use and resource guidelines;
5. Providing an institutional memory; and
6. Providing guidance for annual tasking.

INRMPs are ecosystem-based plans which are to be developed in cooperation with and concurrence of U.S. Fish and Wildlife Service (USFWS) and the state fish and wildlife agency, in this case, California Department of Fish and Game (CDFG). Signatures on the final document or letters of concurrence shall reflect the mutual agreement of all parties.

1.2.1 Plan Contributors

This INRMP was prepared in coordination with NMCSD's Environmental Division within the Facilities Management Department and is to be reviewed and approved by sponsoring decision-makers: the NMCSD Commanding Officer, Regional Director of USFWS, and regional planning representative from CDFG.

1.2.2 Public Participation

There will be a 30-day public comment period for this INRMP update. The INRMP will be available for review and comment upon request.

1.3 Goals of the Plan

The goals set forth in this INRMP are compatible and consistent with the DoD environmental mission to prevent pollution, protect the environment, and protect natural, historic, and cultural resources (DoD 1996).

GOAL 1: Preserve, protect, and enhance natural resources and biodiversity, while guaranteeing continued access to these resources in support of the NMCSD mission.

GOAL 2: Manage for no net loss to the operational carrying capacity of NMCSD lands and accommodate increased military mission requirements for use of these lands, while meeting all environmental compliance responsibilities.

GOAL 3: Provide the organizational capacity, support, and communication links necessary for effective planning and daily administration of this INRMP and NMCSD's natural resources.

The overall strategy for resolving key management and other issues is addressed throughout this INRMP. This strategy is defined through a hierarchical format, starting with very broad long-term statements and ending with specific shorter-term strategies, policies and tasks. As depicted in Figure 1-1, the broadest statement is a goal which is an enduring, visionary description of the document. The goal focuses on the 20-year horizon and beyond. A goal is not necessarily completely obtainable. Definitions are given in Table 1-1, and described further below.

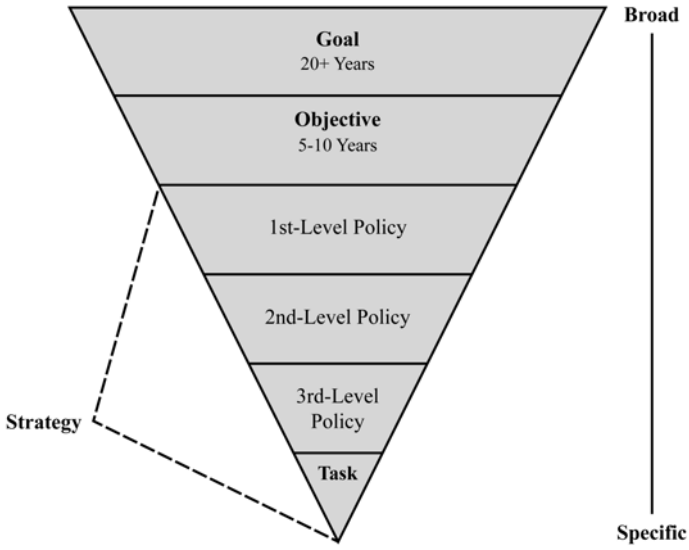

FIGURE 1-1
Management Planning Hierarchy
and Strategy Development

TABLE 1-1
PLANNING DEFINITIONS

Hierarchy	Definition
Goal	Broad statement of intent, direction, and purpose. An enduring, visionary description of the document. A goal may not be completely obtainable.
Objective	Specific statement that describes a desired condition. Can be quantitative or qualitative. Should be good for 5 to 10 years.
Strategy	Explicit description of ways and means chosen to achieve objectives.
Policy	Formally adopted strategy or decision to carry out a course of action.
Task/Activity/Method	Specific step, practice, or method to get the job done, usually organized sequentially with time lines and duty assignments. Tasks should be updated annually.

1.3.1 Planning Definitions

1.3.1.1 Objectives

Many objectives may exist under a particular goal. An objective in this INRMP is a more specific statement than a goal that describes a desired condition, which may or may not be measurable and should last for at least 5 to 10 years. Each natural resource subject discussed in this INRMP usually has an objective for guidance.

1.3.1.2 Strategy

The ways and means chosen to achieve the objectives in this INRMP are defined as a "strategy" in the narrowest sense.

1.3.1.3 Policy

A policy is a formally adopted strategy or decision to carry out a course of action. Different levels of policy exist ranging from broad (1st-level) to narrow (2nd- or 3rd-level) detailed statements of action. Many policies may exist under each objective.

1.3.1.4 Tasks

Below the policy level are individual tasks, which can describe specific steps, practices, or methods to get a job done. These tasks are usually short-lived and need to be updated annually to tie into budgeting needs. To be effective, each task must be directed toward accomplishing a particular policy. The tasks recommended for implementation in this INRMP are summarized in Chapter 5 and Appendix 3. Funding to accomplish tasks outlined in this INRMP will be requested by NMCSD on an annual basis, but the accomplishment of specific tasks is contingent on funding.

1.3.2 Strategic Design of the INRMP

This INRMP was prepared with many different users in mind:

- BUMED and the U.S. Navy, including the military command and Facilities Management Department;
- Federal and state agencies mandated to ensure compliance with environmental laws and regulations. These include USFWS and CDFG and the City of San Diego;
- Users of NMCSD including, but not limited to, military beneficiaries and employees, civilian beneficiaries and employees, and contractors; and
- Environmental and scientific communities, as well as the general public and community groups interested in the preservation of Balboa Park.

This INRMP serves as a policy strategy and reference tool that can be used by all involved. It is an update to the NMCSD *Integrated Natural Resources Management Plan* prepared in 2001 (DoN 2001). This INRMP represents our knowledge of the resources at NMCSD and includes a summary of recent and past biological surveys of the coastal California gnatcatcher (*Polioptila californica californicus*; CAGN). Zoological nomenclature for birds used in this document is in accordance with the American Ornithologists' Union Checklist (1998), for mammals with Jones *et al.* (1997), and for amphibians and reptiles with Crother (2001). Floral nomenclature follows The Jepson Manual for common plants (Hickman 1993) and the California Native Plant Society for sensitive species (CNPS; 2001). Nomenclature for ornamental plant species follows Bailey and Bailey (1976).

1.3.3 Key Issues

The primary natural resource management concerns on NMCSD land include:

- erosion control;
- compliance with federal law on the elimination of exotic species from native plant communities;
- compliance with federal policy regarding the planting of native plants in landscaping;
- rodent and pigeon control; and
- CAGN habitat management.

This INRMP addresses the management of all natural resources on NMCSD with a focus on these key issues.

Erosion control measures have been successful in eliminating erosion on many parts of NMCSD, but some sites still need to be addressed. Exotic invasive plant species need to be removed from the revegetated coastal sage scrub habitat. Pigeons and rodents have recently been a problem in some areas on NMCSD, although some pest control measures have been successful in reducing their presence.

As a federal landowner, BUMED must practice responsible stewardship of sensitive plants and animals occurring on their property. The revegetated area on the eastern slope of NMCSD contains a few CAGNs, a federally listed threatened species protected under the Endangered Species Act (ESA). The presence of CAGN in this area increases the importance of careful management of its habitat.

1.4 Responsibilities

1.4.1 Installation Stakeholders

The NMCSD Commanding Officer reports to BUMED for administrative and facilities support. The NMCSD Commanding Officer is responsible for ensuring that activities and operations on NMCSD fully comply with federal, state, and local laws/regulations and with DoD and DoN policies. The NMCSD Commanding Officer oversees natural resources management on NMCSD and ensures the ability to carry out the military mission. The Environmental Division of the Facilities Management Department advises the NMCSD Commanding Officer and land managers on natural resources concerns. The administrative line of authority is depicted in the organizational chart in Figure 1-2.

1.4.2 External Stakeholders

INRMPs are to be developed in cooperation with and the concurrence of USFWS and the state's fish and wildlife agency, in this case, CDFG. The cooperating partners will work together to measure both the successes and issues resulting from INRMP implementation. Signatures on the final document or letters of concurrence shall reflect the mutual agreement of all parties.

Source: Integrated Natural Resources Management Plan for Naval Medical Center San Diego, November 2001

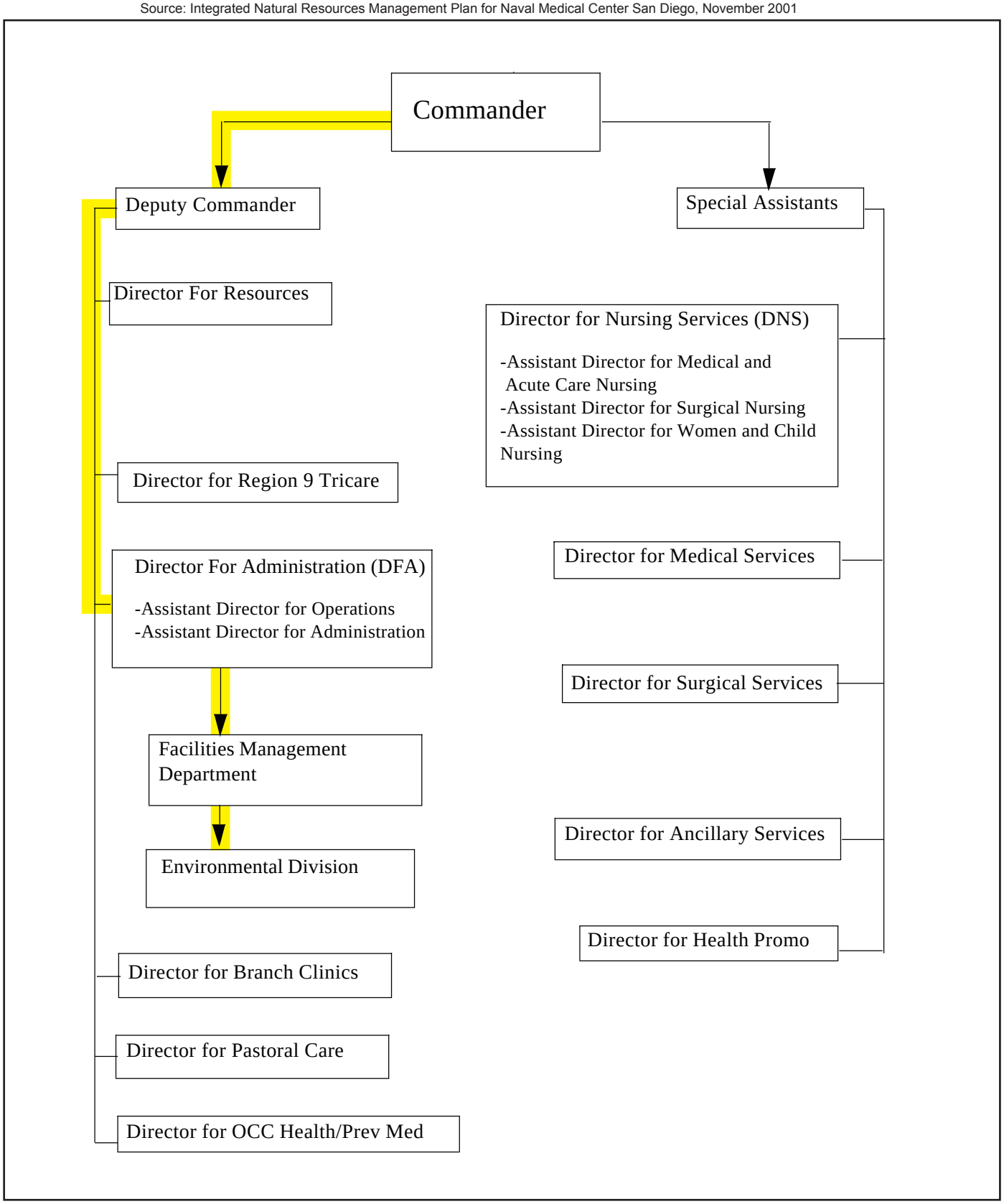

FIGURE 1-2

Organizational chart for NMCSD
Indicating the Administrative Position
of the Environmental Division

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1.5 Authority

1.5.1 Land-use Planning Standards and Decision-making Process

This INRMP is written to fulfill Naval Operations Instruction 5090.1C, which requires Navy installations with land and water resources suitable for conservation and management to establish natural resource management plans, using guidelines and standards set forth in the instruction. The purpose of an INRMP is to help installation commanders manage their natural resources in a manner that is consistent with sustainability of those resources, while ensuring continued support of the military mission. It is intended to be used by the Navy and NMCSD as guidance for new master plans, project planning, mitigation strategy, and compliance monitoring National Environmental Policy Act (NEPA), California Environmental Quality Act (CEQA) documentation, and daily resource management decisions.

A clear understanding of the legal management responsibilities of the land managers and Navy personnel will help assure that recommendations presented in this INRMP are realistic, feasible, and properly prioritized. A brief discussion of INRMP implementation follows. Land-use planning is governed by numerous federal statutes. A comprehensive list is included in Appendix 9.

1.5.2 Regulatory and Jurisdictional Framework

Table 1-2 contains a list of key federal statutes concerning natural resources that affect the operation of NMCSD. Descriptions of these and other applicable laws and statutes, as well as DoD and DoN regulations, are included in Appendix 9.

TABLE 1-2
BRIEF LIST OF FEDERAL STATUTES PERTINENT TO THE MANAGEMENT OF NATURAL RESOURCES ON NMCSD
(see Appendix 9 for a more comprehensive list)

Anti-Deficiency Act (31 United States Code [USC] 1341 et seq.)
Clean Air Act (42 USC 7401 et seq.)
Clean Water Act (as amended; 33 U.S.C. 1251 et seq.)
Comprehensive Environmental Response, Compensation, & Liability Act of 1980 (42 USC 9601 et seq.).
Endangered Species Act of 1973 (as amended; 16 USC 1531 et seq.)
Federal Leadership in Environmental, Energy, and Economic Performance (Executive Order [EO] 13514)
Federal Noxious Weed Act of 1974 (as amended; 7 USC 2801)
Fish and Wildlife Conservation Act of 1980 (16 USC 2901 et seq.)

TABLE 1-2
BRIEF LIST OF FEDERAL STATUTES PERTINENT TO THE MANAGEMENT OF NATURAL RESOURCES ON NMCSD (CONT.)
(see Appendix 9 for a more comprehensive list)

Fish and Wildlife Conservation and Military Reservations (16 USC 670; Sikes Act)
Fish and Wildlife Conservation and Natural Resources Management Programs on Military Reservations (16 USC 661 et seq.; Amended Sikes Act)
Invasive Species Executive Order (EO 13112)
Migratory Bird Treaty Act of 1918 (16 USC 703 et seq.)
National Environmental Policy Act of 1969 (42 USC 4321 et seq.)
National Historic Preservation Act of 1966 (as amended; 16 USC 470)
Responsibilities of Federal Agencies to Protect Migratory Birds (EO 13186)
Sikes Act Improvement Act of 1997 (16 USC 670a et seq.)
Soil Conservation Act (16 USC 590A)
Strengthening Federal Environmental, Energy, and Transportation Management (EO 13423)

1.5.3 Key Laws and Regulations

Some of the key laws and regulations discussed in this chapter are summarized below. More detailed descriptions and the details of other regulations are included in Appendix 9.

DoD Instruction (DoDI) 4715.3, May 1996. Environmental Conservation Program implements policy, assigns responsibilities, and prescribes procedures for the integrated management of natural and cultural resources on property under DoD's control.

Clean Air Act (CAA). The CAA (42 USC §§ 7401 et seq.) mandates the prevention and control of air pollution from stationary and mobile sources. It requires the establishment of National Ambient Air Quality Standards (NAAQS) to regulate primary and secondary concentrations for seven priority air pollutants, New Source Performance Standards (NSPS) to provide ceiling emission standards for certain new and modified stationary sources, and National Emission Standards for Hazardous Air Pollutants (NESHAP) to control pollutants, not covered under NAAQS, which may increase mortality rates or cause serious irreversible illnesses.

Clean Water Act (CWA). The objective of the Federal Water Pollution Control Act (CWA; PL 92-500, as amended; 33 USC §§ 1251 et seq.) is to restore and maintain the chemical, physical, and biological integrity of the nation's waters (Section 101a). Under Sections 401 and 404, the CWA regulates point- and non-point-source (NPS) pollution and—along with Executive Order 11990 titled *Protection of Wetlands*—impacts to wetlands.

The CWA has three major approaches to water pollution control:

1. Construction grants for reducing municipal discharges;

2. National Pollutant Discharge Elimination System (NPDES) permits for control of point-source (storm water and waste water) discharges; and

3. Water quality management planning for NPS control from diffuse natural origins such as sediment.

In 1972 Congress adopted a “zero-discharge” goal and a focus on “preventable causes of pollution” to emphasize the source of contamination rather than controls at the outfall point or the water body itself. Water quality “standards” include a legal designation of the desired use for a given body of water and the water quality criterium appropriate for that use. The “criteria” are specific levels of water quality which are expected to make a water body suitable for its desired use. “Effluent limitations” are restrictions on quantities, rates, and concentrations in wastewater discharges measured at the discharger’s outfall pipe.

Administration of Section 401 of the act is delegated to the State Water Resources Control Board (SWRCB) in California and, locally, to the San Diego Regional Water Quality Control Board (RWQCB). The RWQCB is responsible for setting water quality standards and criteria for water bodies in its regional plan and for issuing and enforcing NPDES permits. The 401 Water Quality Certification application is available on the internet (http://www.swrcb.ca.gov).

Regulatory authority has been delegated by the Environmental Protection Agency (EPA) to the U.S. Army Corps of Engineers (USACE) for Section 404. Section 404 of the CWA deals with the discharge of dredge or fill material into waters of the United States and adjacent wetlands.

Discharges are any materials that result in a change in the bottom elevation of a water body or wetland, including grading, road fills, stream crossings, building pads, and flood and erosion control on stream banks. Vernal pools are considered non-tidal waters that are isolated wetlands under Section 404. Although a vernal pool watershed may at some point, e.g. a 25-year storm event, overflow and connect to other waters of the U.S or waters of the U.S. may sheetflow through a vernal pool to another water of the U.S., they are still considered an isolated wetland under Section 404.

There are 44 more or less generic nationwide permits, also referred to as general permits that preauthorize certain minor discharges as long as they meet certain conditions, e.g. construction of outfall structures, backfill or bedding for utility lines, fill for bank stabilization, and minor road crossings. The current nationwide permits and conditions were issued for a 5-year period and will expire on March 18, 2012. Projects permitted and commenced prior to expiration will likely be allowed to continue under a grandfather provision with conditions. The proposed activities must meet the conditions

of the particular nationwide permit as well as the general conditions and regional conditions for nationwide permits. Each nationwide permit provides a threshold of impact based on volume, acreage, and/or linear footage and can be as low as 0.5 acre and 300 linear feet depending on the particular permit. If these thresholds are exceeded, the nationwide permit may not apply. Work cannot begin until the USACE notifies the U.S. Navy that the nationwide permit applies.

The individual permit process is much more complex and time-consuming than is required for a nationwide permit. It requires consultation with USACE, a 404(b)(1) Evaluation, an Environmental Assessment (EA) prepared by the USACE, and a Public Interest Review. If significant impacts are found, an Environmental Impact Statement (EIS) must be prepared. These regulations apply to vernal pools. The USACE Los Angeles District Condition 7 requires an Individual Permit and an EA for fills in any vernal pool regardless of the presence or absence of endangered species. The USACE is attempting to formalize permit requirements particular to vernal pools. A Memorandum of Agreement between the USACE and EPA dated February 7, 1990 states that all potential impacts must first be shown to have been avoided, minimized, and mitigated. The mitigation sequence indicates that the USACE must first look at avoidance of waters of the U.S. If avoidance is not practicable, the applicant must next show that the impact is minimized to the extent practicable. Finally, if impact is unavoidable, the applicant must provide compensatory mitigation. Compensation involves the creation of a habitat to replace a similar habitat unavoidably eliminated at a project site. The concerned agencies must be completely convinced that the proposed compensation will completely mitigate the lost habitat.

Penalties: A Class I or civil penalty may not exceed $10,000 per violation with the maximum amount of $25,000. Class II civil penalty may not exceed $10,000 per day as each violation continues with the maximum amount not to exceed $125,000.

Endangered Species Act. The ESA (PL 93-205; 16 USC §§ 1531 et seq.) of 1973 requires that all federal agencies undertake programs for the conservation of endangered and threatened species. These agencies are prohibited from authorizing, funding, or carrying out any action that would jeopardize a listed species or destroy or modify its “critical habitat” (Section 7).

Soil Conservation Act. The Soil Conservation Act (PL 74-46; 16 USC § 590A) provides for application of soil conservation practices on federal lands. It requires federal agencies to control and prevent soil erosion and preserve natural resources in managing federal lands.

National Environmental Policy Act. The NEPA of 1969 (PL 91-190; 42 USC §§ 4321 et seq.) evolved over ten years from the desire of Congress to have a cohesive statement of the national environmental policy. Agencies must assess, in detail, the potential environmental impact of any proposal for legislation or other major federal

action that has the potential to significantly affect the quality of the human environment. The act is intended to help public officials and citizens make decisions that are based on an understanding of the environmental consequences of the proposed action and to take action that protects, restores, and enhances the environment.

Invasive Species. The Invasive Species Executive Order (EO 13112) restricts federal agencies from the use of exotic plant species in any landscape and erosion control measures.

National Historic Preservation Act. The National Historic Preservation Act of 1966 (PL 89-665; 16 USC §§ 470 et seq.) provided authorization to expand and maintain the National Register of Historic Places (NRHP), establish the Advisory Council on Historic Preservation, required federal agencies to consider potential effects to NRHP, and provided the Advisory Council opportunities to comment (Section 106). In 1976 the act was amended to expand Section 106 to properties eligible for as well as already listed in the NRHP.

Comprehensive Environmental Response, Compensation and Liability Act. The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980 (43 USC §§ 9601 et seq.) establishes programs for the cleanup of hazardous waste disposal and spill sites to ensure protection of human health and the environment.

1.6 Stewardship and Compliance Discussion

NMCSD recognizes that managing habitats and ecosystems is more prudent and scientifically sound than managing for individual species. Ecosystem management focuses on the protection of sensitive species from further encroachment and degradation. NMCSD strives to strike an acceptable balance between natural habitat values and NMCSD's military mission.

1.7 Review and Revision Process

An installation is not required to revise an existing INRMP at a specific time interval (DoN 2006). The installation shall conduct informal reviews of the INRMP annually and formal INRMP reviews every 5 years with the USFWS and CDFG. During these reviews, it may be determined that an installation's current INRMP is effective and not in need of revision. This evaluation is facilitated by the web-based Metrics Builder tool on the Natural Resources Data Call Station website (https://clients.emainc.com/dcs/navfac/index.htm).

With agreement from and in cooperation with the appropriate field-level offices of the USFWS and CDFG, thorough written documentation of the annual informal reviews may

be used to substitute for the 5-year formal review. The cooperating partners will work together to measure both the successes and issues resulting from INRMP implementation. It is the Navy's intent that each installation fully document annual reviews and work with USFWS and CDFG to utilize the annual review process to meet the 5-year formal review requirement whenever possible.

Annual reviews shall verify that:

a. All Environmental Readiness Level 4 (ERL4) projects and activities have been budgeted and implementation is on schedule;

b. All required trained natural resources positions are filled or in the process of being filled;

c. Projects and activities for the upcoming year have been identified and included in the INRMP (an updated project list does not necessitate revising the INRMP);

d. All required coordination has occurred; and

e. All significant changes to the installation's mission requirements or its natural resources have been identified.

Certain developments may necessitate an INRMP revision. These developments include, but are not limited to the following:

a. A change in mission requirements or intensity of land use;

b. Significant change in natural resource baseline condition. For example, a substantial change in population for a listed species or a new invasive species;

c. Old INRMP has proven inadequate, was not possible to implement, or monitoring has shown projects to be ineffective in meeting natural resource management goals;

d. Natural resource management goals have changed, or planning horizon of previous INRMP has expired; and

e. Base Realignment and Closure (BRAC) actions.

1.8 Management Strategy

1.8.1 What is Ecosystem Management?

This section addresses the well-recognized principle that managing habitats and ecosystems is more prudent and scientifically sound than managing individual species.

Ecosystem management focuses on the protection of sensitive species from further encroachment and degradation. This is accomplished through the protection and restoration of the function, structure, and species composition of the ecosystems that support sensitive species. The key is to strike an acceptable balance between natural habitat values and NMCSD's military mission.

Among federal agencies, including DoD, ecosystem management is thought of as a means to view humanity as part of the environment: "ecosystem management considers ecosystems as functioning biological systems rather than single species or single function views and also incorporates economic and social considerations" (The Keystone Center 1996).

Some key concepts addressed in multi-species or habitat conservation planning can be summarized as follows:

- Identify lands with high biodiversity or habitat value.
- Prevent habitat loss due to erosion, compaction, development, fragmentation, or other means.
- Maintain habitat quality and connectivity between patches. Habitat connections act as dispersal corridors and link, for example, nesting and foraging areas.
- Create, restore, or maintain buffer zones around high-value biological areas.
- Control introduction of exotic species and cultivars of native species.
- Foster physical and age-class structural diversity.

The habitat or ecosystem (rather than individual species) focus of this plan is expected to result in recommendations which will serve to protect the coastal sage scrub habitat located on NMCSD. This patch of habitat on the property's eastern border is an essential component of wildlife habitat within Florida Canyon. It is an extension of the much larger area of coastal sage scrub habitat located just north of NMCSD (Photograph 1-1) and is recognized in the City of San Diego's Multiple Species Conservation Program (MSCP) (included as Appendix 10 of this INRMP) as an important habitat area. Across Florida Drive from NMCSD, the City of San Diego has performed a small (approximately a 7-acre) revegetation project over an old landfill. This revegetated

Photograph 1-1. Relatively Large Patch of Coastal Sage Scrub Habitat North of NMCSD

slope connects coastal sage scrub habitats located to the north and south of the site, and provides additional habitat from which species can disperse over to NMCSD. Though small, NMCSD's patch of native vegetation is beneficial to native plant and wildlife populations found within Florida Canyon.

1.8.2 Policy Strategy for Habitat and Ecosystem Management

*Objective: Enhance, restore, and protect the natural diversity and long-term viability of the ecological and evolutionary processes within the wildlife habitats of NMCSD, consistent with DoD's ecosystem management policy (*DoN 2007*).*

I. Protect and enhance community-level habitat values by adopting and implementing policies which preserve structural and species biodiversity.

   A. Maintain existing coastal sage scrub habitat through erosion control, exotic plant eradication, and other management means.

   B. Monitor habitat condition and effectiveness of management activities.

II. Minimize habitat fragmentation by maintaining continuity with off-site open space. Delineate and maintain connectivity between habitat patches to link foraging and nesting areas, foster population dispersion and recolonization potential, and increase the area available for foraging.

1.9 Other Plan Integration

This INRMP is intended to be compatible with other NMCSD planning documents. It supersedes previous INRMPs including the 2001 INRMP (DoD 2001). Other plans include the NMCSD Master Plan (DoN 1994) and MSCP Subarea Plan.

In preparing this document, other planning documents consulted include:

- NMCSD Base Exterior Architecture Plan (NMCSD 1996);
- Results of an Intensive Phase I Cultural Resource Survey of the NMCSD (RECON 2001);
- Natural Resources Inventory and Implementation Guide (RECON 2005a);
- Erosion Evaluation and Control Plan (RECON 2005b);
- Exotic Invasive Plant Removal Plan (RECON 2005c);

- 45-Day Report on Surveys Conducted for the Coastal California Gnatcatcher at the Naval Medical Center (Clark Biological Services 2009);
- Vegetation Management Plan (Agri Chemical & Supply (Agri Chem) 2009);
- Erosion Evaluation and Control Report (Tierra Data 2009); and
- Biological Resources Inventory Report (Tierra Data 2010).

2.0 Current Conditions and Use

2.1 Installation Information

NMCSD provides patient care to active duty service members and their families, retired military members, and to survivors of members who died in active duty. Hospital services, primary care clinics, specialty clinics, and ancillary services (such as pharmacy, laboratory, and radiology services) are available at NMCSD. Care is provided by staff of more than 6,200 military, civilian, contractor, and volunteer personnel (NMCSD 2010). NMCSD is active in resource sharing programs which allow civilian health care providers to treat patients within the complex. NMCSD is also a location for health promotion. NMCSD provides for the advancement of military medicine through education, training, and research and acts as the tertiary referral center for TRICARE in Region 9 (the area military health care program). Under the command of BUMED, NMCSD is the largest and most technologically advanced military health care complex in the world.

2.1.1 General Description

2.1.1.1 Location and Property Description

Located in San Diego County, California, NMCSD serves at the operational center of one of the nation's largest Naval complexes. San Diego is the home port to more than one-third of the U.S. Naval Pacific fleet. NMCSD supports several military installations throughout the area (Figure 2-1), many of which contain Branch Medical Clinics. NMCSD also provides support for TRICARE Outpatient Clinics in the area.

The NMCSD campus area occupies approximately 75 acres within the southeast corner of Balboa Park in the City of San Diego (Figure 2-2). Consisting of 1,200 acres, Balboa Park contains numerous structures that are on the National Register of Historic Places, including the San Diego Veterans War Memorial Building adjacent to NMCSD. The NMCSD campus is bordered on the east by Florida Canyon, which still contains large tracts of native coastal sage scrub habitat (Photograph 2-1). NMCSD is bounded on the southwest by Interstate Highway 5, on the northwest by Park Boulevard, is southeast of the San Diego Zoo, and four miles east of the San Diego International Airport. Principal access is by Interstate Highway 5 or State Route 163.

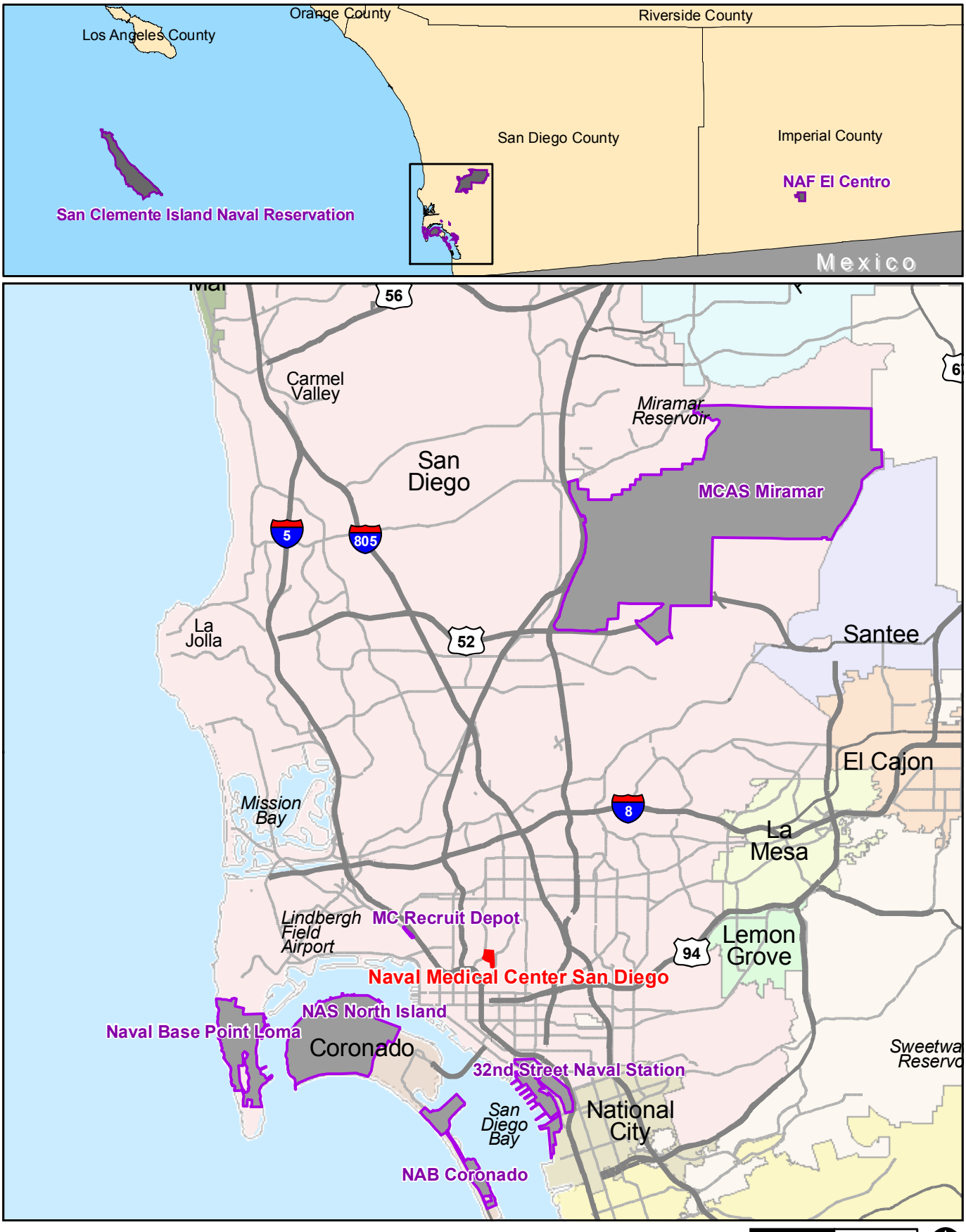

FIGURE 2-1
Regional Location of Naval Medical Center San Diego
and Supported Military Bases

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Image source: Natural color representation of the NAIP 2009 aerial imagery.

Naval Medical Center San Diego

FIGURE 2-2

Aerial Photograph of NMCSD and Surrounding Areas

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2.1.1.2 Real Estate Summary

The U.S. federal government/BUMED owns the 75-acre property supporting the medical complex. Facilities within the complex include the hospital, various training buildings, Senior Officers Quarters (SOQ) and Bachelors Enlisted Quarters (BEQ) housing, community facilities, parking, and maintenance, supply and storage facilities (Figure 2-3). The City of San Diego owns two parking lots west of NMCSD along Park Boulevard (Lots 400 and 800) and one lot to the south (Lot O). These lots are primarily used by the Navy for overflow parking.

Photograph 2-1. View of NMCSD from Northeast across Florida Drive

NMCSD San Diego facilities are used by military, civilian, and contractor personnel. Besides its own organization, NMCSD provides support and facilities to the following tenants:

Major Tenants

- Federal Fire Department
- Naval Drug Screening Lab (NDSL)
- Naval School of Health Sciences (NSHS)
- Naval Facilities Engineering Command (NAVFAC)
- Navy Resale and Service Support Office (NAVRESSOFSO)
- Personnel Support Detachment (PSD)
- Physical Evaluation Board (PEB)

Minor Tenants

- Fleet Reserve Association
- Marine Corps Liaison
- Naval Publication and Printing Support Office (NPPSO)
- Naval Reserve Readiness Association
- Red Cross
- National University
- Southern Illinois University

Image source: Natural color representation of the NAIP 2009 aerial imagery.

FIGURE 2-3

Facilities and Land Use at NMCSD

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2.1.2 General Regional Land Use

In May 1971, plans began for the construction of a new state-of-the-art Naval Hospital to replace the original but outdated Balboa Hospital building, referred to by many as the "Pink Palace." The 75-acre Florida Canyon site in Balboa Park was made available through a land exchange that transferred 34.5 acres of Navy land to the City of San Diego. In September 1980, Congress authorized $293 million for the construction project and in October 1981, the project began. By 1988, construction of the Naval Hospital was completed. The name was changed to Naval Medical Center in February 1993.

Today NMCSD is the largest and most technologically advanced military health care complex in the world. The majority of NMCSD property comprises developed land, which consists of buildings, parking lots, and streets. Three buildings from the old hospital were retained. Buildings 26 and 27, both from 1956, were converted into student housing; and Building 41, the enlisted men's barracks built in 1969, was also retained. The natural habitat on-site includes approximately 9 acres of manufactured slopes that have been revegetated with 7 acres of native habitat dominated by coastal sage scrub.

2.1.3 Abbreviated History and Pre-Military Land Use

2.1.3.1 Prehistoric Era

No prehistoric artifacts, features, or associated deposits have been recorded on, or discovered on the NMCSD property.

2.1.3.2 Historic Era

2.1.3.2.1 Pre-Navy Land Use

In 1868 the San Diego Board of Trustees set aside 1,400 acres of high flat mesa overlooking San Diego town and bay for a city park. Deep canyons cut through the mesa and the landscape was dry. Only chaparral, coastal sage scrub, and cacti were present, except during the spring, when wildflowers appeared on the hills. In the 1890s local volunteers began planting the western edge, and in 1902, the Chamber of Commerce appointed a Park Improvement Committee (DoN 1987).

Grading and landscaping for Balboa Park began in 1903. After 1905, municipal taxes were administered by a Park Commission for further landscaping and improvements. By 1910, roadways had been built, a partial water system installed, and landscaping was completed along the length of the park's western edge. In 1910, the park was given the name Balboa Park.

The Panama–California Exposition Company selected Balboa Park as its site for the 1915 exposition, and the park continued to be improved, setting precedents for future use. The main 1915 exposition buildings stood along an east-west boulevard (El Prado) on the central mesa of Balboa Park. A spectacular bridge crossing the arroyo to the west of the main buildings was built to accommodate visitors. Secondary buildings and concession stands extended north and south. Park Boulevard was cut through to run past the exposition site and included an electric streetcar line. Coincidentally, the alignment of Park Boulevard ran past Inspiration Point, the site of the first Naval Hospital building. The exposition buildings were meant to stand only for the duration of the fair; however, they were retained because of their popularity (DoN 1987) and continue to be used to this day. This unforeseen city-within-a-park, with its paved boulevard and streetcar access from downtown (giving access also to Inspiration Point) set a precedent for the construction of more independent groupings of buildings in Balboa Park.

Prior to the Navy's construction on Inspiration Point, a 1920 topographic map (DoN 1987) shows an old concrete foundation on Inspiration Point, a cottage and stable on a knoll to the southeast, and an unpaved road along the east edge of the ridge that wound down the south face of the promontory to the city grid below. This hospital site was considered a spectacular 'back door' to Balboa Park. In 1920 it was a vista point accessible only by the unpaved road, somewhat removed from the mainstream of Balboa Park's improvements. "It was an idyllic place with grass, scattered eucalyptus trees, quiet graveled carriage drives, and distant views of the harbor" (DoN 1987).

2.1.3.2.2 Historic Military Use

Although not presently located on a historical site, it was during the First World War (WWI) that NMCSD began as a tent field hospital staffed by the U.S. Navy. When World War I began, newly arriving Navy units camped on the exposition grounds along with U.S. Marines who were still waiting for facilities to be built on their newly purchased Marine Corps Base site, the Marine Corps Recruit Depot (MCRD). A Naval Training Camp was also established in Balboa Park, located inland from the Marine Corps camp, and the Naval Aviation contingent ran a ground school there until the North Island flight school was completed. The Navy Medical Corps dispensary, which had accompanied the Marines during their 1914 arrival, also became a separate camp in the park.

In June 1918, the first units of the medical department reported to the Sick Quarters within the Naval Training Camp. By November 1918 (Armistice), the field hospital's tent colonies had reached a bed capacity of over 800. The Naval Training Camp was abandoned in May 1919, but the Navy designated the camp's old Sick Quarters as a hospital. That field hospital remained in full operation throughout the 1918–1919 influenza epidemic.

In order to retain a U.S. Navy presence, the City of San Diego was willing to donate 135 acres for a Naval Training Center. Considering the buildup expense, including facilities

and support facilities such as a hospital, Congress stipulated the acceptance of the training center site if the government was also given a hospital site. The Navy wished to stay in the Balboa Park location; however, it agreed with the City that the field hospital should move from the exposition grounds to a permanent site, still within the park. In 1918, the Navy agreed on an undeveloped area called Inspiration Point located on a southern promontory of the park. Inspiration Point was named for its beautiful view of downtown San Diego and Coronado (DoN 1987). It became the site of the first Naval hospital.

In 1919, the 17-acre site at Inspiration Point was donated to the U.S. Navy by the City of San Diego for the hospital, along with a 135-acre site in San Diego for a Naval Training Center. In May 1920, plans were ordered for the construction of a permanent facility. The architecture of the buildings followed the Spanish Revival style that architect Bertram Goodhue introduced to the Prado quadrangle buildings of Balboa Park. By 1922, the first six buildings were commissioned, and by 1929 additional space was added raising the bed capacity to over 1,000. Because of its color, this Naval hospital was nicknamed the Pink Palace (Photograph 2-2).

Photograph 2-2. Naval Hospital San Diego under Construction circa 1921 (*Courtesy of San Diego Historical Society*)

Historical circumstances shaped the growth of NMCSD. Activity increased during World War II including treatment of 12,000 patients by the end of the war (Photograph 2-3). The Korean War required treatment and care of over 90,000 patients within a two-year period. Structures were added to the hospital as the demand increased. A new surgical building was commissioned in May 1957 with a design capacity of over 1,000 beds. A new, three-story Outpatient Clinic was dedicated in June 1969, which centralized outpatient care in 13 specialties. The Naval Hospital and Naval Station Dispensaries were placed under Naval Regional Medical Center, San Diego, in 1972 and headquartered at the Naval Hospital.

Photograph 2-3. Naval Hospital San Diego during World War II (*Courtesy of San Diego Historical Society*)

2.1.4 Military Mission

2.1.4.1 Mission Statement

The mission of NMCSD is to deliver quality health services in support of U.S. Armed Forces, to maintain medical readiness, and to advance military medicine through education, training and research.

NMCSD strives to ensure the highest personal, professional, and organizational readiness to meet all operational and homeland security requirements in support of delivering quality health services.

2.1.4.2 Future Mission Requirements

The vision of NMCSD is “to be the treatment facility of choice” (NMCSD website 2010). Future land use decisions shall support the buildings and facilities needed to accomplish the military mission and vision.

2.1.5 Operations and Activities

2.1.5.1 Routine Maintenance

Routine maintenance of roads, buildings, utility lines, and other infrastructure is important for safeguarding access to facilities that are central to support the military mission as well as the safety of those involved in implementing the mission. Guidelines for maintenance are needed that allow for protection of sensitive environmental resources.

2.1.5.2 Construction

On occasion there is a need to build new facilities to ensure the ability of the installation to fulfill its military mission. The DoD military construction (MILCON) budget is a primary source of funds for construction. Guidelines for construction are needed that allow for protection of sensitive environmental resources.

2.1.5.3 Installation Restoration Sites

The installation recognizes that adverse impacts to natural resources addressed in this INRMP could result from the release of hazardous substances, pollutants, and contaminants into the environment. The DoN Installation Restoration Program (IRP) is responsible for identifying Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) releases, considering risks and assessing impacts to human health and the environment (including impacts to endangered species, migratory birds,

and biotic communities), as well as developing and selecting response actions when it is likely that a release could result in an unacceptable risk to human health and the environment.

When appropriate, the regional or installation's natural resource management staff will assist the Installation Restoration Program Remedial Project Manager (RPM) in the identification of potential impacts to natural resources caused by the release of these contaminants. Regional or installation natural resources staff will also participate, as appropriate, in the IRP decision making process by communicating natural resource issues on the installation to the RPM, attending Restoration Advisory Board meetings, reviewing and commenting on IRP documents (e.g., Remedial Investigation, Ecological Risk Assessment), and ensuring that response actions, to the maximum extent practicable, are undertaken in a manner which minimizes impacts to natural resources on the installation.

The DoN's IRP is intended to provide a safety net to protect public and ecosystem health by facilitating the investigation and cleanup of contaminated sites at military installations. No installation restoration sites have been identified on NMCSD as potentially contaminated by hazardous materials. When construction for NMCSD was started in the 1980s, the site was covered by clean soil brought in from outside locations, and no known contamination of this soil has occurred since that time.

Because of its duties as a medical hospital, NMCSD has multiple sources of biomedical and hazardous waste. The Facilities Management Department is responsible for the disposal of the waste which is conducted through the NAVFAC or licensed private companies. Waste is stored on NMCSD for no more than 90 days.

NMCSD has a number of other protocols in place to address contaminant concerns. Both the Hazardous Waste Materials Management Plan and Pollution Prevention Management Plan address the disposal and clean-up of potential contaminants. Table 2-1 includes a list of just a few of these programs. In addition, annual Environmental Quality Assessments (EQAs) are conducted to ensure that contaminants are disposed of properly.

TABLE 2-1
ENVIRONMENTAL PROTECTION PROTOCOLS AT NMCSD

Integrated Solid Waste Management Plan with Pollution Prevention Plan and Hazardous Waste Management Plan for NMCSD, CA. July 2006.
Hazardous Material Business Plans for NMCSD, CA. September 2006.
Oil and Hazardous Substance and Spill Prevention, Control, and Countermeasure Plan. March 2007

2.1.5.4 Natural Resources Managed Areas

2.1.5.4.1 Federally Listed Species Managed Areas and/or Mitigation Sites

One listed species is known to occur on NMCSD, the federally listed threatened coastal California gnatcatcher. On March 25 1993, the USFWS listed the coastal California gnatcatcher as threatened (50 CFR 17, March 30, 1993) pursuant to the federal ESA of 1973, as amended. The coastal sage scrub habitat on the eastern slope of NMCSD is a managed area for the California gnatcatcher. The gnatcatcher use area on NMCSD is discussed in Section 3.2.4.2 of this INRMP.

2.1.5.4.2 Designated Critical Habitat

Critical habitat for the California gnatcatcher was designated for this species on October 24, 2000 (USFWS_2000). However, there is no designated critical habitat on or adjacent to NMCSD.

2.1.5.4.3 Areas Restricted Because of Sensitive Habitat/Open Space

Access to California gnatcatcher occupied coastal sage scrub habitat is restricted during the breeding season (1 February through 30 September).

2.1.5.4.4 Ecological Reserve Areas or Resource Natural Areas

The approximate seven acres of native habitat on the eastern side of NMCSD are considered a natural resource. As mentioned above, the management of this habitat is included in this INRMP.

2.1.6 Constraints Map

Not Applicable (NA). Training missions do not occur on the NMCSD campus.

2.1.7 Opportunities Map

NA. Training missions do not occur on the NMCSD campus.

2.2 General Physical Environment and Ecosystems

2.2.1 Physical Setting

NMCSD lies on a bluff called Inspiration Point approximately 4 miles inland of San Diego Bay. This area consists of gently rolling hills dissected by canyons, which eventually ascend to the Peninsular Ranges to the east.

The mean elevation is approximately 250 feet above mean sea level. The area is very steep, with a 180-foot-elevation rise between the lowest and highest points within the NMCSD campus.

2.2.2 Climate and Weather

The regional climate of San Diego is classified as semiarid Mediterranean and consists of three distinct zones of rainfall. The climatic zones are roughly synonymous with the coastal plain, mountain, and desert regions. NMCSD is located in the coastal plain zone, which is the most equable and maritime of any zone in San Diego county. The weather is characterized by warm, sunny days and moderate nights. Summers are warm, and winters are mild.

Weather data from the nearby San Diego International Airport show average monthly temperatures ranging between maximums of 65° to 76° and minimums of 48° to 66° Fahrenheit (Figure 2-4). The average humidity is 76 percent in the early morning and 62 percent in the afternoon, and average annual rainfall is 10 inches. The majority of rain falls from December–March (Western Regional Climate Center 2006). Night and morning fog are common. Throughout most of the year, westerly winds pick up in the afternoon, and early morning and evening easterly winds occur primarily in winter. Stronger winds may occur in winter, associated with cold fronts moving through the region. In late fall and early winter, hot, dry, Santa Ana winds may be quite strong from the east, driven by high pressure over inland deserts.

1

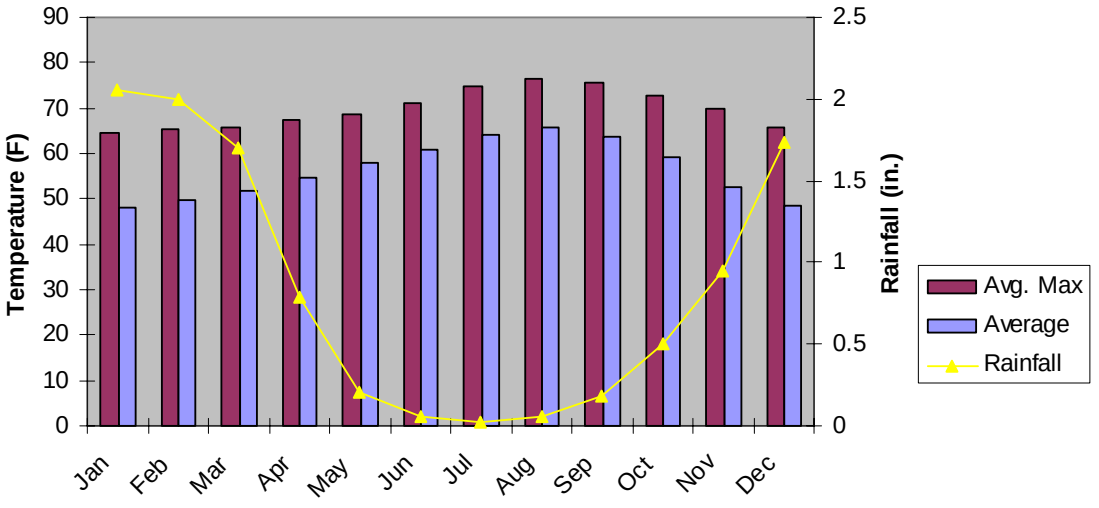
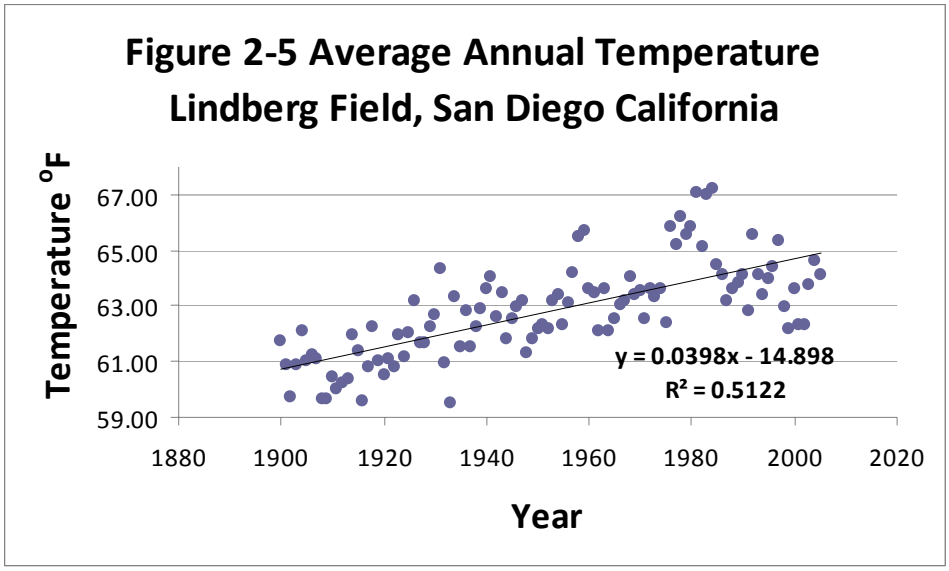
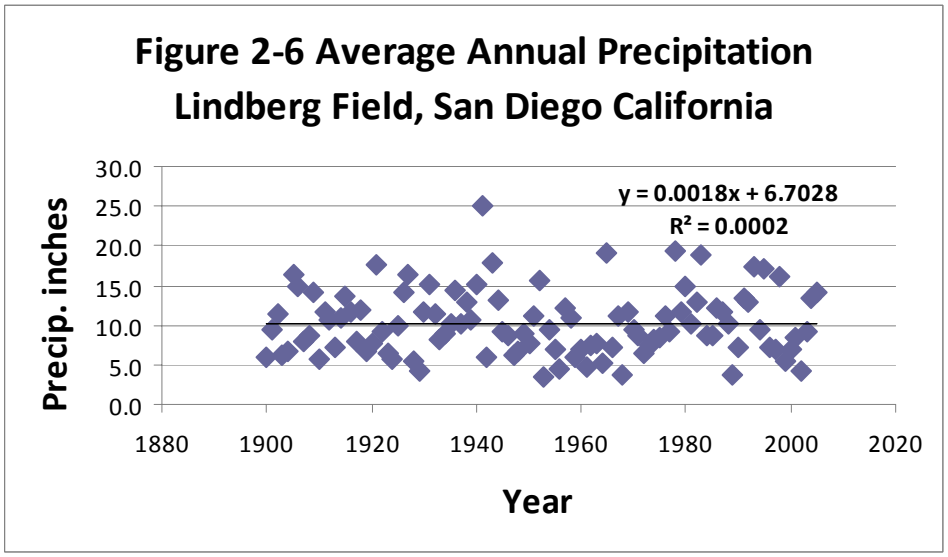


FIGURE 2-4
Average monthly maximum and minimum temperatures and rainfall amount at San Diego International Airport, 1914 to 2005 (Western Regional Climate Center 2010)

2.2.2.1 Regional Climate Change

Historical data from Lindberg Field show that temperatures have been rising over the last century, while precipitation has stayed about the same (Figures 2-5 and 2-6) (Western Regional Climate Center 2009a and b). Regional models project more of the same. Projections using three climate models shown to reasonably model San Diego's climate and two different greenhouse gas emissions scenarios show temperatures rising between 1.5°F to 4.5°F. Nighttime minimum temperatures are anticipated to increase more than daytime maximums. Changes in precipitation are not consistent with some wetter and some drier. The underlying Mediterranean type climate with warm dry summers and cool wet winters is anticipated to continue. In addition, the El Nino/Southern Oscillation (ENSO) is anticipated to function within the historical range of variability (Cayan et al. 2007; Messner et al. 2008).





2.2.3 Geology and Seismicity

In order to provide a level base for the construction of buildings and parking lots, the NMCSD site was deeply excavated. Design modifications to the original overall building plan of NMCSD were necessitated, when a seismic fault was discovered running in a northerly direction just east of the center line of NMCSD (Figure 2-7). Early site investigations indicated that the vertical slip displacement rate was very minor compared to other faults. Although it was concluded that this fault posed no threat to the site, a 100-foot foundation buffer zone was enforced along the fault. A natural water course flowing north to south bordering Florida Drive was preserved.

2.2.4 Soil Resources

The soils found at NMCSD are excessively drained cobbly loams, coarse gravelly loams, and urban land types consisting of highly altered soil materials (U.S. Department of Agriculture [USDA] 1973). The soils and land types that have been mapped at the Naval Medical Center are shown in Figure 2-5 and discussed below.

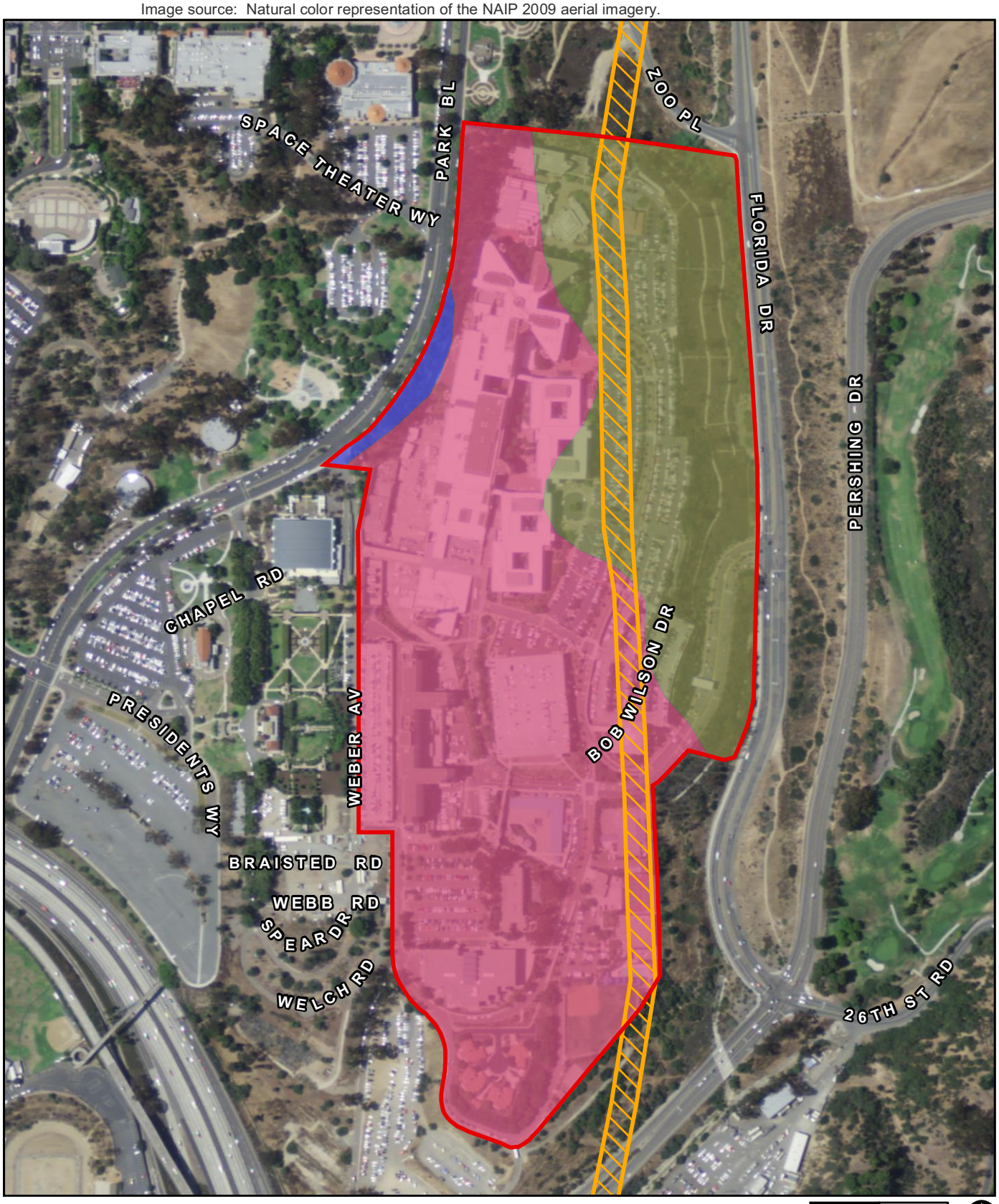
Redding cobbly loam, 9-to-30-percent slopes (ReE). This is a 10-to-20-inch cobbly loam layer over a hardpan. Twenty to 30 percent of the surface layer and 25 to 35 percent of the subsoil are composed of cobblestones. The water holding capacity is only 1.5 to 2 inches, and runoff can be rapid. Consequently, the erosion hazard is moderate to high. This soil is present in the northeast quarter of NMCSD. This area contains the largest patch of native vegetation remaining at NMCSD and is relatively steep.

Redding gravelly loam, 2-to-9percent slopes (RdC). This soil consists of well drained, undulating to steep gravelly loams that have a gravelly clay subsoil and a hardpan. This soil type is only found in a very small section in the northwest corner of NMCSD.

Urban land (UR). The majority of NMCSD is classified as urban land by the soil survey (USDA 1973). This is soil that has been altered by construction projects to the point where identification is not possible. This classification is reserved for buildings, streets, and other developed areas.

Soil types identified by USDA are general categories mapped at a large scale and represent the site condition prior to current development. The wetland delineation performed on-site (RECON 2005a) identified the presence of loamy sands within an urban drainage located on the project site adjacent to Florida Drive, which were likely deposited through the general course of water flow.

Image source: Natural color representation of the NAIP 2009 aerial imagery.



Naval Medical Center San Diego

Fault

Soils

Redding Cobbly Loam, 9 to 30% Slopes

Redding Gravelly Loam, 2 to 9% Slopes

Urban land

FIGURE 2-7

Soils

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2.2.5 Soil Erosion

Erosion is caused by the action of water and wind wearing away the land's surface. The majority of the NMCSD non-built surface area is either impervious and non-erosive or pervious but well vegetated. Natural and landscaped vegetation and a series of runoff drains along the eastern edge of NMCSD stabilize much of the steep slopes (Photograph 2-4). However, erosion is still common in some areas on NMCSD, and adjacent to the campus on steeper slopes (Photograph 2-5).

Photograph 2-4. Culvert Used to Collect Runoff and Reduce Erosion along the Eastern Slope

Photograph 2-5. Erosion just off NMCSD Property along its Southeastern Border

2.3 General Biotic Environment

2.3.1 Threatened and Endangered (T&E) Species and Species of Concern

2.3.1.1 Federal and State Listed Wildlife Species

One listed species, the CAGN, has been observed on NMCSD. The CAGN is listed as federally threatened by USFWS and is a California special concern species according to CDFG. Habitat destruction and fragmentation have been the leading causes of its decline (CDFG 2006).

The following is a brief description of the coastal California gnatcatcher's life history and its status on NMCSD.

Coastal California Gnatcatcher (*Polioptila californica*). The CAGN is a small, gray songbird (Photograph 2-6) resident in San Diego County throughout the year. It is active most of the day except perhaps during the afternoon hours of the hottest days. It feeds primarily on insects and spiders that it gleans from shrubs (CDFG 2006).

Photograph 2-6. Coastal California Gnatcatcher (*Polioptila californica*)

Breeding activity of this species may be seen as early as late-February but peaks in April and can last into August (Griffith and Griffith 1997). An average clutch size is four eggs (range 2–5 eggs). The incubation and nestling stages last approximately 14 and 16 days, respectively (USFWS 1993). Multiple broods may be attempted by a pair in one season. Brood parasitism of gnatcatcher nests by brown-headed cowbirds occurs, but predation is a more frequent cause of unsuccessful nests (Rotenberry and Scott 1998). Nest predators include snakes, rodents, opossums, raccoons, coyotes, gray foxes, bobcats, scrub jays, crows, ravens, and roadrunners (Grishaver *et al.* 1998). Predators of adult CAGNs include raptors, feral cats, and snakes.

In a study on MCB Camp Pendleton in San Diego County, the average breeding home range size was 5.8 acres (Griffith and Griffith 1997); however, other studies have shown breeding territories varying from 2 to 14 acres (USFWS 1993). At Camp Pendleton, the majority of breeding territories were in habitat that had not burned in over 20 years and those in disturbed areas were considerably larger than average (Griffith and Griffith 1997). Year-round home ranges vary in size from 13–39 acres (USFWS 1993).

Coastal California gnatcatchers prefer to establish breeding territories in coastal sage scrub habitat with more than 50 percent shrub cover (Beyers and Wirtz 1997).

Status on NMCSD: Coastal California gnatcatchers were also observed at NMCSD during focused surveys for the species during 1994–1995. One was observed in the revegetated coastal sage scrub habitat during the winter surveys, and a pair was observed during the spring surveys. One male and one female coastal California gnatcatcher were observed during winter surveys conducted in 2000/2001,and the pair were again observed in surveys during the spring 2001 breeding season. At least two birds were observed during surveys conducted during the fall of 2003 (RECON 2005a). The recent survey results confirm that gnatcatchers still persist on the property whether it is for nesting activities or just as part of their territory (Tierra Data 2010).

The location of the gnatcatcher habitat and location of sightings in 2009 is shown in Figure 2-8.

The coastal California gnatcatchers present on NMCSD may be part of a larger population which inhabits Florida Canyon, adjacent and to the east of NMCSD. However, individuals and pairs are often found in isolated patches of habitat far from the closest population, suggesting substantial dispersal (Rotenberry and Scott 1998). In

Source: Biological Resources Inventory Report for Naval Medical Center San Diego, California, July 2010

FIGURE 2-8

California Gnatcatcher Habitat and Location of Sightings at NMCSD

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previous years, one to four coastal California gnatcatchers have been observed annually during the breeding season, and up to nine individuals have been seen during the winter in Florida Canyon (Unitt, *pers. comm*. 2001). Based upon average territory size, the eastern slope of NMCSD probably has adequate potential habitat to support no more than two breeding pairs of California gnatcatchers (CDFG 2006).

2.3.1.2 Federal Species of Concern and Other Sensitive Wildlife Species

Sensitive wildlife species are those species considered endangered, threatened, or of "special concern" by a state (CDFG) or federal (USFWS) agency. NMCSD holds little potential for most sensitive wildlife species because of the relatively small size of its native communities. Other than the CAGN, no such sensitive wildlife species have been observed on NMCSD.

2.3.1.3 Federal and State Listed Plant Species and Other Sensitive Plant Species

Sensitive plant species are those species considered endangered, threatened, or of "special concern" by a state (CDFG) or federal (USFWS) agency, or considered "rare" by the California Native Plant Society (CNPS). No such sensitive plant species have been observed on NMCSD.

2.3.2 Wetlands and Deep Water Habitats

2.3.2.1 Water Usage and Demands

2.3.2.1.1 Regional Water Sources, Use and Conservation

The San Diego region relies heavily on water imported from the Colorado River and Northern California. More than half of the water use is residential. In 2009 approximately 13 percent of the water supply was attributed to water recycling and conservation efforts (San Diego County Water Authority 2009).

2.3.2.1.2 Installation Water Sources, Use, and Conservation

Water for all purposes is supplied from the City of San Diego. Water is used in the hospital, housing, and other buildings as well as for landscaping. Measures to conserve water used for landscaping are described in Section 4-10 of this INRMP.

2.3.2.2 Jurisdictional Wetlands

A total of 0.48 acre of jurisdictional wetlands on the NMCSD campus was delineated in the urban drainage adjacent to Florida Drive as shown in Figure 2-9 (RECON 2005a). Urban runoff and sedimentation contribute greatly to this creek. The drainage has been channelized and is well defined with riprap throughout much of its length. The southern extent of the creek has been stabilized with concrete banks. The creek averages 15 feet wide at the ordinary high water mark. The creek enters the site through a box culvert beneath Zoo Drive and exits to the south via a large pipe (Photograph 2-7). Additional water enters the drainage via runoff from the adjacent east-facing slope. Culverts drain the hillside into the creek (Photograph 2-8).

Conservation of wetlands and jurisdictional waters of the U.S. is accomplished through compliance with existing laws and regulations. Activities, including normal maintenance operations, that may impact wetlands are subject to regulation under Section 404 of the CWA, Section 24-7-c of OPNAVINST 5090.1C, and Executive Order 11990 (Protection of Wetlands). Chapter 4 of this INRMP specifies erosion control measures which provide additional protection against degradation of the wetland and associated habitat.

Photograph 2-7. Creek Exit. Coastal Sage Scrub Habitat Mixed with Non-native Species on the Slope

Photograph 2-8. Creek Running along the Eastern Border of NMCSD

2.3.3 Fauna

Small mammal, reptile, and amphibian surveys were conducted on NMCSD in 1995 during preparation of the 1996 NRMP (DoN 1996). Specific surveys were performed in 1995 and 2000/2001 to assess the extent and condition of the coastal California gnatcatcher. This has provided baseline information about the wildlife inhabiting NMCSD. Surveys for amphibians and reptiles, invertebrates, birds, and mammals were conducted in 2002/2003 for the preparation of the Natural Resources Inventory and Implementation Guide (RECON 2005a; Appendix 12). In addition, surveys were also

Image source: Copyright 2008 GlobeXplorer, All Rights Reserved (flown Jan 2008)

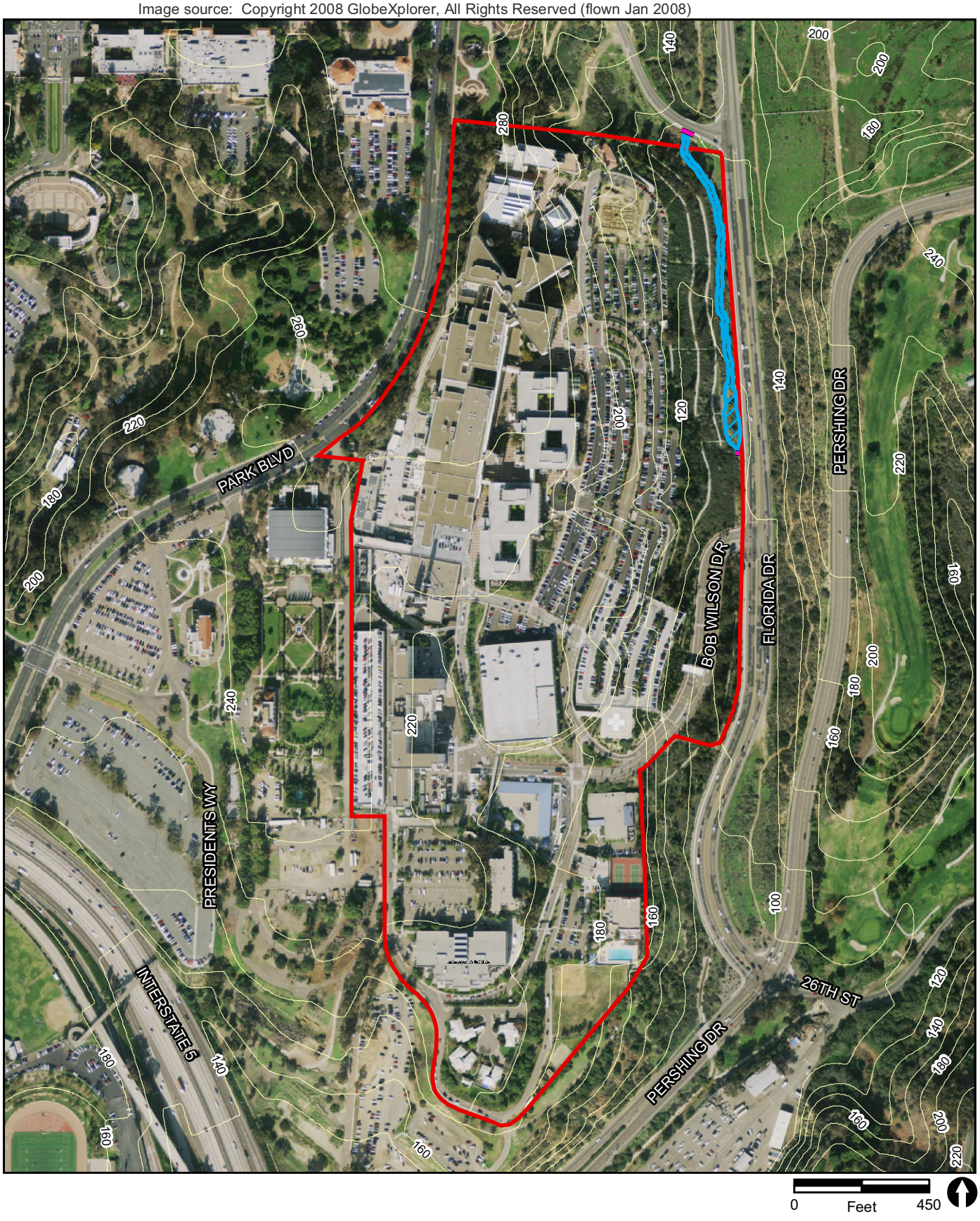

FIGURE 2-9

Jurisdictional Wetlands

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conducted in 2009 for the Biological Inventory Report for NMCSD (Tierra Data 2010; Appendix 4a)

In the 2002/2003 surveys four species of reptiles were detected on-site as well as 29 bird species and nine mammal species. A total of 344 invertebrates were collected representing 12 different orders. At least two coastal California gnatcatchers were observed in 2003 in the Diegan coastal sage scrub habitat.

In the 2009 surveys three species of reptiles were detected on-site as well as 48 bird species and seven mammal species. A total of 83 invertebrates were collected representing 17 different orders. At least one male coastal California gnatcatchers was observed in 2009 in the Diegan coastal sage scrub habitat.

Several reptile, bird, and mammal species occur in the revegetated coastal sage scrub habitat and the southern willow scrub habitat along the eastern edge of NMCSD. In addition, some wildlife, especially birds, also occurs in some parts of the developed areas.

There is good habitat connectivity between the revegetated coastal sage scrub habitat at NMCSD and the habitat that exists within Florida Canyon. The creek just below the slope areas provides appropriate habitat for feeding, breeding, and cover (Photograph 2-9). This connectivity is likely the reason a federally protected species like the coastal California gnatcatcher can thrive on NMCSD property.

Photograph 2-9. View of Creek Corridor from Revegetated Slope on NMCSD

2.3.3.1 Birds

Twenty-nine avian species were detected at NMCSD during 2002/2003 surveys for the Natural Resources Inventory and Implementation Guide (RECON 2005a).

Altogether there were 48 avian species observed during the 2009 survey (Tierra Data 2010). The urbanized land is frequented mostly by many of the birds typical of developed areas within the region. These species included but are not limited to: house finch (*Carpodacus mexicanus*), Anna's hummingbird (*Calypte anna*), European starling (*Sturnus vulgaris*), house sparrow (*Passer domesticus*), and American crow (*Corvus brachyrhynchos*). Most species were observed in the coastal sage and riparian communities on the eastern edge of the property. This area is comprised of abundant native flora; however several nonnative species were observed throughout this portion of the property. One federally listed species, the coastal California gnatcatcher, has been

observed regularly on the revegetated slope (Section 2.3.1.1). All bird species observed at NMCSD in the 2002/2003 and 2009 surveys are listed in Table 2-2.

TABLE 2-2
ORNITHOLOGICAL SURVEY RESULTS (2002/2003 and 2009)

Scientific Name	Common Name	2002/2003	2009
Corvus brachyrhynchos	American crow		x
Falco sparverius	American kestrel	x	
Turdus migratorius	American robin		x
Calypte anna	Anna's hummingbird	x	x
Ceryle alcyon	Belted kingfisher	x	
Thyromanes bewickii	Bewick's wren	x	x
Sayornis nigricans semiatra	Black phoebe	x	x
Molothrus ater	brown-headed cowbird		x
Icterus bullockii	Bullock's oriole		x
Psaltriparus minimus minimus	Bushtit	x	x
Callipepla californica californica	California quail	x	
Toxostoma redivivum	California thrasher		x
Pipilo crissalis	California towhee	x	x
Tyrannus vociferans vociferans	Cassin's kingbird	x	x
Bombycilla cedrorum	cedar waxwing		x
Spizella passerina	chipping sparrow		x
Hirundo pyrrhonota tachina	Cliff swallow	x	
Polioptila californica californica	Coastal California gnatcatcher	x	x
Corvus corax clarionensis	Common raven	x	x
Geothlypis trichas	common yellowthroat		x
Accipiter cooperii	Cooper's hawk	x	x
Columba livia domestica	domestic pigeon		x
Sturnus vulgaris	European starling	x	x
Zonotrichia atricapilla	golden-crowned sparrow		x
Ardea herodias	great blue heron		x
Catharus guttatus	hermit thrush		x
Icterus cucullatus	hooded oriole		x
Carpodacus mexicanus frontalis	House finch	x	x
Passer domesticus	House sparrow	x	x
Troglodytes aedon	house wren		x
Vireo huttoni	Hutton's vireo		x
Carduelis psaltria hesperophilus	Lesser goldfinch	x	x
Zenaida macroura marginella	Mourning dove	x	x
Mimus polyglottos polyglottos	Northern mockingbird	x	x
Stelgidopteryx serripennis	Northern rough-winged swallow	x	x
Vermivora celata	orange-crowned warbler		x
Buteo lineatus	red-shouldered hawk		x
Buteo jamaicensis	Red-tailed hawk	x	x
Agelaius phoeniceus	Red-winged blackbird	x	
Larus delawarensis	ring-billed gull		x
Columbina livia	Rock dove	x	

TABLE 2-2
ORNITHOLOGICAL SURVEY RESULTS (2002/2003 and 2009)

Scientific Name	Common Name	2002/2003	2009
Sayornis saya	Say's phoebe		x
Melospiza melodia	Song sparrow	x	x
Dendroica townsendi	Townsend's warbler		x
Sialia mexicana	western bluebird		x
Empidonax difficilis 2	western flycatcher		x
Larus occidentalis	Western gull	x	x
Aphelocoma californica	Western scrub-jay	x	x
Zonotrichia leucophrys	white-crowned sparrow		x
Aeronautes saxatalis	white-throated swift		x
Zonotrichia leucophrys	Whitexcrowned sparrow	x	
Wilsonia pusilla	Wilson's warbler	x	
Wilsonia pusilla	Wilson's warbler		x
Chamaea fasciata henshawi	Wrentit	x	
Chamaea fasciata	wrentit		x
Dendroica petechia	yellow warbler		x
Dendroica coronata	yellow-rumped warbler		x

2.3.3.2 Amphibians and Reptiles

Three reptile species were found during the 2009 survey (Tierra Data 2010): the western fence lizard (*Sceloporus occidentalis*), the San Diego alligator lizard (*Elgaria multicarinata webbi*), and a San Diego gopher snake (*Pituophis catenifer annectans*). Additionally, side-blotched lizard (*Uta stansburiana*), western fence lizard (*Sceloporus occidentalis*), San Diego alligator lizard (*Elgaria multicarinata webbi*), and San Diego gopher snake (*Pituophis catenifer annectens*) were observed during the 2002/2003 surveys for the Natural Resources Inventory and Implementation Guide (RECON 2005a). One California kingsnake (*Lampropeltis getulus californiae*) was observed in the 1994-1995 surveys. None of these species are considered sensitive by federal or state wildlife agencies. All reptile species observed in recent and previous surveys on NMCSD are listed in Table 2-3.

TABLE 2-3
REPTILE SPECIES OBSERVED DURING SURVEYS CONDUCTED IN 1995, 2002/2003 and 2009

Scientific Name	Common Name	Survey Year(s) Observed
Elgaria multicarinatus webbi	San Diego alligator lizard	1995, 2002/2003, 2009
Lampropeltis getulus californiae	Common kingsnake	1995
Pituophis catenifer annectens	San Diego gopher snake	2002/2003, 2009
Sceloporus occidentalis biseriatus	Western fence lizard	1995 and 2002/2003, 2009
Uta stansburiana	Side-blotched lizard	1995 and 2002/2003

The garden slender salamander (Batrachoseps attenuates), Pacific treefrogs (Pseudacris regilla), Side-blotched lizards (Uta stansburiana), silvery legless lizard (Anniella pulchra), the western skink (Eumeces skiltonianus interparietalis), orange-throated whiptail (Cnemidophorus hyperythrus beldingi), the ring-necked snake (Diadophis punctatus similis), California kingsnakes (Lampropeltis getula), and the San Diego nightsnake (Hypsiglena ochrorhyncha klauberi) are probably present but were not observed during the 2009 survey (Tierra Data 2010).

2.3.3.3 Mammals

Small mammal trapping surveys conducted at NMCSD in 2002/2003 yielded dusky-footed woodrat (*Neotoma fuscipes*), San Diego desert woodrat (*Neotoma lepida intermedia*), deer mouse (*Peromyscus maniculatus*), cactus mouse (*Peromyscus eremicus*), and brush mouse (*Peromyscus boylii rowleyi*). Dusky-footed woodrats, native to San Diego County, are generally not found in urbanized areas. None of these species are considered sensitive.

Other mammal species observed or detected (by tracks, scat, or visual observation) on the property in the 2002/2003 survey included coyote (*Canis latrans*), cottontail rabbit (*Sylvilagus audubonii*), California ground squirrel (*Spermophilus beecheyi*), and opossum (*Didelphis virginiana*). Coyote probably gain access to NMCSD via the creek corridor. Additional species, the house mouse and Norway/black rat, were detected in the 1995 survey and are introduced species. Most of these species are nocturnal and are not observed regularly by NMCSD visitors.

Small mammal trapping surveys were also conducted at NBCSD in 2009. These surveys yielded California ground squirrels (*Spermophilus beecheyi*), black rat (*Rattus rattus*). Other mammal species observed or detected (by tracks, scat, or visual observation) on the property in the 2009 survey included Thenative dusky-footed woodrat (*Neotoma fuscipes*), Botta's pocket gopher (*Thomomys bottae*), raccoons (*Procyon),* house cat (*Felis catus*), and opossum (*Didelphis virginiana*). None of these species are considered sensitive.

All mammal species observed are listed in Table 2-4.

TABLE 2-4
MAMMAL SPECIES OBSERVED DURING SURVEYS CONDUCTED IN 1995, 2002/2003, AND 2009

Scientific Name	Common Name	Survey Year(s) Observed
Canis latrans clepticus	coyote	1995 and 2002/2003
Didelphis virginiana	opossum	2002/2003 and 2009
Felis catus	House cat	2009
Neotoma fuscipes macrotis	dusky-footed woodrat	1995, 2002/2003, 2009
Neotoma lepida intermedia	San Diego desert woodrat	2002/2003

TABLE 2-4
MAMMAL SPECIES OBSERVED DURING SURVEYS CONDUCTED IN 1995, 2002/2003, AND 2009 (CONT.)

Scientific Name	Common Name	Survey Year(s) Observed
Peromyscus eremicus fraterculus	cactus mouse	2002/2003
Peromyscus maniculatus gambelii	deer mouse	2002/2003
Peromyscus boylii rowleyi	brush mouse	2002/2003
Procyon lotor psora	raccoon	1995, 2009
Rattus norvegicus	Norway rat	1995
Rattus rattus	black rat	1995, 2009
Spermophilus beecheyi nudipes	California ground squirrel	2002/2003, 2009
Sylvilagus audubonii sanctidiegi	desert cottontail	1995 and 2002/2003
Thomomys virginiana	Botta's pocket gopher	2009
Urocyon cinereoargenteus californicus	gray fox	1995
Mus musculus	house mouse	1995

Bats have not been observed on NMCSD in surveys to date. With adjacent habitat that offers more opportunities for forage and roosting, bats are not expected to occur at NMCSD.

2.3.3.4 Invertebrates

In the 2002/2003 survey 344 invertebrates were collected representing 12 different orders. In the 2009 survey a total of 83 terrestrial invertebrate species were collected or recorded during the course of these surveys, encompassing 17 Orders. The greatest diversity was seen in the beetles, with a total of 16 distinct taxa from 10 Families, followed by the flies (*Diptera*, 11 Families, 13 taxa) and leaf and plant hoppers (*Homoptera*, 5 Families, 13 taxa). Also well-represented were the moths and butterflies (at least 6 Families, 11 taxa), true bugs (*Hemiptera*, 6 Families, 8 taxa) and bees, wasps, and ants (*Hymenoptera*, 6 Families, 8 taxa).

Given the small size and urban setting of the NMCSD facility, there is a fairly diverse insect fauna, although far less diverse than a more natural setting, even of similar size, might be expected to have. The scarcity of natural, undisturbed vegetation makes it unlikely that any listed invertebrate species could occur on the property.

The complete list for the 2002/2003 and 2009 surveys can be found in Appendix 4a and 4b, respectively. No sensitive invertebrate species were identified

2.3.4 Flora

2.3.4.1 Vegetation Communities and Land Cover Types

The majority of the NMCSD campus is developed and occupied by buildings, paved roads and parking lots, and irrigated landscape. The majority of the vegetation on-site is non-native ornamental landscaping. However, a small portion of the property (approximately 9 acres) along the northeastern edge of NMCSD consists of approximately 7 acres of manufactured revegetated slopes that are primarily vegetated with native plant species, but also contain non-native species (see Photograph 2-7). The native vegetation was planted during the hospital's construction to mitigate the environmental consequences of the construction. The revegetated slope, which has an drainage channel at the toe of the slope, contains Diegan coastal sage scrub and southern willow scrub vegetation communities. A figure showing the vegetation communities and land cover types is included in Section 4.6 of this INRMP.

Plant names, scientific and common, are those used in The Jepson Manual (Hickman 1993). In the most recent surveys conducted by Agri Chemical and Supply Inc. (Agri Chem 2009), vegetation communities were assessed and mapped according to the classification system outlined in Sawyer and Keeler-Wolf (1995). This system should be used in future surveys so that a comparison can be made across years.

The 2005 plant surveys conducted by RECON identified 202 plant species on NMCSD (RECON 2005a). Of this total, 64 species are native to southern California. In addition, no rare plants were identified during the 2009 efforts conducted by Agri Chemical and Supply Inc. (Agri Chem 2009). A complete list of plant species observed at NMCSD in the 2009 surveys is shown in Table 2-5 (Agri Chem 2009). A plant list for Florida Canyon, which is adjacent to the property, is included in Appendix 12.

TABLE 2-5
PLANT SPECIES OBSERVED

Scientific Name	Common Name	Native (N) Introduced (I)
Acacia longifolia	Sydney golden	I
Acacia redolens	Acacia	I
Acer macrophyllum	Big-leaf maple	N
Achillea millefolium	Yarrow, milfoil	N
Agapanthus africanus	Lily of the Nile	I
Agave americana	Century plant	I
Agrostis exarata	Spike redtop	N
Allium sp.	Onion	N
Alnus rhombifolia	White alder	N
Ambrosia psilostachya	Western ragweed	N
Amorpha fruticosa	False indigo	N
Anagallis arvensis	Scarlet pimpernel, poor-man's weatherglass	I
Anemopsis californica	Yerba mansa	N
Apium graveolens	Celery	I

1
2
3

TABLE 2-5
PLANT SPECIES OBSERVED (CONT.)

Scientific Name	Common Name	Native (N) Introduced (I)
Aptenia cordifolia	Baby sun rose	I
Archontophoenix cunninghamiana	King palm	I
Arctotis sp.	African daisy	I
Arecastrum romanzoffianum	Queen palm	I
Artemisia californica	California sagebrush	N
Arundo donax	Giant reed	I
Asparagus densiflorus	Asparagus fern	I
Asparagus officinalis ssp. *officinalis*	Garden asparagus	I
Asphodelus fistulosus	Hollow-stem asphodel	I
Aspidistra elatior	Cast iron plant	I
Atriplex canescens	Fourwing saltbush, shad-scale	N
Atriplex lentiformis ssp. *lentiformis*	Big saltbush	N
Atriplex semibaccata	Australian saltbush	I
Avena sp.	Wild oats	N
Azalea sp.	Azalea	I
Baccharis salicifolia	Mule fat, seep-willow	N
Baccharis sarothroides	Broom baccharis	N
Bauhinia blakeana	Hong Kong orchid tree	I
Bougainvillea sp.	Bougainvillea	I
Brachychiton acerifolius	Flame tree	I
Brachychiton populneus	Kurrajong	I
Brassica nigra	Black mustard	I
Brassica rapa	Field mustard	I
Bromus madritensis . ssp. *rubens*	Foxtail chess	I
Callistemon citrinus	Bottlebrush	I
Calystegia macrostegia ssp. *intermedia*	Chaparral morning-glory	N
Camellia japonica	Common camellia	I
Camissonia sp.	Sun cup	N
Carpobrotus chilensis	Sea fig	N
Carpobrotus edulis	Hottentot fig	I
Carissa grandiflora	Natal plum	I
Cassia excelsa	Crown of gold	I
Ceanothus sp.	Ceanothus	I
Centaurea melitensis	Tocolote, star-thistle	I
Ceratonia silique	Carob tree	I
Chamaesyce sp.	Prostrate spurge	I
Chamomilla suaveolens	Pineapple weed, rayless chamomile	N
Chenopodium sp.	Goosefoot	I
Chenopodium album	Lamb's quarters, pigweed	I
Chrysanthemum coronarium	Garland, crown daisy	I
Cistis creticus	Rock-rose	I
Citrus sp.	Citrus	I
Conyza canadensis	Horseweed	N
Coprosma repens	Mirror plant	I
Cortaderia jubata	Pampas grass	I
Cotoneaster sp.	Cotoneaster	I
Crassula argentea	Jade plant	I
Cupaniopsis anacardioides	Carrot wood	I
Cuphea hyssopifolia	False heather	I
Cycas revoluta	Sago palm	I
Cynara cardunculus	Cardoon	I
Cynodon dactylon	Bermuda grass	I
Cyperus sp.	Nutsedge	N

1
2
3

TABLE 2-5
PLANT SPECIES OBSERVED (CONT.)

Scientific Name	Common Name	Native (N) Introduced (I)
Cyperus alternifolius	Umbrella-plant	I
Delosperma alba	Ice plant	I
Dietes vegeta	African iris	I
Distichlis spicata	Saltgrass	N
Distictis sp.	Trumpet vine	I
Dracaena draco	Dragon tree	I
Drosanthemum floribundum	Rosea ice plant	I
Echium plantagineum	Viper's bugloss	I
Eleocharis macrostachya	Pale spikerush	N
Encelia californica	Common encelia	N
Eriobotrya japonica	Loquat	I
Eriogonum fasciculatum var *foliolosum*	California buckwheat	N
Eriophyllum confertiflorum var. *confertiflorum*	Golden-yarrow	N
Erodium sp.	Filaree, storksbill	I
Erythrina sp.	Coral tree	I
Escallonia laevis	Pink escallonia	I
Eschscholzia californica	California poppy	N
Eucalyptus globulus	Eucalyptus	I
Eucalyptus spp.	Eucalyptus	I
Euphorbia peplus	Petty spurge	I
Ficus carica	Edible fig	I
Ficus pumila	Creeping fig	I
Filago sp.	Herba impia	N
Foeniculum vulgare	Fennel	I
Fraxinus sp.	Ash	I
Gardenia sp.	Gardenia	I
Gazania sp.	African daisy	I
Gelsemium sempervirens	Carolina jessamine	I
Gnaphalium sp.	Cudweed, everlasting	N
Hebe buxifolia	Boxleaf hebe	I
Hedera helix	English ivy	I
Heliotropium curassavicum	Chinese pusley	N
Hemizonia fasciculata	Golden tarplant	N
Hemerocallis sp.	Daylily	I
Heteromeles arbutifolia	Toyon, christmas berry	N
Heterotheca grandiflora	Telegraph weed	N
Hibiscus sp.	Hibiscus	I
Hordeum jubatum	Foxtail barley	N
Impatiens balsamina	Impatiens	I
Ipomoea purpurea	Common morning-glory	I
Isocoma menziesii	Coast goldenbush	N
Jacaranda mimosifolia	Jacaranda	I
Juniperus sp.	Juniper	I
Lactuca serriola	Prickly lettuce	I
Lamarckia aurea	Goldentop	I
Lantana montevidensis	Trailing lantana	I
Lathyrus splendens	Pride of California, campo pea	N
Laurus nobilis	Sweet bay	I
Lepidium nitidum var. *nitidum*	Shining peppergrass	N
Lessingia filaginifolia var. *filaginifolia*	California-aster	N
Ligustrum japonicum	Wax-leaf privet	I
Limonium perezii	Perez rosemary	I
Liquidambar styraciflua	Sweet gum	I

1
2
3

TABLE 2-5
PLANT SPECIES OBSERVED (CONT.)

Scientific Name	Common Name	Native (N) Introduced (I)
Liriope muscari	Big Blue lily turf	I
Lonicera japonica	Japanese honeysuckle	I
Lotus sp.	Trefoil	N
Lotus scoparius var. *scoparius*	California broom	N
Malephora crocea	Croceum ice plant	I
Malosma laurina	Laurel sumac	N
Malva parviflora	Cheeseweed, little mallow	I
Marah macrocarpus	Wild cucumber	N
Marrubium vulgare	Horehound	I
Medicago polymorpha	California bur clover	I
Melaleuca nesophylla	Western tea myrtle	I
Melilotus alba	White sweet clover	I
Melilotus indica	Sourclover	I
Mesembryanthemum crystallinum	Crystalline ice plant	I
Mesembryanthemum nodiflorum	Slender-leaved ice plant	I
Metrosideros excelsus	New Zealand christmas tree	I
Mimulus aurantiacus	Bush monkeyflower	N
Mirabilis californica	Wishbone bush	N
Myoporum laetum	Ngaio	I
Myoporum parvifolium	Myoporum ground cover	I
Nandina domestica	Heavenly bamboo	I
Nassella sp.	Needlegrass	N
Nephrolepis exaltata	Sword fern	I
Nerium oleander	Oleander	I
Nicotiana glauca	Tree tobacco	I
Olea europeae .	Common olive	I
Opuntia ficus-indica	Indian fig	I
Opuntia littoralis	Shore cactus	N
Opuntia prolifera	Cholla	N
Oxalis sp.	Wood-sorrel	N
Paspalum dilatatum	Dallis grass	I
Pennisetum setaceum	Fountain grass	I
Phoenix canariensis	Canary Island date palm	I
Phoenix roebelenii	Date palm	I
Phormium tenax	New Zealand flax	I
Photinia glabra	Japanese photinia	I
Picris echioides	Bristly ox-tongue	I
Pinus sp.	Pine	I
Pinus thunbergiana	Japanese black pine	I
Piptatherum miliaceum	Smilo grass	I
Pittosporum tobira	Pittosporum	I
Plantago sp.	Plantain	N
Platanus racemosa	Western sycamore	N
Plumbago auriculata	Cape leadwort	I
Plumeria sp.	Plumeria	I
Podocarpus sp.	Yew pine	I
Prunus sp.	Prune tree	I
Pyracantha sp.	Firethorn	I
Pyrus kawakamii	Evergreen pear	I
Quercus agrifolia	Coast live oak, encina	N
Raphanus sativus	Radish	I
Raphiolepis indica	Indian hawthorn	I
Rhus integrifolia	Lemonadeberry	N

TABLE 2-5
PLANT SPECIES OBSERVED (CONT.)

Scientific Name	Common Name	Native (N) Introduced (I)
Ricinus communis	Castor bean	I
Rorippa nasturtium-aquaticum	Water cress	I
Rumex crispus	Curly dock	I
Salix gooddingii	Goodding's black willow	N
Salix lasiolepis	Arroyo willow	N
Salsola tragus	Russian thistle, tumbleweed	I
Salvia mellifera	Black sage	N
Sambucus mexicana	Blue elderberry	N
Schinus molle	Peruvian pepper tree	I
Schinus terebinthifolius	Brazilian pepper tree	I
Senna covesii	Coue's cassia	N
Sisymbrium irio	London rocket	I
Solanum douglasii	Douglas nightshade	N
Sonchus oleraceus	Common sow thistle	I
Spergularia macrotheca	Large-flowered sand spurrey	N
Stephanomeria virgata ssp. *virgata*	Slender stephanomeria	N
Sterlitzia nicolai	Large Bird of paradise	I
Tamarix sp.	Tamarisk	I
Tecomaria capensis	Cape honeysuckle	I
Trachelospermum jasminoides	Star jasmine	I
Trifolium sp.	Clover	N
Typha latifolia	Broad-leaved cattail	N
Ulmus parvifolia	Chinese elm	I
Urtica dioica ssp. *holosericea*	Hoary nettle	N
Vinca major	Greater periwinkle	I
Vitis girdiana	Desert wild grape	N
Washingtonia robusta	Washington palm	I
Xanthium strumarium	Cocklebur	N
Zantedeschia aethiopica	Common calla lily	I

2.3.4.2 Landscaping Practices

Landscape plans for the NMCSD campus have been developed and are described more fully in Section 4-10 of this INRMP. These plans concentrate on ways to prevent the spread of invasive plant species, conserve water, and transition the campus landscape treatment from one using predominantly ornamental, non-native plantings, to one relying more on regionally native plants.

3.0 Environmental Management Strategy and Mission Sustainability

3.1 Supporting Sustainability of the Military Mission

Natural resources should be sustained for the use of mission requirements and other purposes rather than be consumed by the mission or degraded over time. In order to achieve this, environmental programs and policies must have the goal of controlling encroachment and preserving an unencumbered environment for the purpose of the mission.

3.1.1 Integrated Military Mission and Sustainable Land Use

3.1.1.1 Land Use Planning

DoD policy seeks to ensure that other current and planned installation activities (e.g., master plans, construction requests, site approval requests, host-tenant agreements, and outleases) are effectively coordinated and consistent with activities described in the INRMP.

To minimize potential land use conflicts, NMCSD land use and environmental planning need to be comprehensive and integrated. As described in Chapter 1 of this INRMP, land use and environmental planning responsibilities are held by different departments at NMCSD. In most cases, however, the Facilities Management Department (619-532-6125) is the primary one involved with day-to-day land use decisions and is responsible for implementing this INRMP.

Land use and natural resources decisions are supported by various NMCSD planning resources and guidelines: the Strategic Plan, Master Plan Update, the Base Exterior Architecture Plan (BEAP), and this INRMP. Planning documents for NMCSD are presently not integrated, although this INRMP seeks to reference sections from each one as appropriate. Federal legislation, federal regulations, and DoD and DoN policies further guide land use management at NMCSD (see Appendix 9 of this INRMP).

The title of this INRMP, Integrated Natural Resources Management Plan, may imply that it is the umbrella to coordinate and guide all land use issues. However, the scope of the INRMP is more narrowly defined in DoD Instruction 4715.3 and the Navy's Environmental and Natural Resources Program Manual (OPNAVINST 5090.1C). To be

comprehensive, all of the existing planning-related documents should become integrated and missing plan components should be added. Future planning should examine these land use subjects together, and not separately.

Planning should also be integrated with the EQA process. This annual review, required by OPNAVINST 5090.1C, is meant to assist Commanding Officers in identifying and correcting compliance gaps. It is essentially an audit of the Commanding Officers' potential environmental compliance liabilities.

Initial planning stages of proposed DoD actions must also be integrated with the NEPA process "to ensure that planning and decisions reflect environmental values, to avoid delays later in the process, and to preclude potential conflicts" (32 Ch.1, Part 188). To accomplish this integration, land use and NEPA planning functions need to be assigned together, with as much accountability as possible.

Land use decisions at NMCSD may not be as contentious as at other military installations because of NMCSD's relatively small size and its focused mission to provide health care facilities. However, clear guidelines to make management decisions regarding NMCSD's land and natural resources should be available if needed. The INRMP objective and policy strategy for land use is as follows:

Policy Strategy for Land Use Planning

Objective: Ensure that land use planning decisions protect the mission of NMCSD by seeking to resolve land use conflicts.

I. Land use decisions to select among competing uses of NMCSD property shall be based on these principles:

A. NMCSD's statutory mission must receive priority.

B. Important decisions should be preceded by careful planning which considers alternative locations for competing uses and the relative impact of each alternative.

1. Environmental impact shall be balanced with economics and public relations. Significant environmental impact from land use planning can, at some point, inhibit military missions.

C. All land use decisions should be supported by a concise record of the basis for the decision. NEPA documentation shall be used as this record.

II. Develop and sustain the land use planning capability.

A. Assign appropriate land use and natural resource personnel.

1. Determine where, organizationally, such individuals should reside.

2. Formally identify who is responsible for natural resource and land use planning for NMCSD.

3. Set a desired standard for performance and expertise, and help provide any additional training needed to meet this standard.

4. Provide for enforcement of natural resource laws and regulations by professionally trained personnel (DoD 1996).

III. Additional principles shall apply to decisions about non-military land uses or the accessing of any part of the property:

A. The costs associated with the review of military land for non-military purposes should be paid by the party making the request. It is also inappropriate for land to be transferred for less than its fair market value, unless directed by Congress.

B. There shall be a detailed understanding of the management responsibilities of both NMCSD and the land user.

C. The NMCSD shall avoid any unlawful discrimination in the consideration of non-military uses of its lands.

IV. Ensure that land use plans and planning processes are relevant and useful for NMCSD's needs.

A. Evaluate NMCSD's existing planning documents, particularly for their:

1. Level of integration, internal consistency, and compatibility;

2. Gaps in policy direction or information necessary to make informed management decisions.

B. Allow for regular updating of all plans, including this INRMP.

C. Coordinate planning activities with the NEPA process.

D. Use benchmarks to monitor and evaluate outcomes, with clear, specific accountability measurements.

E. Ensure that EQAs are conducted annually for NMCSD.

1. Develop tasks, time, and cost estimates to close out findings within one year.

2. Develop a protocol for repeat and non-closed findings.

F. Develop criteria and procedures for monitoring the effectiveness of NMCSD's natural resources management decisions.

V. Ensure that the decision-making process is flexible to changing mission requirements and site-specific problems.

A. Incorporate a dynamic, continuous process for decision-making. Information useful in making future changes or additions to the INRMP should be included.

B. Implement adaptive management to accommodate new strategies resulting from monitoring, scientific findings, or new management policies.

3.1.1.2 Mitigation Planning

A tool sometimes used in land use planning is mitigation. Mitigation is lessening the adverse effects an undertaking may cause to natural resources. Mitigation can include avoiding the effect altogether; limiting the magnitude of the action; repairing, rehabilitating, or restoring the affected resource; reducing or eliminating the effect over time by conservation and maintenance operations during the life of the action; and /or compensating for the effect by providing substitute resources or environments (DoD Instruction 4715.3). In general, regulatory agencies' preferred order of performing mitigation is avoidance, then minimization, then compensation in kind, and then compensation out of kind. Mitigation to be proposed for a specific impact will be addressed on a case-by-case basis. Mitigation requirements shall be planned for, funded, and implemented as part of the proposed action by the action proponent.

Mitigation planning seeks to "expedite" development projects on developable land by setting aside other lands for non-development or non-use through a network of wildlife preserves. The military is concerned that its lands will be used as such preserves in a regional scheme, which could essentially mean no use allowed for training or other functions. The Navy does not want its wide spaces to be viewed by others as the "solution" for regional land use requirements due to the perceived minimal economic and political cost of using military lands. However, the Navy also understands its potential role in regional conservation efforts along with other partners.

3.1.2 Defining Impact to the Military Mission

An impact to the military mission would occur if the installation's ability to support the preparedness of the Armed Forces were reduced, or if excessive costs or restrictions on operations and training would be imposed.

3.1.3 Relationship to Range Complex Management Plan and Other Operational Area Plans

3.1.3.1 Coordination and Planning for Construction and Facility Maintenance

Routine maintenance of roads, buildings, utility lines, and other infrastructure is important for safeguarding access to facilities that are central to support the military mission as well as the safety of those involved in implementing the mission. Proper maintenance also prevents erosion and associated non-point source and air pollution. Guidelines for maintenance are needed that allow for protection of sensitive environmental resources and the timely, cost-effective completion of environmental documentation requirements, while ensuring full accomplishment of the military mission.

Several laws are pertinent: CWA, CAA, ESA, NEPA, and Soil Conservation Act. Routine maintenance activities that may affect drainages fall under USACE authority from Section 404 of the CWA.

3.1.3.1.1 Routine Maintenance

Routine maintenance of roads, buildings, utility lines, and other infrastructure is important for safeguarding access to facilities that are central to support the military mission as well as the safety of those involved in implementing the mission. Proper maintenance also prevents erosion and associated non-point-source and air pollution. Guidelines for maintenance are needed that allow for protection of sensitive environmental resources and the timely, cost-effective completion of environmental documentation requirements, while ensuring full accomplishment of the military mission.

Several laws are pertinent: Clean Water Act (CWA), Clean Air Act (CAA), ESA, NEPA, and Soil Conservation Act. Routine maintenance activities that may affect drainages fall under U.S. Army Corps of Engineers (USACE) authority from Section 404 of the CWA.

Policy Strategy for Routine Maintenance

Objective: Safeguard the military mission by maintaining access and operation of roads, utilities, and other infrastructure to their original design standard or better, while protecting wildlife habitat, sensitive species, soil productivity, watershed functioning, and water quality.

I. Infrastructure shall be aligned to contribute to the military mission and protection of environmental values.

II. Provide overall management guidelines for maintenance activities, while preventing erosion and protecting sensitive natural and cultural resources.

A. Develop a 5–10-year long-term maintenance plan.

B. The first priority shall be to prevent, through proper planning, losses of environmental values due to impact to soils, watersheds, habitats, or species. If loss of environmental values is unavoidable, use mitigation to improve resources elsewhere on the property.

C. When repair work becomes necessary, it will be prioritized according to its seriousness and potential impact based on the following criteria:

1. Safety or security, as for emergency or military vehicle access on secondary roads;

2. Potential for affecting high-value facilities or areas crucial to the military mission;

3. Likelihood of affecting a listed species (beneficially or otherwise), a sensitive habitat, or a significant cultural resource;

4. Volume of potential soil or habitat loss; and

5. Cost-effectiveness of the repair or control measure.

D. When repair work becomes necessary, environmental staff will be notified early enough so the needed review, surveys, and documentation may be prepared without project delay.

E. Monitor resource condition and effectiveness of BMPs as mitigation.

1. Monitor BMPs in terms of:

a. Implementation to specifications;

b. Having the desired management effect; and

c. Soundness in context of the overall management strategy.

2. Keep a record of the most effective BMPs for use in NEPA and mitigation planning.

F. Keep informed and up-to-date on improved methods for preventing environmental impact during maintenance activities and on revisions in laws, regulations, and policies.

3.1.3.1.2 Construction

On occasion there is a need to build new facilities to ensure the ability of the installation to fulfill its military mission. The DoD military construction (MILCON) budget is a primary source of funds for construction.

Policy Strategy for Construction

Objective: By Executive Order, the President has directed that federal agencies shall design, use, or promote construction practices that minimize adverse effects on the natural habitat where cost-effective and to the extent practicable (EO 13112 [1999]*).*

I. Fish and wildlife conservation shall be considered in all site feasibility studies and project planning, design, and construction.

   A. Appropriate conservation work and associated funding shall be included in project proposals, and construction contracts and specifications (DoD 4715.DD-R 1996).

   B. Environmental conditions should be monitored before and after projects which could potentially affect natural resources on and off NMCSD.

   C. Develop or use proven BMPs for controlling soil erosion from construction and landscaping sites (Section 4.10.1).

   D. Ensure NEPA protocols are followed when selecting sites for new construction projects.

      1. Consult with the USFWS on all new construction projects that could potentially affect sensitive species.

      2. Try to locate new structures in previously disturbed areas.

   E. Ensure that new construction complies with all appropriate permits.

II. Any construction projects taking place on NMCSD must go through the Section 106 process.

3.2 Natural Resources Consultation Requirements

Permits are required under the ESA for “take” of federally listed species. “Take” is defined by the ESA as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect any threatened or endangered species. Prior to any project implementation,

including non-native species removal, a survey would be conducted to determine the presence or absence of federally listed species (i.e., CAGN). If species are found, NMCSD would consult with the USFWS prior to implementation of the project. No ESA permits are anticipated to be needed for NMCSD.

Permits are also required under the CWA for the dredge and fill of wetlands. The USACE issues permits for activities that could affect wetlands. In the future, if work needs to be performed that could affect the jurisdictional wetland (see Appendix 9 of this INRMP) the USACE would be consulted through the permitting process. No USACE permits are anticipated to be needed for NMCSD.

3.3 NEPA Compliance

NEPA is the basic national charter for the protection of the environment. It is a procedural planning tool which primarily requires a clear evaluation of all federal decisions potentially affecting the human environment. NMCSD must consider the environmental consequences of its actions before a commitment is made to proceed. However, NEPA itself does not prevent activities from being implemented. Unlike many other environmental regulations, the act is not an enforcement tool punishable by fines for non-compliance.

The NEPA statute (as amended, 42 USC 4321-4370) and the Council on Environmental Quality (CEQ) regulations (40 CFR parts 1500-1508) combine to represent the “letter and spirit” of NEPA. In addition, CEQ has issued some very helpful guidelines: “Forty Most Asked Questions Concerning CEQ’s NEPA Regulations” (1981a); “Scoping Guidance” (1981b); and “Guidance Regarding NEPA Regulations” (1983 *in*: Bass and Herson 1993).

To provide more specific implementation of the CEQ regulations, the DoD issued policy and procedures (32 CFR parts 188 & 214) for DoD components and also Directive 6050.1 (1979) on Environmental Effects of DoD actions in the U.S. A supplement by the DoN (32 CFR part 775) followed, providing policy and assigning responsibilities to the Navy and Marine Corps. It is these DoN procedures which meet the NEPA requirement that every federal agency adopt procedures to supplement the CEQ regulations (40 CFR 1507.3[b]). Following the DoN directive, the Navy issued its own specific policy for compliance with procedural requirements under OPNAVINST 5090.1C. The latter document tasks NMCSD with ensuring that Navy actions (i.e., any action that spends federal money) are in accordance with the letter and spirit of NEPA.

The CEQ regulations and guidelines intend federal agencies to use procedures which will reduce paperwork and delay, but will ensure adequate analysis (40 CFR 1500.4 - 1500.5; CEQ, 1983). For example, expanding the number of projects or actions which deserve categorical exclusions (CatExs) is one opportunity for improvement. Excessive

documentation for CatEx projects is also discouraged. NEPA documentation for NMCSD projects is currently performed by Naval Facilities Engineering Command Southwest (NAVFACSW).

The protection and management of the natural resources of NMCSD are essential to guarantee NMCSD's continued service and support to the military mission. In order to achieve this, NMCSD manages its natural resources in a manner that is consistent with sustainability of those resources and maintains compliance with the NEPA. The INRMP objective and policy strategy for NEPA planning is as follows:

Policy Strategy for NEPA Planning

Objective: Conduct planning of mission activities having potential environmental effects by applying NEPA's requirements and policies to enhance the mission-related use and the stewardship of natural resources. Seek opportunities for streamlining environmental assessment procedures.

I. Ensure that any proposed NMCSD action that has the potential for physical impact on the human environment undergoes the NEPA process, unless it has been addressed in a previous environmental document.

   A. Include new activities and substantive changes in continuing actions, such as routine grounds maintenance, erosion control measures, or the use of herbicides and pesticides.

   B. Conduct thorough evaluation, including prior public comments, of a project to ensure preparation of NEPA documentation at an appropriate level (i.e. CatEx, EA, EIS).

II. The NEPA planning process should facilitate project planning and integrate project-specific plans with overall land use and natural resource management plans.

   A. Integrate NEPA planning early with the regular planning functions of each office.

      1. Technical assistance should be provided by staff to support other offices, when needed, before and after a proposed action is submitted for NEPA review, giving guidance on:

         a. Project design, site selection, and scope of work.

         b. Development of reasonable alternatives, including alternative sites.

         c. Selection of appropriate mitigation so the proposal integrates mitigation from the beginning; mitigation design should remain flexible and creative, and "not cookbook."

d. Importance of implementing BMPs as mitigation measures for environmental protection.

2. Prepare and regularly update a NEPA brochure and a Guidance Book. The brochure may highlight NMCSD's NEPA projects and compliance; while the Guidance Book should clearly and simply outline step-by-step procedures for the management and preparation of NEPA documents.

3. Develop a NEPA non-compliance notification system to correlate with other established environmental non-compliance command reporting.

B. Design NEPA forms for project proponents which are understandable, easy to complete, devoid of extraneous background data, and provide sufficient data for project review and decision-making.

1. Maximize use of checklists and minimize lengthy descriptions.

2. Standardize terms and categories used in project descriptions, including types of military actions.

3. Provide a list of approved mitigation measures from which project proponents may select.

4. Reference appropriate environmental protection and mitigation policies from this INRMP. Also provide for creative and flexible mitigations.

5. Make Geographic Information System (GIS) data and maps of sensitive resources on NMCSD available to project planners to assist in evaluating potential impact of proposed projects and in recommending appropriate mitigation.

C. Communicate directly with all affected parties during NEPA process to avoid misunderstandings and delays.

1. Contact off-site interested and affected agencies and parties as soon as possible on projects with potentially significant environmental impact, particularly if controversial.

2. Cooperate with state and local agencies to the maximum extent practicable to fully address joint needs such as: environmental research and studies, public hearings and scoping sessions, EAs, and EISs.

III. Seek CatExs for actions which have been found not to have a significant effect on the human environment, individually or cumulatively.

A. Develop a list of actions which occur on NMCSD regularly that experience has indicated will not individually or cumulatively result in a significant effect on the human environment.

B. Encourage each office to annually anticipate their projects or actions and seek one yearly “programmatic” CatEx for all projects that qualify. A 5-year project plan would benefit budgeting and NEPA planning as well.

C. Questionable CatExs should fully document justifications; risk statements should be prepared and forwarded to command through Legal Counsel for approval.

D. Ensure that a CatEx determination is appropriate.

1. Consider whether the cumulative effects of several small actions would cause sufficient environmental impact to take the actions out of the categorically excluded class (CEQ 1983).

2. Avoid procedures which would require the preparation of additional paperwork to document an activity that has been categorically excluded.

IV. Prepare a concise EA when a CatEx cannot be used or the significance of the impact is unknown.

V. Ensure the Environmental Impact Statement process is focused on major projects significantly affecting the quality of the human environment.

A. Reduce paperwork and delay during the EIS process:

1. Follow CEQ requirements as well as CEQ's informal guidance for reducing excessive paperwork with EISs.

2. Review existing Navy orders for NEPA ([EOs and similar orders will be included]) to determine how the procedures could be more efficient in the EIS process, while emphasizing real environmental issues and alternatives.

3.4 Beneficial Partnerships and Collaborative Resource Planning

Cooperative planning efforts often include representatives from federal, state, and local agencies, citizen groups, developers, and universities. The motives of the diverse participants, however, may also vary to the point of conflict. Some participants may be searching to reach compromise between development and protection, some want to maximize urban development opportunities, and some want to preserve extensive acreages of habitat. Ecosystem management (driven mainly by the Sikes Act and ESA)

and water quality improvement (driven by the CWA) appear to be the primary motivations for federal agency involvement in such cooperative efforts.

Direction for management of DoD lands and waters is based on the concept of ecosystem management. DoN policy calls for its installations to expand involvement in regional ecosystem planning, management, and restoration initiatives (DoN 1994). Terms commonly used are ecosystem management, landscape ecology, multi-species, or bioregional (biological diversity) planning. What they all represent is a way to address real biological and hydrological needs on natural scales instead of political ones which are commonly based on artificial boundaries. Establishing cooperative planning efforts with the Balboa Park natural resources and ranger staff would benefit all natural resources in Balboa Park, and may leverage scarce funds for surveys and educational efforts, and provide an effective means of mutually beneficial resource sharing.

3.4.1 Fish and Wildlife Inter-agency Coordination

Cooperative management of NMCSD's wildlife is required under the federal SAIA and the Fish and Wildlife Coordination Act. Like NEPA, the Fish and Wildlife Coordination Act is essentially procedural, as no specific outcome is mandated. The SAIA provides a mechanism whereby the DoD, the Department of the Interior (DoI), and host states cooperate to plan, maintain, and manage fish and wildlife on military installations. SAIA also provides for outdoor recreation on military installations, when possible, in keeping with the military mission and national security.

The SAIA (as amended through 2003) no longer requires a Cooperative Agreement with the USFWS or CDFG as a separate document; however, INRMPs do require agreement by both agencies. In addition, consultation with USFWS is required for this INRMP if action affects CAGN outside of the breeding season, or if action with potential to affect CAGN is taken between February 15 and September 15.

3.4.2 San Diego Multiple Species Conservation Program

The San Diego MSCP is a comprehensive habitat conservation planning program that encompasses 582,000 acres and establishes a 172,000-acre preserve system in southwestern San Diego County. The MSCP is a plan and a process for the local issuance of permits under the federal and state ESAs for impact to threatened and endangered species. Also included in the MSCP are implementation strategies, preserve design, and management guidelines. Rather than focusing preservation efforts on one species at a time, the MSCP is designed to preserve native vegetation and meet the habitat needs of multiple species.

Under the MSCP, local jurisdictions will implement their respective portions of the MSCP through subarea plans, which describe specific implementing mechanisms for the MSCP (City of San Diego 1998). The City of San Diego adopted its MSCP Subarea Plan in 1997 to guide implementation of the MSCP Plan within its corporate boundaries, 206,124 acres within the MSCP Subregion (City of San Diego 1997).

Multiple Habitat Planning Area (MHPA) lands are areas within the MSCP Subarea planning area to be preserved and managed for biological resources. The City of San Diego's MHPA lands total approximately 56,831 acres and include Florida Canyon in and adjacent to NMCSD.

NMCSD falls within the Urban Subarea section of the City's MSCP Subarea Plan. In this Subarea "the optimum future condition is a system of canyons that provide habitat for native species remaining in urban areas, 'stepping stones' for migrating birds and those establishing new territories, and environmental educational opportunities for urban dwellers of all ages". Urban habitats are to be managed for a variety of uses ranging from sensitive species protection to outdoor education. See Appendix 10 of this INRMP for the general planning guidelines of the City's MSCP Subarea Plan and for the specific recommendations for the Urban Subarea.

Under the City's MSCP Subarea Plan, 85 sensitive plant and wildlife species are considered to be adequately protected within MHPA lands. These sensitive species are covered species in the MSCP and included in the Incidental Take Authorization issued to the City by federal and state governments as part of the City's MSCP Subarea Plan.

There are 14 plants that are classified as "narrow endemic species" based on their limited distributions in the region. These narrow endemics are sensitive biological resources. All 14 narrow endemic plants are also covered species in the MSCP, and some are state or federally listed as threatened or endangered species.

As a non-participating agency NMCSD is not required to comply with the guidelines in the City's MSCP Subarea Plan; however, managing the native plant community on NMCSD in a similar fashion as Florida Canyon will benefit NMCSD's natural resources.

Policy Strategy for Cooperative Planning

Objective: Be proactive in cooperative resource planning partnerships to create regional conservation, ecosystem, and watershed solutions of mutual benefit while also protecting the military mission.

I. Participate in regional conservation and ecosystem planning efforts.

A. Base NMCSD's involvement on the following criteria:

1. Evaluation of agreements that may encumber land or resources now or in the future. Emphasize the critical importance of ensuring continuation of the military mission and its unique attributes which cannot be replaced.

2. Evaluation of the potential benefits to NMCSD's natural resources.

B. Pursue pertinent DoD ecosystem management policies, including:

1. Maintain and improve the sustainability and biological diversity of the ecosystem at the local landscape and other relevant ecological scales.

2. Promote development of the best available scientific and field-tested information for use in land management decisions.

3. Support U.S. Navy and USFWS partnering efforts through active participation.

C. Provide for the military contribution to regional conservation goals without commitment of DoN lands by recognizing the goals and aspirations of these efforts in this INRMP.

1. Provide for continued coordination with federal and state fish and wildlife management agencies.

2. Manage the native coastal sage scrub habitat according to the guidelines identified within the City of San Diego MSCP. NMCSD should coordinate management activities in this habitat with the City.

3. Encourage partnerships and volunteers to enhance conservation programs whenever practicable.

II. Consult with USFWS, CDFG, and California Department of Parks and Recreation at least annually to fulfill Sikes Act provisions and related interagency cooperative agreements.

A. Ensure compatibility with INRMP goals, objectives, and policies as well as internal consistency in future inter-agency agreements and plans.

B. Involve state and federal resource agencies in the implementation of INRMP objectives and policies when practicable.

C. Promote information sharing and scientifically based, coordinated data collection, and management planning.

D. Contact the City of San Diego Environmental Services Department at (858) 694-7000 with questions about potential cooperative surveys, recycling, or Balboa Park management.

3.5 Public Access and Outreach

DoD installations are to provide for sustained public access and use of natural resources for educational or recreational purposes when such access is compatible with mission activities, and with other considerations such as security, safety, or resource sensitivity (DoD 1996). NMCSD is not open to the public and, because of NMCSD's small size and limited recreation potential, additional requests for access are not anticipated. However, the security of NMCSD personnel, patients, visitors, facilities, and natural resources should be considered when granting access to NMCSD.

3.5.1 Public Access and Outdoor Recreation

3.5.1.1 Policy Strategy for Public Access

Objective: Ensure that public access is compatible with the military mission, natural resource responsibility, and security.

I. Establish clear, coherent policies and procedures for allowing temporary public access to NMCSD.

A. Provide access for agencies and others to conduct natural resources research on NMCSD to the extent that it does not interfere with the military mission or resource sensitivity.

B. Planning for public access shall consider, but not be limited to the following topics (DoD47155.DD-R 1996):

1. Eligible users of installation resources and facilities, including the installation's method of determining user eligibility and priorities.

2. Procedures required for the public to gain access.

3. Accessible and off-limits resources, areas, and facilities.

4. Areas designated for special use.

5. Points of access and egress.

6. Periods of access.

7. List of permitted and prohibited activities.

8. Schedule of applicable fees and charges.

9. Installation personal injury and property liability policy.

10. Access agreements with agencies and organizations.

11. Installation-established access quotas to reflect installation operational, outdoor recreation, and wildlife carrying capacity.

C. Protect sensitive resources from incompatible public uses.

3.5.1.2 Non-Consumptive Recreational Activities

Outdoor recreation, as defined for the purposes of this section, is the active use of the natural resources of NMCSD for recreation and physical exercise. Although NMCSD has facilities such as a baseball field, basketball court, volley ball court, tennis courts, and a 25-meter pool, activities connected to these facilities are not included or addressed by this INRMP (see Figure 2-2). The roads and sidewalks at NMCSD are used for walking, jogging, and biking.

A “healing garden” was recently built between the Ambulatory Care Building and the northern property boundary. The function of the “healing garden” is to provide a location where people have the opportunity to escape the confines of the hospital and walk or sit in a pleasant outdoor environment, while observing nature (see Figures 2-1 and 3-1).

3.5.1.3 Public Land Use and Access

Due to the presence of a federally threatened species, the restricted nature of the facilities, and safety and security issues, NMCSD is unable to provide outdoor recreation opportunities for the general public.

3.5.2 Public Outreach

3.5.2.1 Public-oriented Environmental Awareness Program

Interpretive activities on NMCSD should provide a sense of the unique history, natural resources setting, and cultural resources of southern California’s military installations. There are many opportunities available on NMCSD to provide interpretive programs for NMCSD personnel and visitors, including displays or fact sheets on natural and cultural resources.

Nature study and observation can be used as a healing activity for patients of the NMCSD. Providing an area for patients to walk outdoors and perhaps enjoy activities such as birdwatching, observing wildflowers, botanizing, or wildlife photography may benefit many patients. Watchable wildlife programs and similar programs that facilitate the public's ability to view wildlife in a natural setting are encouraged on Navy lands. While other wildlife is present at NMCSD, birds are the most numerous and are often easiest to view by casual observers. Birds use the natural and landscaped sections of NMCSD for feeding, nesting, and resting during migration.

3.5.2.2 Policy Strategy for Environmental Awareness Program

Objective: Build a strong conservation ethic and personal commitment to natural and cultural resource stewardship by personnel through the promotion of education and awareness of the unique environmental setting and history of NMCSD and southern California's military installations.

I. Identify the types of information and conservation practices that need to be communicated to military personnel in order to protect NMCSD's resources and build a conservation ethic.

A. Provide a clear, concise manual of environmental precautions and restrictions to be used by personnel. The manual should be reviewed annually.

B. Support a natural resource orientation program for new facilities management personnel. Consider all educational media, including video tapes, written materials, or slide presentations.

C. Maintain a brochure about the natural resources present on NMCSD.

Exemplify conservation of the coastal California gnatcatcher and coastal sage scrub habitat. Distribute brochures to NMCSD personnel during indoctrination.

II. Identify and evaluate suitable interpretive opportunities on NMCSD.

A. Develop a multimedia educational program in support of the natural resource programs of the region's military installations.

1. Contact other natural resource managers on military installations within the region to identify key issues to be addressed.

2. Give presentation on a regular basis to interested individuals. This may be especially effective with longer-term patients looking for activities.

B. Develop a self-guided interpretive trail for wildlife viewing, with interpretive signs, along the edge of the parking lot at the top of the eastern slope of NMCSD. Include information on native plant communities, wildlife, and Balboa Park history.

C. Develop areas near benches with native plantings to be viewed by the public and NMCSD personnel (Photograph 3-1). Insert small interpretive weatherproof signs (labels) in the ground for identification of the native plants.

D. Develop an interpretive brochure for the public about NMCSD history and natural resources.

E. Continue to participate annually in Earth Day events. Develop new methods to exhibit the problems addressed by NMCSD personnel to benefit natural resources and to educate the public about the region's native flora and fauna.

Photograph 3-1. Example of Landscaped Area near Buildings where Interpretive Signs about Native Plants Species Could Be Viewed

3.6 Encroaching Partnering

There are no encroachment issues anticipated for NMCSD. NMCSD's mission does not entail operations that would pose an environmental concern for potential development on neighboring properties. Encroachment concerns for military bases typically center on noise-generating training activities. Furthermore, there is little potential for residential development along the borders of NMCSD, since the adjacent properties are already developed or designated as part of the City's MSCP.

3.7 State Comprehensive Wildlife Plans (SCWP)

NA.

4.0 Program Elements

This Chapter discusses each of the NMCSD INRMP program elements and each element's management strategies that will be implemented to meet the goals and objectives presented in Chapter 3. Program elements that are typically included in INRMPs per the DoD INRMP Template guidance have been included for reference, even if they are not components of the NMCSD INRMP (e.g., Agricultural Outleasing).

4.1 Threatened and Endangered Species, and Species of Concern Management

4.1.1 Federal Endangered and Threatened Species

NMCSD must protect and manage any animal species listed as endangered or threatened under the federal ESA. Only one listed species is known to occur on NMCSD, the federally threatened CAGN. The CAGN was listed as a threatened species under the ESA in 1993. Critical habitat has been finalized by the USFWS for this species. Approximately 120,040 acres of the 513,650 total acres designated as critical habitat are in San Diego County. However, no critical habitat is on or adjacent to NMCSD. A description of the CAGNs' habitat needs can be found in section 2.3.1.1 of this INRMP. Section 4.1.1.4 describes species specific management for the CAGN.

The CAGN is also a California species of special concern and is listed as a "covered species" in the MSCP (see Appendix 10 of this INRMP), which provides specific management directives for open space.

4.1.1.1 Inventory, Research, and Monitoring Programs

The most recent CAGN surveys were conducted in 2009 along with general wildlife surveys. Future CAGN surveys can also be conducted along with other biology surveys and should be conducted according to USFWS protocols and in a way that allows for comparison of results across years.

4.1.1.2 Mapping and GIS Data Management

Maps of the project site, natural habitat area, and data for vegetation and habitat type should be made available to biologists for future use in future surveys, preferably in GIS format. The location of CAGNs in future surveys should be recorded, preferably in GIS format.

4.1.1.3 Predator Management Program

If it is determined that a non-native species is having a direct effect on a sensitive native species, measures may be taken for removal of the non-native pest species.

4.1.1.4 Species Specific Management Program: Policy Strategy for coastal California Gnatcatcher Habitat Management

Objective: Provide for the continued use of the eastern slope of NMCSD for CAGNs without impeding the military mission.

I. Restrict access to occupied areas especially during the breeding season, 15 February through 31 August.

   A. Restrict establishment of new roads.

   B. Signs and/or fences restricting access to the coastal sage scrub habitat during the breeding season should remain, and maintenance of such signs and fences should occur as needed.

II. Incorporate management guidelines prescribed within the MSCP and coordinate the management of CAGN with the City of San Diego.

III. Surveys should be conducted according to USFWS protocols and in a way that allows for comparison of results across years.

IV. Aid environmental education programs on the CAGN.

   A. Distribute information to interested parties that contains information on status, management, significance, and/or what citizens can do to help.

      1. Emphasize good stewardship responsibilities:

         a. Disturbing or “harassing” gnatcatchers is considered “take” and is illegal.

         b. Remain on existing roads or trails and avoid entering CAGN habitat during the breeding season (15 February–31 August).

         c. Report information on sightings of deadCAGNs, vandalism, and harassment to the appropriate parties.

4.1.2 State-listed Species

The CAGN is the only state-listed species identified in surveys conducted for NMCSD. It is listed as a species of special concern. DoN encourages cooperation with state

protection programs. NMCSD will implement appropriate strategies to protect sensitive species and habitats identified on its lands.

4.1.2.1 Inventory, Research, and Monitoring Programs

The recommended periodic wildlife and vegetation surveys, which are recommended in this document, also provide opportunity to observe state-listed species not yet observed on the project site.

4.1.2.2 Predator Management Program

If it is determined that a non-native (or in some cases native) species is having a direct effect on a state-listed species, measures will be taken for removal of the non-native species.

4.1.3 Federal Species of Concern and Other Sensitive Species

Although none have been detected in surveys to date, other sensitive species such as species of special concern may potentially inhabit NMCSD. NMCSD will implement appropriate strategies to protect sensitive species and habitat if identified on its lands.

4.1.3.1 Inventory, Research, and Monitoring Programs

The recommended periodic wildlife and vegetation surveys, which are recommended in this document, also provide opportunity to observe other sensitive species not yet observed on the project site.

4.1.3.2 Predator Management Program

If it is determined that a non-native species is having a direct effect on a sensitive native species, measures may be taken for removal of the non-native species.

4.2 Wetlands and Deep Water Habitats Management

4.2.1 Water Management

Water quality is under the responsibility of the SWRCB and the RWQCB San Diego. Authority comes from the state's Porter-Cologne Water Quality Control Act and the federal CWA. With the SWRCB setting statewide water quality objectives, the RWQCB

carries out specific aspects of surface and coastal water regulations locally. A Comprehensive Water Quality Control Plan (CWQCP) for the San Diego Region, adopted by the nine-member RWQCB, identifies existing and potential beneficial uses and establishes water quality objectives.

Implementation of the CWQCP occurs through the issuance of permits for waste discharges under the National Pollution Discharge Elimination System (NPDES) by the RWQCB. Regulations initially focused on controlling point source (end-of-pipe) discharges, such as from sewage treatment, industrial, and power plant outfalls. The Navy's General State Water Quality Certification was approved on November 2, 1998 (98C-127). Regulatory emphasis has turned to regulating storm water discharges from various sources through storm drains as well as runoff sources of non-point source pollution.

4.2.2 Non-Point-Source Pollution/Storm Water Management

As the result of amendments to the CWA (Sec. 402[p]) and to the Coastal Zone Act (Coastal Zone Act Reauthorization Amendments [CZARA] Sec. 6217), storm drains are being treated as a point source of pollution and are required to come under NPDES permit. The County and the Cities are all under a General Municipal Storm Water Permit. CZARA also requires that even small construction sites (less than 5 acres) be included under a stormwater permit.

The Navy has coverage under two storm water permits, the statewide General Industrial NPDES Storm Water Permit and the statewide General Construction NPDES Storm Water Permit. At the time of the writing of this report, the Navy is not covered under an individual NPDES permit, nor under the municipal NPDES Storm Water Permit for San Diego County. Enforcement of NPDES permits by the RWQCB is done when monitoring or another source indicates a violation of permit conditions. Cease and Desist Orders and Cleanup and Abatement Orders can be issued along with stiff financial penalties for noncompliance.

Storm runoff is collected in a series of drains and is funneled to the creek along Florida Drive which is maintained by the City. Under a General Discharge Permit (WDID# 937S001933), NMCSD is required to contract annual sampling of storm water runoff entering this creek on Florida Drive. Samples have been taken once so far during in the 2005-2006 storm season (1 October–30 May) at representative sites and tested for pollutants. No significant levels of pollutants have been reported; the results are presented to the RWQCB in annual reports. BMPs for authorized non-storm and storm water discharges are found in Appendix 12 of this INRMP; an Erosion and Sediment Control Field Manual and general BMPs fact sheets are also included as Attachments 1 and 2 of the Erosion Evaluation and Control Plan (EECP) (Appendix 4a of this INRMP).

Policy Strategy for Storm Water Management

Objective: Minimize runoff pollutants.

I. Ensure that all NPDES permits are up-to-date and that all requirements of those permits are understood and complied with.

II. Protect the natural watershed, in particular the creek on the eastern border of NMCSD, by minimizing the runoff of pollutants.

4.2.3 Wetland and Riparian Area Management

Within the native habitat on-site is a riparian habitat containing 0.48 acre of jurisdictional wetlands (see Figure 2-7). Care must be taken not to impact the jurisdictional wetland during base operations including those conducted for ecosystem restoration/enhancement. Strategies to protect the wetland are discussed below:

Policy Strategy for Wetland Management

Objective A: Protect the jurisdictional wetlands by ensuring that impacts are avoided, or proper permits are obtained.

I. Educate all landscape, storm drain maintenance, or other personnel who perform work in the natural habitat area about the wetland area.

   A. Debris or sediment should not be disposed of in the wetland area.

   B. Contact the USACE regarding any future activities within or affecting the jurisdictional wetlands; invasive plant removal within the jurisdictional wetland may require a permit, if the soil would be disturbed or if heavy equipment is used.

Objective B: Develop projects towards enhancement of the on-site jurisdictional wetland to increase its biological functioning, and its value as habitat and a dispersal area for wildlife (i.e., invasive species removal).

4.3 Law Enforcement of Natural Resources Laws and Regulations

Enforcement of laws and regulations pertaining to natural resources is discussed within each natural resource section.

4.4 Fish and Wildlife Management

4.4.1 General Population Management

Wildlife populations on NMCSD land are not extensive and should be considered as part of the larger Florida Canyon coastal sage scrub community. Many individuals probably move between NMCSD and larger adjacent patches of habitat within the canyon and the entire Balboa Park region. No fish populations are present.

4.4.1.1 Inventory, Research, and Monitoring Programs

A comprehensive inventory of wildlife resources was completed in 2009 (Tierra Data 2010). The results of this inventory are discussed in Chapter 2 of this INRMP. Wildlife surveys to date provide natural resource managers with a baseline condition on which to base decisions. Additional wildlife surveys will be conducted every 5 years.

4.4.1.2 Mapping and GIS Data Management

Maps of the project site, natural habitat area, and data for vegetation and habitat type, preferably in GIS format, will be made available to biologists on an as-needed basis for use in future surveys of the NMCSD campus.

4.4.1.3 Policy Strategy for Management of Wildlife Populations

Objective: Sustain, enhance, and manage wildlife populations on NMCSD while preserving the military mission.

I. Conduct general surveys of wildlife every five years to determine the diversity, abundance, location, and condition of species inhabiting NMCSD. The most recent surveys were completed in 2009.

   A. Compare survey results between years.

   B. Use scientifically valid and objective inventory techniques.

   C. During surveys, target species considered endangered, threatened, or rare by regulatory agencies.

   D. Ensure that population trend information is correlated with weather data for the survey period.

   E. Compare population information with regional datasets to determine if any problems are site-specific or regional in nature.

F. If it is determined that wildlife populations are threatened or require additional monitoring, it may be appropriate to coordinate these activities with the City of San Diego and the MSCP. Determine if similar threats are apparent on adjacent habitat within Florida Canyon.

II. Protect and enhance habitat for wildlife populations on NMCSD.

A. Minimize activity within native habitats during spring and summer months when many bird species are nesting, and reptiles and amphibians are most active.

B. Protect the movement corridors adjacent to native habitats on NMCSD. Perimeter security fencing should be designed to ensure that wildlife can move between NMCSD and adjacent habitats.

C. Inspect for presence of roosting bats before implementing any building and demolition projects. Encourage the relocation of bat colonies to alternative roosting sites.

III. Ensure that pest management practices minimize harm to native wildlife. Educate personnel about the need for non-lethal control measures and the benefits of sustaining wildlife populations.

4.4.2 Contagious Wildlife Diseases

Coyotes, rats, pigeons, sparrows, and feral dogs and cats can occasionally become a health hazard. Of greater concern are some species of mice, in particular the deer mouse (*Peromyscus maniculatus*), which are vectors for disease. Hanta Pulmonary Syndrome (HPS) or Hantavirus could be a potential concern in areas of infestation. This is a potentially lethal virus transmitted to humans through the inhalation of aerosolized rodent urine, feces, or saliva. It has been found in San Diego County, though it is typically more prevalent in rural settings. Employees should be cautious when working in areas of infestation. If rodents are a persistent problem, periodic testing of rodents may be appropriate to determine if they are carriers of the virus.

4.4.3 Sick, Injured, or Dead Animal Management

San Diego County is currently testing select dead birds for the West Nile Virus. The select bird species are crows, ravens, jays, hawks, and owls; dead birds should be reported to the County Department of Environmental Health (DEH) immediately.

Policy Strategy for Sick, Injured, or Dead Animals

Objective: Protect the health of the human and wildlife community by reporting sick, injured, or dead animals to the proper agencies or authorities as needed.

I. Call Wildlife Assist at 619-921-6044 to report sick or injured wildlife.

II. Report dead crows, ravens, jays, hawks, and owls to the County DEH for their West Nile Virus testing program by calling 1-888-551-INFO(4636).

A. To qualify for testing under the County's program, a bird must have been dead for less than 24 hours. Clues to look for are:

1. The bird should not be stiff.

2. There should be no ants or flies covering the bird.

3. The bird should not have a foul odor.

4. The bird should be intact. There should not be any missing body parts or physical injuries.

B. If staff collects the bird, it should not be frozen.

C. Although there is no evidence that humans can be infected with West Nile Virus by handling infected birds, care should be taken when handling dead birds.

1. Use gloves when handling birds or any other dead animal.

4.5 Forestry Management

NA. There are no forest areas on NMCSD campus.

4.6 Vegetative Management

4.6.1 Vegetation Management Program

Plant communities provide important functions within a predominantly urban landscape. They provide the necessary components of wildlife habitat and they support and contribute to biodiversity and ecological health. At NMCSD, both native plant communities and landscaped areas are also serve as a visual resource, aesthetically enhancing pedestrian areas, parking and vehicular circulation system, buildings and other components of the built environment.

4.6.1.1 Inventory, Research, and Monitoring Programs

A botanical survey was conducted in 2002/2003 and 2009 to inventory plant species and delineate plant communities on NMCSD. This survey showed that the native vegetation

present included Southern willow scrub habitat and Diegan coastal sage scrub habitat, a habitat of concern in southern California. Throughout the region, coastal sage scrub occurs on land parcels most coveted for development. Consequently, the majority of this plant community has been converted or highly fragmented by development.

Though the area of coastal sage scrub habitat on NMCSD is relatively small (5.34 total acres out of approximately 7 acres of habitat), it provides a link for both wildlife and plant species between patches of sage scrub habitat that occur up-canyon and down-canyon.

4.6.1.2 Mapping and GIS Data Management

Figures 4-1 and 4-2 show vegetation mapping of the project in both the Holland and Sawyer Keeler-Wolf classification systems (Tierra Data 2010). These figures were produced using GIS data.

The City of San Diego's MSCP Subarea Plan (Appendix 10) recognizes the coastal sage scrub habitat area of Florida Canyon (including the habitat on NMCSD) as important to the canyon's natural functions. This highlights the importance of maintaining and improving the natural habitat on NMCSD.

The following recommendations will help improve and track the progress of improvement for the existing coastal sage scrub habitat on NMCSD.

Policy Strategy for Management of Native Plant Communities

Objective: Protect and enhance the coastal sage scrub habitat on NMCSD to support biodiversity and ecosystem health, with emphasis on coastal California gnatcatcher habitat.

I. Prevent unnecessary damage or disturbance to native plant communities.

A. Protect the corridor of coastal sage scrub habitat between NMCSD and the rest of Florida Canyon, consistent with the MSCP. Coordinate the management of the eastern slope of NMCSD with the City of San Diego.

B. As part of a regional strategy, prevent and control the encroachment of noxious weeds.

C. Prevent ground-disturbing activities in areas supporting coastal sage scrub habitat.

D. Actively control erosion in areas supporting coastal sage scrub habitat.

Source: Draft Vegetation Management Plan, Navy Medical Center San Diego, December 2009

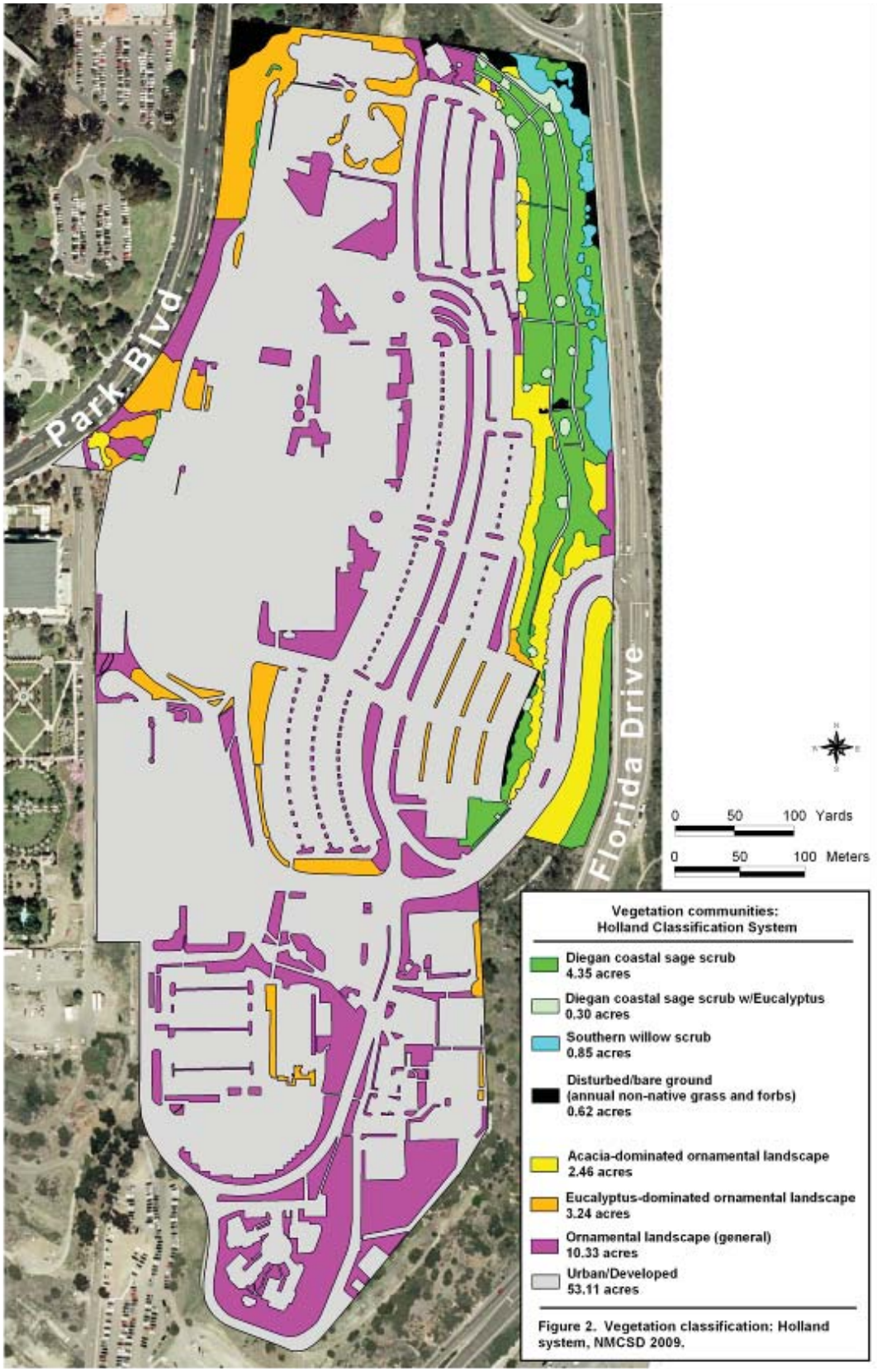
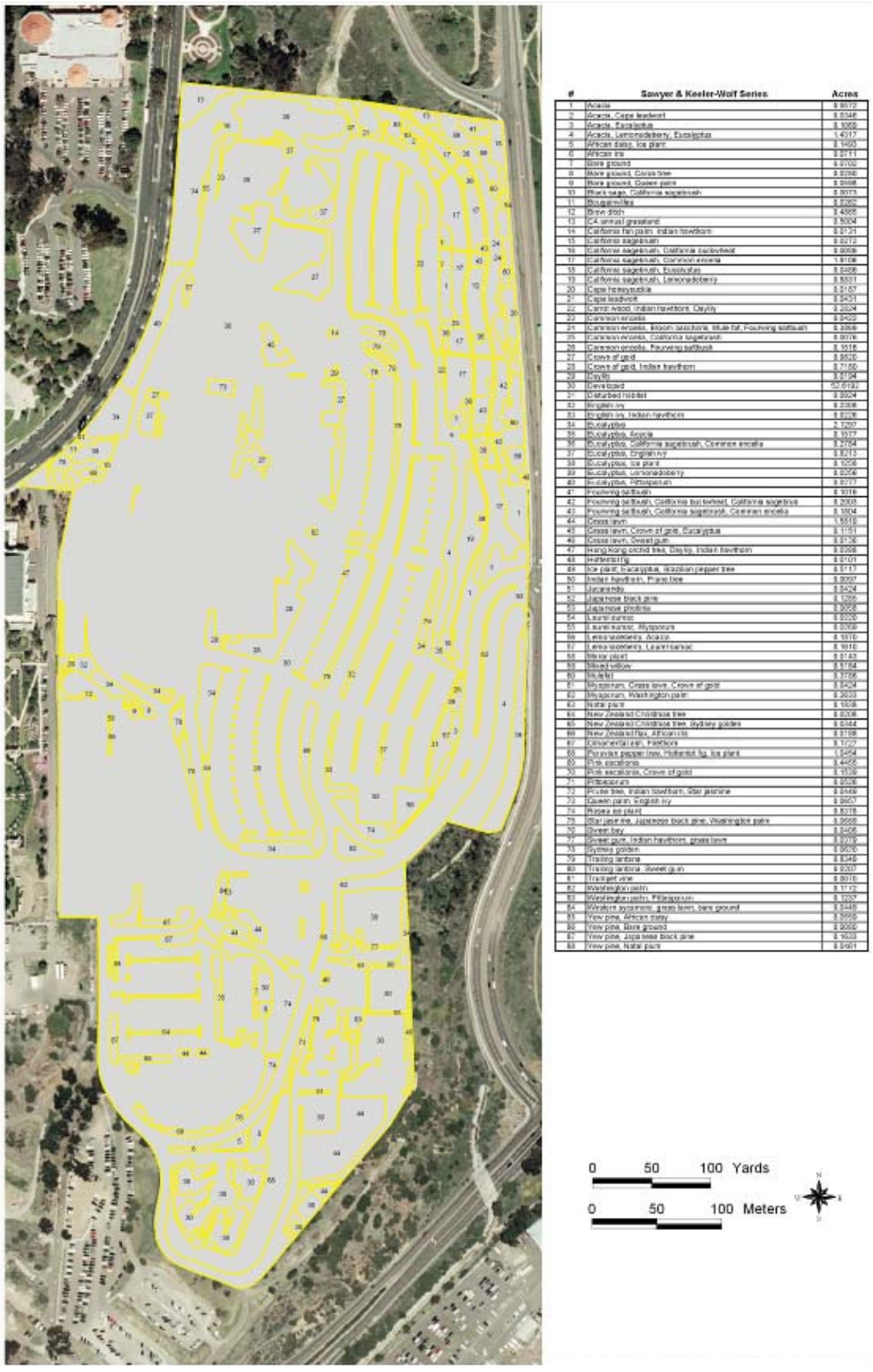


FIGURE 4-1

Vegetation Communities (Holland Classification System)

Source: Draft Vegetation Management Plan, Navy Medical Center San Diego, December 2009



#	Sawyer & Keeler-Wolf Series	Acres
1	Acacia	0.8612
2	Acacia, Cape leadwort	0.5548
3	Acacia, Eucalyptus	0.3068
4	Acacia, Lemonadeberry, Eucalyptus	1.4317
5	African daisy, Ice plant	0.1493
6	African iris	0.2711
7	Bare ground	0.6102
8	Bare ground, Cassia tree	0.2256
9	Bare ground, Queen palm	0.3668
10	Black sage, California sagebrush	0.5073
11	Bougainvillea	0.2262
12	Brow ditch	0.4585
13	CA annual grassland	0.5004
14	California fan palm, Indian hawthorn	0.5721
15	California sagebrush	0.5212
16	California sagebrush, California buckwheat	0.3059
17	California sagebrush, Common encelia	1.9108
18	California sagebrush, Eucalyptus	0.5408
19	California sagebrush, Lemonadeberry	0.5531
20	Cape honeysuckle	0.2157
21	Cape leadwort	0.5431
22	Carob wood, Indian hawthorn, Daylily	0.2824
23	Common encelia	0.3423
24	Common encelia, Bloom succulent, Blue-flat, Flowering saltbush	0.3959
25	Common encelia, California sagebrush	0.8019
26	Common encelia, Flowering saltbush	0.1516
27	Crown of gold	0.9520
28	Crown of gold, Indian hawthorn	0.7180
29	Daylily	0.5794
30	Developed	52.6192
31	Disturbed habitat	0.9924
32	Ivy plant ivy	0.2308
33	Ivy plant ivy, Indian hawthorn	0.5226
34	Eucalyptus	2.7297
35	Eucalyptus, Acacia	0.1577
36	Eucalyptus, California sagebrush, Common encelia	0.2764
37	Eucalyptus, English ivy	0.5273
38	Eucalyptus, Ice plant	0.1258
39	Eucalyptus, Lemonadeberry	0.2256
40	Eucalyptus, Pittosporum	0.9777
41	Flowering saltbush	0.1018
42	Flowering saltbush, California buckwheat, California sagebrush	0.2003
43	Flowering saltbush, California sagebrush, Common encelia	0.1804
44	Grass lawn	1.9510
45	Grass lawn, Crown of gold, Eucalyptus	0.1151
46	Grass lawn, Sweet gum	0.2136
47	Hong Kong orchid tree, Daylily, Indian hawthorn	0.2268
48	Hottentot fig	0.6101
49	Ice plant, Eucalyptus, Brazilian pepper tree	0.5117
50	Indian hawthorn, Prune tree	0.3097
51	Jacaranda	0.5424
52	Japanese black pine	0.1295
53	Japanese photinia	0.2005
54	Laurel sumac	0.8220
55	Laurel sumac, Pittosporum	0.8769
56	Lewis woolberry, Acacia	0.1810
57	Lewis woolberry, Laurel sumac	0.1810
58	Mallow plant	0.5143
59	Mixed willow	0.5184
60	Mulefat	0.3766
61	Pittosporum, Crape jasmin, Crown of gold	0.5424
62	Pittosporum, Washington palm	0.2623
63	Natal plum	0.1808
64	New Zealand Christmas tree	0.2206
65	New Zealand Christmas tree, Sydney golden	0.5464
66	New Zealand flax, African iris	0.5188
67	Ornamental ash, Hackberry	0.1727
68	Peruvian pepper tree, Hottentot fig, Ice plant	1.5454
69	Pine, eucalyptus	3.4456
70	Pine, eucalyptus, Crown of gold	0.7539
71	Pittosporum	0.9526
72	Prune tree, Indian hawthorn, Star jasmine	0.5449
73	Queen palm, English ivy	0.9957
74	Ranjea ice plant	0.5078
75	Star jasmine, Japanese black pine, Washington palm	0.9568
76	Sweet bay	0.5406
77	Sweet gum, Indian hawthorn, grass lawn	0.5319
78	Sydney golden	0.9570
79	Trailing lantana	0.5449
80	Trailing lantana, Sweet gum	0.8207
81	Trumpet vine	0.9078
82	Washington palm	0.1172
83	Washington palm, Pittosporum	0.1207
84	Western sycamore, grass lawn, bare ground	0.5445
85	Yew pine, African daisy	0.5995
86	Yew pine, Bare ground	0.8050
87	Yew pine, Japanese black pine	0.1923
88	Yew pine, Natal plum	0.5401

FIGURE 4-2

Vegetation Communities (Sawyer and Keeler-Wolf Classification System)

II. Enhance native plant communities in areas where exotic species are prevalent.

A. Improve the habitat along the eastern slopes of NMCSD including the slope east of Bob Wilson Drive (see Figure 4-1) by removing exotic species. The majority of these sections already contains the primary components of coastal sage scrub habitat and will be greatly improved by the eradication of exotic species. After removing exotic species, larger bare areas should be planted or seeded with native species. Recommendations for revegetating the coastal sage scrub on NMCSD with native species are included in Table 2 of the Exotic Invasive Plant Removal Plan (EIPRP) contained within Appendix 4a of this INRMP.

III. Monitor the condition and trend of all coastal sage scrub habitat on NMCSD (5.34 acres as last surveyed).

A. Periodically (every three years) perform focused vegetation surveys to determine the health and composition of the coastal sage scrub habitat.

1. The entire habitat is small enough to be surveyed on foot by walking a meandering transect along concrete drainages, roads, and slopes.

2. In addition, vegetation communities should be assessed and mapped according to the classification system outlined in Sawyer and Keeler-Wolf (1995) so that a comparison can be made to the 2009 mapping.

3. Monitoring could be included as part of the surveys for sensitive and exotic/invasive plants.

4. Surveys were last completed in 2009 and should be repeated periodically.

B. Use overall plant and soil cover condition as a primary indicator of a need for adjustments to management. Watch for increases in erosion and/or the presence of numerous dead or dying shrubs.

C. Use plant composition changes, such as the increase of introduced or noxious species, as the secondary indicator of a need to make management adjustments.

D. If it is determined that the coastal sage scrub habitat is threatened or requires additional monitoring, it may be appropriate to coordinate these activities with the City of San Diego and the MSCP. Determine if similar threats are apparent on adjacent habitat within Florida Canyon.

4.6.2 Specific Plant Species Management

To date, no rare or otherwise sensitive plant species have been identified at NMCSD. Because the soils have been greatly altered by construction, and the native plant

communities are a result of revegetation efforts, NMCSD currently holds little potential for the establishment of sensitive plant species. However, a list of rare plants with the potential to occur on-site is presented in Table 4-1. Periodic surveys to confirm the presence or absence of these species are recommended and will be a prudent means to ensure that future changes can be accommodated under the sensitive species management program and policies of this INRMP.

TABLE 4-1
RARE PLANT SPECIES WITH THE POTENTIAL FOR OCCURRENCE ON NMCSD

Species	State/Federal Status	CNPS List	Typical Habitat/Comments
Acanthomintha ilicifolia San Diego thornmint	CE/FT	1B	Chaparral, coastal sage scrub, valley and foothill grassland/clay soils.
Achnatherum diegoensis (=*Stipa diegoensis*) San Diego County needle grass	–/–	4	Rocky soils; chaparral, coastal sage scrub; often near streams.
Adolphia californica California adolphia	–/–	2	Chaparral, coastal sage scrub.
Ambrosia pumila San Diego ambrosia	–/FE	1B	Coastal sage scrub, valley and foothill grassland.
Artemisia palmeri San Diego sagewort	–/–	2	Coastal sage scrub, chaparral, riparian.
Astragalus pachypus var. *jaegeri* Jaeger's milk vetch	–/–	1B	Rocky or sandy areas in grassland or shrubland.
Bergerocactus emoryi Golden-spined cereus	–/–	2	Coastal sage scrub.
Dichondra occidentalis Western dichondra	–/–	4	Chaparral, cismontane woodland, coastal sage scrub, valley and foothill grassland.
Dudleya attenuata ssp. *orcuttii* Orcutt's dudleya	–/–	2	Coastal sage scrub.
Dudleya blochmaniae ssp. *blochmaniae* Blochman's dudleya	–/–	1B	Coastal sage scrub.
Dudleya variegata Variegated dudleya	–/–	1B	Chaparral, coastal sage scrub.
Ericameria palmeri var. *palmeri* (=*Haplopappus palmeri* ssp. *palmeri*) Palmer's ericameria	–/–	2	Coastal sage scrub.
Euphorbia misera Cliff spurge	–/–	2	Coastal sage scrub.
Ferocactus viridescens Coast barrel cactus	–/–	2	Chaparral, coastal sage scrub, valley and foothill grassland.
Harpagonella palmeri var. *palmeri* Palmer's grappling hook	–/–	2	Chaparral, coastal sage scrub, valley and foothill grassland.
Iva hayesiana San Diego marsh elder	–/–	2	Riparian, playas.
Monardella linoides ssp. *viminea* Willowy monardella	CE/FE	1B	Riparian scrub.
Muilla clevelandii San Diego goldenstar	–/–	1B	Chaparral, coastal sage scrub, valley and foothill grassland, vernal pools.
Viguiera laciniata San Diego County viguiera	–/–	4	Chaparral, coastal sage scrub.

See notes on next page.

Notes:

CE: California Endangered
FT: Federal Threatened
CNPS List 1B: Species rare, threatened, or endangered in California and elsewhere; eligible for state listing.
CNPS List 2: Species rare, threatened, or endangered in California but more common elsewhere; eligible for state listing.
CNPS List 4: Watch list of species of limited distribution; species need to be monitored for changes in status of population.

Policy Strategy for Sensitive Plant Species Management

Objective: Provide for the recovery, enhancement, and protection of all sensitive plant species and their respective habitats at optimum levels as a proactive strategy to prevent future federal listings. Strive for maintaining land use flexibility to fulfill mission requirements

I. Continue to confirm the presence/absence on NMCSD property of each sensitive plant species with potential to occur.

A. Conduct rare plant surveys periodically. The area is small enough to be surveyed on foot using a meandering transect. Target annuals in high rainfall years.

B. Keep an updated list of sensitive plant species with the potential to occur on NMCSD and their sensitivity status (see Table 4-1).

II. Implement a sensitive species management program upon the discovery of a sensitive plant on NMCSD.

A. As a first priority, protect enough habitat for rare plants to preserve essential ecological and evolutionary processes.

B. Coordinate management of sensitive plant populations with the City of San Diego and the MSCP.

C. Protect plants considered sensitive by the California Native Plant Society in addition to state and federally listed plants (see Table 4-1).

1. Establish the distribution and relative abundance for each species.

2. Establish protection zones that buffer rare plants from ground disturbing activities and ensure that these areas do not become isolated from one another.

3. Determine critical habitat for each sensitive plant species using the concept of minimal viable population size and the criteria that natural evolutionary and ecological processes continue intact.

D. Keep a cumulative map and record of surveys and findings on sensitive plants.

III. Avoid impacts to sensitive species by avoiding areas in which they occur.

IV. Perform site-specific studies prior to development activities to determine the precise mitigation necessary to preserve and enhance biological resources.

4.7 Migratory Birds Management

4.7.1 Migratory Birds

Many native birds on NMCSD are migratory species and either spend the winter in the area moving north during the spring and summer, or they arrive during the spring and summer from farther south to breed. As a result of documented population declines, migratory birds are the subject of international conservation efforts. As an important biological resource and a good indicator of ecosystem health, NMCSD's bird population must be managed effectively and in accordance with applicable resource laws.

The Migratory Bird Treaty Act (MBTA) of 1918 (16 USC 703-711) is an international agreement between the U.S., Canada, and Mexico that protects most species of birds. The MBTA prohibits the taking or pursuing of migratory birds, their eggs, feathers, or nests. Game birds are listed and protected except where specific seasons, bag limits, and other factors govern their hunting. Exceptions are also made for some nuisance pests, which require a federal depredation permit (e.g., domestic pigeons, starlings, and house sparrows). In addition, a federal permit shall not be required to control yellow-headed red-winged, rusty, and Brewer's blackbirds, cowbirds, all grackles, crows, and magpies, when found committing or about to commit depredations upon ornamental or shade trees, agricultural crops, livestock, or wildlife, or when concentrated in such numbers and manner as to constitute a health hazard or other nuisance (50 CFR 21).

On December 2, 2003, the President signed the 2003 National Defense Authorization Act. This act provides that the Secretary of the Interior shall exercise his/her authority under the MBTA to prescribe regulations to exempt the Armed Forces from the incidental taking of migratory birds during military readiness activities authorized by the Secretary of Defense.

The final rule authorizing the DoD to take migratory birds during military readiness activities was published in the *Federal Register* on February 28, 2007. The regulation can be found at 50 CFR Part 21. The regulation provides that the Armed Forces must confer and cooperate with the USFWS on the development and implementation of conservation measures to minimize or mitigate adverse effects of a military readiness activity, if it determines that such activity may have a significant adverse effect on a population of a migratory bird species.

For non-military readiness activities, migratory bird conservation is addressed separately in a Memorandum of Understanding (MOU) which was developed in response to an EO (13186; January 10, 2001). This MOU between DoD, USFWS, and the State fish and wildlife agency represented by International Association of Fish and Wildlife Agencies (IAFWA) was signed on July 31, 2006. EO 13186 also requires NEPA evaluations to include effects on migratory birds and that advance notice or annual reports must be made to the USFWS concerning actions which result in the taking of migratory birds.

DoD policy states that neotropical migratory bird programs shall be established in support of and consistent with the military mission. DoD's strategy focuses on inventory, on-the-ground management practices, education, and long-term monitoring (DoD 4715.DD-R 1996). A means of achieving these strategies is offered through the Partners In Flight (PIF) cooperative program. PIF is an international effort involving partnerships among federal, state, and local government agencies, professional organizations, conservation groups, and all other interested parties to improve monitoring, research, management, and education programs involving birds and their habitats. PIF offers DoD the opportunity to participate in an international program to enhance stewardship of natural resources and implement conservation objectives on a landscape level. DoD's PIF policy is to promote and support a partnership role in the protection and conservation of migratory birds and their habitat by protecting vital habitat, enhancing biodiversity, and maintaining healthy and productive natural systems consistent with the military mission (DoD 2006).

If a project has the potential to affect nesting birds or nesting substrate (including the trimming of nest trees), a qualified biologist from the Navy Region Southwest, Environmental Department Natural Resources Office and Naval Base San Diego should be contacted to determine if there will be any violations of the MBTA. Most birds typically nest between February and August. Birds can nest in buildings, trees, shrubs, and on the ground. A biological monitor may be needed to ensure absence or nesting birds prior to construction activities and compliance with the MBTA. If nesting birds or eggs are encountered within a construction area, work must be phased to avoid disturbing the birds. Violations of the MBTA can result in fines of up to $2,000 or 2 years imprisonment.

Policy Strategy for Migratory Birds

Objective: Conserve viable habitat for migratory birds that use NMCSD for stopover resting, feeding, and nesting.

I. Determine the status, health, and habitat use of migratory birds, raptors, and non-native species emphasizing certain target or indicator species not currently considered sensitive. Use cooperative assistance from wildlife agencies, non-governmental organizations, and volunteers to collect needed data.

II. Protect the sustainability of these bird populations and their habitat.

A. Restrict access into and disturbance of nesting and breeding grounds during the breeding season (February–August). Incorporate this restriction as a mitigation measure for *proposed projects.*

B. Consider the following opportunities for enhancement of bird habitat:

1. Consider use of artificial aids such as nest boxes

2. Choose appropriate food plants for landscaping, except near eating establishments.

3. Protect areas of dense vegetative cover.

4. Prevent noxious weeds from taking over native habitats.

C. Protect the populations from the lethal effects of human facilities and activities, where this does not conflict with safety concerns.

1. Limit the use of rodenticides and herbicides.

2. Remove any dead or dying rodents from a treated area to reduce the possibility of secondary poisoning.

D. Take bird populations into consideration when reviewing all projects, scopes of works, contracts, and agreements associated with construction and/or vegetation manipulations or removal.

1. Projects should be phased to avoid disturbing nesting birds.

2. If nesting birds or eggs are encountered within a project area, contractor must immediately notify the Contracting Officer or Project Manager and not attempt to remove the bird or its nest from the area.

E. Cooperate with large-scale efforts to research, monitor, and manage migratory bird populations, including the PIF program.

III. Stimulate awareness of migratory bird stewardship strategies.

A. Prepare educational materials regarding NMCSD's migratory birds and management practices. Include information on what personnel can do to help, species lists, and activities detrimental to the bird population.

4.8 Invasive Species Management

4.8.1 Invasive Species or Feral Animal Management Program

An EO (13186; January 10, 2001) on the MBTA requires agencies to control the establishment of exotic species that may endanger migratory birds and their habitat.

Policy Strategy for Invasive or Feral Wildlife

Objective: Restrain or remove exotic and feral species which may detrimentally affect sensitive or migratory bird species.

I. Monitor areas inhabited by sensitive species to determine the presence of potential introduced predators including domestic, feral, and exotic species.

   A. Delineate protocols for protecting native wildlife from domestic, feral, and exotic animals.

   B. If it is determined that a non-native (or native) species is having a direct effect on a sensitive native species (e.g., native brown-headed cowbirds parasitizing CAGN nests), take appropriate removal actions for non-native species.

II. Promote activities aimed at increasing fledgling success and decreasing overall bird mortality.

   A. Educate the public about the damage that can be caused by feral animals and pets.

      1. Conduct educational programs for residents regarding the feeding and harboring of feral cats and dogs, especially within the housing area.

      2. Continue to periodically circulate memos to residents and staff regarding policies which prohibit the feeding of feral cats.

   B. No pets, except for small aquarium fish and Seeing Eye® dogs (or similar animals) are allowed in NMCSD's facilities.

      1. Although cats are prohibited as pets, installing cat-proof fencing around the housing areas on the NMCSD, on an as-needed basis, can prevent unauthorized or feral cats and other pets in the housing areas from encroaching on the nearby occupied coastal sage scrub.

C. Report feral cats to the local Animal Control shelter (619) 236-4250. Feral cats within NMCSD should be reported to the Facilities Management Department at (619) 532-6125 or (619) 532-6135.

4.8.2 Invasive Plants Species Management

An EO was signed in February 1999 (EO 13112) directing federal agencies to identify and manage invasive species. The order stipulates that actions will be taken to prevent the introduction of invasive species, monitor for their presence, and respond rapidly to eliminate them. The DoD subsequently issued a memorandum of compliance with this EO.

An effective way to implement these actions is through the Federal Noxious Weed Act of 1975 that requires federal land managers to develop a management program to control undesirable plants on federal lands under the agency's jurisdiction and to cooperate with state and federal agencies to manage undesirable plants.

Invasive plant management is a large part of this INRMP. At NMCSD and throughout southern California, native vegetation has been altered by the introduction—and in many cases dominance—of non-native plant species, some of which can change ecosystem dynamics dramatically. Invasive species may outcompete natives for water, nutrients, or sun; disrupt processes such as soil nitrogen cycling or pollination relationships or predispose an area to wildfire by providing excess fuel in areas that would normally have supported lower fuel loads. Several non-native species have the ability to completely change the structure of the vegetation, making it unsuitable to most native wildlife species. Sensitive and declining wildlife and plant species are particularly at risk from these non-native species.

Some non-natives that occur in very low numbers or seem innocuous may expand their range dramatically and become a difficult pest weed under the right environmental conditions. These conditions might be brought about by a year with very late rains or a flood that results in heavy sedimentation of drainages leading to the establishment of riparian weeds.

Invasive exotic species are found scattered throughout the native habitat at NMCSD. The most abundant and potentially problematic species include tamarisk (salt cedar; *Tamarix* spp.), giant reed (*Arundo donax)*, pampas grass (*Cortaderia jubata*), cardoon (artichoke thistle; *Cynara cardunculus*), tocolote (*Centaurea melitensis*), sweet fennel (*Foeniculum vulgare*), acacia (*Acacia redolens*), eucalyptus (*Eucalyptus globules*), and iceplant (*Carpobrotus edulis* and *Mesembryanthemum crystallinum*). Additional herbaceous exotic weeds are also present. Invasive plants present on NMCSD are discussed below.

The EIPRP for the project (RECON 2005c) discusses the problematic invasive species by habitat:

NATIVE UPLAND HABITAT (COASTAL SAGE SCRUB)

Some of the species of particular concern at NMCSD are tamarisk, cardoon, Pampas grass, tocolote, fountain grass *(Pennisetum setaceum*), and other potentially invasive herbaceous species. Other, less invasive species, include acacia, blue gum eucalyptus (*Eucalyptus globules*), and iceplant.

Photograph 4-1. Tamarisk (*Tamarix* spp.)

Tamarisk, a shrub or small tree (Photograph 4-1) that takes available water from other plant species, is present on the site in small numbers. This non-native species has the potential to invade and dominate the vegetation on-site, if eradication measures are not continued. Control methods for tamarisk include cutting plants to the base of the stem and immediately applying appropriate herbicides to the cut stump.

Photograph 4-2. Pampas Grass (*Cortaderia Jubata*)

Pampas grass, a large perennial bunchgrass (Photograph 4-2), is present in the northwestern portion of the site, as well as the revegetated portion of the eastern slope. This highly invasive species should also be controlled through cutting and the application of herbicide. If the plants are removed while in flower, the seed head should first be cut off and bagged, and all plant material should be removed from the site.

4-3. Acacia (*Acacia redolens*)

Other less invasive species, such as iceplant, blue gum eucalyptus, and acacia have a medium to low priority for removal, unless evidence suggests that the populations are becoming detrimental to native habitats. Acacia trees (Photograph 4-3) are numerous throughout the eastern slope of NMCSD, including a large population near the parking structure at the top of the revegetated slope. This species spreads aggressively and competes with native shrubs.

Eucalyptus trees (Photograph 4-4) line the parking lots above the revegetated slope. This placement is not particularly detrimental to native species, although eucalyptus trees produce chemicals which inhibit the growth of other species underneath the leaf canopy (termed *allelopathy*). This cost must be weighed against the benefit that these trees provide as passive shading in the summer and for perching or nesting by several species of birds, especially raptors.

Photograph 4-4. Blue Gum (*Eucalyptus*)

Iceplant, a succulent perennial (Photograph 4-5), is present and populations are currently established within the native habitat.

Photograph 4-5. Iceplant (*Carpobrotus edulis*)

RIPARIAN AREAS

Weeds occurring within the NMCSD riparian areas include giant reed, sweet fennel, castor bean (*Ricinus communis*), eucalyptus, iceplant, and tamarisk. These species can alter riparian community composition and structure if allowed to spread.

ORNAMENTAL AREAS

Several species within the ornamental areas can become invasive weeds if introduced to the native landscapes. These include Brazilian pepper tree (*Schinus terebinthifolius*), iceplant (*Carpobrotus chilensis* and *C. edulis*), fountain grass, and eucalyptus.

A complete list of exotic invasive plant species observed on the NMCSD site can be found in the Exotic Invasive Plant Removal Plan (RECON 2005c).

The EIPRP was developed based on surveys in 2005 (RECON 2005c). This plan describes an adaptive management strategy for controlling existing populations and measures to prevent the establishment of new exotics throughout the native open space. This plan is based on enhancing the desired plant species and habitats, rather than only eliminating weeds. Priorities are set to reduce or eradicate weeds that have been established on the property according to their actual and potential impact on land management goals and according to the ability to control the nuisance species. In addition, a Draft Vegetation Management Plan NMCSD (VMP) was also prepared in 2009 (Agri Chem 2009) (Appendix 4d). The VMP focuses on restoration as a tool to

enhance native habitats. It provides guidance on evaluating and identifying possible restoration sites in NMCSD. The VMP identified 22 sites (Figure 4-3) on NMCSD that would benefit from restoration efforts and prioritized the sites selected. These plans will be consulted by the Exotic Invasive Manager for a more detailed description than is summarized below.

The EIPRP and VMP were developed based on site specific data and the California Exotic Pest Plant Council (CalEPPC) list of Exotic Plants (CalEPPC 1999). In February 2006, the California Invasive Plant Council (Cal-IPC), formerly CalEPPC published the *California Invasive Plant Inventory* (Cal-IPC 2006); updates to this list were also published in 2007 (Cal-IPC 2007). The current lists are included in Appendix 13 of this INRMP.

The EIPRP applies to all native open space areas in NMCSD. The VMP builds upon the EIPRP and includes not just the native open space areas, but all of NMCSD including landscaped areas.

Policy Strategy for Control of Invasive Plant Species

Objective: Eradicate or control the spread and introduction of noxious plant species with priority on those with the greatest potential for coastal sage scrub or riparian habitat degradation.

I. Prevention.

A. Use regular monitoring practices to detect new pest plants.

1. Conduct focused surveys of exotic plants every three years to track the density and distribution of exotic species on and adjacent to NMCSD. The most recent surveys were completed in 2009.

a. Monitoring could be included as part of the surveys for sensitive plants and vegetation community trends.

b. Compare survey results between years.

c. Use scientifically valid and objective inventory techniques.

d. Surveys should be conducted by walking along concrete drainages, roads, and slopes.

Map Source: Draft Vegetation Management Plan, Navy Medical Center San Diego, December 2009

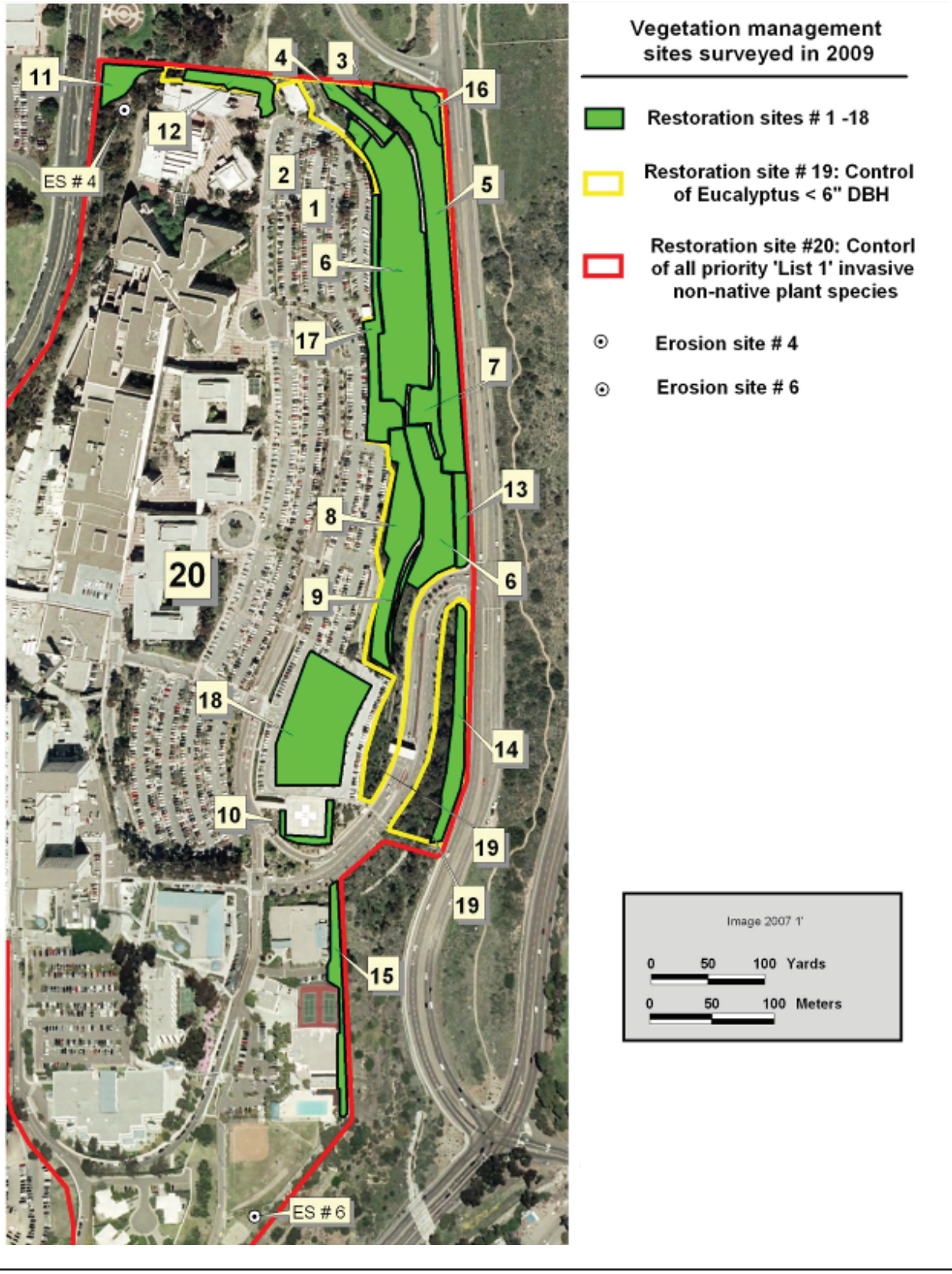


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FIGURE 4-3

Vegetation Management Sites 1-20 and Two Erosion Sites from the Erosion Evaluation Study (Tierra Data Inc, 2009), NMCSD

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e. Specific attention should be given to riparian areas and drainage ways.

f. Monitoring should also note any invasive species on adjacent properties that could spread to NMCSD.

2. Give appropriate personnel non-native plant recognition training so that newly arriving invasive species can quickly be discovered and eradicated.

a. NMCSD has produced a binder of native and non-native plants and presented it to NMCSD landscape contractors in 2005. This binder should be provided for all new landscape personnel.

b. All landscaping personnel working on NMCSD should become educated in identifying problem weeds so that the weed locations can be mapped as other work is being conducted and serve as an early warning system. Blank survey maps should be made available to landscaping personnel working on the site, compiled at the end of each year, and used to assist in focused surveys.

B. Include contingencies for removing exotics as they first appear and for implementing new control measures as they become available into all restoration, mitigation, and management programs.

1. Coordinate with adjacent landowners to eradicate exotics and prevent their spread. Specifically, communicate with the City of San Diego's manager for Florida Canyon to facilitate removal of invasive species along Florida Creek including arundo and tamarisk.

II. Eradicate and control weeds according to the EIPRP.

A. Target species for active eradication based on the recommendations in the EIPRP. The plants recommended for management, the recommended course of action, and their priority for implementation are summarized in Table 4-2.

1. Acacia is ranked a medium-priority for removal; however, if subsequent monitoring indicates the spread of this species into coastal sage scrub or riparian habitat, it should be reassessed as a higher priority.

2. Efforts to control species in the coastal sage scrub habitat should be performed outside the breeding season of the CAGN, which is 15 February through 31 August.

3. Efforts within the jurisdictional wetland area should be coordinated with the USACE, if the soil would be disturbed or if heavy equipment is used.

TABLE 4-2
SUMMARY FOR PRIORITY OF REMOVAL OF EXOTIC INVASIVE PLANTS

Species	Areas Recommended for Action	Recommended Course of Action
High Priority		
Salt cedar (tamarisk)	All	Eradicate existing plants within 3 years.
Giant reed (arundo)	All	Eradicate existing plants within 3 years.
Cardoon (artichoke thistle)	Riparian and DCSS	Eradicate existing plants within 3 years.
Tocolote	Riparian and DCSS where established	Eradicate existing plants within 3 years.
Pampas grass	Riparian and DCSS where established	Eradicate existing plants within 3 years.
Sweet fennel	DCSS where established	Eradicate existing plants within 3 years.
Medium Priority		
Iceplant	Riparian and DCSS	Eradicate existing plants within 3 years (excluding ornamental areas).
Eucalyptus	All but ornamental	Eliminate the spread to native areas.
Tree of heaven	All	Eradicate existing plants within 3 years.
Castor bean	All	Eradicate existing plants within 3 years.
Brazilian pepper tree	All	Eradicate existing plants within 3 years.
Acacia*	All	Eradicate existing plants within 3 years.
Low to Medium Priority		
Hollow-stem asphodel	All	Manage to control existing populations within 3 years.
Australian saltbush	All	Manage to control existing populations within 3 years.
Black mustard	All	Manage to control existing populations within 3 years.
English ivy	All	Manage to control existing populations within 3 years.
Russian thistle	All	Manage to control existing populations within 3 years.
Greater periwinkle	All	Manage to control existing populations within 3 years.
Crown daisy	All	Manage to control existing populations within 3 years.
Plus other invasive species listed in the Cal-IPC California Invasive Plant Inventory (Cal-IPC 2006, 2007)	All	Manage to control existing populations within 3 years.
Low Priority		
Fountain grass	Most	Prevent spread into native habitats.

DCSS: Diegan coastal sage scrub.
* Acacia is ranked a medium-priority for removal, however, if subsequent monitoring indicates the spread of this species into coastal sage scrub or riparian habitat it should be reassessed as a higher priority.

III. Following weed removal, revegetate the areas with native plants. This will enhance the quality of the habitat, discourage re-infestation, and stabilize the soil.

A. Smaller eradicated areas may recover without intervention. However, bare areas that pose a risk for erosion should be stabilized, particularly if erosion could affect jurisdictional waters.

B. A native plant palette appropriate for coastal sage scrub should be used for restoration of upland areas, and a native plant palette appropriate for riparian/wetland should be used for restoration of the stream corridor. Recommendations for revegetating the coastal sage scrub on NMCSD are included in Table 2 of the EIPRP within Appendix 4a of this INRMP.

IV. Eradicate and control weeds according to the VMP.

A. Target species for active eradication based on the recommendations in the EIPRP. Table 4-3 provides an overview of the sites and the numerical values used to prioritize the sites. Numerical values are 0-5, with 0 meaning there to be no benefit for that criteria, and 5 meaning there is substantial benefit.

B. The list of sites should be reviewed annually to determine if modifications or additions need to be made. Sites 3, 5, 16, 19, and 20 were considered high priority, and recommendations as to how to restore each site were given. Restoration recommended involved non-native species eradication, planting and seeding with native species, and erosion control. Detailed descriptions of restoration recommendations can be found in the attached VMP (Appendix 4c). .

4.9 Pest Management

If wildlife species can find food, water, or shelter in areas populated by humans, many will adapt to and even thrive in the new environment. Conflicts with humans can arise and range from simple nuisance cases to damage to buildings or dwellings or serious issues of disease transmission to people. Coyotes, rats, pigeons, sparrows, feral dogs, and cats can become nuisances and occasionally a health hazard.

Removal or relocation of live animals requires a permit from CDFG, which reserves the right to decide which species of “special concern” should be relocated.

Animal damage control shall be implemented as justified by sound ecosystem management, health and safety considerations, in support of the military mission, and in accordance with the requirements of federal and state laws. Control will be limited to offending individuals or particular groups of animals. Habitat management-based control is the preferred method. Other approaches to control include: deliberate removal of

TABLE 4-3
CRITERIA AND NUMERICAL VALUES (0-5) GIVEN TO SITES ASSESSED FOR RESTORATION NEEDS.

Rank	Site Number	Site Name	Habitat value improvement	Fire risk reduction	Flood Risk reduction	Reduce Potential for Erosion	Aesthetic	Efficiency (part of another site)	Summary
1	5	Florida Canyon Riparian Site*	5	5	4	2	1	0	17
2	20	Treatment of all List 1 Species on *NMCSD	5	3	1	3	2	2	16
3	19	Treatment of all Eucalyptus Under 6”*	5	4	0	2	2	2	15
4	3	Florida Canyon NE Corner Riparian* Scrub	4	4	0	1	1	3	13
5	16	Florida Canyon Chrysanthemum Site	4	3	0	3	2	0	12
6	7	Slope Adjacent to Florida Canyon Outfall	4	4	0	3	1	0	12
7	22	Erosion Site 6 (TDS 2009)	4	2	0	4	2	0	12
8	6	High Quality CSS Slope	4	2	0	3	2	0	11
9	11	Northwest Corner Non-native Grassland	4	3	0	3	1	0	11
10	4	Middle Slope NE Corner CSS	4	2	0	3	1	0	10
11	9	Crib Wall Restoration	3	2	0	3	2	0	10
12	13	Gate Entrance—North	3	2	0	2	3	0	10
13	14	Gate Entrance—South	3	2	0	2	3	0	10
14	15	Southeast Corner—Top of Slope	3	3	0	3	1	0	10
15	1	Fisher House Future Native Garden Site	3	0	0	3	3	0	9
16	2	Fisher House Slope	3	2	0	2	2	0	9
17	8	Acacia and Rhus Dominated Parking Lot	3	3	0	2	1	0	9
18	12	Healing Garden	2	2	0	2	3	0	9
19	17	Mature Acacia and NN** Trees—Parking Lot	3	3	0	2	1	0	9
20	10	Helipad Slope	3	0	0	3	2	0	8
21	21	Erosion Site 4 (TDS 2009)	1	0	0	5	1	2	9
22	18	Eucalyptus in Parking Structures	0	5	0	0	1	0	6

Coastal Sage Scrub (CSS)

** Non-native (NN)

animals by trapping, biological control by natural predators, chemical control by keeping animals away with a repellent, or physical control by scaring away animals with various devices or excluding them from a site with fences. It is a standard practice on NMCSD to avoid use of pesticides and herbicides unless absolutely necessary.

Pigeon control around facilities at NMCSD has been an issue of concern for many years (Photograph 4-6). Measures taken in the past to discourage the presence of pigeons have been effective, although some rooftop areas, particularly Building 26 still have some pigeon problems. Measures have included the replacement of eucalyptus trees with palm trees and the installation of owl decoys, Nixalite® metal projection, and signs to discourage pigeon feeding within the McDonald's courtyard (Photograph 4-7). Continued use of these measures in affected areas is recommended to keep the pigeon population under control. Pigeons, along with house sparrows, European starlings (*Sturnus vulgaris*), and wrentits (*Chamaea fasciata*), are specifically excluded from protection granted under the Migratory Bird Treaty Act (MBTA).

Photograph 4-6. Pigeon in Main Courtyard at NMCSD

Photograph 4-7. Signs Located in the McDonald's Courtyard. Note the Nixalite® on Top of the Sign to the Right.

Some buildings at NMCSD have also been infested by mice in the past. Measures have been implemented to seal buildings with rodent-proof materials where past problems existed. In the future, measures should be taken to eliminate rodents if discovered within buildings. Employees should be cautious when working in areas of infestation, as some species of mice are vectors for disease.

OPNAVINST 6250.4B directs the DoN's pest management policy and requires a comprehensive Integrated Pest Management Plan, the contents of which are stipulated. The instruction discusses the need to control pest outbreaks which affect the military mission, damage property, or impact the welfare of people.

Policy Strategy for Pest Control

Objective: Protect NMCSD facilities, personnel, visitors, and native species from risk or loss due to wild or feral animal predation or damage.

I. Anticipate problems through monitoring and public relations.

A. Perform regular surveys for pigeons, mice, and other potential pests.

B. Speak with personnel who frequent areas which have had problems in the past to determine if the problem persists.

II. Prevent the risks and potential losses and liabilities from wild or feral animal damage.

A. Closely coordinate and cooperate with other NMCSD offices in developing and implementing methods to reduce or eliminate facility damage and human conflicts related to wildlife. When areas in or around eating establishments are affected by nuisance wildlife, a food inspector should be contacted.

B. Ensure that all outdoor trash containers are covered and that a sufficient number of them are located around NMCSD to discourage littering.

C. Continue current practices for discouraging feral pigeons from inhabiting NMCSD facilities. Use owl decoys, Nixalite® bird control products, and signs prohibiting the feeding of pigeons where appropriate.

D. Discourage habitation of occupied buildings through appropriate and biologically acceptable measures.

E. Discourage mice from entering buildings using barriers. Existing building openings have been sealed. If new openings are discovered, seal openings larger than 1/2 inch across with rodent proof materials such as cement or metal.

III. When removal of nuisance wildlife is necessary, consider non-lethal measures whenever possible.

A. Trapping is the preferred method for removal of rodents. Larger infestations may require rodenticides or fumigation. NAVFAC should be contacted when poisons are required.

B. Trap feral animals alive as needed and turn them over to the County Animal Control Officer.

C. Avoid the killing of non-target species whenever possible.

4.10 Land Management

4.10.1 Soil Conservation and Erosion Control

The steep slopes, soil types, channelized flows such as through culverts, and sporadic and intense rainstorms make soil erosion a critical concern at NMCSD. Though previous erosion efforts have helped stabilize many of the steep slopes on NMCSD, some areas of erosion still need to be controlled. An erosion control plan has been developed and is summarized below. There is some erosion behind one of the retaining walls, which requires immediate attention. Other areas of concern for NMCSD include eroded gullies located near the southeast boundary, just off the property on city-owned land, whose rehabilitation will require cooperation with the City of San Diego.

Federal land managers are required to control and prevent erosion by conducting surveys and implementing conservation measures (Soil Conservation Act PL 74-46; 16 USC 5901). This includes both point-source (originating from a single location such as a culvert) and non-point-source (originating from a dispersed area) erosion, especially when affecting water quality.

Preventing erosion is much more cost-effective than controlling erosion after the problem has begun. The best way to avoid erosion is not to disturb existing plant communities, to ensure culverts are adequately sized, and to ensure that the ground is sufficiently protected at the outfalls of channelized structures. Once the ground surface is exposed by grading or traffic, wind and water will expedite erosion.

Erosion prevention and control becomes a “Class I” funding action (see Section 5.4.1 of this INRMP) on NMCSD when it affects habitat or nests of the federally threatened coastal California gnatcatcher or wetlands classified as jurisdictional waters of the U.S. Since avoiding soil disturbance is not always possible, the measures described in section 4.2.2 below for soil erosion prevention and control are recommended.

An EECP was developed for NMCSD in 2005 (Appendix 4a; RECON 2005b) and the NMCSD Erosion Evaluation and Control (EEC) report prepared in 2009 (Attachment B; Tierra Data 2009) identifies current and potential future problems and maintenance issues.

Policy Strategy for Soil Management/Erosion Control

Objective A: Prevent degradation of NMCSD facilities and native habitats.

Objective B: Protect and restore soil productivity and wildlife habitat through effective implementation of BMPs, such as topsoiling, seeding, planting, and catchbasin inserts, to prevent and control soil erosion.

I. The first priority shall be erosion prevention through proper planning, rather than restoring or correcting conditions of accelerated or unnatural erosion.

A. Generate and ensure incorporation of innovative BMPs in the preliminary design of construction and maintenance activities involving ground disturbance with the following strategy. For reference, an Erosion and Sediment Control Field Manual and general BMPs fact sheets which have been modified for use at NMCSD are included in Attachments 1 and 2 of the EECP in Appendix 4a; BMPs for authorized non-storm and storm water discharges are found in Appendix 12 of this INRMP:

1. Minimize site disturbance,

2. Stabilize site disturbance,

3. Protect slopes and channels,

4. Control site perimeter,

5. Control internal erosion,

6. After construction, add source-control BMPs and treatment-control BMPs, and

7. Keep a record of the most effective BMPs for use in NEPA planning and mitigations.

B. Ensure that any project which requires NEPA review includes procedures for erosion control.

C. Facilitate coordination with other organizations when erosion concerns cross jurisdictional boundaries. Contact the City of San Diego about addressing erosion concerns along the southeast and northwest corners of the facility boundary.

D. Stay informed and up-to-date on improved methods for preventing erosion during maintenance activities and on revisions in laws, regulations, and policies.

E. Regularly monitor storm runoff and its effect on particularly vulnerable areas such as steep slopes.

II. Implement the short-term, long-term, monitoring and inspection, and maintenance tasks specified in the EECP and EEC. These tasks are summarized below:

A. EECP Short-term Erosion Control. Figure 4-4 shows the location of the short-term maintenance sites. These are areas that require immediate attention and should be considered a high priority:

Image Source: Natural color representation of the NAIP 2009 aerial imagery.

Naval Medical Center San Diego

Short-term Maintenance Sites

S1

S2

S3

S4

S5

0 Feet 450

FIGURE 4-4

Short-Term Sediment and Erosion Control Maintenance Sites

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S1. Install native shrubs and herbs at the site of the two identified bare/sparsely vegetated areas (see Tables 2 and 3 of the EECP).

S2. Fill and revegetate the off-site eroded gullies and redesign the drainage to redirect water so that it does not drain off-site in concentrated flows. Construction of a drainpipe to the bottom of the slope may be necessary to avoid future erosion problems if redirection of runoff is not possible. Adjacent landowners should be consulted and coordinated with. An engineer should be consulted for design options.

S3. Install a catch basin inlet filter in the drain that receives runoff from the hillside in order to trap sediment.

S4. Prevent erosion behind the retaining wall at the north of the project site by constructing a small berm or ditch to divert runoff to the drain mentioned in item S3 above.

S5. A large cavity is forming behind the retaining wall near the northeast corner of the parking structure. Consult an engineer to develop plans to correct the retaining wall and the concrete culvert which appears to be causing the problem.

B. EECP Long-term Erosion Control. Figure 4-5 shows the location of the long-term maintenance sites. These are areas that should be regularly monitored and managed in order to prevent large and costly problems:

L1. Inspect drains and culverts located on the steep hillsides of NMCSD before and after a significant rainfall event with the post-inspection occurring before the following rainfall event. All sediment and debris that are obstructing flow should be removed and disposed of in an area that is not subject to erosion (debris should also not be deposited into the jurisdictional wetland on-site). Inspect points of discharge and repair any erosion sites.

L2. Place sediment and debris traps at the point where runoff from the parking lot enters the concrete drains on the west end of the parking lot. Maintain as necessary.

L3. Sweep the identified drainages following significant storm events to remove sediment and debris.

C. EEC Long-term Erosion Control. The EEC report identified twelve sites where erosion occurs (Figure 4-6). Areas that require short-term erosion and sediment control identified in the EECP overlap with Sites 1, 2, 3, 4, 9, 10, and 11 of the EEC. Areas identified for long-term sediment and erosion management in the

Image Source: Natural color representation of the NAIP 2009 aerial imagery.

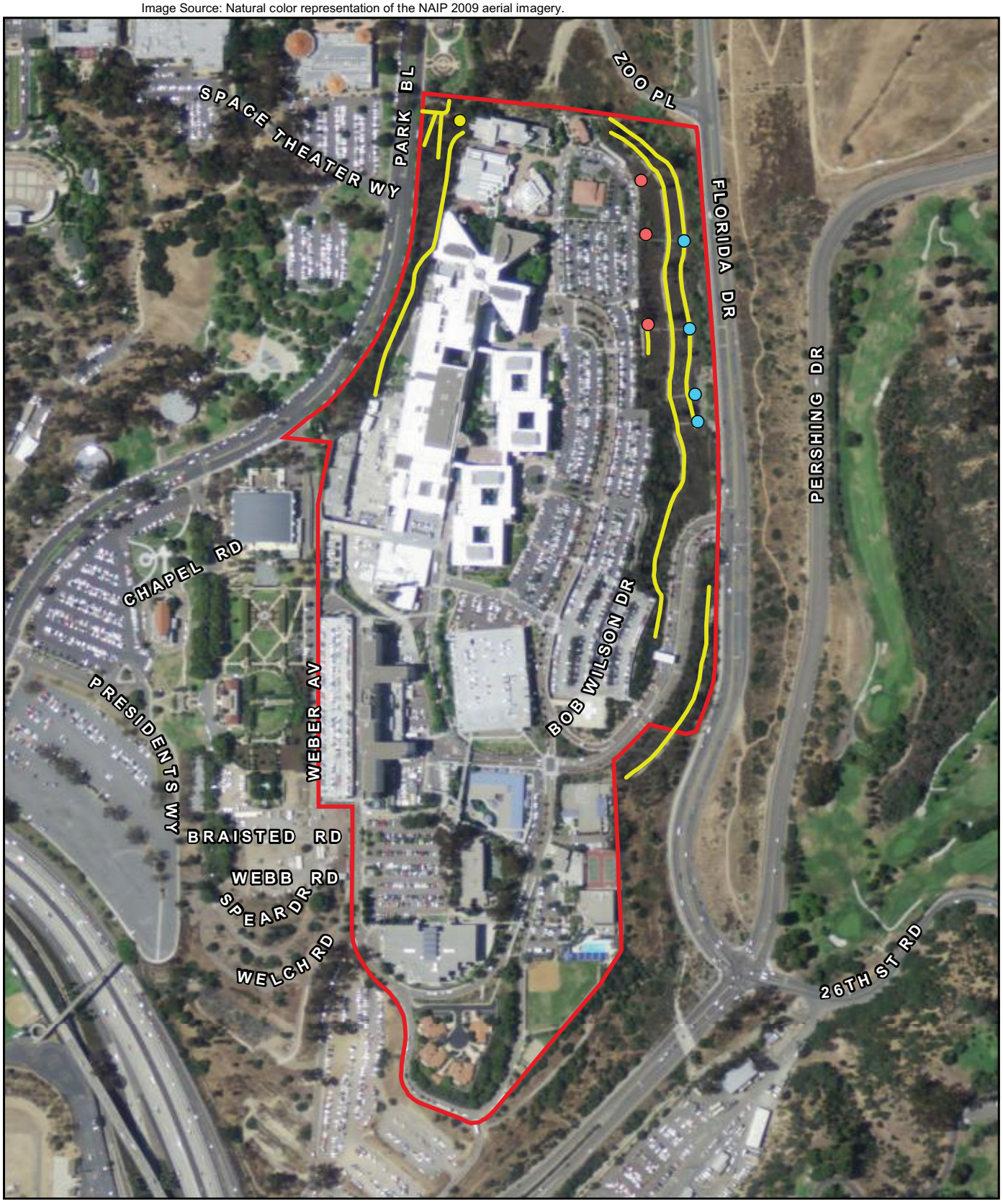

FIGURE 4-5

Long-Term Sediment and Erosion Control Maintenance Sites

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Map Source: Navy Medical Center San Diego, Erosion Evaluation and Control Report, November 2009

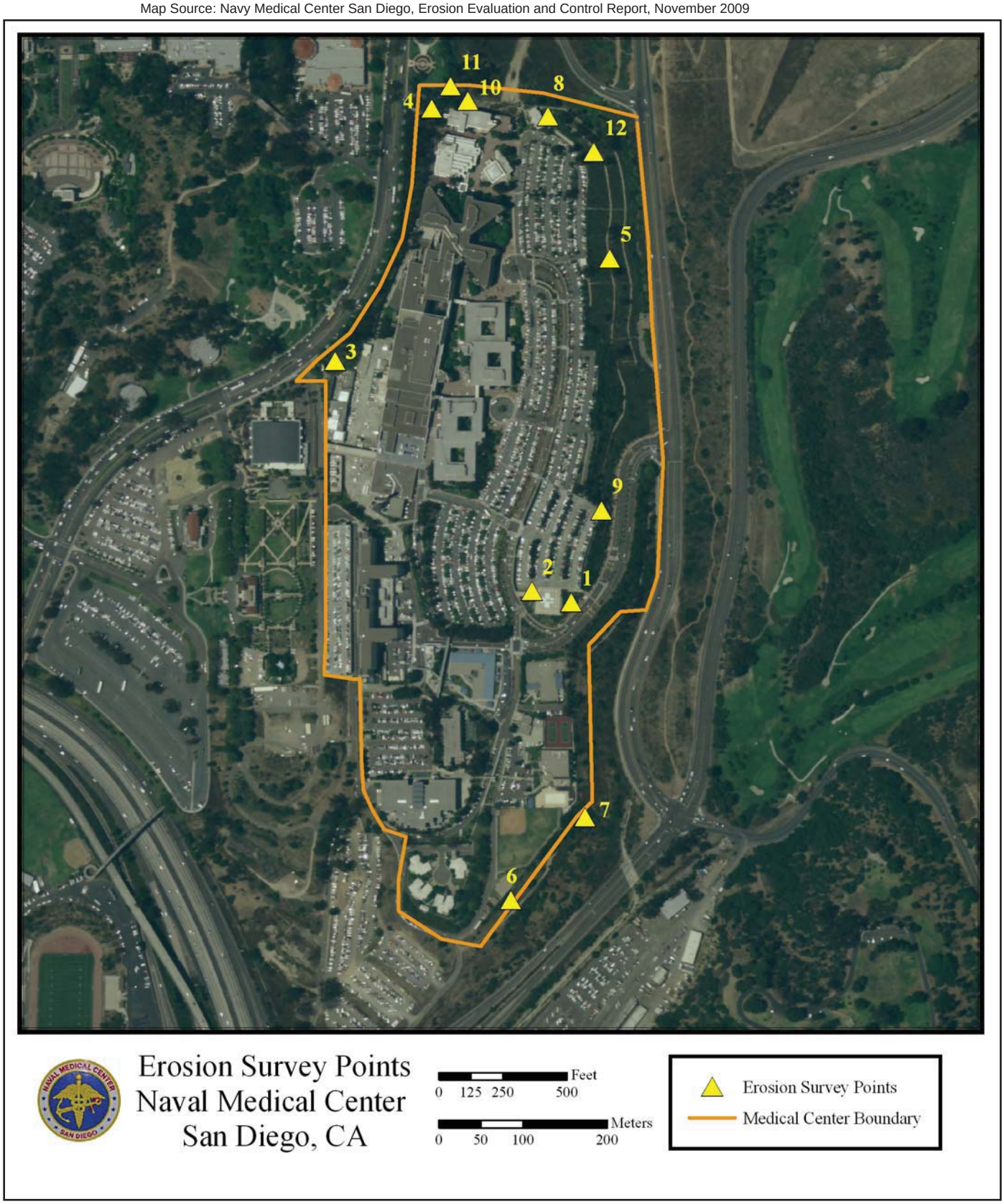

FIGURE 4-6

Specific Locations of Erosion Concerns
at Naval Medical Center San Diego

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EECP overlap with Sites 5, 8, and 12. Sites 6 and 7 in the EEC were not previously identified in the EECP.

D. Monitoring and Inspection. The Erosion Control Manager should inspect all sediment and erosion management sites within 24 hours of a significant storm event (0.25 inch or more over a 24-hour period). Any damages or deficiencies should be recorded.

E. Any damages or deficiencies recorded by the Erosion Control Manager should be repaired or replaced as soon as feasible, preferably before the next storm event.

4.10.2 Landscaping and Ground Maintenance

Landscaping benefits the human working environment by conserving energy, providing wildlife habitat, protecting water quality, preventing soil erosion, reducing glare, improving visual aesthetics, creating wind buffers and providing for heat control in recreation areas and around buildings. The importance of appropriate landscaping, for visual, ecological, and climate control reasons, cannot be underestimated.

Presidential Landscape Policies for federal facilities

The President has directed that federal agencies shall implement the following policies where cost-effective and to the extent practicable (EO 13112 [1999]) (included as Appendix 14 of this INRMP):

- Use regionally native plants for landscaping;
- Design, use, or promote construction practices that minimize adverse effects on the natural habitat;
- Seek to prevent pollution by among other things, reducing fertilizer and pesticide use, using integrated pest management techniques, recycling green waste and minimizing runoff. Landscaping practices that reduce the use of toxic chemicals provide one approach for agencies to reach reduction goals established in EO No. 12856 “Federal Compliance with Right-To-Know Laws and Pollution Prevention Requirements”;
- Implement water-efficient practices, such as the use of mulches, efficient irrigation systems and audits to determine exact landscaping water-use needs. Select and site plants in a manner that conserves water and controls soil erosion. Landscaping practices, such as planting regionally native shade trees around buildings to reduce air conditioning demands, can also provide innovative measures to meet the energy

consumption reduction goal established in EO No. 12902, “Energy Efficiency and Water Conservation at Federal Facilities”;

- Create outdoor demonstrations incorporating native plants, as well as pollution prevention and water conservation techniques, to promote awareness of the environmental and economic benefits of implementing this directive. Agencies are encouraged to develop other methods for sharing information on landscaping advances with interested non-federal parties.

Naval commanders approved these directives and issued guidelines for landscaping on Navy lands (DoN 2007). In keeping with these federal standards, U.S. Navy policy requires minimizing disturbance to native habitats, using integrated pest management practices, and recycled water. To the extent practical, NMCSD will use regionally native plants for landscaping and other beneficial water conservation techniques. Federal agencies are restricted in the use of exotic (non-native) plant species in any landscape and erosion control measures, as indicated by Executive Order 13112 (see Appendix 14 of this INRMP). Care will be used in the renovation of existing landscape areas to ensure that non-native plants in the landscape do not have the propensity to escape into and threaten the native plant habitat.

Comprehensive landscape planning for NMCSD will consider both landscape design quality and appropriateness for the local site, including consistency with the landscape design of Balboa Park and any historical elements of this landscape. Design quality includes both aesthetic and functional aspects of the landscape. Functional purposes include screening, directing views and/or traffic, climate control, ecological function and habitat value, highlighting areas of importance, controlling erosion, and creating a sense of scale for buildings and pedestrian use areas. Determination of design appropriateness will also take ease of maintenance and water consumption into consideration.

4.10.2.1 Use of Native Plants

Interspersed throughout the structures and parking lots of NMCSD are islands of landscaped herbs, shrubs, and trees. Most of this landscaping incorporates non-native ornamentals. The majority of these species are not invasive and may even provide a secondary habitat for use by some wildlife. However, the list of landscaping species occurring in the ornamental areas on NMCSD (see Table 2-5) includes some which may cause problems in native habitats if not controlled (e.g., iceplant.) Native groundcovers such as morning glory (*Calystegia macrostegia*) or trailing indigo bush (*Dalea greggii*) are more appropriate for use than iceplant.

New landscaping will consist mainly of historically appropriate, drought-tolerant and locally-adapted native species, combined with mulches (free of exotic plants) and boulders. A preference will be given to native species. Because hospital patients often have depressed immune systems, preference should also be given to plants which are

non-allergenic. A list of drought-tolerant, regionally native, non-allergenic plants is included as Appendix 15 of this INRMP. In addition, the overall landscaping effect should be consistent with surrounding Balboa Park. Any new landscaping and/or outdoor amenities must be designed within conservation and budgetary guidelines and should require little maintenance. Using rocks or mulch as ground covers will reduce water needs, help prevent or control erosion, and still provide aesthetically pleasing landscapes. NMCSD is responsible for maintaining an area 10 feet outside of the boundary fence line as a fire break.

New lawns are not encouraged except where functionally appropriate for pedestrian use. Lawns require frequent watering; however, existing lawns can be maintained at "survival" level with careful measuring and scheduling of irrigation. Lawns should be restricted to: family housing, recreation fields, children's playgrounds, and areas around the hospital that can be readily used and enjoyed by patients or staff.

Landscape plants should be chosen according to the degree of drought resistance, availability, cost, ease of establishment, type of maintenance required, function and consistency with the landscaping scheme. For the most part, a limited variety of the most locally-adapted, native, drought resistant plants should be used. A list of recommended species appears in Appendix 15 of this INRMP.

A new landscaping project that would benefit all NMCSD personnel, patients, and visitors is the "Golden Eagle Native Landscape Tribute." This project would be comprised of a memorial statue of a golden eagle and the planting of a coast live oak adjacent to the existing Healing Garden.

Policy Strategy for Landscape Treatment

Objective 1: To improve the visual and aesthetic environment for both civilian and military personnel living, working, or visiting NMCSD, avoid the introduction of invasive exotic species, decrease water use, and improve drought tolerance of plant communities.

Objective 2: Upon the next update of the Base Exterior Architecture Plan (BEAP) revise the landscape section based upon the following protocols.

I. Prioritize landscape improvement projects.

   A. Give high priority to areas that serve as important gathering places or highly used areas.

   B. Assign high priority to the improvement of existing landscaping in areas of importance, including those visible to long-term patients or frequented by high ranking officials and visitors.

C. Minimize water use, maintenance, and fertilizers wherever possible through efficient irrigation systems, drought-tolerant plants, appropriate plant use, and effective plant establishment techniques.

1. Give priority to planting drought-tolerant species.

2. Consider replacing lawns with natives in any areas not typically used for functional purposes or by patients.

D. Develop a priority scheme to determine which areas should receive higher levels of watering during emergency drought conditions. Consider the following:

1. Trees are normally the most valuable and most easily sustained.

2. Shrubs, vines, and groundcovers are of moderate value and can be replaced with like-size materials if lost during a drought.

3. Lawns take the least amount of time to grow back to maturity.

II. Use landscaping to moderate environmental influences (e.g., solar heat gain, glare, dust, and wind), mitigate human activities (e.g., noise, construction), unify exterior spaces, enhance biological values, and improve functionality.

A. Plan new facilities in coordination with existing and new landscaping with attention to building orientation, overhangs, trellises, etc., reduce the need for large landscaped areas, and protect plantings where most effective.

B. Cooperate with personnel from Balboa Park and the City of San Diego when planning new landscaping projects.

C. Use trees and shrubs to block all undesirable views and lights and provide privacy for patients.

D. Plant deciduous trees for summer solar-insulation/winter heat-gain screening at buildings (tree leaves help shade in summer, whereas the lack of leaves in winter allows buildings to take advantage of solar warmth).

E. Plant windbreaks for wind deflection and dust control.

F. Use rocks or mulch as ground covers to reduce water needs, control weeds, and reduce erosion.

Mulches should not contain exotic plants that may spread on NMCSD. Free mulch currently may be obtained from the Miramar Landfill. Call (858) 573-1420 for more information.

G. Use landscaping, where necessary, to define edges and buffer areas that are incompatible with the surrounding use.

H. Choose native plants that are useful to wildlife as a food source, where practicable, but not near eating areas.

I. Provide weed control.

1. Use mulches to reduce evapotranspiration and control weeds.

2. Apply herbicides on an as-needed basis only.

J. Plant locations and spacing should permit normal plant development without undue crowding or pruning.

K. Maintain a list of acceptable and successful drought-tolerant, native, non-allergenic plants to be used on NMCSD for landscaping (see Appendix 15 of this INRMP). Ensure that no invasive exotic species (see Appendix 13 of this INRMP) are used.

1. Plant native groundcovers such as morning glory or trailing indigo bush instead of iceplant.

2. Re-assess the landscape planting list in follow-up INRMPs.

L. Consider development of the “Golden Eagle Native Landscape Tribute” adjacent to the Healing Garden.

1. The planting of a native coast live oak would enhance the natural environment.

4.10.2.2 Landscape Irrigation Water Conservation

Because water is an increasingly precious and expensive commodity in San Diego, landscapes must be analyzed based on their water consumption. For example, only ground covers that can survive from one rainy season to another without water are those that contain established drought-tolerant plants. All others need water in the dry season. Faced with the prospect of water shortages and increasing water costs, landscapes that consume large quantities of water and do not serve any function or meet any specific design criteria should be eliminated or redesigned.

A constraint for landscaping is uncertainty of water supply during periodic drought in southern California and the accompanying need to conserve water resources. Periodic drought conditions are characteristic of NMCSD’s climate and, as such, watering requirements and use restrictions for landscape are subject to variation. In drought

years, water may necessarily be restricted to only those uses which are essential to NMCSD. The landscape may have to withstand little or no water for long periods of time. By utilizing native and drought tolerant plants with low watering requirements coupled with appropriate planting and irrigation methods, NMCSD can continue to maintain and upgrade its landscaping and still meet water conservation standards.

NMCSD is entirely dependent upon the City of San Diego Water Utilities Department for potable water; however, the County Water Authority is responsible for setting water use and conservation policies that directly affect NMCSD. As a purchaser of local water supplies, NMCSD is required to follow the County Water Authority's Drought Response Program. This program describes six stages of alert to drought conditions and appropriate water use activities, including guidelines for landscape watering (Table 4-4).

TABLE 4-4
RECOMMENDATIONS FOR LANDSCAPE IRRIGATION FROM THE COUNTY WATER AUTHORITY DROUGHT RESPONSE PROGRAM LISTED BY STAGES OF DROUGHT ALERT

Stage One Alert
▪ Irrigate only during morning, evening, or nighttime hours. ▪ Check irrigation systems for leaks, broken parts, and sprinkler aim. Repair as necessary. ▪ Set irrigation schedules appropriate to the season. ▪ Request a landscape audit by the Professional Assistance for Landscape Management Program. ▪ Convert non-functional turf areas to drought tolerant plants. ▪ Convert shrubs and planter areas to drip irrigation.
Stage Two Alert—Same as Stage One Alert with the following additions:
▪ Reduce watering of low use areas. ▪ Reduce water use by 10%
Stage Three Alert—Same as Stage Two Alert with the following additions:
▪ Eliminate watering of non-functional turf areas. ▪ Reduce water use by 15%.
Stage Four Alert—Same as Stage Three Alert with the following additions:
▪ Irrigate no more than twice per week. ▪ Reduce water use by 20%.
Stage Five Alert—Same as Stage Four Alert with the following additions:
▪ Eliminate watering of ornamental turf areas. ▪ Water only actively used turf area no more than twice per week. ▪ Reduce water use by 30%.
Stage Six Alert—Same as Stage Five Alert with the following additions:
▪ Irrigate playing fields only. ▪ Reduce water use by 40%.
Water Emergency
▪ Short-term system failure. ▪ No outdoor watering.

Note: Stage one is least drastic.

In 2004 the City of San Diego Water Department conducted an Irrigation Audit for NMCSD's Landscaping. The results are included in Appendix 16 of this INRMP. The results include short-term and long-term recommendations. It should be noted that the "Bluff Plant Material List" attachment to Appendix 15 includes a potentially invasive species (acacia). New plantings on the project site should be free of exotic species.

Along with water conservation efforts, water reclamation is an important alternative to supplement limited water supply in the San Diego region. Efforts are underway to make the cost of reclaimed water comparable to the cost of imported domestic water. Reclaimed systems have special design considerations including cross connection protection, signage and other means of preventing direct human consumption of reclaimed water, and a separate on-site distribution system. The reclaimed water distribution piping is to be specially marked and colored to alert people to the presence of reclaimed water and prevent connections to potable water systems.

Policy Strategy for Landscape Irrigation Water Conservation

Policy Objective: Reduce use of water for landscaping while continuing to provide a quality environment to NMCSD personnel and visitors.

I. There are a number of short-term recommendations specified in the Irrigation Audit prepared for NMCSD (City of San Diego Water Department 2004) that are relatively easy and inexpensive to implement, such as adjusting the height and spray arc of sprinkler heads and trimming plant material blocking spray. These short-term measures should be implemented, and the remaining short- and long-term measures should be considered for implementation in the future.

II. Maintain NMCSD's irrigation system and require all new irrigation to use automatic systems with water-conserving design.

A. Refer to the Irrigation Audit prepared for NMCSD (City of San Diego Water Department 2004) when replacing or installing new irrigation components.

B. Consider all of the following devices as appropriate for the system: wet taps, backflow preventers, main and lateral line piping, isolation water meters, wiring, moisture sensors, clocks, rain shut-off devices, weather station monitors, flow and pressure sensors, irrigation sprinkler heads and/or drip irrigation equipment, and pressure regulating valves.

C. Design all new irrigation projects to use reclaimed water (gray water), when available, in accordance with Health Department standards.

III. Increase the uniformity of water distribution in manual and automatic irrigation systems and adjust irrigation schedules to maximize efficiency and emphasize a reduction in evaporation.

A. Set runtimes during periods of less wind velocity, usually dusk until dawn.

B. Lengthen the irrigation interval between irrigations and increase the amount of water at each irrigation point to promote deep rooted turf. Deep watering once a

week is preferable to more frequent, shallow watering which promotes surface rooting.

C. Monitor plant health and appearance and adjust controllers to minimum water levels.

D. Separate lawn and shrub areas onto individual stations. This may require additional valves, lateral piping and control equipment.

E. Correct sprinkler direction frequently to prohibit sprinkler runoff onto streets and sidewalks. If water is running from an irrigated area it may suggest the area is being over-watered or that there is a leak in the irrigation system.

F. Observe the California Water Authority's water use and conservation policies with seven stages of alert (see Table 4-4 above).

IV. Approve landscape improvements that will reduce water requirements.

A. Replace existing high-water use plants, including areas of seldom-used lawns, with native, low-water-use plants.

B. Substitute plant material with non-vegetative groundcovers, where suitable.

1. Encourage use of mulches, decomposed granites, and other high quality paving materials for areas of high use or prominence. Consider the use of mulch around landscape plants to reduce the watering frequency.

a. Mulches should not contain exotic plants that may spread on NMCSD. Free mulch may be obtained from the Miramar Landfill.

2. Prohibit the substitution of existing plant materials with asphalt, plain concrete, or barren soil.

C. Group plants into "hydrozones" based on similar water requirements and exposure to sun and wind.

1. Place all plants that require higher amounts of water in sites protected from drying winds and out of direct sunlight.

D. Amend or reclaim excessively compacted, heavy, or saline soils to improve water retention, drainage, and aeration.

1. Aerate soil that has become compacted by continuous traffic over wet soils by foot and equipment traffic.

2. For turfgrass, remove 0.25-to-0.50-inch diameter soil cores that are approximately 3 to 4 inches deep. Aerate annually.

4.11 Agricultural Outleasing

NA. No Agricultural outleasing does not occur on the NMCSD campus.

4.12 Geographic Information Systems (GIS) Management, Data Integration, Access, and Reporting

Natural resource information management is complex, because ecosystems and spatial data are complex and dynamic. They are inherently multi-dimensional and change over time. Computers have greatly enhanced access to land-based information. In particular, GIS and image interpretation software help in the efficiency and effectiveness of environmental analysis and review. They have allowed managers to become more adaptive in their decision-making, providing a means to organize and update many types of resource data, as well as to test assumptions and play out management scenarios. They can play a critical role in helping land managers conceptualize problems at landscape or ecosystem levels.

Currently, NMCSD does not have GIS staff. It is recommended that NMCSD acquire access to GIS support in order to better understand and manage the NMCSD resource base.

4.12.1 Navy Natural Resources Data Call Station

NAVFAC is developing the web-based Data Call Station INRMP Builder, available online at: https://clients.emainc.com/navfac/index.htm.

NAVFAC will post copies of all INRMPs and associated NEPA documents on the Natural Resources Data Call Station. The Data Call Station INRMP Library will also serve as a source for baseline data for use in future NEPA and other planning documents, Biological Assessments, and outreach materials.

All INRMP projects must be entered into the Environmental Program Requirements (EPR) website and receive approval up the chain of command prior to soliciting any signatures on the INRMP.

Policy Strategy for Natural Resource Information Management

Objective: Ensure the technically sound, practical, and appropriate use of library and computer technology to manage, analyze, and communicate natural resource information in support of management decisions.

I. Seek out and use existing technology and make strategic investments in new technologies and creative, innovative management techniques to solve local or regional environmental problems.

A. Facilitate better natural resource decisions by improving the capability to access, organize, and analyze maps, inventories, remotely sensed data, and other natural resource planning documents.

1. Identify data needs and priorities. Document the current and future data needs for all base land use functions, including why and when the information is needed, procedures for database development, and prioritization of projects.

2. Develop record keeping protocols for wildlife and invasive plant species sightings on NMCSD.

3. Build and catalog a library of resource materials to enhance day-to-day capability and reporting of natural resource concerns.

II. Coordinate the integration of natural resource information with mission-related planning.

A. Use installation master plans to integrate natural resources management objectives with mission activities and facilities development on Department of the Navy lands.

B. Write a policy for the sharing of NMCSD's land use data.

1. Control the dissemination of GIS data to persons outside NMCSD that may be used to justify encroachment pressures.

2. Develop provisions and policies for sharing appropriate natural resource information with federal and state agencies, non-governmental organizations, researchers, and the general public (DoD1996).

III. Strengthen the scientific basis for natural resources management by integrating research and management (DoD 1996).

4.12.2 Data and GIS Management Program

Currently NMCSD does not have a GIS Management Program. However, data from the 2002/2003 and 2009 biology surveys were produced in GIS and provided to NMCSD staff. Data from future surveys should also be provided to NMCSD staff in the form of GIS files to aid in future surveys. Current and past records that could be incorporated into a GIS database at a future date should be maintained.

4.13 Outdoor Recreation

The Navy is required to provide outdoor recreation and interpretive opportunities to the public where and when they are compatible with military needs. Outdoor recreation activities are intended to support the wise stewardship of DoD's natural resources. In the event of potential conflicts of use, sound biological management practices shall prevail.

Because of its small size, limited capacity of its resources, and the restricted nature of military activities, NMCSD is constrained in its ability to supply outdoor recreation opportunities. Outdoor recreation, as defined for the purposes of this section, is the active use of the natural resources of NMCSD for recreation and physical exercise. Although NMCSD has facilities such as a basketball court, volley ball court, tennis courts, and a 25-meter pool, activities connected to these facilities are not available to the general public and are therefore not considered outdoor recreation, as defined above. The roads and sidewalks at NMCSD are used for walking, jogging, and biking. There are currently no hiking trails; however, throughout Balboa Park there are ample locations to enjoy this and many other recreational activities.

According to the SAIA, military installations are required to develop outdoor recreation plans where there are suitable resources for such a program consistent with national security. The preparation of a recreation plan is not necessary for NMCSD, because of its limited and sensitive resources and scarce open space. Due to the presence of a federally threatened species, the restricted nature of the facilities, and safety and security issues, NMCSD is unable to provide outdoor recreation opportunities to the general public.

4.14 Bird Aircraft Strike Hazard (BASH)

NA. NMCSD does not have a BASH plan.

4.15 Wildlife Fire Management

NMCSD does not have a Wildfire Management Plan. The majority of the NMCSD property is developed and occupied by buildings, roads, parking lots, and irrigated landscape (approximately 66 acres) (see Figures 2-2 and 2-3). However, a small portion of the property (approximately 9 acres) along the northeastern edge of NMCSD consists of manufactured slopes that are primarily vegetated with native species, but do contain some non-native species. The vegetation in this northeastern section forms a dense cover over most of the revegetated slope and is predominantly native Diegan coastal sage scrub (7 acres) with some native southern willow scrub (less than 1 acre), and the remaining vegetation being disturbed habitat and non-native invasive species (RECON 2005a).

These areas are managed according to the guidelines prescribed within the City of San Diego's MSCP Sub Area Plan (Appendix 10). As a federal agency, NMCSD is not required to comply with the guidelines in the MSCP; however, managing the open areas on NMCSD in a similar fashion would benefit NMCSD's natural resources. The MSCP sets guidelines for the prevention of wildfires. Fire management primarily focuses on fuel or brush management, and is regulated by the Landscape Ordinance and Landscape Technical Manual, in conjunction with the Fire Department.

4.16 Training of Natural Resources Personnel

4.16.1 Military and DoD Personnel Environmental Awareness Program

The nature of military service entails a degree of transience in the resident population. Communicating how natural resources improve quality of life can enhance pride and a feeling of ownership in natural resources even for those who do not reside in the area permanently. Appreciating the links between human land use and the native environment leads to a more caring and responsible attitude toward the ecosystem.

Many resource conservation measures have been incorporated into NMCSD's regulations, guidelines, and plans. However, these measures alone fall short of establishing the desired degree of protection from the impacts of military use. Accordingly, regulations are supplemented with a formal program of conservation education, designed to instruct and motivate all military personnel in the elements of resource protection. NMCSD has a unique opportunity to educate military personnel about responsible natural resource use, because military personnel and their families from the region's installations are treated here.

4.16.2 Training of Natural Resource Personnel

The environmental education, training, and career development of DoD personnel should follow the requirements outlined in DoD Directive 4715.10. Highlights of the Director's Order are outlined in the strategy below.

Policy Strategy for Training of Natural Resource Personnel

Objective: Ensure the proper environmental education, training, and career development of DoD personnel.

I. Promote the certification of professionals and technicians in their disciplines and specialties.

   A. Encourage continuing education, membership in professional organizations, and committee membership participation.

II. Ensure that all DoD personnel receive appropriate environmental awareness training.

   A. Ensure that all non-environmental management departments receive appropriate environmental education, training, or awareness for their function.

III. Fund all mandatory environmental trainings as required by federal laws and regulations.

IV. Ensure that all DoD environmental personnel have effective career development programs including job progression levels, an inter-Service referral system, and developmental assignments.

   A. Support career development opportunities that include participation in personnel exchange activities, as provided through cooperative agreements with other federal departments and agencies, and foreign governments.

4.17 Coastal/Marine Management

NA. Coastal or marine resources are not present on the NMCSD campus.

4.18 Floodplains Management

NA. NMCSD campus is not in a floodplain.

4.19 Other Leases

NA. NMCSD does not maintain additional leases.

4.20 Cultural Resources

4.20.1 Cultural Resources Management and Protection

Balboa Park is considered a National Historic Landmark (NHL). The City of San Diego has established a review procedure that allows for the National Park Service and the State Historic Preservation Officer to comment on projects within the NHL park boundaries. The NMCSD campus and facilities are outside of the NHL boundary.

Within Balboa Park, numerous structures are also on the NRHP. According to the National Historic Preservation Act, as amended, a property must be at least 50 years old to be considered historic (special consideration criteria G for determining significance). There are exceptions for properties of exceptional importance.

No resources which meet National Register criteria for historical significance have been identified on NMCSD. The vast majority of buildings on NMCSD have been built since 1988 and do not meet the significance criteria. However, the student housing facilities (Buildings 26 and 27) are over 50 years old, and the enlisted men's barracks (Building 41), built in 1969, was 50 years old as of 2009. These three structures may therefore qualify as historic properties under special consideration criteria G. These potential historic resources are currently being evaluated for significance; they must be treated as if they were significant unless and until determined to be otherwise by this evaluation process.

Policy Strategy for Cultural Resources Management

Objective: Ensure that Cultural Resources are Protected by Assessing Potentially Significant Buildings and structures.

I. Maintain a list of the buildings and structures located within the NMCSD boundary and the year they were constructed.

   A. Prior to a structure reaching 50 years of age, a building evaluation shall be performed by an archeologist to determine if it qualifies for inclusion on the National Register of Historic Places.

      1. Appropriate conservation measures shall be followed for any buildings that qualify for inclusion on the National Register of Historic Places.

2. If a building reaches 50 years of age and a building evaluation has not yet been completed, it shall be treated as a significant resource until such an evaluation determines otherwise.

II. Any construction projects taking place on NMCSD must go through the Section 106 process.

4.20.2 Integration with Cultural Resources Management and Protection

A Phase I cultural resource survey was conducted and no prehistoric artifacts, features, or associated deposits were found. The survey determined that no additional investigation for prehistoric archaeological sites or features of NMCSD is required (RECON 2001). Although an Integrated Cultural Resource Management Plan does not need to be prepared for NMCSD cultural resources will be managed in accordance with the above policy strategy.

4.21 Pollinators

Bees, butterflies, moths, and other invertebrates are important pollinators of native plants as well as agricultural crops. These invertebrate species have seen a steep decline in recent years due to introduced disease, habitat loss, and pesticide use. The installation should prevent the loss of and enhance the habitat of pollinators through protection of existing habitat, landscaping that includes plants attractive to pollinators, and judicious use of pesticides in an integrated pest management (IPM) program. At the same time pollinator conservation should be implemented in a way that pollinators do not become pests, i.e. encouraging bee nesting in buildings.

4.22 Climate Change

The evidence for human caused climate change is extensive and has generated consensus in the scientific community (GAO 2007; Gitay et al. 2002; Oreskes 2004). Addressing climate change poses a new challenge for natural resources managers who will need, in addition to understanding ecosystems as they function now and in the past, to anticipate future changes in ecosystem structure and function (GAO 2007). This is a task made more difficult due to the likelihood of the emergence of climates that don't have a present day analog.

Policy Strategy for Climate Change and Ecosystem Management

Objective: Adapt to climate change to provide for the maintenance of biodiversity and ecosystem function to the maximum extent feasible.

Identifying and adapting to the likely effects of climate change call for a proactive rather than reactive approach to maintain cost effective programs and meet legal requirements to manage natural resources. Collaboration is particularly important, as species and their assemblages are anticipated to shift in response to changing climate. There won't be a cookbook for managing under climate change, but in some ways it will not be so different than managing under the present climate with all its variability. Climate change can be looked at as one more factor in a dynamic system.

Approaches to deal with climate change generally address one or more of the following three items: mitigation, adaptation, and research. Mitigation within the context of climate change refers to activities designed to reduce human impact on the climate. Adaptation refers to activities that reduce the projected effects of a changing climate. Most of the focus within INRMPs will be on adaptation and research, as mitigation generally falls outside of the realm of natural resources management.

Important concepts in adaptation to climate change are: resilience (can something rebound from a disturbance [fire, flood] or extreme climatic event [drought]?) and sustainability (does the long-term rate of regeneration [of living organisms or resources like soil] equal the rate of mortality or loss?). Under a stable climate we also manage for resilience and sustainability; climate change adds another stressor that can have direct and indirect impact. With this view, an obvious place to begin is to evaluate whether the things we currently do to promote resilience and sustainability need to be modified.

The ecosystem effects of climate change will likely be incremental and challenging to distinguish from other drivers of ecosystem change. Addressing impact to threatened and endangered species and their habitat from global climate change and developing modifications to natural resources management strategies to address them will require an adaptive process of developing, validating, and improving models in the creation of "forecasts" needed to inform management and perform comprehensive threat analyses.

Steps in this area of specialized forecasting can include the following:

1. Assessing the vulnerability of species and ecosystems to climate change;

2. Identifying trends in climate variability under the existing climate;

3. Adding climate change to the threats analysis prepared as part of the INRMP process;

4. Participating in regional efforts to adapt to climate change, including identification of migratory pathways to support species movement and habitat shift by use of existing borderlands, mitigation banks, and conservation buffers;

5. pdating of BMPs to address the risks posed by climate change to unique landscapes, ecosystems, and habitats, once vulnerability assessments are completed; and

6. Using already existing regional conservation partnerships and alliances to share information and collaborate across jurisdictions.

Regulatory drivers include:

1. The Conservation Programs on Military Reservations Act (Sikes Act; 16 U.S.C. 670) requires preparation of INRMPs in cooperation with the USFWS, a Service within the Department of Interior.

2. The Council on Environmental Quality (CEQ) draft administrative guidance addresses the treatment of climate change impact within NEPA documents (CEQ 2010). In this draft guidance, relevant to the preparation of environmental impact analysis under NEPA to support INRMP decision-making, agencies are to use the NEPA process to “reduce vulnerability to climate change impact, adapt to changes in our environment, and mitigate the impacts of Federal agency actions that are exacerbated by climate change” (CEQ 2010; Draft Guidance at Section I, paragraph 6).

5.0 Implementation

5.1 Project Implementation

This section contains a list of projects that will greatly benefit the natural resources at NMCSD or enhance the environment for people at NMCSD and should be considered for implementation, as adequate funding becomes available. These projects are also discussed within the appropriate chapters of this INRMP and will be most effective when instituted as part of the complete management policies outlined in Chapters 3 and 4. The list is intended to summarize the key issues to be addressed at NMCSD. Appendix 3 is summary of all implementation recommendations outlined in the INRMP.

Most projects will not require further NEPA documentation, as they would be covered under the EA prepared for the INRMP. Other projects not specifically addressed in the INRMP, or modified projects, will typically be closely enough related to the INRMP that they can be Categorically Excluded. Only in very unique circumstances will an individual natural resources project require its own EA or EIS.

1. Erosion control and water quality. The first priority of erosion control efforts shall be erosion prevention through proper planning, rather than to cure or correct conditions of accelerated or unnatural erosion. Generate and ensure incorporation of innovative BMPs in the preliminary design of construction and maintenance activities involving ground disturbance. After construction, add source-control BMPs and treatment-control BMPs. Implement the short-term, long-term, monitoring and inspection, and maintenance tasks specified in the EECP (RECON 2005b) and the EEC report (Tierra Data 2009). Protect the natural watershed, in particular the creek on the eastern border of NMCSD, by minimizing the runoff of pollutants.

2. Removal of non-native plants. Use regular monitoring practices to detect new pest plants and conduct focused surveys of exotic plants every three years to track the density and distribution of exotic species on and adjacent to NMCSD. Removal efforts should be performed during the winter when CAGN is not breeding. If this is not possible, coordinate with Naval Base San Diego biologists to ensure that weed removal and ESA compliance can both occur.

- Coordinate with adjacent landowners to eradicate exotics and prevent their spread.

- Efforts within the jurisdictional wetland area must be coordinated with and under permit by the USACE, if the soil is to be disturbed or if heavy equipment is to be used.

3. Periodic surveys for plants and wildlife. Surveys for plants and wildlife were performed at NMCSD in 2009. Periodic surveys are recommended for sensitive plant and wildlife species and for general population information. Sawyer-Keeler-Wolf classification is appropriate for determining vegetation cover. Surveys for the coastal California gnatcatcher are to be conducted according to USFWS protocols and importantly, in a way that allows for comparison of results across years.

4. Interpretive nature trail along edge of parking lot. Develop a nature trail along the eastern edge of the parking lot, above the revegetated slope, for the use, education and recreation of NMCSD personnel, patients, and visitors. The trail could start near the Fisher House, perhaps be connected to the "Healing Garden," and continue to the large parking structure. The top of this slope should be wide enough for a narrow dirt, gravel, or asphalt trail with educational signs and with names of native plants labeled. The signs should emphasize the native plants and wildlife of Florida Canyon and/or the history of NMCSD and Balboa Park. Design and construction plans, prepared by a licensed design professional (e.g., landscape architect), will need to be developed in insure the access and safety provisions of the Americans with Disability Act (ADA) and other regulations are met.

5. Golden Eagle Native Landscape Tribute. Develop an honorary landscaping project for the area adjacent to the Healing Garden to benefit personnel, patients, and visitors. This project would comprise a memorial statue of a golden eagle and the planting of a coast live oak.

6. Rodent/Pest damage control. Continue implementing measures that prevent or discourage rodents and feral pigeons from inhabiting NMCSD facilities. Ongoing efforts should continue the use of Nixalite® bird control products, owl decoys, and signs prohibiting the feeding of pigeons where appropriate. Existing known building openings larger than 0.5 inch across have been rodent-proofed, and ongoing maintenance should continue this practice for any newly discovered openings.

7. Outdoor interpretive demonstrations and displays. Outdoor kiosk displays and signage that include information on native plants as well as pollution prevention and water conservation techniques could be created to promote awareness of the environment and NMCSD's commitment to responsible stewardship of resources. Maintain the *Non-native Plants on Naval Medical Center San Diego* and Natural Resources *at Naval Medical Center San Diego* brochures (Appendices 17 and 18). Other methods for promoting the sharing of information could be in the form of additional brochures intended for visitors and/or personnel at NMCSD, and informative signage placed in outdoor waiting areas

8. Public-oriented environmental awareness program. A natural resource orientation program and a concise manual of environmental stewardship, precautions and restrictions to be used by personnel would assist in the protection of NMCSD's

resources and would build a conservation ethic. Continued annual participation in Earth Day events would educate the public about the region's native flora and fauna and NMCSD's stewardship efforts.

5.1 Process for Preparing Prescriptions

The NMCSD Commanding Officer has primary responsibility for implementation of the INRMP. Under the authority and direction of the Commanding Officer, the Environmental Division provides staff for implementing the INRMP management actions, and NAVFACSW provides technical assistance on request.

5.2 Achieving No Net Loss

The SAIA states that an INRMP shall provide for "no net loss in the capability of military installation lands to support the military mission of the installation." The ecosystem management measures described in this INRMP will not result in any loss of support of the military mission of NMCSD. The primary area of conservation is on the eastern slope, the steepness of which would prevent or greatly restrict any other use or development.

5.3 Use of Cooperative Agreements

NA. NMCSD is not utilizing any cooperative agreements.

5.4 Funding

5.4.1 Project Funding Criteria

Any requirement for the obligation of funds for projects in this INRMP shall be subject to the availability of funds appropriated by Congress, and none of the proposed projects shall be interpreted to require obligation or payment of funds in violation of any applicable federal law, including the Anti-Deficiency Act (31 USC § 1341, et seq).

Implementation of the strategies and projects described in this INRMP are guided by how budget priorities are assessed for environmental work on DoD installations. This is described in DoD Instruction 4715.3 (May 3, 1996) on Environmental Conservation Programs, which implements policy, assigns responsibilities, and prescribes procedures for the integrated management of natural and cultural resources on property under DoD control.

Four programming and budgeting priority levels have been established by DoD:

a. *Class 0: Recurring Natural and Cultural Resources Conservation Management Requirements.* These are activities needed to cover the recurring administrative, personnel, and other costs associated with managing DoD's conservation program that are necessary to meet compliance requirements (federal and state laws, regulations, Presidential Executive Orders, and DoD policies), or that are in direct support of the military mission. Also included are environmental management activities associated with the operation of facilities, installations, and deployed weapons systems.

b. *Class I: Current Compliance.* These projects and activities are needed because an installation is currently out of compliance (has received an enforcement action from a duly authorized federal or state agency or local authority; has a signed compliance agreement or has received a consent order; has not met requirements based on applicable federal or state laws, regulations, standards, Presidential Executive Orders, or DoD policies) and/or the need for the projects are immediate and essential to maintain operational integrity or sustain readiness of the military mission. This also includes projects and activities needed that are not currently out of compliance (deadlines or requirements have been established by applicable laws, regulations, standards, Presidential Executive Orders, or DoD policies, but deadlines have not passed or requirements are not in force) but shall be if projects or activities are not implemented in the current program year.

c. *Class II: Maintenance Requirements.* These are projects and activities needed that are not currently out of compliance (deadlines or requirements have been established by applicable laws, regulations and standards, Presidential Executive Orders, or DoD policies, but deadlines have not passed or requirements are not in force), but shall be out of compliance if projects or activities are not implemented in time to meet an established deadline beyond the current program year.

d. *Class III: Enhancement Actions, Beyond Compliance.* These are projects and activities that enhance conservation resources or the integrity of the installation mission, or are needed to address overall environmental goals and objectives, but are not specifically required under regulation or Executive Orders and are not of an immediate nature.

Four Navy programming and budgeting priority levels were developed based on the DoD levels:

a. *Environmental Readiness Level (ERL) 4.* Supports all actions specifically required by law, regulation, or Executive Order (DoD Class I and II requirements); supports all DoD Class 0 requirements as they relate to a specific statute such as hazardous waste disposal, permits, fees, monitoring, sampling and analysis, reporting and record keeping; supports recurring administrative, personnel, and other costs associated with managing

environmental programs that are necessary to meet applicable compliance requirements (DoD Class 0); and supports minimum feasible Navy executive agent responsibilities, participation in Office of the Secretary of Defense (OSD)-sponsored interdepartmental and inter-agency efforts, and OSD-mandated regional coordination efforts.

b. *ERL 3.* Supports all capabilities provided by ERL4; supports existing level of Navy executive agent responsibilities, participation in OSD-sponsored interdepartmental and inter-agency efforts, and OSD-mandated regional coordination efforts; supports proactive involvement in the legislative and regulatory process to identity and mitigate requirements that will impose excessive costs or restrictions on operations and training; and supports proactive initiatives critical to the protection of Navy operational readiness.

c. *ERL 2.* Supports all capabilities provided under ERL3; supports enhanced proactive initiatives critical to the protection of Navy operational readiness; supports all Navy and DoD policy requirements; and supports investments in pollution reduction, compliance enhancement, energy conservation and cost reduction.

d. *ERL 1.* Supports all capabilities provided under ERL2; supports proactive actions required to ensure compliance with pending/strong anticipated laws and regulations in a timely manner and/or to prevent adverse impact to Navy mission and supports investments that demonstrate Navy environmental leadership and proactive environmental stewardship.

5.4.2 Scheduling and Funding

It is the responsibility of the Facilities Management Department to determine which projects should receive priority for implementation. Any requirement for the obligation of funds for projects in this INRMP shall be subject to the availability of funds appropriated by Congress, and none of the proposed projects shall be interpreted to require obligation or payment of funds in violation of any applicable federal law, including the Anti-Deficiency Act, 31 USC § 1341, et seq.

5.4.2.1 Programming and Budgeting Priorities for Natural Resources Programs

"Must fund" conservation requirements are those projects and activities that are required to meet recurring natural and cultural resources conservation management requirements or current legal compliance needs, including EOs.

Once validated and entered into the Environmental Program Requirements Web (EPR-Web) Database Portal, funding for all ERL Level 3 and 4 projects are typically programmed. Projects that are ERL 1 and 2 should seek alternate funding sources, which are listed below.

5.4.2.1.1 Operations and Maintenance, Navy (O&MN) Environmental Funding

The majority of natural resource projects are funded with Operations and Maintenance Navy (O&MN) environmental funds. These appropriated funds are the primary source of financial resources that support must-fund, just-in-time environmental compliance (i.e., Navy ERL 4 projects). O&MN funds are generally not available for Navy ERL 3–1 projects. In addition to restricting funding to Environmental Readiness Level 4 projects, there are other limitations placed on the use of O&MN funds:

a) Only the initial procurement, construction, and modification of a facility or project are considered valid environmental funding requirements. The subsequent operation, modification due to mission requirements, maintenance, repair, and eventual replacement is considered a Real Property Maintenance funding requirement. For example, the cost of initially installing a BMP can be funded through O&MN, but future maintenance or repair of that BMP must be paid by Real Property Maintenance funds.

b) When natural resource requirements are tied to a specific construction project or other action, funds for the natural resource requirements should be included in the overall project costs. For example, if a permit for filling wetlands is required as part of a MILCON project, the costs of obtaining the permit and implementing all associated mitigation should be paid by MILCON funds as part of the overall construction project costs.

5.4.2.1.2 Legacy Funds

The Legacy Resource Management Program (Legacy Program) is a special congressionally mandated initiative to fund military conservation projects. Although the Legacy Program was originally funded from 1991 to 1996 only, funds for new projects have continued to be available through this program. The Legacy Program can provide funding for a variety of conservation projects, such as regional ecosystem management initiatives, habitat preservation efforts, archaeological investigations, invasive species control, monitoring and predicting migratory patterns of birds and animals, and national partnerships and initiatives, such as National Public Lands Day. If NMCSD plans to request Legacy Program funds, it should consider the following details:

a) The availability of Legacy Program funds is generally uncertain early in the year.

b) Pre-proposals for Legacy Program projects are due in March and submitted using the Legacy Tracker Website: http://www.dodlegacy.org/.

c) Project proposals are reviewed by the Navy chain of command before being submitted to the DoD Legacy Resources Management Office for final project selection.

d) The Legacy Website provides further guidance on the proposal process and types of projects requested.

5.4.2.1.3 Other Funding Sources

Recycling Funds. An installation with a Qualified Recycling Program (QRP) may use proceeds for some types of natural resource projects. Proceeds must first be used to cover QRP costs. Up to 50 percent of net proceeds may then be used for pollution abatement, pollution prevention, composting, alternative fueled vehicle infrastructure support, vehicle conversion, energy conversion, or occupational safety and health projects with first consideration given to projects included in the installation's pollution-prevention plans. Remaining funds may be transferred to the non-appropriated Morale, Welfare, and Recreation (MWR) account for approved programs or retained to cover anticipated future program costs. Natural resource projects can be funded as pollution prevention/abatement (e.g., wetlands or riparian forest restoration) or MWR projects (e.g., trail construction and maintenance).

Non-DoD Funds. Many grant programs are available for natural resources management projects, such as watershed management and restoration, habitat restoration, and wetland and riparian area restoration. When federally funded, these programs typically require non-federal matching funds. However, installations may partner with other groups (e.g., Audubon Society, native plant society) to propose eligible projects.

5.4.2.2 Integration with EPA Funding Classes

Strategic Environmental Research and Development Program (SERDP) Funds. SERDP is DoD's corporate environmental research and development (R&D) program. Planning and execution is done in full partnership with the Department of Energy (DoE) and Environmental Protection Agency (EPA) with participation by numerous other federal and non-federal organizations. SERDP funds for environmental and conservation projects are allocated through a competitive process. Within its broad areas of interest the SERDP focuses on cleanup, compliance, conservation, and pollution preventions technologies.

5.4.2.3 Federal Anti-Deficiency Act

All actions contemplated in this INRMP are subject to the availability of funds properly authorized and appropriated under federal law. Nothing in this INRMP is intended to be nor must be construed as a violation of the Anti-Deficiency Act (31 USC 1341 et seq.)

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