

# INTEGRATED NATURAL RESOURCES MANAGEMENT PLAN 2018

Subject to annual review and revision

## MARINE CORPS AIR STATION MIRAMAR, CALIFORNIA



Natural Resources Division  
Environmental Management  
Department  
Marine Corps Air Station  
Miramar

Tetra Tech, Inc.  
Santa Barbara, CA

Gene Stout and  
Associates  
Loveland, CO

Geomorph Information  
Systems  
San Diego, CA

Prepared for  
Commanding Officer  
Marine Corps Air Station Miramar



**INTEGRATED NATURAL RESOURCES MANAGEMENT PLAN  
FOR  
MARINE CORPS AIR STATION MIRAMAR, CALIFORNIA**

**2018**

**Subject to Annual Review and Revision**

Prepared for

**Commanding Officer, Marine Corps Air Station Miramar**

Prepared by

**Tetra Tech, Inc.  
Santa Barbara, CA**

**Gene Stout and Associates  
Loveland, CO**

**Geomorph Information Systems  
San Diego, CA**

and

**Natural Resources Division  
Environmental Management Department  
Marine Corps Air Station Miramar**

**MCAS MIRAMAR MISSION**

To maintain and operate facilities, and provide services and material support to the 3rd Marine Aircraft Wing and other tenant organizations.

Recommended citation: MCAS Miramar 2018. Integrated Natural Resources Management Plan for Marine Corps Air Station Miramar, California.

**June 2018**

# INTEGRATED NATURAL RESOURCES MANAGEMENT PLAN

## MARINE CORPS AIR STATION MIRAMAR, CALIFORNIA

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### ENDORSEMENT

This Integrated Natural Resources Management Plan (INRMP) meets the requirements of the Sikes Act (16 USC 670a *et seq.*) as amended.

Written letters of concurrence from the Carlsbad Office, U.S. Fish and Wildlife Service Region 8 and the California Department of Fish and Wildlife are in Appendix F of this INRMP. MCAS Miramar natural resources staff meet annually with resource agency staff to review INRMP implementation.

Following staff review, I endorse continued implementation of the 2018 MCAS Miramar INRMP as an update is being prepared. Our integrated natural resources management approach to support installation operations and readiness remains as described.

Update of the plan has been delayed pending field survey results and formal listing decisions for two species currently proposed for listing under the Endangered Species Act, western spadefoot toad (*Spea hammondi*; proposed as a threatened species on December 5, 2023) and southwestern pond turtle (*Actinemys pallida*; proposed as a threatened species on October 3, 2023). Following receipt of this information and listing decisions, update of the plan will be completed.

Newer natural resources information that supplements for planning and management is available on the MCAS Miramar Sensitive Resources geographic information system map (March 12, 2024). It is available to all and can be downloaded from the MCAS Miramar Environmental Management System web site, Natural Resources web page at:

<https://www.miramar-ems.marines.mil/Divisions/Conservation/Natural-Resources/> .

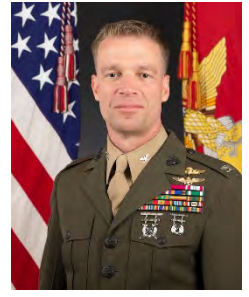
#### Approving Official:

THOMAS M. BEDELL  
Colonel, U.S. Marine Corps  
Commanding Officer  
Marine Corps Air Station Miramar

  
\_\_\_\_\_  
14 MAY 2024  
\_\_\_\_\_  
Date



## Commanding Officer, MCAS Miramar Environmental Policy Statement



Marine Corps Air Station (MCAS) Miramar is the Marine Corps' premier Air Stations and one of the Department of Defense's (DOD) busiest and most strategically located Air Stations. MCAS Miramar is located in the center of a constellation of Marine and Navy installations and ranges in the Southwestern United States, which is ideal for unimpeded access to the training needed to support combat readiness and on order, act as a power projection platform in support of Joint Force operations in Indo-Pacific Command.

We take great pride in being a part of the San Diego community and appreciate the partnership and unwavering support from "America's Finest City." The Marine Corps recognizes its responsibility to San Diegans to maintain stewardship of the Air Station by preventing unnecessary hazards while supporting all aircraft operations from 3d Marine Aircraft Wing (MAW). MCAS Miramar's Environmental ethos is based on a commitment to compliance with Federal, State and Local environmental regulations in order to preserve natural and cultural resources and to mitigate environmental and health risk while sustaining realistic military training and testing for future generations of Marines. Through promoting a culture of compliance, MCAS Miramar will conduct mission planning, decision making, training, and daily operations in a manner that demonstrates a commitment to:

- Compliance with applicable environmental laws, regulations, and policy in practice and planning;
- Implementation and improvement of Environmental Management Systems that enhance the capability of MCAS Miramar to support 3d MAW training and reduce risks to mission and the environment;
- Conserve MCAS Miramar natural and cultural resources;
- Remediate contaminated sites that are the result of past practices;
- Prevent pollution to protect the environment and minimize the burden and cost of compliance, and prevent spills;
- Proper disposal of solid, hazardous and universal wastes to reduce impacts the environment and avoid environmental violations that take vital funds away from mission-related activities;
- Sustainability through renewable energy, resource reduction and recycling;
- Partner with other federal, state and local resource agencies to share successes and lessons learned to maximize the return on the Marine Corps investment in environmental compliance and conservation.

MCAS Miramar's emphasis on environmental stewardship is based on the four foundational pillars of compliance, conservation, environmental restoration, and pollution prevention. Through incorporating these principles in our daily activities and future plans we will succeed in environmental management which will produce improvements in training opportunities, maximize resources, and support the broader Marine Corps mission. MCAS Miramar communicates this policy to all levels of the organization and station tenants in order to increase environmental awareness. This policy, along with environmental goals and objectives and other elements of the Station Environmental Management System, are available to all hands and the public at <http://www.miramar-ems.marines.mil/>.

  
T. M. BEDELL

**INTEGRATED NATURAL RESOURCES  
MANAGEMENT PLAN**

**MARINE CORPS AIR STATION  
MIRAMAR, CALIFORNIA**

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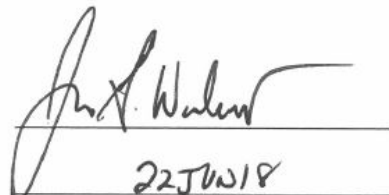
**ENDORSEMENT**

This Integrated Natural Resources Management Plan meets the requirements of the Sikes Act (16 USC 670a *et seq.*) as amended.

Written letters of concurrence from the Carlsbad Office, U.S. Fish and Wildlife Service Region 8 and the California Department of Fish and Wildlife are in Appendix F of this Integrated Natural Resources Management Plan.

**Approving Official:**

JASON G. WOODWORTH  
Colonel, U.S. Marine Corps  
Commanding Officer  
Marine Corps Air Station Miramar



22 JUN 18  
Date



Commanding Officer, MCAS Miramar  
Environmental Policy Statement



TEAM MIRAMAR

The mission of MCAS Miramar is simple: Support 3rd MAW and the Operational FMF. What we do each and every day contributes to success in combat. In order to be effective we must take care of our Marines, Sailors and families. By improving the lives of our families we support Marines and increase unit and family readiness. Team Miramar will help Marines be ready to do the Nation's bidding, as Marines have always done, by providing premier MAGTF training facilities, off duty recreation, and vibrant support of the family core. To accomplish this we must also take care of our training and recreational environments.

It is MCAS Miramar's commitment to:

- Comply with applicable environmental law, regulation and policy.
- Employ strict Pollution Prevention (P2) efforts.
- Conserve natural and cultural resources.
- Clean up or control areas of past contamination.
- Minimize any risk to our mission.
- Strive for continual improvement of our environmental performance.

In order to achieve our goals, the following Objectives and Targets have been established:

Objective	Target	Target Implementation Date
Reduce the amount of trash going to the landfill	<ul style="list-style-type: none"> <li>▪ Increase solid waste diversion rate from 35% to 40% through various means to include but not limited to increased recycling awareness particularly with cardboard recycling and source reduction</li> </ul>	<ul style="list-style-type: none"> <li>▪ Reach 40% diversion annually, starting in 2017</li> </ul>
F-35 program support infrastructure environmentally supported	<ul style="list-style-type: none"> <li>▪ Complete F-35 Supplementary Environmental Assessment</li> <li>▪ All necessary environmental permits secured</li> <li>▪ Environmental mitigation completed</li> </ul>	<ul style="list-style-type: none"> <li>▪ Annually, starting in 2017</li> </ul>
Reduce risk of environmental regulatory noncompliance	<ul style="list-style-type: none"> <li>▪ All personnel aboard the installation receive general awareness annual training by Jan 30</li> <li>▪ Train Facilities Engineering and Acquisition Division to enforce appropriate government contractor environmental practices by Dec 31</li> <li>▪ Environmental Management Department audits every permitted site and source by Dec 31</li> </ul>	<ul style="list-style-type: none"> <li>▪ Annually</li> </ul>

Marine Corps Air Station Miramar is committed to continual improvement; recognizing the public as our partner, our continual improvement will be pursued and documented within our Environmental Management System (EMS) at [www.MiramarEMS.com](http://www.MiramarEMS.com). Commander and leaders of all units will promote awareness of this policy and that superior environmental management expands training opportunities, maximizing resources, and supports 3d MAW and the Marine Corps Mission. For more information contact the Environmental Management Department at 858-577-1108.

  
J. G. WOODWORTH

**Department of Defense  
United States Marine Corps**

**Finding of No Significant Impact  
for Implementation of the  
Integrated Natural Resources Management Plan  
Marine Corps Air Station Miramar  
San Diego County, California**

The United States Marine Corps, following Section 102(2)(c) of the National Environmental Policy Act (NEPA) of 1969 and the Council on Environmental Quality regulations (40 CFR § 1500-1508) implementing the procedural provisions of NEPA, gives notice that an Environmental Assessment (EA) has been prepared and that an Environmental Impact Statement (EIS) will not be prepared for the implementation of an Integrated Natural Resources Management Plan for Marine Corps Air Station (MCAS) Miramar. Based on the following summary of effects (as discussed in the EA), I have determined that the full implementation alternative will not have a significant effect on the human environment. Therefore, an EIS is not needed.

**Proposed Action.** The proposed action is the implementation of an Integrated Natural Resources Management Plan (INRMP) for MCAS Miramar. The INRMP is a planning document that facilitates the management and conservation of natural resources on land and waters under the control of the Department of Defense. The INRMP meets statutory requirements of the Sikes Act Improvement Act (SAIA) of 1997, Public Law 105-85, Div. B Title XXIX, Nov. 17, 1997, 111 Stat 2017-2019, 2020-2022. The SAIA requires each installation to prepare an INRMP that provides for the management and use of natural resources on the installation, to the extent that such activities are consistent with the installation's military mission.

The INRMP is designed to balance the management of ecosystem resources unique to the Station and support Station military mission requirements and other land use activities affecting the installation natural resources. The INRMP is a fully integrated plan developed with input from Station planners and trainers, natural resources managers, regulatory agencies, and the public. The INRMP identifies planned natural resource management actions that must be and could be implemented to support stewardship and conservation compliance in support of the military readiness mission of the Station.

**Agency Coordination.** The SAIA requires that INRMPs be prepared in coordination with the U.S. Fish and Wildlife Service (USFWS) and the California Department of Fish and Wildlife (CDFW). Such coordination should reflect the mutual agreement of all parties concerning the conservation, protection, and management of fish and wildlife resources on an installation. Further, the SAIA requires the public be afforded an opportunity to review and comment on the plan during its preparation.

MCAS Miramar provided the USFWS and the CDFW with two opportunities to review and comment on the drafts of the INRMP. Public review and comment occurred from December 16, 2017 to January 22, 2018. Copies of the Draft 2018 INRMP and this Draft EA were placed on the MCAS Miramar Environmental Management System web site <http://www.miramar-ems.marines.mil/>.

**Alternatives.** Three alternatives were evaluated in the EA:

- Alternative 1 – Full Implementation of the MCAS Miramar INRMP (Preferred Alternative)
- Alternative 2 – Partial Implementation of the MCAS Miramar INRMP
- Alternative 3 – No Action Alternative (continue implementing the 2011 INRMP)

The Preferred Alternative (Alternative 1) provides a net benefit to the environment while supporting current levels of military activity. Alternative 2, Partial Implementation of the INRMP, would entail implementation of only Common Output Levels of Service (COS) Level 3 and ongoing actions and projects. This would provide a net benefit to the environment while supporting current levels of military activity, but to a lesser degree than Alternative 1. Alternative 3, the No Action Alternative, would entail continued implementation of objectives and practices under the existing natural resources management program and 2011 INRMP, which would provide a net benefit to the environment while supporting current levels of military activity, but to a lesser degree than either Alternative 1 or Alternative 2.

**Environmental Effects.** The EA presents a review and analysis of the anticipated environmental impacts associated with the preferred and other alternatives. Resources evaluated include geology, soils, climate, hydrology, watersheds and wetlands, air quality, noise, recreation, public health and safety (hazardous waste/materials, environmental health and safety risks to children), land and air space use, cultural resources, biological resources, environmental justice, and socio-economics. There would be no significant negative impacts, individually or cumulatively, associated with implementing the INRMP. There would not be any disproportionately high and adverse human health or environmental effects from the action on minority and/or low-income populations. Nor would there be any impacts associated with the protection of children from environmental health and safety risks. The preferred alternative will provide a positive effect to natural resources. Since the actions proposed are either environmentally beneficial or neutral, there should be little, if any, environmental controversy surrounding implementation of the INRMP.

**Findings.** Based on a review of the information contained in the EA, it is concluded that implementation of the 2018 INRMP on MCAS Miramar is not a major federal action that would significantly affect the quality of the environment within the meaning of Section 102(2)(c) of the National Environmental Policy Act of 1969, as amended. Accordingly, the preparation of an EIS is not required.

Based on the EA for implementation of the INRMP and this Finding of No Significant Impact, I approve the INRMP and endorse full implementation of the planned natural resource management actions it contains (pending availability of funds).

The EA prepared for the Marine Corps addressing this action is on file and interested parties may obtain a copy from: Commanding Officer, MCAS Miramar; Attn: Environmental Management Department, H & HS; P.O. Box 452013, San Diego, California 92145-2013, telephone (858) 577-1108. A limited number of copies of the EA are available to fill single-copy requests.

Signature: \_\_\_\_\_

JASON G. WOODWORTH

Colonel, U.S. Marine Corps

Commanding Officer

Marine Corps Air Station Miramar

22 JUN 18

\_\_\_\_\_  
Date



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## ACRONYMS

BASH	Bird/Animal Air Strike Hazard
BCC	Bird of Conservation Concern
BGEPA	Protected by Bald and Golden Eagle Protection Act
BMP	Best Management Practice
BRAC	Base Realignment and Closure
CalTrans	California Department of Transportation
CDFW	California Department of Fish and Wildlife
CIM	Climate Informed Monitoring
CFR	Code of Federal Regulations
CNPS	California Native Plant Society
COLS	Common Output Levels of Service
CWA	Clean Water Act
DoD	Department of Defense
EA	Environmental Assessment
EIS	Environmental Impact Statement
EOD	Explosives Ordnance Disposal
ESA	Endangered Species Act
FC	Federal Candidate for Listing
FE	Federal Endangered Species
FGDC	Federal Geographic Data Committee
FT	Federal Threatened Species
GIS	Geospatial Information System
GPS	Global Positioning Systems
HEM	Habitat Evaluation Model
HMMWV	High Mobility Multipurpose Wheeled Vehicle
I	Interstate
INRMP	Integrated Natural Resources Management Plan
kV	kilovolt
LTEM	Long-Term Ecosystem Monitoring
MA	Management Area
MC	Munition Constituent
MCAS	Marine Corps Air Station
MCCS	Marine Corps Community Services
MCIWEST	Marine Corps Installations West
MCO	Marine Corps Order
MEC	Munitions and Explosives of Concern
MHPA	Multi-Habitat Planning Area
MRP	Munitions Response Program

MRS	Munitions Response Site
MSCP	Multiple Species Conservation Program
NAS	Naval Air Station
NCCP	National Community Conservation Planning Program
NEPA	National Environmental Policy Act
NRCS	National Resource Conservation Service
NVC	National Vegetation Classification
OPBUD	Operations Budget
PA	Preliminary Assessment
PE	Federally Proposed Endangered Species
PL	Public Law
PSR	Pre-Activity Survey Report
PT	Federally Proposed Threatened Species
REPI	Readiness and Environmental Protection Integration
RI/FS	Remedial Investigation/Feasibility Study
RNA	Research Natural Area
SANDAG	San Diego Association of Governments
SAR	Species at Risk
SC	State Candidate for Listing [Plant]
SCD	State Candidate for Delisting
SCE	State Candidate for Listing [Animal]
SCT	State Candidate for Listing as Threatened
SDCWA	San Diego County Water Authority
SDG&E	San Diego Gas and Electric
SE	State Listed Endangered
SFP	State Fully Protected Species
SI	Site Inspection
SR	State Listed Rare
SSC	Species of Special Concern (former candidates for Federal listing)
ST	Stated Listed Threatened
T/E	Threatened/Endangered
U.S.	United States
USC	United States Code
USFWS	United States Fish and Wildlife Service
USMC	United States Marine Corps

# EXECUTIVE SUMMARY

## **Purpose**

This Integrated Natural Resources Management Plan (INRMP) guides implementation of the natural resources program on Marine Corps Air Station (MCAS) Miramar (Station). The program conserves MCAS Miramar natural resources and helps ensure compliance with environmental laws and regulations. The INRMP actions help maintain quality training lands to accomplish MCAS Miramar's critical military mission on a sustained basis and ensure that natural resources conservation measures and military mission activities are integrated and consistent with federal stewardship requirements.

This INRMP shows interrelationships between individual components of natural resources management (e.g., vegetation, wetlands, fish and wildlife), mission requirements and other land use activities affecting MCAS Miramar natural resources. The INRMP integrates current and future land use activities at MCAS Miramar with natural resources management and conservation.

The INRMP is intended to be a technical document used by persons planning and/or preparing Station approvals, management actions, orders, instructions, guidelines, standard operating procedures, and other plans. The INRMP provides technical guidance for the integration of natural resource issues and concerns into facilities and operational planning, in accordance with the NEPA decision-making processes.

This INRMP is not intended to be used by persons operating in the field, other than staff of the Environmental Management Department. Field personnel are expected to be operating under Station guidelines, plans, orders, or other approvals that have been developed using the INRMP and have already had environmental compliance review and, where applicable, regulatory approvals and/or permitting.

## **Environmental Compliance**

### **General**

Preparation and implementation of this INRMP are required by the Sikes Act (16 USC 670 *et seq.*), Department of Defense (DoD) Instruction 4715.03 (2013), Office of the Secretary of Defense policy memo (*Implementation of Sikes Act Improvement Act: Updated Guidance*, October 10, 2002), and Marine Corps Order (MCO) 5090.2 (*Marine Corps Environmental Compliance Protection Manual*). This INRMP was prepared using the *Handbook for Preparing, Revising and Implementing Integrated Natural Resources Management Plans on Marine Corps Installations* (U.S. Marine Corps [USMC] 2007). This INRMP is a major revision of the 2011-2015 INRMP (MCAS Miramar 2011a).

This INRMP helps MCAS Miramar comply with other federal and applicable state laws, most notably laws associated with environmental documentation, wetlands, endangered species, and wildlife management in general. Compliance requirements at least partially affecting implementation of the INRMP are listed in Appendix A. This INRMP also maintains the natural resource related Defense Base Closure and Realignment Act (BRAC) commitments resulting from the realignment of Naval Air Station (NAS) Miramar to MCAS Miramar.

### **National Environmental Policy Act**

The National Environmental Policy Act (NEPA) requires disclosure of environmental impacts created by proposed major federal actions. The *Handbook for Preparing, Revising and Implementing Integrated Natural Resources Management Plans on Marine Corps Installations* (USMC 2007) and the Council on Environmental Quality (*Implementing Guidelines for NEPA*, 40 CFR Parts 1500-1508) recommend an Environmental Assessment be completed for natural resources management plans. MCO 5090.2 and

Miramar Station Order 5090.4 outline NEPA compliance requirements of proposed Marine Corps actions. Thus, an accompanying Environmental Assessment was prepared to analyze environmental impacts of implementing this INRMP, as a separate document.

### **Sikes Act**

The Sikes Act<sup>1</sup> states, *The Secretary of Defense shall carry out a program to provide for the conservation and rehabilitation of natural resources on military installations. To facilitate the program, the Secretary of each military department shall prepare and implement an integrated natural resources management plan for each military installation ...*

The Sikes Act (16 USC 670 *et seq.*) requires that, consistent with the use of military installations to ensure the preparedness of the Armed Forces, each INRMP shall, where appropriate and applicable, provide for:

- fish and wildlife management, land management, forest management, and fish and wildlife-oriented recreation;
- fish and wildlife habitat enhancement or modifications;
- wetland protection, enhancement, and restoration where necessary for support of fish or wildlife;
- integration of, and consistency among, the various activities conducted under the INRMP;
- establishment of specific natural resources management objectives and time frames for proposed action;
- sustained use by the public of natural resources to the extent such use is not inconsistent with the needs of fish and wildlife resources management;
- public access to the military installation that is necessary or appropriate for sustained use by the public of natural resources to the extent that the use is not inconsistent with the needs of fish and wildlife resources, subject to requirements necessary to ensure safety and military security;
- enforcement of natural resource laws and regulations;
- no net loss in the capability of military installation lands to support the military mission of the installation; and
- such other activities as the Secretary of the military department considers appropriate.

The Sikes Act also requires or provides for:

- regular review of this INRMP and its effects, not less often than every five years;
- exemption from procurement of services under Office of Management and Budget Circular A-76 and any of its successor circulars; and
- priority for contracts involving implementation of this INRMP to state and federal agencies having responsibility for conservation of fish or wildlife.

### **Endangered Species Act**

This INRMP has the concurrence of the U.S. Fish and Wildlife Service (USFWS). This concurrence includes agreement that the INRMP complies with the Endangered Species Act (ESA). Review of this INRMP was via informal consultation with regard to the ESA. Implementation of this INRMP is not likely to adversely affect any threatened or endangered species.

The USFWS considered but determined not to designate critical habitat aboard the Station for the San Diego fairy shrimp (USFWS 2007b), Riverside fairy shrimp (USFWS 2005, 2012a), coastal California gnatcatcher (USFWS 2007a), spreading navaretia (USFWS 2010), willow monardella (USFWS 2006,

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<sup>1</sup> The Sikes Act referenced in this INRMP is as amended, including Public Law 105-85, the Sikes Act Improvement Act of 1997.



2012b), and the Quino checkerspot butterfly (USFWS 2009). The USFWS made this determination because the Station's INRMP, as implemented, is a legally operative INRMP that "*provides a benefit to the species for which critical habitat [was] proposed for designation,*" per section 218 of the 2004 National Defense Authorization Act and ESA Section 4(a)(3)(b)(i). This revised INRMP continues the applicable protections and procedures for these species.

## **Scope**

The INRMP provides the basis and criteria for protecting and managing natural resources using landscape and ecosystem perspectives, consistent with the military mission. The INRMP applies to organizations internal and external to MCAS Miramar that are involved with or interested in the management or use of Station natural resources and lands. This application includes active duty units, reserve components, Station organizations, private groups, and individuals, including tenants, lessees, easements, or others using real property pursuant to a permit, license, right of way, or any other form of permission.

## **Relationship to the Military Mission**

The Marine Corps has a unique defense mission among the nation's armed services of being able to field, on virtually immediate notice, a self-sufficient air and ground combat force trained as an integrated team under a single command. To prepare for this mission, the Marine Corps must maintain the flexibility to train its units so they are prepared for the challenges they may face in combat. MCAS Miramar is an important facility for satisfying these training requirements.

The mission of MCAS Miramar is "*To maintain and operate facilities, and provide services and material support to the 3d Marine Aircraft Wing and other tenant organizations.*" The mission of the Third Marine Aircraft Wing, the Station's primary tenant, is to "*Provide combat-ready, expeditionary aviation forces capable of short-notice, world-wide deployment to Marine Air Ground Task Force, fleet, and unified commanders.*"

Marine Corps goals for natural resources management, along with those specifically adopted for MCAS Miramar, provided guidance for the development of the INRMP. A critical goal of the INRMP is to support the Marine Corps military mission by ensuring compliance with applicable environmental laws and regulations. This INRMP supports the military mission by protecting and enhancing training lands upon which the mission is critically dependent. The Station has a long, publicly acknowledged history of outstanding natural resources stewardship that will be continued through the implementation of this INRMP.

The INRMP describes impacts of the military mission upon natural resources and the means to mitigate these impacts. However, this INRMP does not evaluate the MCAS Miramar military mission, nor does it replace any requirement for environmental documentation of the military mission at the Station.

## **Cooperators**

This document was prepared in cooperation with the U.S. Fish and Wildlife Service and the California Department of Fish and Wildlife (CDFW), representing the federal and state Sikes Act cooperating agencies, respectively. Appendix F includes coordination/review/concurrence documents from the USFWS and CDFW. Other federal and state agencies, lease and easement holders, nongovernmental organizations, and the general public were afforded opportunities to review and comment on the INRMP.

## **MCAS Miramar Natural Resources**

MCAS Miramar has 144 native and non-native vegetation types within 44 alliances. Major vegetation types on MCAS Miramar include scrub, chaparral, woodlands, freshwater marsh, and grassland. The entire eastern portion of MCAS Miramar (*i.e.*, east of I-15) functions as an important habitat linkage with adjacent

open spaces. The Station has important wildlife corridors that allow for wildlife movement and dispersal. In October 2003 the Cedar Fire swept through MCAS Miramar and much of the region in general. The fire burned about 17,600 acres on the Station; in general, the vegetation has recovered since 2003.

At a minimum, MCAS Miramar supports 7 species of amphibians, 30 species of reptiles, and 39 species of mammals. Well over 200 species of birds have been observed on the Station. Vernal pools and other seasonally ponded features (147 acres) at MCAS Miramar are the largest and most contiguous in southern California, supporting important and least disturbed examples of endangered and sensitive species dependent on vernal pool habitat in the region (Bauder and Wier 1991).

Federally listed species found on MCAS Miramar include the threatened coastal California gnatcatcher (*Poliophtila californica californica*), endangered least Bell's vireo (*Vireo bellii pusillus*), endangered Quino checkerspot butterfly (*Euphydryas editha quino*), federally proposed Hermes copper butterfly (*Hermelycaena [Lycaena] hermes*), endangered Del Mar manzanita (*Arctostaphylos glandulosa* ssp. *crassifolia*), endangered willow monardella (*Monardella viminea*, Elvin and Sanders 2003; *Monardella linoides* ssp. *viminea*, Abrams 1951), and six species associated with vernal pool habitat, such as the San Diego mesa mint (*Pogogyne abramsii*) and San Diego fairy shrimp (*Branchinecta sandiegonensis*). Species of Regional Special Concern (including species at risk of listing) at the Station include former candidates for federal listing as threatened or endangered, species of concern to the State of California, and species that are regionally rare or of limited distribution.

The Station's overall approach to managing natural resources follows the principles of ecosystem management, consistent with Marine Corps policy. The MCAS Miramar strategy for conservation and management is to 1) limit activities, minimize development, and mitigate actions in areas supporting high densities of vernal pool habitat, threatened or endangered species, and other wetlands and 2) manage activities and development in areas of low densities, or no regulated resources, with site-specific measures and programmatic instructions. Management Areas (MAs) were identified primarily to support the conservation and management of Special Status Species, wetlands, and other areas warranting special attention. Level I MAs (2,683 acres) support nearly all vernal pool habitat basins and watersheds and some closely associated coastal California gnatcatcher territories. Conservation needs in Level II MAs (5,898 acres) focus on non-vernal pool, federally listed species. Level III MAs (1,740 acres) support riparian vegetation and habitat linkages not contained within Level I and II MAs. Remaining undeveloped areas not in Levels I, II, or III MAs have been delineated as Level IV MAs (7,859 acres). Level V MAs (4,858 acres) are developed areas that support few unaltered natural landscapes and therefore almost no high value natural resources. Figure 5.1 and Table 5.1 in Chapter 5 illustrate and summarize important resources within these MAs, respectively.

## **Accomplishments**

Chapter 7 discusses specific accomplishments over the past five years with regard to natural resources management on MCAS Miramar. Particularly noteworthy was UFSWS recognition that the INRMP (MCAS Miramar 2006, MCAS Miramar 2011a) was sufficiently beneficial to the coastal California gnatcatcher (USFWS 2007a), San Diego fairy shrimp (USFWS 2007b), Quino checkerspot butterfly (USFWS 2009a), and Riverside fairy shrimp (USFWS 2011a, USFWS 2012a) that designation of critical habitat for these species was precluded aboard MCAS Miramar.

Other notable accomplishments included:

- successes in invasive plant prevention and control;
- increased conservation awareness;
- updated floral monitoring (O’Leary 2009), which demonstrated that virtually no changes were attributable to Marine Corps military activities;
- soil erosion and vegetation damage repair on seven sites;
- a study that concluded that the coastal California gnatcatcher will find and inhabit suitable nesting habitat, in spite of the MCAS aircraft noise environment (Hubbs-Sea World Research Institute 2006);
- federally-listed Special Status species monitoring, including recent observations (April 2017) of the endangered Quino checkerspot butterfly, which, in general, confirmed ongoing habitat recovery from the 2003 Cedar Fire;
- completion of BRAC 1995 vernal pool mitigation commitments;
- managing federally- and state-listed Species of Special Concern;
- updated vegetation mapping for the entire Station (Tetra Tech 2014);
- inventorying, monitoring, and managing vernal pool habitat and its Special Status Species, including identification of areas that appear suitable for re-establishing vernal pools, completed in 2009;
- supporting the Miramar National Cemetery vernal pool restoration project, completed in 2016;
- completion of vernal pool and wetland habitat restoration for MV-22 Basing facilities mitigation (2018);
- delineation of non-vernal pool wetlands and other Waters of the U.S. (Lichvar and Dixon 2008);
- meeting compliance requirements associated with migratory birds;
- first off-installation habitat compensation project in the Department of the Navy (mitigation for Miramar Brig Expansion impacts);
- providing technical support for the development and implementation of the 2008 *Bird/Animal aircraft Strike Hazard (BASH) Plan*;
- supporting natural resources-based outdoor recreation, particularly with regard to permitting and management of the Miramar Fish Pond and the establishment of the Stowe Trail for mountain biking; and
- developing and maintaining Geospatial Information System databases and using them to support Station decision-making.



*Vernal Pool Habitat – One of the Station’s most important sensitive resources  
Natural Resources Division*

## **INRMP Implementation Summary**

The Station natural resources management goals and specific objectives to attain these goals can be found in Chapter 7 of the INRMP.

This INRMP will be considered to be implemented when MCAS Miramar:

- actively requests, receives, and uses funds for Common Output Levels of Service (COLS) Level 3 (core requirements) Projects and activities;
- ensures that sufficient numbers of professionally trained natural resources management staff are

- available to perform the tasks required by the INRMP;
- coordinates annually with the USFWS and the CDFW; and
- documents specific INRMP action accomplishments undertaken each year (USMC 2007).

Formal adoption of an INRMP by the installation commander constitutes a commitment to seek funding and execute, subject to the availability of funding, all COLS Level 3 Projects in accordance with specific timeframes identified in the INRMP. Under the Sikes Act, any natural resources management activity that is specifically addressed in the plan must be implemented (subject to availability of funds). Failure to implement the INRMP is a violation of the Sikes Act and may be a source of litigation (USMC 2007).

This INRMP is designed to provide direct input into the USMC Status Tool for Environmental Programs (STEP) budget system. The INRMP (Chapters 7 and 9 and Appendix E) describes specific projects with justifications, timelines, and budgets. Appendix E addresses funding specific to this INRMP and its projects. The below table summarizes INRMP implementation costs by funding source.

Type Funds Programmed	FY 18	FY 19	FY 20	FY 21	FY 22	Totals
<b>COLS Level 3</b>						
O&M, MC**	\$794	\$581	\$741	\$1,039	\$792	\$3,948
OPBUD**	\$794	\$581	\$741	\$1,039	\$792	\$3,948
CMP	\$0	\$0	\$0	\$0	\$0	\$0
Agricultural Outlease Income	\$54	\$56	\$57	\$81	\$66	\$314
<b>Subtotals (COLS Level 3)</b>	<b>\$848</b>	<b>\$637</b>	<b>\$799</b>	<b>\$1,120</b>	<b>\$858</b>	<b>\$4,262</b>
<b>COLS Level 2</b>						
O&M, MC	\$27	\$93	\$28	\$30	\$390	\$567
OPBUD	\$27	\$93	\$28	\$30	\$30	\$207
CMP	\$0	\$0	\$0	\$0	\$360	\$360
Agricultural Outlease Income	\$0	\$0	\$280	\$0	\$360	\$640
<b>Subtotals (COLS Level 2)</b>	<b>\$27</b>	<b>\$93</b>	<b>\$308</b>	<b>\$30</b>	<b>\$750</b>	<b>\$1,207</b>
<b>COLS Level 1</b>						
O&M, MC	\$60	\$49	\$58	\$67	\$78	\$312
OPBUD	\$60	\$49	\$58	\$67	\$78	\$312
CMP	\$0	\$0	\$0	\$0	\$0	\$0
Agricultural Outlease Income	\$202	\$250	\$0	\$250	\$0	\$702
<b>Subtotals (COLS Level 1)</b>	<b>\$262</b>	<b>\$299</b>	<b>\$58</b>	<b>\$317</b>	<b>\$78</b>	<b>\$1,014</b>
<b>Grand Totals</b>	<b>\$1,137</b>	<b>\$1,029</b>	<b>\$1,164</b>	<b>\$1,467</b>	<b>\$1,686</b>	<b>\$6,483</b>

\* Funding in thousands of dollars.

\*\* Project MI3CONNROPB48050007, which provides staffing for the Natural Resources Program, is captured within COLS Level 3, O&M, MC (OPBUD) funding for years 2018-2022 (\$370,000-\$385,000,

respectively).

## Costs and Benefits

- **Costs:** Full implementation of the INRMP will cost approximately **\$6,483,000** for FY 2018 - FY 2022. Funding will be from Operations and Maintenance, Marine Corps (including Operations Budget and Centrally Managed Environmental Program funds) and income from the nursery Agricultural Outlease.
- **Military Mission Benefits:** Implementation of this INRMP provides accurate and up-to-date resource information to support planning of military mission requirements. It helps reduce maintenance costs, improve health and safety, and improve the quality of training land and its associated training at MCAS Miramar.
- **Environmental Benefits:** The INRMP provides the basis for the conservation and protection of natural resources. It reduces vegetation loss and soil erosion from military and support activities, reduces the potential for environmental pollution, and promotes biodiversity conservation. Plan implementation increases overall knowledge of the operation of Station ecosystems through surveys and research. INRMP implementation monitors ecosystem/natural resource “health” to decrease long-term environmental costs and reduces personal and installation liabilities from environmental noncompliance, including formal designation of ESA critical habitat.
- **Other Benefits:** Interested agencies, groups, and persons better understand the positive management efforts that are conserving natural resources on MCAS Miramar. Quality of life for the Station community and neighbors is improved.

## INRMP Organization

This INRMP is organized as follows.

- Chapter 1, ***Introduction*** describes the purpose of compliance requirements for the INRMP, its relationship with regional conservation planning efforts, and relationships between natural resources management regarding overall MCAS Miramar and 3<sup>rd</sup> Marine Aircraft Wing missions. It describes the MCAS Miramar overall strategy for conservation and management and lists goals of that management. It also provides general information on the location and environmental setting at MCAS Miramar.
- Chapter 2, ***MCAS Miramar Land Use*** describes the land use history, military operational requirements and military land use, and nonmilitary land use at the Station and on adjacent lands.
- Chapter 3, ***Physical Setting*** describes the climate, geology and soils, hydrology and watersheds, and potentially contaminated sites on the Station.
- Chapter 4, ***Biological Resources*** describes vegetation and landcover types, vernal pool habitat, wildlife and wildlife habitat, habitat linkages and wildlife corridors, Special Status Species, a summary of the 2003 Cedar Fire, and a description of the Habitat Evaluation Model and its use.
- Chapter 5, ***Management Areas and Land Use Compatibility*** describes Level I-V Management Areas, discusses land use compatibility issues, and identifies the Station’s conservation contributions to regional conservation programs.
- Chapter 6, ***Project and Mitigation Planning*** identifies environmental compliance requirements associated with Station project planning, including NEPA, ESA, Clean Water Act, and Migratory Bird Treaty Act requirements, and describes project mitigation planning for both temporary and permanent project effects.
- Chapter 7, ***Natural Resources Management Goals and Objectives*** identifies Marine Corps and Station natural resources management goals, specific objectives to attain these goals, and individual natural resources management projects in a standard format with justifications, timelines, and budgets.
- Chapter 8, ***Compliance and Law Enforcement*** describes means to maintain conservation

- compliance awareness and environmental compliance and natural resources-related enforcement.
- Chapter 9, *INRMP Implementation and Evaluation* identifies Marine Corps and Department of Defense policy regarding implementation of this INRMP and identifies personnel, personnel training, supplies and equipment, project support, funding, and command support needed to implement this INRMP.
  - *Literature Cited* documents all sources referenced in this INRMP.
  - *Preparers and Agency Reviewers* identifies individuals, with their qualifications, who prepared this document and Navy/Marine Corps, USFWS, and CDFW personnel who were consulted during preparation of this INRMP.
  - *Appendices* contain information or data relevant to implementation of the natural resources management on MCAS Miramar.

For those who are primarily interested in natural resources actions and projects planned for 2018-2022, they are identified in Appendix E. Appendix E can provide a basis for evaluating plan implementation.

## Summary

The Marine Corps believes that military activities can be compatible with the conservation of sensitive biological resources. MCAS Miramar will continue its well-established program of managing and conserving its natural resources in support of the Station military mission. The DoD, and MCAS Miramar in particular, recognizes that degradation of the land degrades its use for realistic training, and thereby degrades readiness.

The INRMP outlines steps required to meet DoD, U.S. Marine Corps, and MCAS Miramar legal obligations to provide for the stewardship of the natural resources on MCAS Miramar, while supporting the accomplishment of the military mission. The INRMP has been developed through cooperation with appropriate regulatory agencies. As a public document, it will support and perpetuate the military mission while fostering stewardship and goodwill for MCAS Miramar. This INRMP will not resolve all existing and/or future environmental issues. It does, however, provide the guiding strategy, personnel, and means to minimize and work toward resolution of such issues.