

6.0 PROJECT AND MITIGATION PLANNING

This chapter addresses project and mitigation planning at MCAS Miramar relative to natural resources. This guidance is intended to be used by persons planning and/or preparing Station approvals, management actions, orders, instructions, guidelines, standard operating procedures, other plans, and NEPA documentation. This will assist such persons in the integration of natural resource issues with their planning and decision-making process. The project planning section presents regulatory compliance requirements as they relate to natural resource concerns. The section on mitigation planning defines mitigation, explains the MCAS Miramar approach to mitigation, briefly describes existing mitigation actions, and presents information for mitigation planning at MCAS Miramar.

This planning and mitigation guidance is provided for application to new projects, activities, and Station authorizations being processed by the Station. This guidance is not intended to be applied retroactively to activities and actions for which environmental planning and resource agency authorizations have already been completed, such as NEPA documentation and Endangered Species Act Section 7 Biological Opinions or Section 10 Incidental Take Permits.

6.1 Project Planning

6.1.1 National Environmental Policy Act Considerations

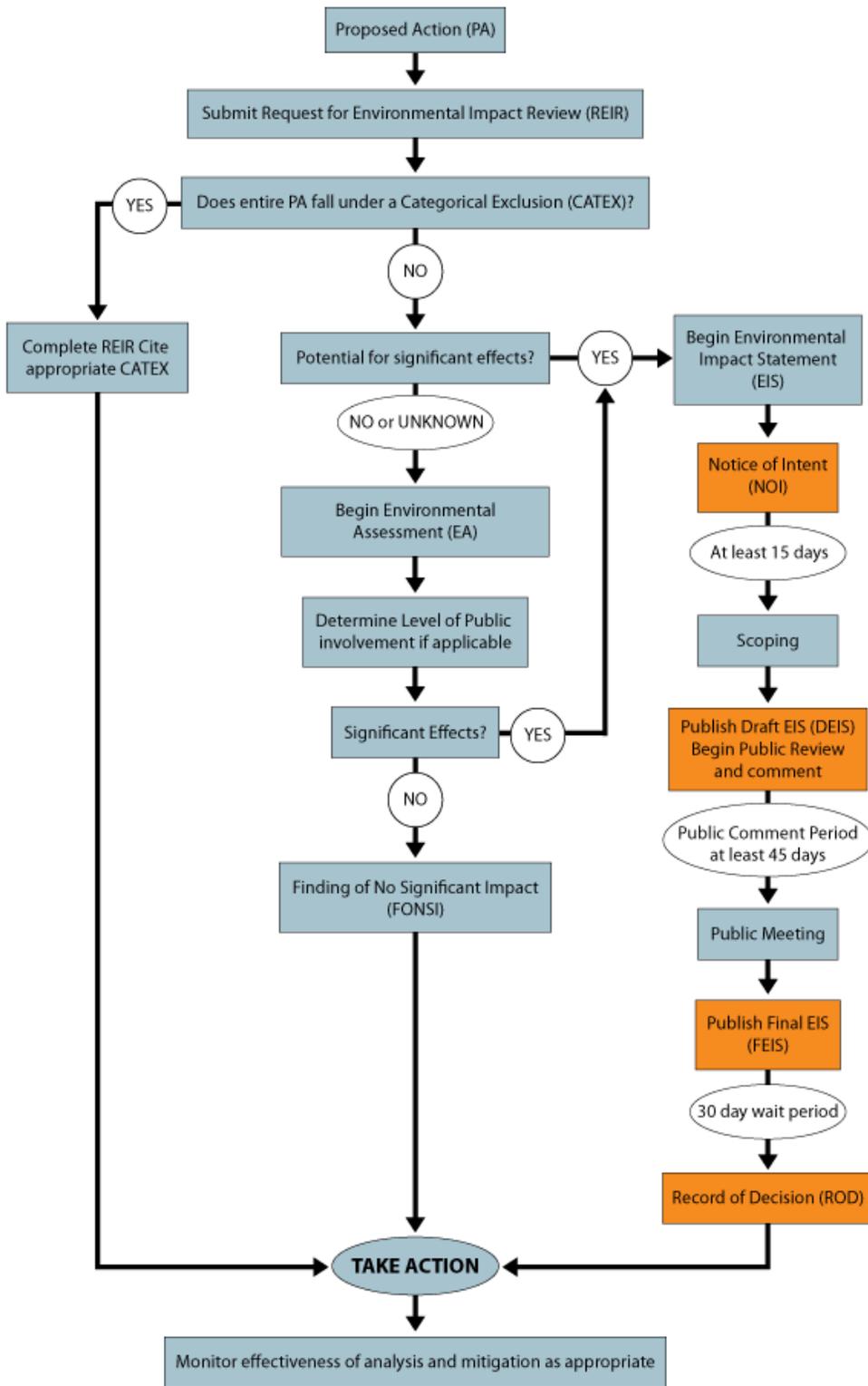
NEPA requires federal agencies to assess, in detail, potential environmental impacts of their actions that could significantly affect the quality of the environment. At MCAS Miramar, the Environmental Management Department administers NEPA planning and ensures that NEPA compliance is accomplished in consultation with legal counsel. Department of Navy and Marine Corps policies require action proponents to fund and ensure completion of NEPA planning and other necessary documentation for their proposed actions, such as construction, maintenance, land development, leases, and easements (SECNAVINST 5090.6A; MCO P5090.2A, Change 2, Chapter 12; *Marine Corps NEPA Manual* (Headquarters Marine Corps 2009); MCIWEST Order 5090.1; Miramar Station Order 5090.4).

NEPA is intended to help decision makers make informed decisions that are based on an understanding of environmental consequences and take action that protects, restores, and enhances the environment. Agencies are to use a systematic, interdisciplinary approach that integrates natural and social sciences and environmental design. While NEPA requires consideration of more than the natural environment, NEPA provides planners with a process (Figure 6.1.1 [Headquarters Marine Corps 2009]) to identify and initially assess natural resource issues requiring compliance.

NEPA requires a detailed statement of significant environmental impacts of major federal actions. For example, an action may be considered significant if it has a long-term impact or potential risk because of its effect on a species protected under the ESA. The process identifies reasonable alternatives to proposed actions that might have less or no environmental effect. Individual and cumulative impacts must be considered. The following three-tiered approach is used to evaluate impacts.

- Certain categories of actions may be excluded from the need to prepare a detailed environmental analysis for NEPA purposes. *Categorical Exclusions* are categories of actions that have been previously determined to not have a significant effect on the human environment, either individually or cumulatively. Marine Corps Order P5090.2A (para. 12201.3a) provides a list of Categorical

Figure 6.1.1. NEPA Process Chart



*All actions in orange require HQMC and ASN approval

Exclusions and associated extraordinary circumstances that preclude the use of the Categorical Exclusions.

- An **Environmental Assessment** is the analysis to be completed when the government is uncertain as to whether an action will significantly affect the environment or whether the action is controversial; the result of an EA is either a Finding of No Significant Impact or a requirement to complete an EIS.
- An **Environmental Impact Statement** is a full-disclosure document that presents a full and complete discussion of significant impacts, informing the public and decision makers of reasonable alternatives to the proposed action.

6.1.1.1 Significance Determination

The issue of “significance” in terms of environmental effects is important to NEPA compliance. An issue is not necessarily significant just because a regulatory consultation or permit requirement is encountered (*e.g.*, Section 7 ESA consultation with the USFWS, obtaining a Section 404 CWA permit). For example, the Nationwide Section 404 Clean Water Act Permits have already been subjected to NEPA review, programmatically, with a conclusion that their use would not have significant impacts, either individually or cumulatively. Significant effects of proposed actions are determined by adverse effects on important resources that are not mitigated.

Definitions of adverse effects vary by law. Thus, it is important to use specific definitions within specific laws (*e.g.*, CWA, ESA) for determining adverse effects.

For biological resources in general, primary criteria for determining significance are the **unmitigated** loss of a resource identified as threatened or endangered by the USFWS, the local and regional rarity of affected resources, and the degree to which affected resources may be impacted. To a large degree, significance thresholds are based on the regulatory status of resources, which reflect their rarity and/or special significance. The following types of effects to biological resources are generally considered significant:

- unmitigated permanent or long-term temporary impact to federally listed species, including significant loss of occupied habitats (Section 7 ESA consultation with the USFWS will assist with this determination);
- unmitigated loss or impact to large quantities of wetlands in Waters of the United States, as defined by CWA regulations;
- unmitigated effects to important quantities of regionally- and locally-declining populations (*i.e.*, federal species of special concern and species considered rare and threatened or endangered by the State of California);
- unmitigated loss of important quantities of declining vegetation communities that are considered rare, both locally and regionally (with impacts evaluated in terms of such factors as setting [*e.g.*, population size, habitat quality] and the magnitude and nature of effects (*e.g.*, temporary versus permanent));
- alteration of regionally- and locally-important wildlife corridors that would severely and permanently limit their use by wildlife species; and/or
- substantial, unmitigated erosion resulting in loss of site integrity to support vegetation and degradation of downstream water quality by sediment loading.

6.1.1.2 Guidance for Addressing Natural Resources in NEPA Documents

The Natural Resources Division should be consulted regarding topics for analysis for each individual NEPA document to be prepared. Details for addressing natural resources in NEPA documents for MCAS Miramar can be obtained from the Station Environmental Department.

6.1.2 Other Natural Resources Specific Compliance Considerations

NEPA cannot be finalized (*i.e.*, publication of final Environmental Impact Statement or signing a Finding of No Significant Impact) until “*all consultation and authorization processes required by law, including but not limited to, those set out in the Endangered Species Act, ..., Migratory Bird Treaty Act, Coastal Zone Management Act, Clean Air Act, are complete.*” (Memorandum for Chief of Naval Operations and Commandant of the Marine Corps, *Supplemental Policy Guidance to SECNAVINST 5090.6A for Consultations and Regulatory Coordination*, May 6, 2009, Assistant Secretary of the Navy (Installations and Environment), Washington, DC). This guidance was further clarified by the Commandant of the Marine Corps (*Supplemental Policy Guidance to SECNAVINST 5090.6A for Consultations and Regulatory Coordination*, July 27, 2009).

As part of project planning at MCAS Miramar, careful consideration will be given to project siting relative to Management Areas (MAs). This effort will support the Station’s overall conservation strategy of minimizing the development of areas supporting high densities of predominantly vernal pool habitat, threatened or endangered species, and other wetlands (*i.e.*, Level I, II, and III MAs). Benefits of this strategy are reduced delays in project approvals (consultation timelines may be eliminated or minimized) and decreased costs (mitigation requirements may be minimized). Consultation, permitting, and mitigation requirements are discussed in the remainder of this chapter.

Two major considerations relative to potential impacts on Special Status Species (as defined in this INRMP) and wetlands are compliance with the Endangered Species Act and Clean Water Act. Requirements of these two acts are summarized in this section to facilitate consideration early in the planning process at MCAS Miramar.

6.1.2.1 Endangered Species Act

MCO 5090.2A states, “*The Marine Corps will consult ... on any Marine Corps action that may affect any endangered or threatened species or critical habitat to ensure that such action is not likely to jeopardize the continued existence of the species or result in the destruction or adverse modification of critical habitat... In addition, the Marine Corps will further programs for the conservation of endangered and threatened species. Each installation supporting endangered or threatened species must address their management in its INRMP detailing protective measures that assure the continued health and viability of these species on the installation.*”

When evaluating actions potentially affecting threatened or endangered species identified in Chapter 4, planners (*e.g.*, Public Works Division, military trainers, Real Estate Division, Environmental Management) must take into account requirements of the Endangered Species Act (ESA) and timelines needed for compliance. Formal consultations with the USFWS pursuant to **Section 7** of the ESA (50 CFR 402) are required prior to federal agencies authorizing, funding, or implementing proposed actions which may affect a federally threatened or endangered species or its critical habitat¹⁰.

Once formal consultations are initiated, consultations can be lengthy. Formal consultations involve up to a 90-day consultation period and an additional 45-day period for the USFWS to prepare a biological opinion (135-day total). Either the lead agency or the USFWS may request an extension of the formal consultation period, but such extensions require mutual agreement. Conditions that may require an extension include complex

¹⁰ Critical habitat is a legal term defined by the ESA for species listed by the USFWS. No critical habitat has been designated on MCAS Miramar; thus, the term should not normally be used with regard to projects proposed for MCAS Miramar. Section 7.4, *Special Status Species Management* describes how implementation of this INRMP meets criteria to preclude critical habitat designation, as provided for by ESA Section 4(a)(3)(b)(i).

issues or circumstances for which additional data (e.g., surveys) may be needed to avoid a jeopardy biological opinion.

Preparation of **biological assessment** information is required to initiate formal consultation. A biological assessment is required for major federal construction activities; however, a biological assessment may be prepared to support consultation for any action that may affect a federally listed threatened or endangered species. A listing of the basic information required to initiate formal consultation required by Section 7 of the ESA is found at 50 CFR 402.14(c). As part of a joint partnering effort between local Navy, Marine Corps, and USFWS staff, a working group developed an informal document, *Guidelines for Preparing Biological Assessments for Section 7 Endangered Species Act Consultation*, in 2000. Preparation of biological assessments for proposed actions on MCAS Miramar should follow the guidelines of this document unless otherwise directed (obtain a copy from Miramar Natural Resources Division staff).

The time required to prepare a biological assessment is quite variable depending on the complexity of the proposed action and the magnitude of potential effects on the species of concern. Potential requirements for additional information (e.g., surveys) can further extend the timeline for completion of the biological assessment. Anywhere from a few weeks to more than a year may be required to finalize a biological assessment before it can be submitted to the USFWS as part of the request to initiate formal consultations.

A **biological opinion** is the USFWS opinion resulting from the formal Section 7 ESA consultation process. It is a written statement from the USFWS regarding its opinion on effects of a proposed action on listed species and the potential to jeopardize the continued existence of the species. It also includes a summary of the information on which the opinion is based, detailing how the agency action affects the species or its critical habitat. It provides nondiscretionary Terms and Conditions with Reasonable and Prudent Measures that must be implemented in conjunction with a proposed action to avoid or minimize impacts. The USFWS also provides nonbinding Conservation Recommendations as part of the biological opinion.

A biological opinion is required for actions that may adversely affect a threatened or endangered species so as to avoid jeopardizing the continued existence of any such species and violations under **Section 9** of the ESA. Section 9 of the Act prohibits the “take” of a threatened or endangered species. *The term “take” means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct* (16 USC 1532). The term “harass” in this definition has been further defined to mean *...an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding or sheltering* (50 CFR 17.3). *Harm, in the definition of “take” in the Act [ESA] means an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral pattern, including breeding, feeding, or sheltering* (50 CFR 17.3).

Part of a biological opinion is the issuance of an incidental take authorization, which authorizes take of listed species that is incidental to the conduct of an otherwise legal activity, provided terms and conditions established in the biological opinion are followed and implemented. Terms and conditions can involve additional costs relative to mitigation requirements, which may include compensation for lost resources, minimization of, and avoidance of impacts on threatened or endangered species or critical habitat. Such potential costs must be considered as part of project planning and construction.

Consultation under the ESA shall be considered complete when, at a minimum, a draft Biological Opinion is issued by the USFWS (Commandant of the Marine Corps, *Supplemental Policy Guidance to SECNAVINST 5090.6A for Consultations and Regulatory Coordination*, July 27, 2009).

The informal consultation process to fulfill Section 7 requirements generally will require less time than formal consultations. This is an option only when the incidental take of a threatened or endangered species and other adverse effects can be avoided. This process can also be used to initiate a dialog with the USFWS regarding the necessity for formal consultation. The outcome of an informal consultation is often a letter from the USFWS stating that the proposed action is not likely to adversely affect the listed species, although sometimes the conclusion of informal consultation can be reached solely through discussion.

When a proposed action affects a species proposed for listing as threatened or endangered, a **formal conference** (as opposed to a consultation for a listed species) with the USFWS may be required. The standard for requiring a conference is that the proposed action may jeopardize the continued existence of the species, as opposed to affecting it, as is the standard for listed species. The USFWS encourages **informal conferencing** when proposed species are involved. Unlike biological opinions, recommendations made in conference opinions are advisory and therefore non-binding.

The primary purpose of conferencing is to avoid delay of a proposed action should a species proposed for listing become listed, and to ensure that the proposed action does not jeopardize a species' recovery potential. Should a species become formally listed prior to implementation of the proposed action, federal agencies are required to consult with the USFWS to confirm that the conference opinion still serves as the formal biological opinion. This is typically a simple procedure if there are no significant changes in the action as planned or in the information used during the conference.

ESA consultations are accomplished for the Station through the Environmental Management Department. The action proponent shall bear the responsibility for preparation of a biological assessment along with the documentation necessary for execution of consultation/conferencing requirements. Often this work and documentation is accomplished by contract with a qualified consulting firm. Species and habitat information possessed by the Station can be made available to action proponents; however, any needed supplementation or field verification shall be accomplished (or funded) by the proponent.

For non-federal proposed actions requiring the approval of MCAS Miramar, the Station, as a federal agency, is required to complete a Section 7 consultation/conference with the USFWS prior to authorizing a proposed action which may affect a proposed or listed threatened or endangered species. This is the Station's requirement regardless of any requirement the action proponent may or may not have regarding such species. All MCAS Miramar approvals will be conditioned upon the action proponent's commitment to fund and/or implement Reasonable and Prudent measures with associated Terms and Conditions which result from this consultation/conference procedure.

Some non-federal actions associated with previously issued rights-of-way and easements may not require authorization from the Station. In such cases, where no federal entity is involved, the Section 7 ESA consultation requirement for federal agencies may not be applicable, and the non-federal action proponent may need to resolve ESA compliance directly with the USFWS under the provisions of Section 10 of the ESA.

6.1.2.2 Clean Water Act

CWA permitting for Marine Corps actions on MCAS Miramar will be processed through the Environmental Management Department. Preparation of permit application and associated information, wetland delineation, and other applicable information are the responsibility of the action proponent. Permitting necessary for non-Marine Corps proposed actions shall be accomplished and funded by the action proponent in coordination with MCAS Miramar staff. Completion of the regulatory permitting process is required for all federal and non-federal actions as part of receiving final Station approval to implement the requested action.

NEPA documentation can be completed prior to obtaining CWA permits, provided the decision maker is made aware of permit requirements and, to the maximum extent possible, made aware of potential mitigation requirements. The proponent must provide appropriate documentation indicating coordination with the Army Corps of Engineers, proposed mitigation, if any, and that the Corps of Engineers is likely to concur with the impacts determination (Commandant of the Marine Corps, *Supplemental Policy Guidance to SECNAVINST 5090.6A for Consultations and Regulatory Coordination*, July 27, 2009).

Executive Order 11990, *Protection of Wetlands* directs all federal agencies to provide leadership and take action to minimize the destruction, loss, or degradation of wetlands as well as to preserve and enhance the beneficial values of wetlands. Marine Corps Order P5090.2A (Chapter 12) requires that all activities adversely affecting the quality or quantity of tidelands or fresh water wetlands that are not covered by nationwide or regional permits have, at a minimum, an EA prepared. In a similar manner to Executive Order 11990, Executive Order 11988, *Floodplain Management* directs federal agencies to provide leadership in avoiding direct or indirect development of floodplains, as well as to restore and preserve the natural and beneficial values of floodplains.

Section 404 of the CWA addresses the discharge of dredge or fill material into waters of the United States, including wetlands (definitions at 40CFR 230.3 (s) and (t)). The term “waters of the United States” is broadly defined to include navigable waters (including intermittent streams), impoundments, tributary streams, and wetlands associated with navigable waters. This includes ephemeral streams on MCAS Miramar. In general, wetlands are areas inundated or saturated by surface or ground water to the extent that they support vegetation adapted for saturated soil conditions (*e.g.*, vernal marshes, vernal pool habitat). A discharge is any material that results 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 streambanks. Regulatory authority has been delegated by the Environmental Protection Agency to the U.S. Army Corps of Engineers for Section 404. Nationwide and individual permits are options for meeting the requirements of Section 404.

The Army Corps of Engineers has developed a series of nationwide permits that pre-authorize certain minor discharges (*e.g.*, construction of outfall structures, backfill or bedding for utility lines, fill for bank stabilization, minor road crossings), provided they meet certain conditions. Use of most nationwide permits requires review by the Army Corps of Engineers and possibly other federal agencies. Notification of the Army Corps of Engineers is usually required, and applicants must meet conditions outlined in the regulations and ensure the proposed project does not conflict with other federal laws (*e.g.*, ESA, NEPA).

Section 404 regulations apply to vernal pools when they are adjacent or connected to waters of the U.S. The Los Angeles District Engineer of the Army Corps of Engineers has established **Regional General Conditions** (U.S. Army Corps of Engineers 2002) to the nationwide permits. One condition requires that any action that affects jurisdictional vernal pools must have, at a minimum, an individual Section 404 permit. DON and USMC policy direct that an action requiring an individual Section 404 CWA permit requires a minimum of an EA for NEPA documentation. Not all vernal pool habitat on MCAS Miramar is subject to the permitting jurisdiction of the CWA¹¹. The jurisdictional status of individual vernal pools will be determined in consultation with the Station Natural Resources Division. However, regardless of the jurisdictional status of vernal pool habitats, any projects that may affect them must consider the presence/absence of endangered species and the federal “no net loss” of wetlands policy (Executive Order 11990) in project planning and NEPA documentation.

The individual permit process is much more complex and time consuming than the Nationwide Permit program. Typically, the application process involves a pre-application meeting (if requested), permit

¹¹Solid Waste Agencies of Northern Cook County (SWANCC) vs. the U.S. Army Corps of Engineers.

application process, the posting of a public notice to allow for public comment, and a final decision by the Army Corps of Engineers in which the Corps indicates its readiness to prepare an EA (or cause one to be prepared) , Public Interest Review, and 404(b)(1) Evaluation. If the conclusion is that the action will cause significant impacts, then the Army Corps of Engineers must prepare an EIS (or cause one to be prepared, often by the federal agency that is required to have the permit). Further, all ESA requirements must be fulfilled before a permit can be issued.

Also, before an applicant can receive an individual Army Corps of Engineers permit to discharge dredge or fill material into waters of the United States, including jurisdictional wetlands, the applicant may be required to demonstrate that the proposed discharge is unavoidable and the least damaging alternative. These considerations are required under the Environmental Protection Agency's 404(b)(1) Guidelines (40 CFR 230). An alternative analysis should be considered early during project planning process to reduce costs, avoid delays, and increase certainty in permit approval (Yocum *et al.* 1989). These requirements for alternative analysis, in general, exceed those required by NEPA.

For proposed actions involving wetlands, requirements of the CWA need to be considered. The CWA contains specific provisions for the regulation of the disposal of dredge soil within navigable waters, and placement of materials into wetlands. Permits are required under sections 401, 402, and 404 of the CWA for proposed actions that involve wastewater discharges and/or dredging/placement of fill in wetlands or navigable waters. These permits are required prior to the initiation of proposed actions. However, such permitting may be accomplished for emergency situations, as defined by the regulatory agency.

Section 402 of the CWA addresses requirements for storm water discharges into natural drainages and is administered by the U.S. Environmental Protection Agency. **Section 401** addresses water quality issues and requires issuance of a Water Quality Certification by the Regional Water Quality Control Board before a Section 404 Permit can be issued. The state charges a fee for Section 401 permitting.

The CWA also requires federal agency consistency with state nonpoint source pollution management plans. Nonpoint source pollution results from ground disturbing actions, such as construction, military training, and fuelbreak construction. Marine Corps' policy is to support the development and implementation of nonpoint source pollution management programs that ensure water quality protection. This is typically accomplished through the use of Best Management Practices (BMPs). As defined by MCO P5090.2A, BMPs are "*methods, measures, or practices selected by an agency to meet its nonpoint source control needs, including, but not limited to, structural and nonstructural controls and operation and maintenance procedures (40 CFR 130).*"

6.1.2.3 Migratory Bird Legal Instrumentalities

Migratory Bird Treaty Act

The Migratory Bird Treaty Act is an international agreement among the United States, Canada, and Mexico that protects designated species of birds. Virtually all birds are protected under the Migratory Bird Treaty Act, with only a few exceptions, such as the California quail. Birds classified as migratory also include species that occupy MCAS Miramar throughout the year. A complete list of all species of all migratory birds protected by the Migratory Bird Treaty Act is in 50 CFR 10.13.

The Migratory Bird Treaty Act controls the taking of these birds, their nests, eggs, parts, or products. The Act states that it is unlawful "at any time, by any means or in any manner, to pursue, hunt, take, capture, kill, attempt to take, attempt to capture, or attempt to kill, purchase, offer to purchase, deliver for shipment, ship, export, import, cause to be shipped, deliver for transport, transport or cause to be transported, carry or cause to be carried, or receive for shipment, transportation, carriage, or export, possess, offer for sale, sell, offer to sell,

barter, offer to barter, any migratory bird, any part, nest, or egg of any such bird, or any part, nest, or egg thereof;” unless and except as permitted by regulations in the Migratory Bird Treaty Act.

All persons, organizations, and agencies, are liable for prosecution for violations and must follow permitting requirements for taking migratory birds. Special purpose permits may be requested and issued that allow for the relocation or transport of migratory birds for management purposes.

Executive Order 13186

Executive Order 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds* required that DoD and the USFWS establish a Memorandum of Understanding that will promote the conservation of migratory bird populations. A Memorandum of Understanding has been developed between the agencies to address non-military readiness activities¹² (*i.e.*, natural resources management, installation support functions, industrial activities, facility construction/demolition, hazardous waste cleanup) (effective 31 July 2006; Federal Register Volume 71(168):51580-51585). Specifically the Memorandum of Understanding requires that DoD shall:

- follow all migratory bird permitting requirements for activities subject to 50 CFR (*e.g.*, banding and marking, scientific collecting, special Canada goose permit, special purposes, depredation);
- encourage incorporation of comprehensive migratory bird management objectives into DoD planning documents, including INRMPS;
- incorporate conservation measures addressed in Regional or State Bird Conservation Plans into INRMPS;
- consistent with imperatives of safety and security, allow the USFWS and other partners reasonable access to military lands for conducting sampling or survey programs;
- prior to starting any activity that is likely to affect populations of migratory birds, take the following specific steps:
 - identify potentially affected species and determine if any Species of Concern could be affected;
 - use NEPA to assess and document expected impacts on Species of Concern; and
 - engage in early planning and scoping with the USFWS relative to potential impacts of a proposed action to proactively address migratory bird conservation and initiate appropriate actions to avoid or minimize the take of migratory birds.
- manage military lands and non-military readiness activities in a manner that supports migratory bird conservation, giving consideration to the following:
 - habitat protection, restoration, and enhancement;
 - fire and fuel management practices;
 - invasive species and aquatic nuisance species management practices;
 - communication towers, utilities and energy development; and
 - recreation and public use.
- develop and implement new and/or existing inventory and monitoring programs, at appropriate scales using national standardized protocols, to evaluate effects of conservation measures to minimize or mitigate take of migratory birds, with emphasis on those actions that have the potential to significantly impact species of concern; and
- promote timely and effective review of INRMPS with respect to migratory bird issues with the USFWS and respective State agencies.

¹² Military readiness activities are addressed in a rulemaking in accordance with section 315, National Defense Authorization Act for Fiscal Year 2003 (Public Law 107-314, 116 Stat. 2458).

Final Rule – Migratory Bird Permits; Take of Migratory Birds by the Armed Forces

Section 315 of the 2003 National Defense Authorization Act provides that, not later than one year after its enactment, the Secretary of the Interior (Secretary) shall exercise his/her authority under Section 704(a) of the Migratory Bird Treaty Act to prescribe regulations to authorize the Armed Forces to incidentally take migratory birds during military readiness activities authorized by the Secretary of Defense or the Secretary of the military department concerned. The Authorization Act further requires the Secretary to promulgate such regulations with the concurrence of the Secretary of Defense.

The USFWS published a final rule (Federal Register Volume 72, Number 39, February 28, 2007) that authorizes the Armed Forces for the incidental taking of migratory birds during military readiness activities. This final rule “... *authorizes such take, with limitations, that result from military readiness activities of the Armed Forces. If any of the Armed Forces determine that a proposed or an ongoing military readiness activity may result in a significant adverse effect on a population of a migratory bird species, then they must confer and cooperate with the Service to develop appropriate and reasonable conservation measures to minimize or mitigate identified significant adverse effects. The Secretary of the Interior, or his/her designee, will retain the power to withdraw or suspend the authorization for particular activities in appropriate circumstances.*”

This rule only includes military readiness activities. It specifically does not include routine operation of installation operating support functions (*e.g.*, administrative offices; military exchanges; commissaries; water treatment facilities; storage facilities; schools; housing; motor pools; laundries; morale, welfare, and recreation activities; shops; mess halls), operation of industrial activities, or construction or demolition of facilities relating to these routine operations.

The rule anticipates that installations will use the NEPA process to determine whether an ongoing or proposed military readiness activity is “*likely to result in a significant adverse effect on the population of a migratory bird species.*” If such significant adverse effects are likely, an installation is required to confer with the USFWS to develop and implement appropriate conservation measures to minimize or mitigate any such significant adverse effects. The Armed Forces will continue to be responsible for ensuring that military readiness activities are implemented in accordance with all applicable statutes including NEPA and ESA.

Withdrawal of authorization may be proposed if the Secretary [*of Interior*] determines that failure to do so is likely to result in a significant adverse effect on a population of a migratory bird species and one or more of the following circumstances apply:

- (A) The Armed Forces have not implemented conservation measures that (i) are directly related to protecting the migratory bird species affected by the proposed military readiness activity; (ii) would significantly reduce take of migratory birds species affected by the military readiness activity, (iii) are economically feasible, and (iv) do not limit the effectiveness of military readiness activities.
- (B) The Armed Forces fail to conduct mutually agreed upon monitoring to determine the effects of a military readiness activity on migratory bird species and/or the efficacy of the conservation measures implemented by the Armed Forces.
- (C) The Armed Forces have not provided reasonably available information that the Secretary has determined is necessary to evaluate whether withdrawal of take authorization for the specific military readiness activity is appropriate.

Final Rule – Migratory Bird Permits; Removal of Migratory Birds from Buildings

The USFWS published a final rule (Federal Register Volume 72, Number 193, October 5, 2007) that amended 50 CFR part 21 to allow removal of migratory birds (other than federally listed threatened or endangered species, Bald Eagles, and Golden Eagles) from inside buildings in which the birds may pose a threat to themselves, to public health and safety, or to commercial interests. This regulatory addition facilitates removal of birds from buildings, which would otherwise require a migratory bird permit.

Birds removed under this rule must be captured using a humane method and, in most cases, immediately released to the wild. *“This regulation does not allow removal of birds or nests from the outside of buildings without a permit. Removal of active nests from inside buildings must be conducted by a federally permitted migratory bird rehabilitator.”*

MCAS Miramar Migratory Bird Permit

The USFWS issued a Depredation-Airport Permit (MB815395, effective June 1, 2009 through May 31, 2010) to MCAS Miramar that covers take, temporary possession, and transport of injured birds to rehabilitation facilities to *“relieve or prevent injurious situations impacting public safety.”* Removal actions to alleviate excrement falling onto workspaces and aircraft have been deemed impacting public safety. The permit excludes federally listed threatened or endangered species, Bald Eagles, and Golden Eagles.

The permit cannot be used for situations where birds *“are merely causing a nuisance.”* Many conditions apply that should be reviewed as any specific actions are taken. Condition J of the permit authorizes persons employed by or under contract of MCAS Miramar to conduct specific activities in this permit. Standard Conditions for Migratory Bird Depredation Permits are included with the permit. Actions to exclude or preclude bird use of areas where incompatible with operations should be considered prior to any bird removal attempt.

Impacts of Migratory Bird Issues on Project Planning

As part of planning and/or approving construction, re-construction, and maintenance actions, steps need to be taken to avoid impacts on migratory birds, their nests, and young. Wording needs to be placed in all contracts and work orders to prevent work delay costs to the government that may result from the presence of bird nests in work areas. The Environmental Management Department, Natural Resources Division can provide contractual language prepared for and approved by the Navy for construction contracts on MCAS Miramar.

6.2 Mitigation Planning

Mitigation, as discussed here, is lessening adverse effects an undertaking may cause relative to natural resources. Mitigation can include the following actions (DoD Instruction 4715.3; Definitions):

- 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.

In general, regulatory agencies’ preferred order of performing mitigation is avoidance, then minimization, then compensation in kind, and then compensation out of kind. Mitigation 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. Generally, mitigation requirements in compensation for impacts by non-military actions on MCAS Miramar will be accomplished off-Station. Further, the Station cannot be used for mitigating impacts of actions occurring off MCAS Miramar that affect natural resources (DoD Instruction 4715.3, paragraph F.1.i(3)). Marine Corps Installation West Order 5090.1, *National Environmental Policy Act Standing Operating Procedures (NEPA SOP)* states that MCAS Miramar *“shall not be used to mitigate for 3d party (non-DoD) actions,”* and that use of MCAS Miramar *“lands for mitigation by other Services or any exception to this policy requires approval by the Commanding General, MCIWEST”*.

One typical form of mitigation is restoration of disturbed areas to compensate for lost resources (as noted above). Restoration of disturbed areas is one of the few means of creating additional habitat for Special Status Species, such as the Coastal California Gnatcatcher, on MCAS Miramar. Techniques to be considered include ripping and cultivating, seeding, transplanting, mulching, irrigating, and controlling weeds. Any restoration plan would contain a monitoring schedule, as well as performance standards (success criteria). As with other mitigation, early involvement of resource agencies is important. Regulatory agency approval of restoration/mitigation plans is usually required as a condition of ESA and CWA permit approvals. Techniques used to restore disturbed areas can also include soil mitigation, irrigation, inoculating with mycorrhizal fungi, planting of native plants, prescribed burning, imprinting, and use of herbicide.

Careful consideration will be given early in the planning process to the siting of proposed actions and potential compensating mitigation relative to MA designations (Chapter 5). As part of MCAS Miramar's ongoing efforts to avoid and/or minimize impacts on Special Status Species, vernal pool habitat, other wetlands, and constrained regional habitat linkages, first consideration for siting projects and activities will be given to the use of Level V, then Level IV MAs. Compensating mitigation actions will first be considered for siting in Level I and II MAs.

This will, in turn, enable planners to reduce costs (in terms of funding, manpower, and time) to plan, obtain regulatory approvals, and implement proposed actions. MCAS Miramar will also take into account areas where compensating mitigation actions have already been performed for natural resources regardless of the MA designation (Figure 5.1). Locating suitable mitigation sites on MCAS Miramar that will not conflict with military operation requirements is becoming increasingly difficult.

Persons planning and/or preparing mitigation actions need to be aware that military lands cannot be set aside as permanent environmental preserves. The DoD, and the Marine Corps in particular (Section 2.2, *Overview*), must maintain the flexibility to adapt its defense mission to political and technological developments (DoD Instruction 4715.3, paragraph F.1.i(4)).

The following briefly describes ongoing mitigation and presents mitigation planning information.

6.2.1 Mitigation Actions

Some projects and/or operations at MCAS Miramar result in damage to natural resources that cannot be avoided through planning and minimization efforts. Mitigation is an important part of these projects. Figure 5.1 identifies sites used for mitigation actions, and specific location mapping can be found in final restoration reports. Mitigation commitments that require continued management on MCAS Miramar include the following items.

- West Coast Basing of MV-22 Osprey at MCAS Miramar and MCAS Camp Pendleton compensation for the loss of vernal pool habitat (0.11 acres), coastal sage scrub vegetation (2.2 acres), and ephemeral streambed and associated wetlands (0.27 acres) (2009 Department of the Navy, Notice of Record of Decision, West Coast Basing of the MV-22 Aircraft; ESA Biological Opinion FWS-MCBCP-08B0678-09F0860; U.S. Army Sec. 404 CWA Permit (application in process); RWQCB Sec. 401 CWA Permit (application in process)); and
- P125 project for Replacement of Jet Fuel Underground Storage Tanks and Distribution System restoration of temporarily disturbed construction zone on site, enhancement of surrounding habitat, and compensation for California gnatcatcher habitat loss with 7.2 acres of coastal sage in Eastgate Mall parcel of the Station (reference ESA Biological Opinion 1-6-06-F-4755.2).

In addition to the above, planning has begun for mitigation associated with the Joint Strike Fighter F-35B stationing, potentially at MCAS Miramar.

Mitigation commitments already completed on Station include:

- Joint Regional Confinement Facility Southwest (Miramar Naval Consolidated Brig alteration and expansion), Navy (NAVFAC SW) purchased a permanent conservation easement for 8.9 acres of coastal sage scrub habitat on the Sycamore Westridge Parcel of the San Dieguito River Park (reference ESA Biological Opinion);
- Tank 9935 Area and Rose Creek Storm Water Outfall Basin, a fuel spill mitigation in Rose Canyon, which remediated and restored native vegetation to the contaminated site; Final Site Remediation Report submitted; Preliminary No Further Action letter received from Regional Water Quality Control Board;
- restoration of 0.6 ac of coastal sage scrub vegetation within the southeastern corner of the Flightline Area to compensate for impacts associated with repair and widening of Ammunition Road (reference ESA Informal Consult letter 1-6-98-I-32);



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- restoration of 0.4 acres of vernal pool habitat basin south of the Navy-Marine Corps Reserve Center that were damaged by tank training (reference ESA Biological Opinion 1-6-92-F-31);
- revegetation (restoration) of 25 acres of land in the Eastgate Mall portions of the Station to obtain 20 acres of coastal sage scrub vegetation to compensate for loss of 20 acres off-Station by the Eucalyptus Hills (Ridge) Navy housing development in Lakeside, CA (reference ESA Biological Opinion 1-6-93-F-33);

- creation of 8,250 square feet of vernal pool surface area and associated watershed in the northwestern portion of the Station (X1-3 Group) to compensate for vernal pools lost from construction of the West Coast Consolidated Brig (reference ESA Biological Opinion 1-6-87-F-34).
- replacement of Engelmann oak trees at a 5:1 ratio in San Clemente and West Sycamore canyons in compensation for impacts from the construction of the Rifle/Pistol Training Range Complex at MCAS Miramar (reference EA/FONSI, 22 June 2001);
- restoration of 0.50 acres of vernal pool habitat for impacts to San Diego fairy shrimp in compensation for maintenance, improvement and use of existing roads, lots, driveways, and loading docks at MCAS Miramar (reference ESA Biological Opinion 1-6-99-F-64); restoration work was completed in the Miramar Mounds National Natural Landmark area; and
- Mitigation obligations relative to impacts from the Realignment of NAS Miramar to MCAS Miramar, as described in the 1995 BRAC EIS (Ogden 1996), Biological Assessment (Ogden 1995), and Biological Opinion/Conference Opinion (1-6-95-F-33) for the realignment (USFWS 1996a).

Regarding mitigation for realignment of NAS Miramar to MCAS Miramar, the primary form of mitigation was restoration of previously degraded sites. Habitat mitigation actions beyond impact avoidance and on-site revegetation included restoration of 87.5 acres of coastal sage scrub at the west end of the Flightline, 1.03 acres of riparian wetland habitat in lower Murhpy Canyon on Station, and restoration of 9.4 acres of vernal pool habitat widely distributed throughout the Station.

All vernal pools in the G Parcel (Vernal Pool Management Unit 6, Group AA4-7) are to be preserved in partial fulfillment of the realignment action preservation commitment. The remaining mitigation commitment of 1.14 acres was met by preserving 1.14 acres of the 1.78 acres of vernal pools located south of State Route 52 (Vernal Pool Management Unit 9, Groups U-15, U-19, and F16-17) to minimize effects on military activities on MCAS Miramar. The Department of Navy also committed to preserving existing vernal pool habitat at a 1:1 on the Station.

It is important to note that with the exception of the BRAC commitment to preserve vernal pools at a ratio of 1:1 (prior to DoD Inst. 4715.3), no other habitat restoration commitments made to mitigate for resource impacts have committed to permanent preservation of restoration sites. While this is the case, compensating mitigation sites should be treated as though they have reached their restoration success criteria if ever considered for a use that would be incompatible with conservation of the resource.

6.2.2 Mitigation Planning Guidance

This section provides guidance for persons who are responsible for planning construction, facility maintenance, and other actions on MCAS Miramar that may adversely affect natural resources. This information needs to be reviewed and incorporated into early stages of the planning process to avoid and minimize adverse effects and, if necessary, plan for compensation of lost natural resources that are regulated by federal law or are otherwise important to the maintenance of the natural ecosystem of the Station. Where adverse impacts to threatened and endangered species, their habitat, or wetlands are involved, planners must demonstrate that such impacts have been avoided and minimized to the maximum extent practicable prior to proposing an action that will adversely affect these resources. This should be explained in relevant planning documents, such as Environmental Assessments, Environmental Impact Statements, Biological Assessments, and Clean Water Act permit applications. Often, these will be presented as “conservation measures” or “mitigation measures” to be implemented as a part of the proposed action.

This guidance directly applies to all activities involving a federal action affecting MCAS Miramar lands. Entities exercising rights granted under existing license, leases, easements, or any other form of permission are expected to follow this guidance as a minimum standard and as Station policy, to the extent applicable. As new

real estate documents are developed and modifications to existing permissions are prepared, the clear applicability of this guidance in the context of the entire INRMP will be reinforced. Some items of this guidance may not be applicable to all cases where no formal federal action is involved; however, applicable provisions of the California Environmental Quality Act (CEQA), Section 10 Endangered Species Act Habitat Conservation Plans, and/or other applicable environmental compliance permitting would likely require similar mitigation planning and execution. Nevertheless, this guidance should be used as a starting point for all project planning efforts as a means of maintaining a consistent approach.

Guidance provided in this section has been developed in coordination with the USFWS and U.S. Army Corps of Engineers. This guidance outlines general requirements that would commonly be expected to result from regulatory consultation and permitting processes in support of a proposed action. Additional project-specific requirements and details that are appropriate for a proposed action cannot be provided with this guidance since such specifics must be tailored to each individual project.

This guidance is not intended to replace planning, consultation, and conservation requirements discussed earlier in this chapter (6) with respect to the National Environmental Policy Act, ESA, and CWA. Rather, the guidance is intended to help planners with the following:

- evaluate environmental costs of siting facilities and actions;
- assist with impact avoidance throughout the planning process;
- minimize construction delays due to seasonal timing constraints; and
- identify potentially suitable mitigation for preparation of NEPA documents, biological assessments, and section 404 CWA permit applications.

Consideration of mitigation costs is important because they are a cost of any proposed action. In all cases, planners should expect that final mitigation details and requirements for a specific proposed action will be determined through applicable consultation and permitting processes in coordination with technical assistance provided by the Station's Natural Resource Division.

Mitigation costs are the responsibility of the action proponent. Avoidance or minimizing adverse impacts to natural resources should be a priority to reduce project costs. Likewise, regulatory permitting reviews and permit issuance can increase the timelines of all projects regardless of size (*e.g.*, replacing a carport can have migratory bird issues; land navigation training can have vernal pool habitat issues). Including these elements in the earliest project planning efforts can minimize expenses and timeline delays. For example, a project located within a species habitat may need to avoid construction activities during the breeding season. This time constraint can be more easily incorporated in the project timeline and contract requirements at the beginning of project planning and before contract award than later when contract modifications to stop work activities (per regulatory permit requirements) might add supplementary costs and failure to meet contract timelines.

6.2.2.1 Definition of Terms

For the purposes of interpreting this planning guidance, the following definitions are provided.

Developed -Area that is devoid of naturally occurring vegetation or is maintained in a continuous state of disturbance displaying primarily disturbance adapted plant species or bare ground. It is usually paved, graded or landscaped, with little or no short-term potential for colonization and succession of native plant communities. This type may have other vegetation/habitat types and regulated resources immediately adjacent that must be considered, such as the disturbed vegetation type and wetlands. Found in tables 5 and 6 under *Vegetation/Habitat Type* and in Section 4.2.15, *Developed*.

Disturbed Land - Areas where past or present physical disturbance (*e.g.*, grading, tilling, repeated vehicle use that has severely damaged plant root zones or removed above-ground plant cover) has caused the area to be covered by disturbance-adapted species or bare ground but have a potential to support native vegetation if left undisturbed. Found in tables 5 and 6 under Vegetation/Habitat Type and in 4.2.14, *Disturbed Habitat (Vegetation)*.

Growing/Breeding Season - The period within which active growth (plants) or breeding (animals) occurs. For wetlands, including vernal pool habitat and associated species, the growing/breeding season would occur during the rainy season or when the soil remains wet (about November through May, depending on annual precipitation). For other threatened and endangered species, the growing/ breeding season would generally be 15 February – 31 August.

Habitat Compensation (and “compensating”) - Action that compensates for lost habitat values and functions for the target resource by providing these habitat values at another site. Often accomplished by restoring habitat on a disturbed or degraded site but may also be accomplished by securing and permanently protecting habitat off of the Station to benefit the species.

Habitat Enhancement - Improvement of habitat values of a site through such methods as weeding, invasive plant control, trash removal, protective marking or fencing, soil stabilization, reseeding, and/or supplemental planting with native plants. Typically, habitat enhancement is intended to occur on sites that are unsuitable for restoration (see below) due to the presence of an established native plant community type. Habitat enhancement may often be feasible on the same site that is restored to original condition, following a temporary impact, if the pre-impact condition is a disturbed vegetation type, or “disturbed land”, and the goal is a higher quality end state. Enhancement work must be described in a plan, either in association with other restoration activities or separately. This plan must specify enhancement actions to be undertaken, anticipated benefits, and detailed, site-specific success criteria based on the needs of the Special Status Species involved. As much as is possible, planning for a specific proposed action should identify locations and site-specific enhancement methods and goals during biological assessment work.

Habitat Restoration (and “restore”) - Re-establishment of habitat values and functions (including soils, topography, hydrology, and key biota) for the target resource following some condition that caused severe degradation or loss of those on a site for the purpose of restoring a disturbed site to its pre-disturbance state. Evidence of the former existence of the target habitat on proposed restoration sites and connectivity to existing habitats are important factors to consider when selecting a restoration site. Restoration may be done on a recently disturbed site, such as that from a temporary construction action, or a site disturbed long ago.

Active Restoration/Revegetation Active restoration involves positive actions to improve soil stability, reduce erosion, establish vegetation by seeding or planting, irrigation of establishing plants during dry periods, specifically controlling competing species, applying amendments if necessary, maintenance and monitoring, and applying adaptive management during changing conditions.

Passive Restoration/Revegetation Passive restoration may include any combination of revegetation techniques (*e.g.*, erosion control device installation, native seed sowing, appropriate invasive species control, etc.) to assist open/disturbed areas revegetate in a naturally evolving manner with minimal active management following initial treatment. Sites should be checked periodically to ensure that invasive weeds are not invading, adequate soil protection is being realized, and that desired plants are becoming established at the site.

Where the pre-impact site condition was a disturbed vegetation type, “disturbed land”, or developed, additional restoration actions can be executed to meet enhancement and/or compensation commitments.

Occupied Habitat - Habitat known to be occupied by a species of interest during at least some period of the year.

Permanent Habitat Loss - For the purposes of this planning guidance, any action that does not meet the description of a Temporary Habitat Loss as provided in this guidance.

Temporary Habitat Loss - A disturbance causing damage to a naturally vegetated area that can once again support naturally occurring vegetation following cessation of the disturbance. Typically, this would be applicable to areas disturbed in association with a permanent loss or conversion of habitat where above-ground vegetation is removed and root zones are severely damaged or soil is severely compacted.

U.S. Army Corps of Engineers Regulated Vernal Pool - A vernal pool as defined by the Regional General Conditions to the Nationwide Permits published in a U.S. Army Corps of Engineers Special Public Notice dated November 25, 1997. This Public Notice defines a vernal pool and lists indicator species for vernal pools. As a result of 2001 Supreme Court Decision¹³, vernal pools that are isolated from navigable Waters of the U.S. may not be U.S. Army Corps of Engineers Regulated Vernal Pools.

Vernal pools - Wetlands that seasonally pond in small depressions as a result of a shallow, relatively impermeable layer (*i.e.*, clay or other impervious soil or rock layer) that restricts downward percolation of water. The dominant water source for vernal pools is precipitation with pools typically filling after fall and winter rains and evaporating during spring and summer. These seasonal ponds are fragile, easily disturbed ecosystems that provide habitat for indigenous, specialized assemblages of flora and fauna, including several species which are either proposed or already federally listed as threatened or endangered. It is important to differentiate between true vernal pools and other depressions that may look like vernal pools, such as road ruts, puddles, and ditches. The Natural Resources Division can provide assistance regarding identification of true vernal pools.

Wetlands/Waters of U.S. - Includes navigable waters (including intermittent streams), impoundments, tributary streams, and areas inundated or saturated by surface or ground water to the extent that they support vegetation adapted for growing in saturated soils (CWA regulatory discussion in Section 6.1.2, *Other Natural Resources Specific Compliance Considerations*).

6.2.2.2 Instructions for Using this Guidance

This section provides only general guidance for mitigation. Clarification and additional detail are required for its application to specific proposed actions. Project planners and contractors are expected to draw upon their internal resource specialists for detailing specific measures for a proposed action, which should then be verified with the Station Natural Resource Division.

Unplanned and unauthorized damage to natural resources regulated by the CWA and ESA can cause substantial project delays while supplemental authorization and permitting are obtained. There are special allowances for emergency situations in the regulations of NEPA, CWA, and the ESA. The definition of “emergency,” however, is very narrowly written to address actions that could not be planned for in advance or required immediate response.

Tables 6.2.2.2a and 6.2.2.2b provide mitigation guidance for **temporary** and **permanent** habitat loss, respectively. These tables rely on information provided in other chapters of this INRMP. Management area boundaries are identified and described in Chapter 5 (Figure 5.1). Vegetation types, vernal pool habitat, and

¹³ Solid Waste Agencies of Northern Cook County (SWANCC) vs. the U.S. Army Corps of Engineers.

threatened and endangered species¹⁴ are described in Chapter 4 along with maps showing the general distribution on the Station.

The following points are particularly important when planning mitigation.

- ***The quality of vegetation/habitat types affects compensation ratios for habitat impacts presented in tables 6.2.2.2a and 6.2.2.2b.*** When degraded vegetation/ habitat types are involved, ratios should be adjusted to achieve an equitable compensation. Thus, a lower compensation ratio would be appropriate where high quality habitat or off-Station habitat preservation is being offered for impacts to a degraded habitat and equivalent biological value to the target species or resource. Important factors when evaluating biological value include density of target species, proximity to the coast (for gnatcatcher, in particular, proximity to the coast is closely tied to biological value), importance for habitat connectivity, and contribution to long term regional conservation plans, such as the MSCP.
- ***Mitigation plans involving a threatened and endangered species or wetland often require regulatory approval prior to project approval and implementation.***
- ***Differentiate between true vernal pools and other depressions that may look like vernal pools, such as road ruts, puddles, and ditches.*** The loss of ***true vernal pools*** must be mitigated at least on a 1:1 ratio to achieve “no net loss” of wetlands; however, regulatory agencies typically require higher mitigation ratios due to uncertainties of complete replacement of functions and values. Contact the Natural Resources Division regarding the identification of true vernal pools. Planners must be aware that some vernal pool-associated species, including some of six vernal pool-associated threatened and endangered species, do occur in puddles, ruts, and ditches that pond water during the vernal time of the year. In such cases, mitigation for the loss of endangered species habitat may be required for sites not considered to be true vernal pools.
- ***Data within this INRMP and its associated maps should not be used without additional field verification and up-to-date and detailed project site evaluation.*** These data are provided to help with initial planning. Before budgeting supplemental surveys, planners should contact the Natural Resources Division for the most up-to-date resource data.
- ***Sensitive habitats and species are more susceptible to damage or harassment during active growing and breeding seasons; therefore, contract timelines are extremely important.*** This is especially true where vernal pool habitat occurs in close proximity to other threatened and endangered species. As such, careful project planning and coordination with the USFWS are necessary to minimize overall effects of a proposed action to all resources involved. See definition of ***Growing/Breeding Season*** in Section 6.2.2.1, *Definitions of Terms*. Action proponents and planners should consider these timeframes in early project development.
- ***Impacts to differing resources often can be phased or avoided through careful planning.*** For example, where impacts to vernal pool habitat can be avoided by careful conduct of activities, limitations on activities based on vernal pool habitat conservation needs would not apply while avoidance of other species sensitive periods could still apply. Where the conduct of activities cannot be planned to avoid these most sensitive periods, project specific authorizations and appropriate additional impact minimization measures should be planned for and expected from regulatory agencies.
- ***Identification of suitable sites for compensatory actions must be an early consideration when planning for impacts to natural plant communities and habitats.*** Authorizing resource agencies have specific requirements for siting compensatory mitigation actions. Usually for actions where habitat compensation is for permanent impacts, habitat restoration may only occur at degraded sites that would not naturally provide such resources in the reasonably foreseeable future. Suitable sites for

¹⁴ Do not rely exclusively on INRMP lists for these species as USFWS/CDFG/CNPS lists are updated regularly.

Table 6.2.2.2a. Mitigation Guidance for Temporary Habitat Loss

Vegetation/ Habitat Type[^]	Mgmt. Area Level	T/E Species* Occupied	Required Impact Avoidance, Minimization, and Compensation**	Consultation Required
Chaparral, Non-native and Mixed Grasslands, and Eucalyptus Woodland	All	No	Take action to minimize area of impact, soil loss, and sediment laden stormwater runoff; implement passive restoration of temporary disturbance areas.	No
		Yes	Above action plus active on-site restoration of T/E plants and suitable wildlife habitat plus enhancement at 1:1 ratio (if levels III, IV, and V) and 2:1 (if Levels I and II), targeting same habitat type. No habitat-disturbing activities between 15 February and 31 August.	Yes
Coastal Sage/ Chaparral Scrub, Coastal Sage Scrub, Native Grassland, and Oak Woodland	Level V	No	Take action to minimize area of impact, soil loss, and sediment laden stormwater runoff; implement passive restoration of temporary disturbance areas.	No
		Yes	Above action plus active on-site restoration of T/E plants and suitable wildlife habitat plus habitat enhancement at 1:1 ratio targeting enhancement of same habitat type. No habitat-disturbing activities between 15 February and 31 August.	Yes
	Levels I, II, III, and IV	No	Take action to minimize area of impact, soil loss, and sediment laden stormwater runoff; active restoration of temporary disturbance areas. Replace damaged oak trees at 5:1 ratio. Minimize habitat-disturbing activities between 15 February and 31 August.	No
		Yes	Above action plus on-site restoration of T/E plants and suitable wildlife habitat plus habitat enhancement at 1:1 ratio (if Levels III or IV) and 2:1 ratio (if Levels I or II), targeting the same habitat type. No habitat-disturbing activities between 15 February and 31 August.	Yes
Riparian, Open water, Streambed/ Channel, Marsh, Mulefat Scrub, and Willow/Oak	All	No	Take action to minimize area of impact, soil loss, and sediment laden stormwater runoff; passive restoration of temporary disturbance areas. CWA 404/401 permit required if delineation determines wetland involved. Implement wetland mitigation according to permit, including active restoration. Replace damaged oak trees at 5:1 ratio. Minimize habitat-disturbing activities between 15 February and 31 August.	Potentially Required*** Yes (if CWA jurisdictional Waters of U.S. involved)
		Yes	Above action plus active on-site restoration of T/E plants and suitable wildlife habitat plus habitat enhancement at 1:1 ratio (if Levels III or IV) and 2:1 ratio (if Levels I or II), targeting same habitat type, plus any additional wetland mitigation required. No habitat-disturbing activities between 15 February and 31 August.	Yes
Vernal pool watershed	All	No	Must clearly document that no T/E species are in vernal pool basins or watersheds. If no T/E species present and associated depression is a U.S. Army Corps of Engineers-regulated vernal pool, take action to avoid an increase or decrease of water quantity, sediment transport, and change in water quality runoff to pool basin. Sedimentation into basin must be prevented; or, CWA permit may be required. Minimize soil-disturbing activities during rainy season or when ground is wet (about 1 November to 1 June).	No

Table 6.2.2.2a. Mitigation Guidance for Temporary Habitat Loss

Vegetation/ Habitat Type [^]	Mgmt. Area Level	T/E Species* Occupied	Required Impact Avoidance, Minimization, and Compensation**	Consultation Required
		Yes	If presence/absence of T/E species not determined or T/E species are present in associated pool, take action to minimize area of impact and restore watershed (soil replacement/stabilization and revegetation). Monitoring of species in pool basin to document extent of actual impacts to T/E species may be required. If impacts documented to T/E species, then watershed enhancement is required to compensate for indirect impacts to the T/E species. No work around vernal pool during rainy season or when ground is wet (about 1 November to 1 June).	Yes
Vernal pool basin	All	No	Must clearly document that no T/E species are in vernal pool watershed and any T/E species will not be indirectly impacted by work in the watershed. If no T/E species are present, take action to minimize increase or decrease of water quantity, sediment transport, and change in water quality runoff to pool basin. Wetland permit may be required if the basin is adjacent to Waters of the U.S. For true vernal pools, restore area of impact and implementation habitat enhancement at 1:1 ratio, targeting same habitat types, and any other wetland mitigation required in accordance with CWA 404/401 permits and EO 11990. Salvage vernal pool soil (plants, seeds, cysts, and soil) and any other wetland mitigation required in accordance with permits. Salvage vernal pool soil (plants, seeds, cysts, and soil) in dry season prior to construction for restoration. No work in vernal pool during rainy season or when ground is wet (about 1 November to 1 June).	Potentially Required*** Yes, if CWA jurisdictional.
		Yes	If presence/absence of T/E species is not determined or T/E species are present, above action required plus habitat enhancement at 2:1 ratio (vice 1:1), targeting same habitat types and any additional wetland mitigation required by Clean Water Act permitting. No work around vernal pool during rainy season or when ground is wet (about 1 November to 1 June).	Yes
Developed	All	No	Take action to minimize erosion and sediment laden stormwater runoff.	No
		Yes	Minimize temporary direct and indirect impacts to adjacent habitat in accordance with T/E species present. Compensating mitigation may be required if impacts cannot be avoided to adjacent habitat and T/E species.	Yes

[^] For disturbed categories, refer to text instructions of this section for using guidance provided in this table. Mitigation ratios should be equitable with the quality of vegetation/habitat impacted. Project -pecific update of vegetation and land cover mapping must be done prior to determining appropriate mitigation ratios.

* Federally listed species only.

** See text (Section 6.2.2.1, *Definition of Terms*).

*** Contact MCAS Miramar Natural Resources Division for a determination.

Table 6.2.2.2b. Mitigation Guidance for Permanent Habitat Loss

Vegetation/ Habitat Type[^]	Mgmt. Area Level	T/E Species* Occupied	Required Impact Avoidance, Minimization, and Compensation**	Agency Consultation Required
Chaparral, Non-native and Mixed Grasslands, and Eucalyptus Woodland	All	No	Maintain a minimum width of 500 feet for wildlife movement corridors in Level I, II, and III areas. Implement temporary disturbance requirements. Some habitat compensation may be appropriate if impacts become significant to other sensitive or declining species based on the NEPA analysis.	No
		Yes	Above action plus T/E plant population and suitable wildlife habitat compensation for occupied habitat lost at 2:1 ratio. No habitat-disturbing activities between 15 February and 31 August.	Yes
Coastal Sage/ Chaparral Scrub, Coastal Sage Scrub, Native grassland, and Oak Woodland	Level V	No	Implement temporary disturbance requirements. Some habitat compensation may be appropriate if impacts become significant to other sensitive or declining species based on the NEPA analysis.	No
		Yes	Above action plus T/E plant population and suitable wildlife compensation for occupied habitat lost at 2:1 ratio elsewhere. No habitat-disturbing activities between 15 February and 31 August.	Yes
	Levels I, II, III, and IV	No	Maintain minimum width of 500 feet for wildlife movement corridors. Implement temporary disturbance requirements and habitat compensation at 1:1 ratio targeting same habitat type elsewhere. Replace damaged oak trees at 5:1 ratio. Minimize habitat-disturbing activities between 15 February and 31 August.	No
		Yes	Above action plus T/E plant population and suitable wildlife habitat compensation for occupied habitat lost at 2:1 (vice 1:1) elsewhere. No habitat-disturbing activities between 15 February and 31 August.	Yes
Riparian, Open water, Streambed/ Channel, Marsh, Mulefat Scrub, and Willow/Oak	All	No	Maintain a minimum width of 500 feet for wildlife movement corridors in Level I, II, and III areas. Implement temporary disturbance requirements. Wetland permit may be required if delineation determines wetland involved; compensation for wetland habitat loss at a 1:1 ratio to achieve “no net loss” plus any other mitigation required by CWA 404/401 permits. Replace damaged oak trees at 5:1 ratio. Minimize habitat-disturbing activities between 15 February and 31 August.	Potentially Required*** Yes (if jurisdictional Waters of U.S. involved)
		Yes	Above action plus T/E plant population and suitable wildlife habitat compensation for occupied habitat lost at 2:1 ratio (habitat compensation may also meet wetland mitigation requirement). No habitat-disturbing activities between 15 February and 31 August.	Yes
Vernal pool watershed	All	No	Must clearly document that no T/E species are in vernal pool watershed and any T/E species will not be indirectly impacted by work in the watershed. If no T/E species present and depression is a U.S. Army Corps of Engineers-regulated vernal pool, take action to avoid an increase or decrease of water quantity, sediment transport, and change in water quality runoff to pool basin.	No

Table 6.2.2.2b. Mitigation Guidance for Permanent Habitat Loss

Vegetation/ Habitat Type [^]	Mgmt. Area Level	T/E Species* Occupied	Required Impact Avoidance, Minimization, and Compensation**	Agency Consultation Required
			Sedimentation into basin must be prevented; otherwise CWA permit may be required. Minimize soil-disturbing work around vernal pool during rainy season or when ground is wet (about 1 November to 1 June). Some habitat compensation may be appropriate if impacts become significant to other sensitive or declining species based on the NEPA analysis.	
		Yes	If presence/absence of T/E species not determined or T/E species are present, enhance remaining portions of watershed (protection by fencing or other means, enlarge another portion); monitoring species in pool basin may be necessary to document extent of actual impacts to T/E species. If impacts documented to T/E species, then additional action required for indirect impacts to the T/E species by habitat enhancement, possibly elsewhere. No work around vernal pool during rainy season or when ground is wet (about 1 November to 1 June).	Yes
Vernal pool basin	All	No	Must clearly document that no T/E species are in vernal pool basins or watersheds. Wetland permit may be required because wetland is impacted. Compensating mitigation required for impacts in accordance with applicable CWA 404/401 permits (plan for 3:1 ratio). If not regulated by CWA, mitigate true ^{^^} vernal pool at 1:1 to achieve “no net loss.” Salvage vernal pool soil (plants, seeds, cysts, and soil) in dry season prior to construction for mitigation. No work in vernal pool during rainy season or when ground is wet (about 1 November to 1 June).	Potentially required *** Yes, if CWA jurisdictional.
Vernal pool basin	All	Yes	If presence/absence of T/E species not determined or T/E species are present, above actions plus compensation for loss of vernal pool basin area are required at 3:1 ratio plus any additional wetland mitigation required. No work around vernal pool during rainy season or when ground is wet (about 1 November to 1 June).	Yes
Developed	All	No	Implement temporary disturbance requirements.	No
Developed	All	Yes	Minimize temporary direct and indirect impacts to adjacent habitat in accordance with T/E species present. Compensating mitigation may be required if impacts cannot be avoided to adjacent habitat and T/E species.	Yes

[^] For disturbed categories, refer to text instructions of this section for using guidance provided in this table. Mitigation ratios should be equitable with the quality of vegetation/habitat impacted. Project-specific update of vegetation and land cover mapping must be done prior to determining appropriate mitigation ratios.

* Federally listed species.

** See text (Section 6.2.2.1, Definition of Terms).

*** Contact MCAS Miramar Natural Resources Division for a determination.

^{^^} Differentiate between true vernal pools (naturally occurring) and other depressions that may look like vernal pools, such as road ruts, puddles, and ditches. Planners should contact the Natural Resources Division regarding the identification of true vernal pools.

permanent habitat compensation that do not infringe on operational requirements are becoming increasingly rare on MCAS Miramar. Compensation for habitat impacts should be considered in areas beyond Station boundaries. Compensating mitigation requirements for impacts by nonDoD actions on MCAS Miramar need to be planned to occur off of the Station (Marine Corps Installations West Draft Order 5090.1 (3a(1)(e)(iii))).

- ***Utilization of off-Station opportunities for compensation or habitat created in advance that is “banked” may warrant differing mitigation ratios than those presented in this guidance.*** In all cases, however, much of this planning guidance will be applicable regardless of the mitigation site location. For initial planning of projects and actions, this guidance provides the best starting point for estimating mitigation requirements.
- ***Costs of mitigating impacts to natural resources should be considered when evaluating proposed action alternative locations and planning for funding.*** Mitigation must be treated as part of the project that will be fully funded by the action proponent. Conservation and restoration sites should be equivalent to the impacted habitat in terms of biological value to target species. Important factors when evaluating biological value include density of target species, proximity to the coast, and importance for habitat connectivity. Where feasible, compensating mitigation sites that are closer to the Station should be preferred so that the impacts are more directly offset. Some environmental authorizations and permitting require mitigation funding to be secured and assured prior to causing adverse affects. Resource mitigation costs can be highly variable depending on specific details of the project (*e.g.*, extent of habitat impacts, type of habitat impacted, duration of impacts, habitat compensation site conditions, and technologies). Providing actual cost estimates for mitigation on a “per acre impacted” basis is too variable to be presented here. Technical natural resource specialists should be contacted during project planning to assist with estimating likely mitigation costs associated with a proposed action. Cost considerations for impact prevention during action implementation need to be accounted for, as well as habitat restoration and/or compensation (*i.e.*, biological monitoring, placing protective signs/fencing, sedimentation controls, etc).
- ***Effects on future land use must also be considered.*** These “costs” can seriously affect the future flexibility of military mission accomplishment on the Station. As an example, if one acre is permanently lost and must be compensated for at a 2:1 ratio due to its high value, the compensation would require restoring two acres of habitat elsewhere. The two acres of habitat created in compensation for the one-acre lost, must then be treated as high habitat value where those acres previously had a very low habitat value. As an example of wetland mitigation, MCAS Miramar was required to mitigate construction impacts on 1.2 acres associated with BRAC via the creation/restoration of 2.4 acres of wetlands at two sites. This resulted in twice the amount of regulated wetland habitat on Station as was developed.

6.2.2.3 General Mitigation Requirement for All Actions

Many components of mitigation actions are common to most situations. The following mitigation measures should be planned for all proposed actions unless a determination can be made, in consultation with Natural Resource Division staff, that they are not appropriate.

- Because the primary purpose of mitigation is to lessen the severity of an action, the first step in mitigation planning should be ***avoidance of impacts***. Once avoidance has been implemented to its fullest extent, remaining impacts should be minimized prior to consideration of off-site compensation. This must be the first step in the mitigation planning process because numerous regulatory authorizations require demonstration of maximum impact avoidance and minimization before authorization may be given (Section 6.1.2, *Other Natural Resources Specific Compliance Considerations*).

- **Indirect effects** of a proposed action must be addressed when planning mitigation. Indirect effects have an impact at some point later in time. This may be the case where use and maintenance of a new facility is likely to have an adverse effect beyond the building “footprint” following construction. For example, fencing may be necessary to prevent landscape maintenance and concentrated human foot traffic from damaging naturally occurring resources that were avoided by construction of a building. Often, maintenance and safety considerations associated with new or re-utilized facilities, such as wildfire fuel breaks, are overlooked by planners and are not realized until use is implemented. Such considerations must be treated as part of the initial project and mitigated accordingly.
- In addition to direct habitat loss, **less tangible direct and indirect effects** may result from a proposed action. These potential effects must be evaluated and mitigated. A common concern is noise associated with construction and subsequent use that extends beyond the immediate work or activity area. As a general rule, noisy construction activities need to be kept far enough away from noise-sensitive threatened and endangered species such that the level in the occupied habitat varies little from background. With least Bell’s vireos and California gnatcatchers, separation of at least 500 feet from active nests is often required if the breeding season cannot be avoided. Other examples include outdoor lighting that may require shielding, visual harassment by human activities and equipment operation, changes to wetland hydrology, and sedimentation from construction sites to wetlands. Often temporary effects that may result from construction are avoided by performing work outside sensitive breeding and growing seasons, as presented in this planning guidance. Other effects that are likely to have a longer or permanent adverse effect must be mitigated.
- Threatened or endangered species **presence or absence determinations** must be made using survey guidelines developed by the USFWS or other means acceptable to them. Where no such guidelines or protocols exist, surveys must be conducted by qualified persons (as defined below) using methods recognized and accepted in the professional consulting field. When making presence/absence determinations relative to a project, areas where indirect effects may affect species must be considered as well. If a site is used by a species for some important part of their life cycle, it is considered occupied regardless of the presence of the species at any one time. Survey protocols have been developed for the California Gnatcatcher, Least Bell’s Vireo, and fairy shrimp.
- A **biological monitor** should be retained to educate workers, oversee and implement impact avoidance and minimization, document impacts, and guide revegetation efforts for all proposed actions that require active avoidance or will actually affect threatened or endangered species or wetlands (including vernal pool habitat), require active revegetation, or require habitat compensation. At a minimum, this individual must have: (1) a bachelor’s degree with an emphasis in ecology, natural resource management or related science; (2) demonstrated local experience with the resource(s) involved; and (3) a good understanding of the regulations regarding wetlands and endangered species.
- Proposed actions must include requirements for **impact avoidance and minimization measures** as part of implementation of any proposed action. Measures, which should be considered as applicable, are worker environmental protection briefings, signs, markers, protective fencing, biological monitoring, erosion and sedimentation prevention, noise baffling, and temporary impact restoration. These should be included as part of the environmental protection plan for all standard operating procedures, work requests, and contracts during planning.
- **Migratory birds** are generally protected by the Migratory Bird Treaty Act and implementing regulations and orders. Planners must review proposed actions with regard to conduct of actions during the active breeding season (may be January-September) and project-caused loss of traditionally used nesting/roosting sites. Habitat clearing activities should be timed to avoid the breeding season to maximum extent practicable to avoid damage to active bird nests. Compensation for the loss of traditionally used nesting/roosting sites may be an issue for raptors and colonial nesters, such as herons. All contracts and work orders prepared for MCAS Miramar must include provisions in the Environmental Protection section that prohibit harming, damage, or destruction of active bird nests

while requiring “work arounds” without incurring additional cost. The Natural Resource Division can provide contractual language for construction contracts on MCAS Miramar.

- Mitigation actions that are accomplishing **habitat compensation or enhancement** on the Station should be planned to occur in level I, II, or III MAs if at all possible, in that order. Consideration of off-Station sites should also be done since using those locations would not limit on-Station flexibility. Site evaluations and approvals for habitat compensation and enhancement must be initiated concurrently with proposed action planning, whenever possible. The ideal situation would be for the actual habitat work to start concurrently or before the action causing an impact.

All actions that require active habitat restoration, enhancement, and/or compensating mitigation should have an appropriate mitigation plan developed prior to implementation. Such plans must discuss site conditions, methods to be implemented, monitoring and maintenance (usually 3-5 years), success criteria, remedial actions if expected success is not being achieved, and reporting requirements. The plans must ensure that all applicable requirements of regulatory approvals are incorporated. Often, regulatory agencies require that they have an opportunity to review and approve plans where their authorization for resource impacts is provided. Regardless, review and approval of plans must be finalized through the Natural Resources Division on MCAS Miramar.

6.2.2.4 Conclusion

Although this guidance has been prepared in coordination with the USFWS and U.S. Army Corps of Engineers, following any or all of this guidance criteria does not replace required regulatory consultations and permitting. Planners should be able to minimize unexpected planning and implementation costs and time delays by applying these guidance criteria to actions and construction proposed on MCAS Miramar.

6.2.3 Planning Alternatives for Future Mitigation

6.2.3.1 Off-Installation Mitigation

Given existing constraints to land use at MCAS Miramar, the use of existing and/or creation of mitigation/conservation banks off of the Station as an option for meeting natural resources mitigation requirements shall be given serious consideration as a preferred approach. Conservation/mitigation banking is defined as “*Actions taken to compensate for future adverse effects of undertakings by providing resources or environments in advance of any specific undertaking*” (DoD Instruction 4715.3). The primary objective of mitigation banking is to receive credit for habitat improvement or conservation that can be used, sold, or purchased as compensation for impacts elsewhere.

In recent years, many large-scale mitigation land banks have been established in California. With many conservation banks in operation or being established, San Diego County has opportunities (<http://www.dfg.ca.gov/habcon/conplan/mitbank/catalogue/catalogue.html>) to provide off-Station mitigation (e.g., Daley Ranch, Crestridge, Cornerstone Lands, and Pilgrim Creek Conservation Banks). Currently, NAVFAC Southwest, on behalf of MCAS Miramar, is in the process of purchasing Coastal Sage Scrub mitigation credits from the Daley Ranch Conservation Bank in Escondido in compensation for the loss of similar habitat on the Station (in this case, not occupied by threatened or endangered species).

Purchase of conservation easements can also provide a means for securing compensatory mitigation. In late 2009 the Naval Facilities Engineering Command Southwest completed a final off-Station, perpetual and irrevocable, conservation easement (San Dieguito River Valley Regional Open Space Park Joint Powers Authority and Naval Facilities Engineering Command Southwest 2009), whereby 8.9 acres of habitat owned by the San Dieguito River Valley Regional Open Space Park Joint Powers Authority is being conserved in compensation for permanent impacts to coastal California gnatcatchers and their habitat from the Navy Joint

Regional Confinement Facility Southwest (brig) alteration and expansion project on MCAS. Since the Brig is managed through Naval Base Point Loma, any long-term habitat restoration, maintenance, and/or monitoring of this easement will not require MCAS staff actions.

Off-station opportunities for compensating mitigation through purchase of mitigation credits, perpetual conservation easements, and similar arrangements consistent with regional conservation plans and installation buffering shall be considered favorably as a preferred method for providing natural resource mitigation. Although off-installation options may not be available or preferred in all situations, or for all resource types, such an approach maintains future land use flexibility on the Station to support military readiness. When comparing cost, indirect costs of staff time needed to manage on-station restoration efforts and loss of land use must be considered in addition to direct costs.

According to MCIWEST Draft Order 5090.1 (3a(1)(e)(iii)(c), *“Participation in off-Base mitigation programs maximizes land available for military training and other mission requirements and reduces restrictions on USMC land use. Use of off-installation mitigation, however, is expected to be more expensive and requires a case-by-case analysis and determination by the installation commander. Decisions to use off-installation mitigation for Marine Corps actions within the MCIWEST AOR require notification and concurrence of the Commanding General, MCIWEST. Staffing of related real estate licenses and/or Encroachment Partnering Agreements through MCIWEST will satisfy this requirement.”*

6.2.3.2 Encroachment Partnering

Under authority of the Readiness and Environmental Protection Initiative (within Section 2811, FY 2003 National Defense Authorization Act) installations *“may enter into an agreement with a State or private entity to limit development or property use that is incompatible with the mission, to preserve habitat, or to relieve anticipated environmental restrictions that would restrict, impede, or interfere with military training, testing, or operations on the installation”* (U.S. Department of Defense and U.S. Fish and Wildlife Service 2004).

The primary objective of the environmental partnering program is to ensure that encroachment does not threaten the ability on an installation to achieve its mission objectives and support military readiness. Environmental partnering is a cost effective means to limit incompatible land use and support local conservation efforts. The Marine Corps, however, is not interested in expanding its land holdings. The Marine Corps’ vision and approach to creating land and conservation buffering partnerships on an installation has the following components:

- maintain integrity of military installation,
- conserve open space and natural resources, and
- enhance community’s quality of life.

Usually, a non-governmental organization, such as The Nature Conservancy or The Trust for Public Lands, acquires either the land or easements on the land from willing sellers on behalf of the partnership. If an easement is purchased, the landowner can usually remain on the land and conduct their preferred lifestyle, whether it is forest management, ranching, or whatever. These lands will be managed in perpetuity in a manner to conserve the ecosystem and limit urbanization along the military installation boundaries. Real property interest will normally take the form of a restrictive easement. Lands acquired under this authority are not to be directly used (*e.g.*, maneuver or other training) for military purpose. Indirect use (*e.g.*, overflights, noise) is permitted.

Notable successes with this process are on many military installations, including Marine Corps installations Camp Pendleton, Camp Lejeune, and MCAS Beaufort. A 2008 DoD report to Congress¹⁵ on the status of the Readiness and Environmental Protection Initiative (installation buffer zones) stated the program, “... is an effective tool to protect military readiness, meet Service priorities, and leverage public funds. In addition, REPI partnerships provide a broad range of secondary benefits. REPI is embraced by its many stakeholders and partners as making an important contribution to national defense while also advancing important natural resource stewardship and land use planning goals and policies.”

A 2007 RAND Corporation study¹⁶ of the Readiness and Environmental Protection Initiative stated, “The key to combating this issue is speed... A number of these bases don’t have the immediate funding or partnerships to compete with development pressures and buffer additional land, which in the long-term would save them money due to increases in property values over time... In many cases, the clock is ticking.... Once the opportunity to purchase undeveloped land has passed, it will be very difficult and expensive to buffer these bases.”

Through coordination for Camp Pendleton's Buffer Lands Acquisition Program, the USFWS stated¹⁷, “we recommend that both MCB Camp Pendleton and MCAS Miramar consider conservation opportunities for listed species within western San Diego County (approximately west of the crest of the Peninsular Mountain Range), western Riverside County (west of Banning Pass and the crest of the San Jacinto Mountains), and Orange County, as these areas contain the great majority of occurrences of listed species on MCB Camp Pendleton and MCAS Miramar.” The USFWS continued by stating, “The use of offsite conservation and restoration to offset impacts to listed species is a novel approach for MCB Camp Pendleton and MCAS Miramar, so we encourage continued close coordination with our office on the development of the crediting program and on the suitability of offsite conservation/restoration opportunities for addressing project-related impacts.”

Since the inception of the Readiness and Environmental Protection Initiative Buffer lands program, Camp Pendleton has completed three projects totaling 1,294 acres. The Lauderbaugh project, completed in 2008, protects a critical wildlife corridor that links the Base to other open spaces throughout southern California, which helps ensure the long-term viability of wildlife populations on Camp Pendleton and limits further fragmentation and isolation of Base-managed populations of sensitive species. The project also helps preserve water quality and flow and provides passive recreational opportunities. The Margarita Peak and Twaddle projects, both completed in 2007, buffered and helped protect military live-fire and airspace operations, and they also preserve habitat for sensitive species.

California’s Wildlife Action Plan (Bunn *et al.* 2007) uses Camp Pendleton’s contribution to the regional network of conservation lands and specifically identifies the need to similarly protect habitats on lands adjacent to MCAS Miramar. The Action Plan recommends protection of land adjacent to MCAS Miramar. Such protection would both support the goals of the Action Plan and buffer MCAS Miramar from development that may not be compatible with the Station’s military mission. Action Plan implementation would also provide

¹⁵ *Readiness and Environmental Protection Initiative*. May 2008. Second Annual Report to Congress. Deputy Under Secretary of Defense for Installations & Environment, Washington, DC.

¹⁶ *The Thin Green Line: An Assessment of DoD’s Readiness and Environmental Protection Initiative to Buffer Installation Encroachment*. June 2007 Press Release, RAND Corporation, Office of Media Relations.

¹⁷ Ecological Services, Carlsbad Fish and Wildlife Office, Carlsbad, CA. Dec. 9, 2009, letter to Commanding Officer, Marine Corps Base, Camp Pendleton, CA, *Buffer Lands Acquisition Program and Offsite Conservation for Marine Corps Base Camp Pendleton and Marine Corps Air Station Miramar, San Diego County, California*.

suitable mitigation opportunities beyond installation boundaries. Encroachment partnering offers an excellent opportunity to meet the goals of both the Wildlife Action Plan and this INRMP.

MCAS Miramar took advantage of conservation buffering with regard to off-Station mitigation for coastal sage scrub vegetation affected by the Veterans Administration's Fort Rosecrans Cemetery Annex project. A resulting conservation easement and preservation agreement with the City of San Diego secured acreage to the southeast of MCAS Miramar that is contiguous with Mission Trails Regional Park.

A 2007 workshop for integrating Wildlife Action Plans with implementation of INRMPs was hosted by the Carlsbad USFWS office. MCAS Miramar was represented at this workshop. Since then, annual INRMP implementation meetings among the USFWS, CDFG, and MCAS Miramar have continued these discussions. MCAS Miramar is interested in continuing this dialog and looks forward to mutual advantages of implementing this INRMP and the 2012-anticipated revision of the Wildlife Action Plan.

6.2.3.3 Conservation Agreements

A conservation agreement is a formal, written document agreed to by the USFWS and other cooperators that identifies specific actions and responsibilities for which each party agrees to be accountable. The objective of a conservation agreement is usually to reduce threats to a candidate or proposed species or its habitat, possibly lowering the listing priority or eliminating the need to list the species. Conservation agreements are usually less restrictive than mitigation banks and do not require transfer of ownership (Foreman 1997). When appropriate, MCAS Miramar will consider conservation agreement options.

6.2.3.4 Planning Considerations

If mitigation banking and/or conservation agreements are considered, there must be early involvement of USFWS and other agencies. Terms and conditions of future biological opinions that involve the set-aside or special management of habitat would draw on a mitigation bank or conservation agreement. This would allow comprehensive long-term mitigation planning, rather than project-specific or activity-specific mitigation.