FINAL

INTEGRATED NATURAL RESOURCES MANAGEMENT PLAN MARINE CORPS MOUNTAIN WARFARE TRAINING CENTER BRIDGEPORT, CALIFORNIA

FEBRUARY 2018

***Prepared For*:**

Marine Corps Mountain Warfare Training Center
Bridgeport, California

***Prepared by*:**

Amec Foster Wheeler Environmental & Infrastructure, Inc.
San Diego, California 92123

***Under Contract With*:**

Commander, Navy Region Southwest
&
Naval Facilities Engineering Command Southwest
San Diego, California 92132
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Integrated Natural Resources Management Plan
Marine Corps Warfare Training Center
Bridgeport, California

This Integrated Natural Resources Management Plan (INRMP) meets the requirements of the Sikes Act Improvement Act (SAIA, as amended) of 1997 (16 US Code [USC] § 670a et seq., as amended), United States Department of Defense Instruction (DoDI) 4715.03 "Environmental Conservation Program", and Marine Corps Order (MCO) P5090.2A, *Environmental Compliance and Protection Manual*.

Approving Official – United States Marine Corps, Marine Corps Training Center Bridgeport, California

Approved by: _____ 8 May 2018
James E. Donnellan, Colonel **Date**
Commanding Officer
Marine Corps Warfare Training Center
Bridgeport, California

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Concurring Agency – United States Fish and Wildlife Service

Approved by:

12/11/2017

Carolyn W. Swed
Field Supervisor
U.S. Fish and Wildlife Service
Reno, Nevada

Date

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Concurring Agency – California Department of Fish and Wildlife

Approved by:

Leslie MacNair — Date: 1/30/18

Leslie MacNair
Regional Manager
California Department of Fish and Wildlife

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Concurring Agency – Nevada Department of Wildlife

Approved by: Jack Robb — 12-11-17

Nevada Department of Wildlife — **Date**

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Concurring Agency – United States Forest Service, Humboldt-Toiyabe National Forest

Approved by:

William A. Dunkelberger **Forest Supervisor** **U.S. Forest Service, Humboldt-Toiyabe National Forest**	**Date**

EXECUTIVE SUMMARY

The Integrated Natural Resources Management Plan (INRMP) is the primary guidance document and tool of the United States Marine Corps (USMC) for managing natural resources at Marine Corps Mountain Warfare Training Center Bridgeport (MCMWTC). MCMWTC is composed of approximately 62,960 acres over many parcels, primarily in California, with land administered by multiple federal, state and private entities. Only a small part of the area that comprises MCMWTC is under the exclusive use of the USMC; the remainder is open to use by the public. The primary purpose of MCMWTC is provide the USMC and other United States Department of Defense (DoD) entities the ability to train in mountain conditions. MCMWTC, due to its geographic location and the size of the facility, contains diverse habitats and species that require natural resources management. The natural resources management on MCMWTC must be conducted in a way that provides for sustainable land use, complies with applicable environmental laws and regulations and real estate leases and licenses, and provides for no net loss in the capability to support the military mission. It also must be done in cooperation with the United States Forest Service (USFS) as most of MCMWTC is available to the USMC via Special Use Permits (SUPs) issued by the USFS. This INRMP provides a structure and plan to manage natural resources more effectively and ensures that MCMWTC facilities remain available to support the installation's military mission into the future.

The Sikes Act Improvement Act (SAIA) of 1997, 16 US Code (USC) § 670a et seq., as amended, requires federal military installations with significant natural resources to develop a long-range INRMP and implement cooperative agreements with other agencies. An INRMP is required by DoD and USMC Policy for MCMWTC because the USMC conducts military training on the installation and conservation measures are required to manage the natural resources. This INRMP is a new INRMP, developed in cooperation with USFS, along with cooperation from United States Fish and Wildlife Service (USFWS), the California Department of Fish and Wildlife (CDFW), and the Nevada Department of Wildlife (NDOW). It is required as a result of the presence of significant natural resources, including documented federally and state listed species, critical habitat for federally listed species, and significant water resources and vegetation management, potentially including prescribed fire. The INRMP is intended to be consistent with the SAIA. Specific goals identified by the INRMP are:

- GOAL 1: Provide good stewardship to protect, manage, and enhance the land, water, and natural resources of MCMWTC while fulfilling the military mission.
- GOAL 2: Provide the organizational capacity, support, funding, and communication necessary for effective strategic planning, implementation of this INRMP, and management of the installation's natural resources.

These goals are supported in the INRMP by objectives, policies, and actions to achieve these goals. The objectives, policies, and actions are divided into separate resource areas, such as soil management, wetlands and water management, vegetation management, threatened and endangered (T&E) species management, outdoor recreation, etc. This INRMP provides a description of the installation and the military missions, the environment on the installation,

and specific natural resource management designed for sustainable military training. The implementation of this INRMP will ensure the successful accomplishment of the military mission while promoting adaptive management that sustains ecosystem and biological integrity and provides for multiple uses of natural resources. It will also ensure that management efforts of the USMC at this facility is consistent, integrated and with as little redundancy as possible.

SUMMARY OF UPDATES

This page summarizes updates that apply to this Integrated Natural Resources Management Plan (INRMP) for Marine Corps Mountain Warfare Training Center Bridgeport (MCMWTC) in California. These are changes that have been identified by United States Marine Corps, but not yet incorporated into the text of the INRMP. This list of updates will be provided during annual reviews.

Summary of Updates for MCMWTC INRMP		
Date	**Applicable Section(s)**	**Change**

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ACRONYMS AND ABBREVIATIONS

°F	degrees Fahrenheit
AGL	above ground level
AOP	Annual Operating Plan
BCC	Birds of Conservation Concern
BGEPA	Bald and Golden Eagle Protection Act
BLM	Bureau of Land Management
BMP	best management practices
BO	Biological Opinion
BRD	Bridgeport Ranger District
CA	Conservation Area
Cal-IPC	California Invasive Plant Council
CALVEG	Classification and Assessment with Landsat of Visible Ecological Groupings
CAR	Critical Aquatic Refuges
CATEX	Categorical Exclusion
CCVI	Climate Change Vulnerability Index
CDFW	California Department of Fish and Wildlife
CESA	California Endangered Species Act
CFR	Code of Federal Regulation
CMFHA	Coleville Military Family Housing Area
CNPS	California Native Plant Society
CO	Commanding Officer
COC	Combat Operation Centers
CPLO	Community Plans and Liaison Office
CRPR	California Rare Plant Rank
CWA	Clean Water Act
dbh	diameter at breast height
DoD	United States Department of Defense
DoDI	United States Department of Defense Instruction
DoN	United States Department of Navy
DPS	Distinct Population Segment
DZ	Drop Zone
EA	Environmental Assessment
EMS	Environmental Management System
EO	Executive Order
ERL	Environmental Readiness Level
ERP	Environmental Restoration Program
ESA	Endangered Species Act
FMP	Fire Management Plan
FP	Fully Protected
FSM	Forest Service Manual
FY	fiscal year
GIS	Geographical Information System

ACRONYMS AND ABBREVIATIONS (Continued)

HQ	Headquarters
HQMC	Headquarters Marine Corps
HTNF	Humboldt Toyaibe National Forest
HUC	Hydrologic Unit Code
ICRMP	Integrated Cultural Resources Management Plan
INRMP	Integrated Natural Resources Management Plan
IPM	Integrated Pest Management
IPMC	Integrated Pest Management Coordinator
IPMP	Integrated Pest Management Plan
LAB	lacustrine aquatic bed
Legacy Program	Legacy Resource Management Program
LLC	Limited Liability Company
LOP	Limited Operating Period
LUB	lacustrine unconsolidated bottom
LZ	Landing Zone
MAGTFTC	Marine Air Ground Task Force Training Command
MBTA	Migratory Bird Treaty Act
MCMWTC	Marine Corps Mountain Warfare Training Center
MCO	Marine Corps Order
Metrics	Natural Resources Metrics
MIS	Management Indicator Species
MLO	Military Liaison Officer
mm	millimeter
MOA	Memoranda of Agreement
MOU	Memorandum of Understanding
MOUT	Military Operations in Urban Terrain
NAC	Nevada Administrative Code
NAVFAC	Naval Facilities Engineering Command
NDOW	Nevada Department of Wildlife
NEPA	National Environmental Policy Act
NGO	non-governmental organization
NNHP	Nevada Natural Heritage Program
NRCS	Natural Resources Conservation Service
O&M	Operations and Maintenance
OEF	Operation Enduring Freedom
OHV	off-highway vehicle
OIF	Operation Iraqi Freedom
PAC	Protected Activity Center
PARC	Partners in Amphibian and Reptile Conservation
PEM	palustrine emergent
PFO	palustrine forested
PIF	Partners in Flight
PMU	Population Management Unit

ACRONYMS AND ABBREVIATIONS (Continued)

PSS	palustrine scrub-shrub
PUB	palustrine unconsolidated bottom
RCA	riparian conservation areas
RCMP	Range Complex Management Plan
REIR	Request for Environmental Impact Review
RHU	Relocatable Housing Unit
RMO	Road Management Objectives
ROD	Record of Decision
RPAC	Regional Planning Advisory Committee
SAIA	Sikes Act Improvement Act
SDZ	Surface Danger Zone
SecNAV	Secretary of the Navy
SR	State Route
SSC	Species of Special Concern
SUP	Special Use Permit
SWAP	State Wildlife Action Plan
SWPPP	Stormwater Pollution Prevention Plan
T&E	threatened and endangered
TA	Training Area
TC	Transit Corridor
U.S.	United States
USACE	United States Army Corps of Engineers
USC	US Code
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
USMC	United States Marine Corps
USNVC	United States National Vegetation Classification Standard
WFMP	Wildland Fire Management Plan
WRCC	Western Regional Climate Center
WUI	Wildland Urban Intermix
WUS	Waters of the United States

SECTION 1
OVERVIEW

1.1 Purpose

The purpose of this Integrated Natural Resources Management Plan (INRMP) is to provide Marine Corps Mountain Warfare Training Center Bridgeport, California (MCMWTC) with a long term (10 to 20 years) planning document to guide the installation commander in the management of natural resources to support the installation mission, while protecting and enhancing installation resources for multiple use, sustainable yield, and biological integrity. The land that MCMWTC operates on is a combination of United States Forest Service (USFS) land, private property, and United States Department of Navy (DoN) owned/ United States Marine Corps (USMC) managed land. The USMC also occasionally incidentally uses Bureau of Land Management (BLM) and California Department of Fish and Wildlife (CDFW) land as part of the activities on MCMWTC, with permission issued as USMC requests for a specific event. The primary purpose of the INRMP is to ensure that natural resource conservation measures and military operations on those lands that comprise MCMWTC, regardless of ownership, are integrated and consistent with permit, stewardship and legal requirements.

This INRMP has been prepared to meet the requirements established by the Sikes Act Improvement Act (SAIA) of 1997 and the implementing directives of the United States Department of Defense (DoD), the Secretary of the Navy (SecNAV), and the Commandant of the USMC. The USMC commitment to natural resources management was reaffirmed in the USMC Installations Campaign Plan (USMC 2013a).

The INRMP is the primary means by which natural resources compliance and stewardship priorities are set and funding requirements are determined. It ensures that natural resources management and military operations are integrated and consistent with stewardship and legal requirements. Due to the complex land ownership and permitting associated with MCMWTC, providing a summary of all the natural resources, their management recommendations, and how the USMC will support those management recommendations, regardless of land ownership, is essential to supporting the military mission.

This INRMP reflects the USMC's approach to natural resources management actions and summarizes baseline information and agreements through which compliance with regulatory and planning processes, such as those required by the SAIA, as amended, National Environmental Policy Act (NEPA), Endangered Species Act (ESA), and the Clean Water Act (CWA) is accomplished. This INRMP also fulfills other responsibilities with regard to Department of Defense Instructions (DoDIs) and Department of Defense Directives, as well as DoN and USMC policies for natural resource planning, conservation, management, and rehabilitation in support of the installation's military training mission. It also fulfills the requirements of Marine Corps Order (MCO) P5090.2A, *Environmental Compliance and Protection Manual*, which states that an installation must prepare an INRMP when it supports federally listed species and/or designated critical habitat; substantial wetland areas;

or large areas used for military readiness purposes, which require care. MCMWTC meets all three requirements and the USMC is required to prepare and implement an INRMP.

In accordance with the SAIA, as amended, the INRMP is intended to:

- Provide a framework for recognizing and balancing environmental stewardship with mission readiness;
- Guide the MCMWTC Commander in the management of natural resources to support the installation mission;
- Protect and enhance natural resources for multiple uses, sustainable yield, and biological integrity; and
- Ensure that natural resources management measures and military operations on the installation are integrated and consistent with stewardship and legal requirements.

1.2 Authority

The SAIA, as amended was enacted to "promote effectual planning, development, maintenance, and coordination of wildlife, fish, and game conservation and rehabilitation in military reservations". It requires the Secretaries of the military departments to prepare and implement INRMPs for each military installation unless exempted due to the absence of significant natural resources. Each INRMP shall include all elements of natural resources management applicable to the installation, including compliance with the Terms and Conditions of relevant Biological Opinions (BOs). Development and implementation of this INRMP will fulfill the statutory requirements under the SAIA, as amended.

Though several other laws (e.g., ESA, CWA, Migratory Bird Treaty Act [MBTA], etc.) require military installations to protect sensitive biological resources, the SAIA, as amended is viewed as an "umbrella" law with regard to management of natural resources on military lands. Thus, this INRMP helps ensure that MCMWTC complies with other federal and state laws, most notably laws associated with environmental documentation, endangered species, water quality, and management of wildlife, in general (see Appendix A for complete list).

In accordance with the SAIA, as amended, this INRMP shall, to the extent appropriate and applicable, provide for:

A. Fish and wildlife management, land management, and fish- and wildlife-oriented recreation;
B. Fish and wildlife habitat enhancement or modifications;
C. Wetland protection, enhancement, and restoration, where necessary for support of fish, wildlife, or plants;
D. Integration of, and consistency among, the various activities conducted under the plan;

E. Establishment of specific natural resources management goals and objectives and time frames for proposed action;

F. Sustainable use by the public of natural resources to the extent that the use is not inconsistent with the needs of fish and wildlife resources;

G. Public access to the military installation that is necessary or appropriate for the use described in subparagraph (F), subject to requirements necessary to ensure safety and military security;

H. Enforcement of applicable natural resource laws (including regulations);

I. No net loss in the capability of military installation lands to support the military mission of the installation; and,

J. Such other activities as the SecNAV department determines appropriate.

The SAIA, as amended, has other provisions that relate to the implementation of this INRMP that include:

- Review for operation and effect of this INRMP, not less often than every 5 years, by internal and external stakeholders; and
- Priority for contracts involving implementation of this INRMP to state and federal agencies having responsibility for conservation of fish and wildlife.

DoDI 4715.03 requires protection and enhancement of natural resources for multiple use, sustainability, and biological integrity (DoD 2011). INRMP requirements include inventory of significant or sensitive natural resources; restoration or rehabilitation of altered or degraded landscapes; provisions for outdoor recreational activities; and application of the principles of ecosystem management.

Chapter 11 of MCO P5090.2A describes USMC policies on natural resources management, including land management, fish and wildlife management, forest management, outdoor recreation, and environmental restoration (USMC 2013b). Appendix A summarizes all relevant federal environmental statutes, regulations, executive orders (EOs), and military mandates for environmental compliance.

The Handbook for Preparing INRMPs for Marine Corps Installations (USMC 2004) was also utilized as guidance for this INRMP development. The 2004 Handbook provides the most current information on the requirements of the SAIA, the purpose of natural resources management on USMC lands, and general guidance on preparation and revision of INRMPs for USMC installations.

1.3 Scope

The INRMP provides the basis for the conservation and protection of natural resources by reducing potential adverse effects on the species and habitat found on the installation and simultaneously conserving biodiversity. Implementation of this INRMP will improve long-range planning at MCMWTC, decrease long-term environmental costs, reduce liabilities

from environmental non-compliance, and improve the overall condition of natural resources and the land to support the military mission. Implementation of this INRMP will also increase overall knowledge of MCMWTC ecosystems through surveys, research, internal environmental awareness, and outreach programs.

1.4 Responsibilities

To ensure MCMWTC's military training mission and environmental conservation mission are compatible and mutually supportive, multiple MCMWTC organizations have a role or responsibility in managing and supporting the natural resources. On those lands permitted by the USFS for MCMWTC, the USMC is responsible for ensuring the sustainability of training and complying with permit conditions (see Appendix B for copies of the permits). The management of natural resources on USFS is ultimately under the jurisdiction of the Forest Supervisor for the Humboldt-Toiyabe National Forest (HTNF). The USMC, however, can implement and support the overall natural resources management on MCMWTC, in cooperation with USFS. Close collaboration and partnering is required (see Section 2.7) between the USMC and USFS in order to be cost effective, provide consistent management across jurisdictions, avoid redundancy, and optimize the use of scarce resources.

In accordance with MCO P5090.2A, it is the responsibility of all USMC personnel to:

1. *"Know and comply with the environmental rules and regulations that apply to their duties*
2. *Maintain a general awareness of all applicable USMC environmental policies and goals*
3. *Apply the principles of Total Quality Leadership to incorporate environmentally safe practices and procedures into daily operations*
4. *Take advantage of pollution prevention opportunities in everything we do*
5. *Emphasize environmental awareness and incorporate environmental compliance into every aspect of operation practices*
6. *Promote pollution prevention as the primary means of achieving and maintain compliance with environmental requirements*
7. *Address environmental problems, rather than ignore them."*

1.4.1 Headquarters Marine Corps

Headquarters Marine Corps (HQMC), located in Washington, DC, is responsible for developing general policy and providing MCOs as well as funding to implement natural resources programs at MCMWTC. HQMC conducts onsite Environmental Compliance Evaluations of the MCMWTC natural resources program at least once every three years.

1.4.2 Marine Corps Air Ground Combat Center

MCMWTC is overseen by the Marine Air Ground Task Force Training Command (MAGTFTC) located at the Marine Corps Air Ground Combat Center in Twentynine Palms, California. The mission of the MAGTFTC is to conduct relevant live-fire combined arms training, urban operations, and Joint/Coalition level integration training that promotes operational forces readiness as well as to provide the facilities, services, and support responsive to the needs of resident organizations, Marines, Sailors, and their families today and tomorrow.

1.4.3 Commanding Officer

The MCMWTC Commanding Officer (CO) is a signatory on the INRMP, authorizing its adoption and implementation, and has liability for its environmental compliance. The CO is directly responsible for operating and maintaining MCMWTC, including implementing and enforcing this INRMP. The CO is personally liable for noncompliance with environmental laws. Thus, the CO has a strong interest in assuring that this INRMP is properly implemented.

1.4.4 MCMWTC Environmental Office

The MCMWTC Environmental Office serves as the on-site point of contact for all environmental related activities including the planning, organizing, administering, implementing, and management of environmental programs at the MCMWTC per MCO P5090.2A, *Environmental Protection and Compliance Manual*, which incorporates all federal laws and regulations and adds USMC specific policies. Projects proposed in this INRMP are reviewed and implemented by the MCMWTC Environmental Director and Natural Resources Manager as appointed by the CO. The MCMWTC Natural Resources Manager and the Environmental Director both play key roles in implementing this INRMP, identifying potential projects, participating in USMC environmental review, and coordinating with USFS with respect to natural resources management.

1.4.5 Naval Facilities Engineering Command Southwest

Naval Facilities Engineering Command (NAVFAC) Southwest is responsible for the planning, engineering/design, construction, real estate (including the acquisition and disposal of), environmental services, in a six state area on the West Coast. The command also provides public works services such as transportation, maintenance, utilities/energy delivery, facilities management, and base operations support to Navy and USMC installations within its geographic area of responsibility, as well as support to other federal agencies in California. NAVFAC Southwest assists in implementing Navy and USMC policy to ensure stewardship of these lands and compliance with natural resources laws and regulations. It also provides technical expertise to evaluate and validate funding requests for natural resources projects. NAVFAC Southwest provides contracting authority, technical

oversight, planning documents, and contracts (including Cooperative Agreements) for installations within its jurisdiction.

The Public Works Department within the NAVFAC Southwest is the primary section involved with land use planning and implementation. It ensures that MCMWTC complies with all applicable federal and state of California environmental laws and regulations.

1.4.6 Federal and State Wildlife Agencies

SAIA requires the SecNAV to prepare INRMPs in cooperation with the United States Fish and Wildlife Service (USFWS) and the appropriate state wildlife agency. In California, the state wildlife agency is the CDFW (formerly California Department of Fish and Game). In Nevada, this agency is the Nevada Department of Wildlife (NDOW). This cooperation ensures that the INRMP reflects mutual agreement of these parties concerning conservation, protection, and management of fish and wildlife resources on the installation. Mutual agreement is only required, however, with respect to fish and wildlife management elements. No element of the SAIA is intended to either enlarge or diminish the existing responsibility and authority of the wildlife agencies concerning natural resources management on military lands. Appendix C includes review and agency concurrence documents.

A Memorandum of Understanding (MOU), renewed in 2013, established a cooperative tripartite agreement between the DoD, the United States Department of the Interior USFWS, and the state fish and wildlife agencies as represented by the International Association of Fish and Wildlife Agencies. This MOU recognizes the partnerships necessary to prepare, review, and implement INRMPs on military installations. Recently, the USFWS has issued new guidance for coordination of INRMPs (USFWS 2015a).

This INRMP has been prepared in accordance with the SAIA, as amended and in cooperation with USFWS, CDFW, and NDOW. Implementation of this INRMP and any changes in planned activities will be undertaken with the cooperation and agreement of USFWS, CDFW, and NDOW. This INRMP is a living document and will be updated during annual reviews to reflect improved management practices, changes in proposed actions within MCMWTC, and agency comments or concerns about ongoing or proposed activities. Per DoD policy, the MCMWTC Environmental Office will review the INRMP annually in cooperation with the USFWS, CDFW, and NDOW.

Due to the fact that most of MCMWTC is comprised of USFS lands, the USFS is also included as a cooperating agency and natural resource management on USFS lands cannot occur without USFS approval.

1.4.7 United States Forest Service

The USFS is responsible for the natural resources management on the majority of MCMWTC. The mission of the USFS is to sustain the health, diversity, and productivity of the Nation's forests and grasslands to meet the needs of present and future generations.

The USMC uses a portion of the USFS lands within the Bridgeport Ranger District (BRD), which is authorized under Special Use Permits (SUPs) and supported by Annual Operating Plans (AOPs). The SUPs and areas included are summarized in Section 3.2. The SUPs are included in Appendix B. Accordingly, the USFS is a major stakeholder in this INRMP and is a coordinating agency. This INRMP will not supersede the Humboldt-Toiyabe National Forest (HTNF) Plan or Sierra Nevada Forest Plan where it pertains to USFS management.

The USFS is responsible for all administration of the SUPs, monitoring plans, and approval of all plans submitted for current operation and future development of USFS lands. The USFS is also responsible for periodic monitoring to ensure DoN compliance with the provisions of AOPs and SUPs.

1.4.7.1 USFS Military Liaison Officer

A USFS Military Liaison Officer (MLO) is dedicated to coordination between the USFS and USMC regarding MCMWTC. The MLO plays a key role in the approval of the AOPs, as well as any required environmental reviews. The USFS MLO will be jointly agreed upon per the stipulations of the primary SUP (BRI250). The USFS MLO works in close cooperation with the MCMWTC to carry out USFS management responsibilities, facilitate mutual stewardship and sustainment of USFS lands and advise the MCMWTC on the proper uses and occupancy on the authorized use area, to ensure compliance with the Forest Land Management Plan, and all applicable federal and local laws relevant to both agencies.

1.4.7.2 USFS Bridgeport Ranger District Biologists

USFS biologists for the BRD play an integral role in identifying permit conditions and working with MCMWTC's natural resource staff to ensure data exchange and reaching agreement on needed natural resource management actions.

1.4.7.3 Humboldt-Toiyabe National Forest Forest Supervisor

The HTNF Forest Supervisor is the approving authority for all SUPs, AOPs, and permit negotiations with the USMC for USFS land comprising MCMWTC.

1.5 Goals and Objectives

The overall purpose of this INRMP is to develop a program that conserves and enhances ecosystem integrity and sustains both biological diversity and continued availability of those resources for military readiness and sustainability and other human uses.

The overall strategy for resolving key management issues, as well as other issues, is addressed throughout the INRMP. The INRMP defines the strategy through a hierarchical format, starting with very broad, long-term statements (Goals) defined by more specific, mid-term focus areas (Objectives) and implemented through specific, short-term actions (Projects).

The utility of this hierarchy is to ensure that projects help achieve long-term goals in a way that can be tracked and give direction to everyday decisions about MCMWTC's use and management of its natural resources. The goals, objectives, and policies of this INRMP provide the consistency and coordination needed among the various personnel at NAVFAC Southwest and MCMWTC involved in all levels of daily as well as annual decision-making.

1.5.1 Key Goals

The overall goals of this INRMP all focus on avoiding or minimizing adverse effects from military activities to the overall ecosystem and its sensitive resources; increasing interaction with federal, state, and local agencies; and ensuring compliance with environmental legislation, regulations, and guidelines. These goals will ensure the success of the military mission and the conservation of natural resources. The general philosophies and methodologies used throughout the MCMWTC natural resources management program are focused on conducting required military mission activities while maintaining ecosystem viability.

INRMPs are required by DoDI 4715.03, *Environmental Conservation Program*, to achieve the following:

- Identify, protect, conserve, and manage sensitive and significant natural resources and ecosystems;
- Promote the conservation of biodiversity whenever practicable;
- Use and care for natural resources so as to best serve our Nation's present and future needs;
- Comply with all applicable EOs and federal, state, and local statutory and regulatory requirements, both substantive and procedural;
- Support the military mission by managing for the goal of no net loss to the operational carrying capacity of installation lands; and
- Be flexible enough to accommodate increased military mission requirements for use of these lands.

For the MCMWTC INRMP, the general goals are as follows, with specific goals as related to each resources area presented in Section 4.0:

- GOAL 1: Provide good stewardship to protect, manage, and enhance the land, water, and natural resources of MCMWTC while fulfilling the military mission.
- GOAL 2: Provide the organizational capacity, support, funding, and communication necessary for effective strategic planning, implementation of this INRMP, and management of the installation's natural resources.

1.5.2 Key Objectives

The following objectives were identified as key objectives for this INRMP to support the goals above:

- Ensure no net loss in the capability of the land and natural resources at MCMWTC to support its current and future military mission;
- Ensure compliance with applicable laws and regulations;
- Maintain and enhance the level of biodiversity within the constraints of the military mission;
- Implement adaptive management techniques to provide flexible and responsive management strategies based on scientific data gathered from monitoring programs, literature, and resource experts;
- Provide for public access where required by USFS permit and where possible on DoN land;
- Protect the quality and wildlife value of habitat; and
- Maintain sufficient, professionally trained natural resources personnel to implement, manage, and monitor the management strategies of the INRMP and the natural resources conditions associated with the USFS permits.

These objectives are supported by several resource-specific objectives, which are described in Section 4.0. Resource-specific measures were developed to guide natural resources management on MCMWTC and facilitate the development of prescriptions and projects.

1.6 Management Strategy

Implementation of this management plan will support MCMWTC's military mission while maintaining, protecting, and enhancing the ecological integrity of the lands and the biological communities inhabiting them, thereby protecting MCMWTC ecosystems and their components.

The typical management programs addressed in an INRMP include land management, forest management, aquatic and terrestrial habitat management, special natural area management, fish and wildlife management, threatened and endangered (T&E) species management, pest management, wildland fire management, recreational resource management, and agricultural program management. The INRMP is a mission-driven plan, created with a dual purpose:

- To allow for the conduct of appropriate military use at levels necessary to maintain a full readiness posture for national defense and civil missions; and
- To provide for management of natural resources in an ecosystem-oriented, sustainable manner, consistent with federal, state, and local regulations.

Benefits of the INRMP to the military mission include sustained use of MCMWTC's installation lands, better distribution of military activities, and integration of the military mission with natural resources management. The INRMP facilitates long-range, sustainable use of MCMWTC.

This INRMP emphasizes an ecosystem management approach to natural resources management, consistent with laws, regulation, and DoD policies presented in Appendix A. Ecosystem management supports the use of natural resources on MCMWTC for both military and other human-related values and purposes, with the desired outcome to protect the properties and functions of natural ecosystems. Ecosystems extend beyond installation boundaries, and management of MCMWTC natural resources will include continuing to work with partners and neighbors. MCMWTC mission activities are integrated and consistent with federal stewardship requirements and ensure the sustainability of quality lands to accomplish MCMWTC's military mission.

The purpose of the INRMP is to assist MCMWTC in achieving "no net loss" in the capability of MCMWTC to support the military mission. The DoD faces significant challenges in achieving this goal as installation managers are under increasing pressure from many directions regarding how to use and manage resources. The implementation of the INRMP will allow MCMWTC to support its mission, while conserving the natural resources on the installation.

Due to the majority of MCMWTC being permitted for USMC by the USFS, coordinating both military use and related natural resources management is essential for the successful implementation of this INRMP, maintaining compliance with the USFS permits, and supporting the military mission.

1.7 Stewardship and Compliance

1.7.1 Stewardship

Environmental stewardship is a key component for range sustainability. The equilibrium between training requirements and a sustainable and healthy environment is called for in several instructions by making sure environmental considerations are part of the DoD decision-making processes (DoDI 4715.03 and MCO P5090.2A). The purpose of environmental stewardship is to responsibly manage resources for the benefit of present and future generations. Conducting required training operations, while at the same time meeting regulatory requirements and minimizing environmental impacts, is a goal that will ensure the sustainability of the MCMWTC. Meeting this goal will promote both operational and environmental sustainability.

DoDI 4715.03 *Environmental Conservation Program* (18 March 2011) requires that Navy installations incorporate ecosystem management's "ten guiding principles" as the basis for land use planning and management. The ten principles of ecosystem management had first appeared in a 1994 DoD memorandum and were subsequently published as principles and

guidelines in an enclosure to DoDI 4715.03. DoD principles and guidelines address key components of ecosystem management that are generally acceptable to researchers and practitioners alike, and they provide guidance pertinent to installation managers. DoDI 4715.03 also provides a DoD definition of ecosystem management as:

> "A goal-driven approach to managing natural and cultural resources that supports present and future mission requirements; preserves ecosystem integrity; is at a scale compatible with natural process; is cognizant of nature's time frames; recognizes social and economic viability within functioning ecosystems; is adaptable to complex changing requirements; and is realized through effective partnerships among private, local, state, tribal, and federal interests."

The guiding principles of ecosystem management are as follows (DoDI 4715.03):

1. Maintain and Improve the Sustainability and Native Biodiversity of Ecosystems.
2. Administer with Consideration of Ecological Units and Timeframes.
3. Support Sustainable Human Activities.
4. Develop a Vision of Ecosystem Health.
5. Develop Priorities and Reconcile Conflicts.
6. Develop Coordinated Approaches to Work Toward Ecosystem Health:
    - Involve the military operational community early in the planning process
    - Develop a detailed ecosystem management implementation strategy
    - Meet regularly with regional stakeholders
    - Incorporate ecosystem management goals into strategic, financial, and program planning and design budgets
    - Seek to prevent undesirable duplication of effort
7. Rely on the Best Science and Data Available.
8. Use Benchmarks to Monitor and Evaluate Outcomes.
9. Use Adaptive Management.
10. Implement Through Installation Plans and Programs.

1.7.2 Compliance

The INRMP supports the MCMWTC military mission by ensuring compliance with federal and state laws, especially those associated with environmental documentation, wetlands, endangered species, water quality, and wildlife management. The primary natural resources laws are the SAIA and the ESA, but there are a number of other laws that also apply depending on the resource and the activity. For activities on USFS land, compliance with

the SUP conditions is also required. Appendix A presents a list of natural resources management legal drivers.

NEPA of 1969 (42 USC 4321 et seq.) was created to identify environmental concerns caused by human activities and to resolve them to the best degree possible, using public input and the best information available. The NEPA processes applicable to MCMWTC are described in Section 2.5. An Environmental Assessment (EA) was prepared to evaluate the potential impacts of this INRMP. The public draft EA and the public draft INRMP were provided to agencies for review and comment starting 14 March 2016 and a public notice and review period was conducted 16 March – 15 April 2016. The EA will be included in Appendix N when complete.

1.8 Review and Revisions Process

The DoN uses an Environmental Management System (EMS) to integrate environmental considerations into day-to-day activities across all levels and functions of DoN and USMC enterprises. It is a formal management framework that provides a systematic way to review and improve operations, create awareness, and improve environmental performance. Systematic environmental management as an integral part of day-to-day decision making and long-term planning processes is an important step in supporting mission readiness and effective use of resources. The most significant resource for every organization is their senior leadership's commitment and visibility in EMS implementation and sustainability. A robust EMS is essential to sustaining compliance, reducing pollution and minimizing risk to mission. The USMC EMS conforms to the International Organization for Standardization 14001: 2004 *Environmental Management System* standard. The adaptive management cycle included in this INRMP and the annual reviews of the INRMP are both part of implementing the EMS relative to natural resources management on MCMWTC.

1.8.1 Review for Operation and Effect

Not less than every five years, the INRMP will be reviewed for operation and effect to determine if the INRMP is being implemented as required by the SAIA and contributing to the management of natural resources on MCMWTC. The review will be conducted by the cooperating parties to include representatives of the USMC, the USFS BRD, the USFWS, the CDFW, and the NDOW. Appendix C will include agency INRMP review letters, once available.

The review for operation and effect will either conclude that the INRMP is meeting the intent of the SAIA and implementation can continue with or without appropriate updates; or that it is not effective in meeting the intent of the SAIA to conserve natural resources while providing for no net loss in training capability and it must be revised. The conclusion of the review will be documented in a jointly executed memorandum, meeting minutes, or in some other way that reflects mutual agreement.

If only updates are needed, they will be done in a manner agreed to by all parties. The updated INRMP will be reviewed by the local USFS, USFWS, CDFW, and NDOW offices. Once reviewed, the update of the INRMP will be complete and implementation will continue.

If a review of operation and effect concludes that an INRMP must be revised, there is no set time to complete the revision. The existing INRMP remains in effect until the revision is complete and USFS, USFWS, CDFW, and NDOW concurrence on the revised INRMP is received. Revisions to the INRMP will go through a more detailed review process similar to development of the initial INRMP to ensure MCMWTC military mission, USFS, USFWS, CDFW, and NDOW concerns are adequately addressed and the plan meets the intent of the SAIA.

1.8.2 Annual Reviews and Coordination

Per DoD policy, the MCMWTC Environmental Office will review the INRMP annually in cooperation with the USFS BRD, USFWS, CDFW, and NDOW. On an annual basis, MCMWTC will invite the USFS, USFWS, CDFW, and NDOW as well as other interested internal and external stakeholders to attend a meeting to review previous year INRMP implementation and discuss implementation of upcoming programs and projects. Invitations will be either by letter or email. The meeting will be documented with an agenda, meeting minutes, sign in roster of attendees, or other means. The cooperating partners will work together to measure both the successes and issues resulting from INRMP implementation. Appendix D will include the results of annual reviews, once available. The review for operation and effect and annual review can occur simultaneously. The DoN and USMC have developed a set of Natural Resource Metrics (Metrics) to provide a standard method for the collection and reporting of information for Natural Resources programs. The Metrics are used to determine how well the USMC is doing with respect to natural resources management and INRMP implementation across USMC installations. The Metrics are comprised of seven focus areas:

1. INRMP Implementation
2. Species and Habitats
3. Ecosystem Integrity
4. Public Access and Use
5. Team Adequacy
6. Partnership Effectiveness
7. Impact to the Mission

Each focus area has three to seven criteria that have been established by natural resources managers and are used to help determine the status of a given functional area within natural resources. This INRMP addresses and supports the requirements of those issues addressed in the Metrics.

The INRMP Annual Review process also generates DoD conservation program metrics to measure effects of the conservation program on the installation mission and the status of the relationships with the wildlife agencies. In the case of the USMC, the Metrics roll up for inclusion into the DoD metrics.

1.9 Integration with other MCMWTC Plans

INRMPs shall be prepared in coordination with other planning documents (e.g., installation master plans, range plans, training plans, Integrated Cultural Resources Management Plans [ICRMPs], Integrated Pest Management Plans [IPMPs], encroachment plans, installation restoration plans, and installation information management systems). By its nature, an INRMP is multidisciplinary and provides the summary for natural resources at a specific installation. As a result, information from an INRMP is incorporated into other plans and other plans help identify management priorities and potential impacts to natural resources that are incorporated into the INRMP. The INRMP is integrated with a number of MCMWTC plans including:

- **Final Range Complex Management Plan (RCMP), May 2011**—The RCMP identifies current and projected operations within MCMWTC and provides an investment strategy to meet training requirements. Included within this plan is an outreach plan (Chapter 10) to document community outreach and engagement strategies and actions that support long-term sustainable use of MCMWTC for military training (USMC 2011a). This INRMP is compatible with the goals, mission requirements, and future visions of the RCMP.
- **Final Capstone Plan, October 2011**—The Capstone Plan is intended to provide a coherent and economically feasible road map for the long-range physical development of MCMWTC. The management strategies to be implemented in this INRMP are compatible with the Capstone Plan (USMC 2011b).
- **Final Integrated Pest Management Plan (IPMP), June 2008**—The IPMP is a comprehensive, long-range document that captures all the pest management and pesticide-related activities conducted on the MCMWTC. The management strategies to be implemented in this INRMP are compatible with the IPMP (NAVFAC Southwest 2008).
- **Final Stormwater Pollution Prevention Plan (SWPPP), October 2007**—The purpose of the SWPPP is to assist MCMWTC in maintaining compliance with the requirements of the National Pollution Discharge Elimination System program administered by the State of California and the United States Environmental Protection Agency (USEPA). The management strategies to be implemented in this INRMP are compatible with the SWPPP (USMC 2007).
- **MCMWTC Master Plan, May 2005**—The 2005 Master Plan was prepared to provide a coherent and economically feasible road map for the long-range physical development of MCMWTC. The management strategies to be implemented in this INRMP are compatible with the Master Plan.

- **Encroachment Control Plan, August 2013** – This plan, developed in conjunction with the Eastern Sierra Land Trust, serves as a 'road map' for addressing encroachment on MCMWTC. The plan includes a comprehensive analysis of encroachment issues impacting or having the potential to impact operations and training; prioritized issues based on impact severity and issue urgency; and recommended management strategies to address each issue.
- **Wildland Fire Management Plan (WFMP)** — This plan was completed in 2015 and describes in detail the fire management program, activities, and methods used on MCMWTC to manage wildland fire (VersarGMI & Vernadero Group, Inc. 2015). This is being developed to reduce wildfire potential, outline program safety, protect and enhance valuable natural resources, integrate applicable state and local permit and reporting requirements, and implement ecosystem management goals and objectives at MCMWTC.
- **Integrated Cultural Resources Management Plan (ICRMP)**—The ICRMP is drafted and nearing completion. The ICRMP summarizes known cultural resources as well as the standard operating procedures and overall management of cultural resources on MCMWTC.

SECTION 2
NATURAL RESOURCES MANAGEMENT AND MISSION SUSTAINABILITY

2.1 Defining Impact to the Military Mission

Under the SAIA, MCMWTC must ensure that there is no net loss to the military mission due to implementation of this INRMP. To do this, the link between land use and the mission of integrated strike warfare training support and the missions of other tenant users, needs to be disaggregated into component parts.

Land use and natural resource management decisions should be evaluated so that resources are protected against short-term, project-by-project impacts that cumulatively could result in significant resource changes, thereby limiting the flexibility of military mission requirements. Additionally, decisions should be considered at appropriate biological scales and time frames so that there is an inherent removal of any conflicts between natural resource management and military mission. A big picture view of the current training scenario, or of any existing or future scenarios, should be aligned with broader ecosystem management goals.

The military will carry out its mission at MCMWTC while practicing good stewardship of the natural resources. This involves protecting physical resources, visual resources, biological resources, outdoor recreation programs, and cultural resources. Section 3 describes the natural resources found on MCMWTC and Section 4.0 provides the goals, objectives, and management approaches to natural resources on MCMWTC lands.

Careful consideration is given to the siting of proposed actions and evaluation of potential impacts is done early in the planning process. As part of ongoing efforts to avoid and/or minimize impacts on special-status species, sensitive habitat, cultural or other relevant resources, consideration will first be given to use of areas with fewer known sensitive resources. 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.

Due to a complex set of permit conditions which minimize impacts to sensitive resources on USFS land, the USMC follows the requirements prescribed by the USFS for use of their land, resulting in avoidance and minimization of impacts to natural resources (see Section 3.5, as well as resource specific conditions in Section 4). In addition to meeting military mission requirements, the lands open to public access are also managed to meet multiple use requirements by the USFS. The permits are summarized in Section 3.2.

2.2 Natural Resources Management Overview

The SAIA defines the purpose of natural resources management on military lands as "the conservation and rehabilitation of natural resources on military installations; the sustainable multipurpose use of the resources, which shall include hunting, fishing, trapping, and non-

consumptive uses; and subject to safety requirements and military security, public access to military installations to facilitate the use [of these resources]."

The USMC approach to natural resources management on MCMWTC takes a long-term view of ecosystem processes and human activities and integrating conservation and management of biological resources with the military mission of the installation. The installation's natural resources conservation and management programs are to be directed toward achieving the overarching natural resource management goals (Section 1.5 and Section 4) and providing good stewardship of the natural resources by implementing this INRMP. The general philosophies and methodologies used throughout the MCMWTC natural resources management program are focused on conducting required military mission activities while maintaining ecosystem viability.

2.3 Ecosystem Management Approach

MCMWTC lies within the Sierra Nevada Mountain Ecoregion (Level III) within the larger Northwestern Forested Mountains Ecoregion (Level II, USEPA 2013). The Sierra Nevada is a deeply dissected block fault that rises sharply from the arid basin and range ecoregions on the east and slopes gently toward the Central California Valley to the west. The eastern portion has been strongly glaciated and generally contains higher mountains than are found in the Klamath Mountains to the northwest. The vegetation grades from mostly ponderosa pine at the lower elevations on the west side and lodgepole pine on the east side, to fir, spruce, and whitebark pine (*Pinus albicaulis*) at the higher elevations. Alpine conditions exist at the highest elevations.

According to the DoDI 4715.03, the goal of ecosystem management is to ensure that military lands support present and future training and testing requirements while preserving, improving, and enhancing ecosystem integrity. Over the long term, that approach shall maintain and improve the sustainability and biological diversity of terrestrial and aquatic (including marine) ecosystems while supporting sustainable economies, human use, and the environment required for realistic military training operations. The "Ecosystem Integrity" Focus Area of the USMC Metrics (refer to Section 1.8.2 and Appendix D) is intended to define the ecosystems that occur on the installation and assess the integrity of these ecosystems. The term, integrity, refers to the quality of state of being complete, unbroken condition, wholeness, entirety, unimpaired, without significant damage, good condition, or general soundness. Terrestrial ecosystems, as defined by NatureServe's "Ecological Systems of the United States: A Working Classification of United States Terrestrial Systems" were selected from a list and assigned to each installation. Locally-defined ecosystems were added, if necessary. The ecosystems at MCMWTC as defined by NatureServe (2011) and the United States National Vegetation Classification (USNVC 2015) are as follows:

- Sierra Nevada Subalpine Lodgepole Pine Forest and Woodland
- Sierra Nevada Alpine Dwarf Shrubland
- Mediterranean California Foothill and Lower Montane Riparian Woodland
- Temperate Pacific Freshwater Emergent Marsh

- Great Basin Pinyon Juniper Woodland
- Great Basin Xeric Mixed Sagebrush Shrubland

Development of this INRMP is based on the concept of adaptive management of ecosystems. Adaptive management is founded on the idea that management of renewable natural resources involves continual learning process (Walters 1986). This approach recognizes that there is incomplete data when dealing with natural resources and that, through continued research and monitoring of the effects of management practices, new information will be developed. In addition, an adaptive management approach recognizes that protection and management actions are often implemented, by necessity, with imperfect knowledge. Recognition of this uncertainty allows development of monitoring and research approaches to progressively improve knowledge, and thus enhance decision-making and management capabilities. The adaptive management process is illustrated in Figure 2-1.

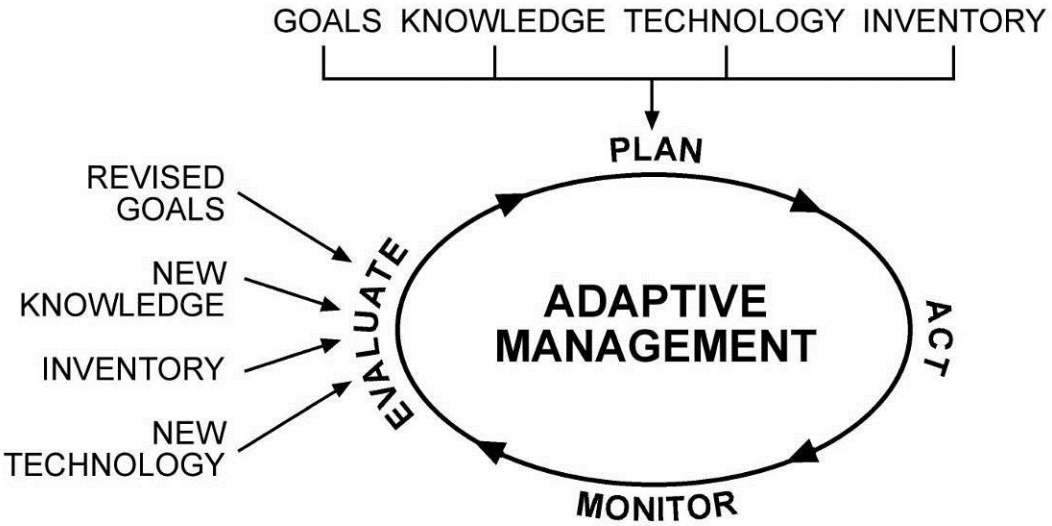


Figure 2-1. Adaptive Management Strategy

2.4 Natural Resources Consultation Requirements

Due to the fact that most of the land that comprises MCMWTC is administered by the USFS, there is close cooperation between the USFS and the USMC and the majority of natural resource management conducted by the USMC is either required under USFS permit conditions or is conducted with the cooperation and approval of the USFS. This is also true for cultural resources management and some NEPA reviews.

As required by the SAIA, the USMC consult with the USFWS, CDFW, and NDOW on the management of natural resources located within the installation. Cooperative management of the MCMWTC's natural resources is required under the SAIA and the Fish and Wildlife Coordination Act (16 USC 661-667e). In the case of USFS lands under permit to the USMC, the USFS would be the consulting agency, if appropriate.

There are multiple natural resources consultation requirements in addition to those associated with INRMP development and review requirements as described in Section 1.8. Training on MCMWTC has the potential to impact federally listed species, critical habitat, and/or proposed federally listed species or critical habitat (Sections 3.5.13 and 3.5.14), and numerous species that are designated as Species of Special Concern (SSC) by CDFW, NDOW, USFS, or BLM (Sections 3.5.15). Consequently, Section 7 ESA consultation or equivalent state consultation may be required for USMC projects and activities that could impact these species, regardless of land ownership. Additionally, actions that fall under the jurisdiction of Section 404 or 401 of the CWA necessitate permitting from United States Army Corps of Engineers (USACE). In addition to natural resources consultation requirements, there are National Historic Preservation Act and tribal consultation requirements, which are presented in full in the ICRMP for MCMWTC (currently in draft).

2.5 National Environmental Policy Act Compliance

NEPA is a federal law that mandates federal agencies consider the environmental consequences of their actions before commitment to the actions. It is a procedural planning tool which requires a clear evaluation of all federal decisions potentially affecting the human and natural environment. The NEPA statute (as amended, 42 US Code [USC] 4321–4370) and the Council on Environmental Quality regulations (40 Code of Federal Regulation [CFR] parts 1500–1508) combine to represent the requirements of NEPA.

The USMC provides additional guidance on the NEPA review process and requirements in Chapter 12 of the *Environmental Compliance and Protection Manual* (MCO P5090.2A, 26 August 2013). The development of a new INRMP requires NEPA analysis and a draft Environmental Assessment (EA) accompanies this INRMP (Appendix N). This EA is a programmatic EA; individual NEPA analysis may still be required for actions to implement this INRMP but can be tiered from this programmatic EA. Many, but not all, actions associated with INRMP implementation typically fall under a categorical exclusion (CATEX) and would not require a NEPA analysis at the level of an EA.

The MCMWTC policy for NEPA planning is as follows:

- Assess the environmental consequences of each proposed action that could affect the natural environment, and address the impacts of each action through analysis, planning, mitigation, and prevention.
- Ensure that any proposed MCMWTC action that has the potential for impact on the environment undergoes the NEPA process.
- Include new activities, substantive changes in continuing actions, specific actions, or adoption of programs.

NEPA documentation (EAs or larger) for MCMWTC projects is currently completed in cooperation with NAVFAC Southwest personnel. NEPA documents that have been prepared to address specific mission training requirements on MCMWTC include the following:

- EA/Finding of No Significant Impact for Proposed Utilities Upgrades at the Coleville Military Family Housing Area (CMFHA) Associated with the MCMWTC, California.
- *Final Environment Assessment (EA) for Marine Corps Mountain Warfare Training Center Communication Infrastructure Upgrades*.

The USMC is also in the process of developing an EA that analyzes a comprehensive updating and consolidation of the USFS permits and potential impacts of future training on MCMWTC, referred to as the *Environmental Assessment for Enhancement of Operations and Training Proficiency at MCMWTC*. This EA is still in development but relevant permit conditions, policy, and project that have already been identified during that process have been incorporated into this INRMP.

2.5.1 DoN Land

For projects and activities on MCMWTC that require a NEPA analysis, the USMC uses a request for environmental impact review (REIR) process and form to review all proposed projects for potential environmental impacts in compliance with MCO P5090.2A. The REIR process uses a multipurpose form, which allows the NEPA specialist to select the appropriate NEPA documentation. This can include selecting a CATEX from the Navy's List of CATEXs appropriate for the proposed action/project. The process allows the natural resources, cultural resources, and environmental compliance specialists to review a specific proposed action or project for compliance requirements for federal and state laws, regulations, and permits, as well as interagency agreements. The process also allows for the notification of other MCMWTC departments and tenants of a proposed action or project.

2.5.2 USFS Land

As specified in the SUPs with the USFS, military training activities on USFS lands require NEPA analysis. If proposed projects could affect USFS lands, the REIR form used on DoN lands is also submitted to the USFS MLO or another USFS representative (Section 1.4.7) for review. The USFS makes the final decision on approval of all projects and plans on USFS administered lands.

2.5.3 Bureau of Land Management Land

There are a number of authorizations available to the USMC with the BLM, as described in BLM Instructional Manual No. 2001-030 (BLM 2001). The USMC coordinates its use of BLM lands for training activities with the BLM Field Office in Carson City, Nevada. Training activities, such as use of a convoy training route in Nevada, regularly have been categorized by BLM as permitted "casual use." BLM follows its NEPA process associated with these authorizations.

2.6 Encroachment Partnering

MCMWTC training lands are primarily located on public lands administered by the USFS. Military training is conducted in accordance with the AOP and specific SUPs issued by the USFS. Non-military encroachment pressures on MCMWTC are primarily associated with the use of training lands by the public on the HTNF. The USMC has no authority to restrict use of these lands.

The presence of non-military forest users significantly impacts training. The right of the public to use these forest lands limits the use of most areas for live fire training. The USMC is conducting ongoing planning and analysis and examining options to acquire in-holdings (private lands within the forest area) that would support development of permanent training structures such as Military Operations in Urban Terrain (MOUT) Facilities, to mitigate limitations of constraints on USFS lands. MCMWTC has developed an Encroachment Control Plan with the Eastern Sierra Land Trust (USMC 2013c). As described in the Encroachment Control Plan, wetlands and noise are already being managed, while additional encroachment is resulting from T&E species, urban growth, air and land use restrictions and clean water. The Encroachment Control Plan also identifies management strategies to reduce and/or management encroachment from those areas.

2.7 Beneficial Partnerships and Collaborative Resource Planning

Beneficial partnerships with agencies, universities, environmental organizations, and community groups are a fundamental part of natural resources management at MCMWTC. The involvement of these groups is based on their designation as cooperating agencies and on cooperative agreements, regulatory authority, and technical assistance, as required by federal legislation and regulation. There are many benefits of regional planning partnerships, such as those described below:

- Pooling of financial resources for implementation can help spread the costs of restoration, enhancement, monitoring, and research;
- Project mitigation will be more beneficial and efficient because it is based on a consensus of prioritized need;
- Funding institutions, as well as regulatory agencies, can determine their own role in contributing to the plan's success;
- Positive relationships, partnerships, and goodwill can result among all participants in the process by fostering understanding and collaborating on a common goal;
- The public is provided a consistent message that is an accurate reflection of the status and management of MCMWTC; and
- A more consistent and reliable regulatory process is better for everyone.

The existing USFS plans, primarily the HTNF Plan (USFS 1986) and Sierra Nevada Forest Plan (with Amendments, USFS 2004, 2013a), serve as the foundation that identifies natural

resource management needs in the area surrounding and including MCMWTC. Additional plans associated with specific rare species, either USFWS or CDFW plans, contribute additional guidance. These group of agencies (USFS, USFWS, and CDFW) are essential to the collaborative resources planning required for MCMWTC and the surrounding area. For areas used in Nevada for activities based out of MCMWTC, BLM and NDOW are also important partners. The USMC also supports research undertaken by universities (e.g., University of California at Davis) and other federal and state agencies (e.g., United States Geological Survey, CDFW), as appropriate and avoiding impacts to the military training.

Due to the nature of land ownership and permits that underlie MCMWTC, the USMC must conduct cooperative natural resources management with the USFS. As required by the USFS permits, all research to include monitoring, surveys and inventories, sponsored or funded by the USMC on land authorized for use by MCMWTC is coordinated with and approved by the USFS to ensure that appropriate protocols are followed. A description of natural resource projects already completed or underway on MCMWTC, with USFS approval, is provided in Section 4.1. A description of general permit requirements relating to natural resources is provided in Section 4.2, along with resource-specific ones under each resource area in Section 4.

2.7.1 Fish and Wildlife Inter-Agency Coordination

As required by the SAIA, the USFWS, CDFW and NDOW are cooperating agencies on the development and review of this INRMP. As described in the USFS permits, the USFS and USMC will collaborate with the CDFW on fish and wildlife management, to include construction and management of ponds, stocking and management of fish populations, planting and maintaining wildlife food plots, and conducting managed hunts within the MCMWTC Training Areas (TAs) as availability of appropriate funds allow. The USMC and USFS may meet annually with the CDFW to coordinate wildlife management within TAs.

There have been collaborative efforts between the USFS and CDFW for natural resources management in areas that benefit MCMWTC. These efforts have primarily been focused on fish passage and invasive species removal efforts on Mill Creek and Silver Creek and on amphibian surveys. When appropriate, the USMC will support these efforts.

2.7.2 United States Forest Service

As a result of the majority of MCMWTC training lands being on USFS land and the resulting SUPs (see Section 3.2 for more details and note that the *EA for Operations and Training Proficiency* will update and consolidate this SUPs), the USFS is a major stakeholder in this INRMP and is a coordinating agency. This INRMP will not supersede the HTNF Plan (USFS 1986) or the Sierra Nevada Forest Plan Amendments (USFS 2004, 2013) where it pertains to USFS management.

A USFS MLO has been appointed to coordinate the USMC's responsibilities and use of National Forest land (Section 1.4.7). MCMWTC staff works closely with the USFS MLO to conduct quarterly meetings in order to coordinate appropriate actions pertaining to special

use authorization compliance, signature of reimbursement, cost recover agreements, and annual financial operating plans. Further, they work in close cooperation to carry out USFS management responsibilities, facilitate mutual stewardship and sustainment to USFS lands, and advise the MCMWTC on the proper uses and occupancy within the authorized use area.

2.7.3 State Wildlife Action Plans

As required by recent DoD guidance, INRMPs must indicate how they support the relevant State Wildlife Action Plan (SWAP). The SWAP serves as a comprehensive, landscape level plan, identifying the species of greatest conservation need and the key habitats on which they depend, with the intent to prevent wildlife species from becoming threatened or endangered. In California, the CDFW developed and maintains the California SWAP (CDFW 2005, 2015a). A final 2015 update is currently available at https://www.wildlife.ca.gov/SWAP/Final. In Nevada, the NDOW developed and maintains the Nevada SWAP (NDOW 2013), available at http://www.ndow.org/Nevada_Wildlife/Conservation/Nevada_Wildlife_Action_Plan/.

This INRMP primarily draws from the California SWAP, but incorporates elements of the Nevada SWAP where appropriate. The California SWAP contains conservation goals, strategies, and actions to successfully conserve California's key habitats and priority species within seven provinces and their 19 ecoregions of the state, while freshwater fish planning is based around river drainages. MCMWTC straddles the border of the Sierra Nevada province (Sierra Nevada ecoregion) and the Deserts province (Mono ecoregion), within the Central Lahontan (Walker River) watershed. The relevant conservation targets for MCMWTC include North Coastal Mixed Evergreen and Montane Conifer Forests, Alpine Vegetation, and Walker River Native Fish Assemblage from the Sierra Nevada ecoregion and the Great Basin Pinyon Juniper Woodland and Big Sagebrush Scrub from the Mono ecoregion. Table 2-1 summarizes relevant goals, pressures and strategies from the California SWAP.

Table 2-1. Relevant Goals and Strategies from CA SWAP (CDFW 2015a)

Goals	Key Ecology	Pressures	Strategies
North Coastal Mixed Evergreen and Montane Conifer Forests			
By 2025… • acres where native species are dominant • acres with desired stages of succession • acres with desired age class heterogeneity (increase rotation age) • acres of habitat (with increased recruitment of oaks, aspen, and shrubs) • acres with desired fire regime acres/miles with desired water yield are increased by at least 5% from 2015 acres/miles.	Fire regime Successional dynamics Native versus non-native species Age class heterogeneity Hydrological regime	Fire and fire suppression Livestock farming and ranching Logging and wood harvesting Renewable energy Utility and service lines	Data Collection and Analysis Management Planning Land Acquisition/ Easement/ Lease Law and Policy Outreach and Education

Table 2-1. Relevant Goals and Strategies from CA SWAP (CDFW 2015a) (Continued)

Table 2-1. Relevant Goals and Strategies from CA SWAP (CDFW 2015a) (Continued) Goals	Key Ecology	Pressures	Strategies
Alpine Vegetation			
By 2025… • acres connected are maintained within the ecoregion from 2015 acres • acres of macrogroup (target) are maintained within the ecoregion from 2015 acres • acres with desired plant diversity (species richness and subgroup/alliance diversity) are maintained within the ecoregion from 2015 acres.	Area and extent of community Connectivity among communities and ecosystems Diversity	Climate change Commercial and industrial areas Invasive plants/animals Livestock farming and ranching Recreational activities	Data Collection and Analysis Partner Engagement Management Planning Direct Management Outreach and Education Training and Technical Assistance
Walker River Native Fish Assemblage			
By 2025… • miles of streams with target fish population (SGCNs) • miles of river where native species are dominant • miles connected (i.e., past barriers) • miles with desired stream stage (mimics natural hydrograph) • miles with desired level of water quality (meeting TMDL standards) • miles with desired age class heterogeneity are increased by at least 5% from 2015 acres.	Area and extent of community Connectivity among communities and ecosystems Native versus non-native diversity Hydrological regime Soil and sediment deposition regime Surface water flow regime Water quality	Dams and water management/use Introduced genetic material Invasive plants/animals Livestock farming and ranching Roads and railroads	Data Collection and Analysis Partner Engagement Management Planning Direct Management Law and Policy Outreach and Education
Great Basin Pinyon Juniper Woodland			
By 2025… • acres with desired native species dominance and desired structural diversity are increased by at least 5% within the presettlement range of pinyon-juniper and juniper habitats in the ecoregion • acres of desired successional stage are increased by at least 5% from presettlement habitat area • acres desired fire return are increased by at least 5% from 2015 levels	Fire regime Successional dynamics Structural diversity Native versus non-native diversity	Climate change Fire and fire suppression Invasive plants/animals Livestock farming and ranching Other ecosystem modifications	Data Collection and Analysis Partner Engagement Direct Management
Big Sagebrush Scrub			
By 2025… • acres of habitat • acres with desired age class heterogeneity • acres where native species is dominant • acres with desired fire regime are increased by at least 5% from 2015 acres.	Area and extent of community Fire regime Native versus non-native diversity Age class heterogeneity	Fire and fire suppression Housing and urban areas Invasive plants/animals Parasites/pathogens/diseases	Data Collection and Analysis Partner Engagement Direct Management Economic Incentives Land Acquisition/ Easement/ Lease

Source: California SWAP (CDFW 2015a)

2.8 Other Land Use Plans

There are also plans from other agencies that are relevant to the use of MCMWTC lands, primarily plans prepared by the USFS:

- Sierra Nevada Forest Plan and Amendments (USFS 2001, 2004, 2013a)
- Humboldt-Toiyabe National Forest Land and Resource Management Plan (USFS 1986)
- Bridgeport Winter Recreation Area Management Plan (USFS 2010a)
- MCMWTC Intensive Use Area Closure Order. Order Number: 04-17-10-10 (USFS 2010b)
- Carson City District Resource Management Plan, currently being updated (BLM 2015)
- Mono County General Plan (Mono County 2015)

2.9 Public Access and Outreach

2.9.1 Public Access and Outdoor Recreation

In general, DoD installations provide for sustained public access and use of natural resources for educational or recreational purposes when such access is compatible with mission activities and with other considerations such as security, safety, or resource sensitivity (DoDI 4715.03). The security of MCMWTC personnel, assets, facilities, natural resources, and the visitors themselves should receive priority when granting access to DoD properties. MCMWTC, however, is unusual for DoD facilities in that large portions of the facility must be open for public access, even when being used for military training, since much of the facility is on USFS land and continued public use is mandated as part of the USFS permits.

There are some areas within the general MCMWTC boundary where formal military training is not allowed to protect public access and public use and includes: Leavitt Meadows Campground, Leavitt Meadows Pack Station, Sonora Bridge Campground and Picnic Area, and Pacific Crest Trail. USMC activities are occasionally allowed in this areas when a USFS representative is present and/or as part of an interpretive education series or other mutually agreed activities directed at a civilian audience. For more on general permit conditions and public use, see Section 4.2.

2.9.2 Public Outreach

It is DoD and USMC policy to encourage a conservation ethic by providing an understanding of the need to protect and conserve natural resources through good stewardship. An important objective of such programs is to promote public recognition of excellent stewardship. The USMC policy strategy for public outreach and education on MCMWTC are as follows:

- Identify and evaluate settings and forums suitable for enhancing community involvement, compatible with the military mission and security.
- Apply specific conditions to ensure compatibility with the military mission and security.
- Encourage partnerships and volunteers to enhance conservation programs wherever practicable, for example: habitat enhancement, weed eradication, and planting of native plants.

MCMWTC is unusual in that it does not own or control most of the lands it relies on for training. While the USMC owns most of Base Camp and the CMFHA, most TAs are accessed through permits with the USFS. These arrangements do not provide for exclusive USMC use, but allow military training to proceed alongside other permitted land-uses, including recreational uses. Thus, the USMC is but one of many stakeholders with interest in the management and use of the forest lands that comprise and surround MCMWTC. The potential for space-use conflicts between military training and other permissible uses of forest lands is evident. For MCMWTC, effective community relations are vital to its ability to successfully accomplish its military mission.

Therefore, MCMWTC has established and seeks to maintain effective communication and working relationships with the USFS, local communities, and other stakeholders through its outreach program. Within the Range Complex Master Plan (USMC 2011a), a full description of the outreach activities is provided. The outreach strategies and approaches described there provide methods, messages, and tools to address MCMWTC's future needs and challenges and are designed to support the COs strategic vision and investments for the range. Implementation of these recommendations requires ongoing coordination within MCMWTC, and with multiple stakeholders that express widely-varying interests in use of lands and resources that comprise the range.

The area referred to as Conservation Area 1 (or CA-1) is included within the USFS permits for MCMWTC, but the only allowable use in that area is for environmental education, either for military personnel or for public outreach. No military training is allowed in that area.

Surrounding Communities

A command representative attends local community meetings, including the Antelope Valley Regional Planning Advisory Committee (RPAC), Bridgeport RPAC, Mono County Planning Commission, Mono County Board of Supervisors, Mono County Collaborative Planning Team, Sierra Business Council, and Northern Mono Chamber of Commerce. The command representative provides regular presentations to each of these committees/organizations.

MCMWTC also receives many requests from neighboring communities for USMC participation in local community events, such as parades, special openings, and festivals. Each year, Marines from MCMWTC participate in community and civic-related outreach activities. In Bridgeport, MCMWTC staff participates in various outreach activities including the annual Fourth of July parade, Bodie Ghost Town parade, and Memorial Day

Ceremony. In Gardnerville, activities include the Carson Valley Days parade and a community softball league. In Coleville, MCMWTC staff serve as Antelope Valley Elementary assistant teacher volunteers and participate in the local high school graduation. Table 2-2 includes a list of MCMWTC annual community events.

Public Notification of Military Training

Public notification of military training is required by the USFS permits for MCMWTC activities on USFS land. MCMWTC has initiated a comprehensive public outreach program designed to inform the public of the installation's presence and mission, facilitate coordination with other agencies and public stakeholders, and reduce conflicting uses on lands used as part of MCMWTC. Nevertheless, the potential for land-use conflicts is inherent in the military use of public lands, given that virtually all TAs are open to the public without the need for advance coordination or notice.

Although training activities cannot be published in advance to the general public per Force Protection and National Security policies. MCMWTC may inform the public on the day of certain training or regarding non-sensitive types of training using bulletin boards located around MCMWTC's training grounds. Existing bulletin boards that may be used by the MCMWTC for public notification in compliance with security directives are located at Peoples Gate, Finley Mine Road Junction, Silver Creek Meadows, and Deer Run Trail.

Table 2-2. MCMWTC Annual Community Events

Activity	Location	Dates	Event Lead
Mule Days	Bishop, CA	May	Mayor
Memorial Day Ceremony	Bridgeport, CA	May	Mayor
Fourth of July Parade	Bridgeport, CA	July	Mayor
Bodie Ghost Town Parade	Bridgeport, CA	August	City Council
Community Basketball League	Carson City, NV	Winter	MCCS
Memorial Day Ceremony	Coleville, CA	May	Walker VFW
High School Graduation	Coleville, CA	June	Principal
Carson Valley Days Parade	Gardnerville, NV	June	Mayor
Community Softball League	Gardnerville, NV	Summer	MCCS
Armed Forces Day Parade	Hawthorne, NV	May	Mayor
High School Graduation	Hawthorne, NV	June	Principal
Armed Forces Day	Hawthorne, NV	May	Mayor
Highway 108 Cleanup	Highway 108	May, September	Caltrans
Highway 108 Snow Removal	Highway 108	Winter	Caltrans
Toys for Tots	Nevada	December	USMCR
Reno Rodeo Parade	Reno, NV	June/July	Rodeo Committee
Conduct speeches for numerous organizations	TBD	TBD	Various Organizations
Assist local authorities upon request	TBD	TBD	Mono County
Provide firing detail and bugler upon request	TBD	TBD	Various Organizations
Assist USFS with maintaining 75 miles of roads	HTNF	Summer	USFS
Back County Horsemen	Turlock, CA	March	Committee
Walker Campground Cleanup	Walker, CA	March	Walker RPAC

Notes: MCCS = Marine Corps Community Services, TBD = To be determined

SECTION 3
CURRENT INSTALLATION CONDITIONS AND USE

3.1 MCMWTC Mission

Section 101(b)(1)(I) of the SAIA states that each INRMP must, to the extent appropriate and applicable, and consistent with the use of the installation to ensure the preparedness of the Armed Forces, provide for "*no net loss in the capability of military installation lands to support the military mission of the installation*."

Uniquely among United States military installations, MCMWTC provides the conditions for conducting a broad spectrum of mountain warfare training events that are critical to military readiness. The USMC, like the other military branches, develops its training requirements based first on assessment of the National Security Strategy, National Military Strategy, and mandated roles and missions for USMC forces. Requirements for TAs are founded in and derived from these mission mandates and the need for a robust mountain warfare training capability is well established.

As the Nation's Force-in-Readiness, the USMC must maintain the capability to operate effectively in complex mountainous terrain and environments. Providing training in this arena is the sole mission of MCMWTC. Accordingly, the military mission of MCMWTC is as follows:

> *The Marine Corps Mountain Warfare Training Center conducts unit and individual training courses to prepare USMC, Joint, and Allied Forces for operations in mountainous, high altitude and cold weather environments; and the development of warfighting doctrine and specialized equipment for use in mountain and cold weather operations.*

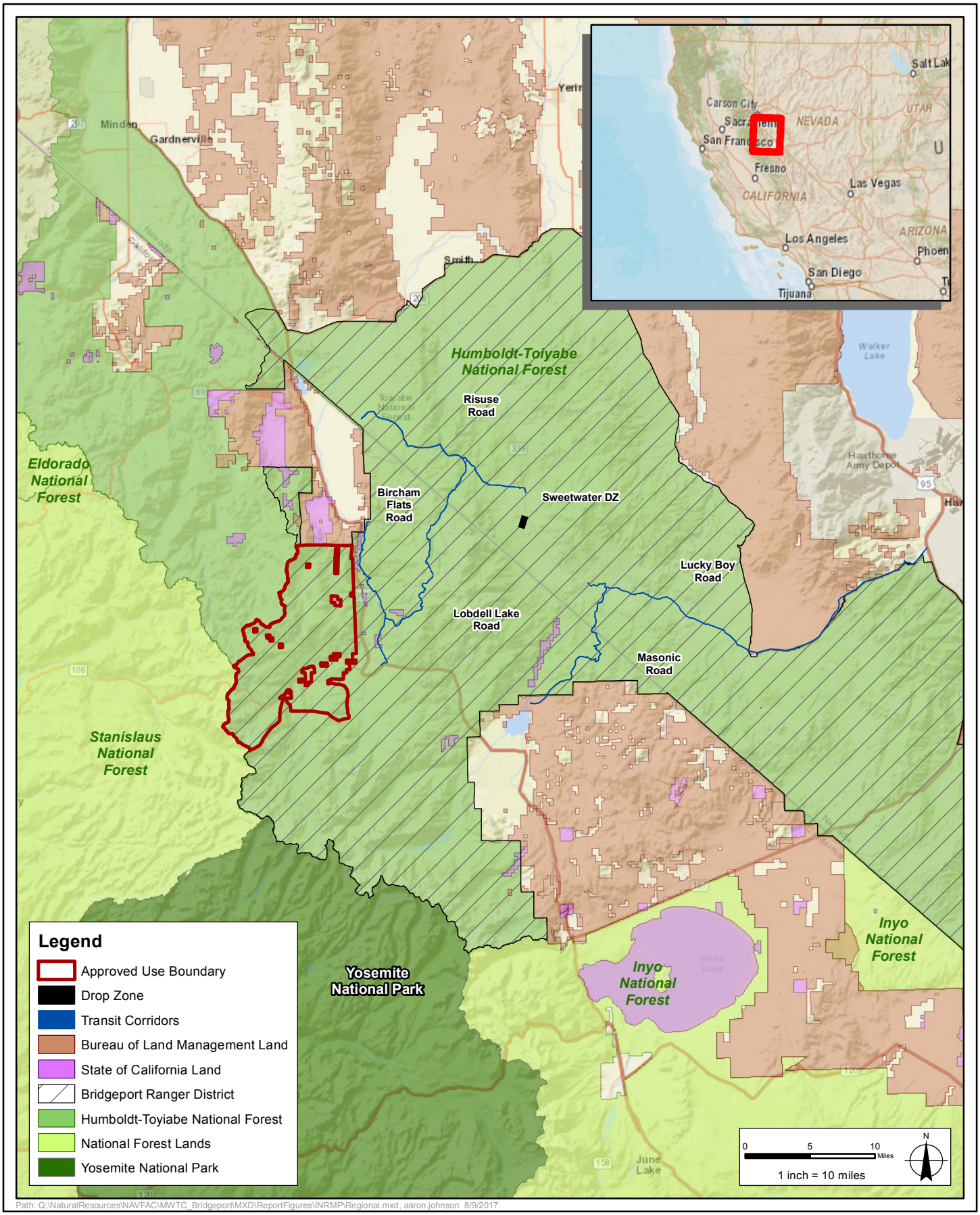
3.2 Installation Description

MCMWTC Base Camp Main Gate

MCMWTC is located in the mountains of the eastern Sierra Nevada range. It is generally situated north of Yosemite National Park, east of the Pacific Crest Trail, and south of Lake Tahoe, and is bounded by US Highway 395 to the east and California State Route (SR) 108 to the south (Figure 3-1). With most of the remaining boundary defined by Alpine, Mono, and Tuolomne county boundaries. The region is sparsely settled, with the town of Bridgeport, California (population 800) located 24 miles south of the Main Gate of the base. Bridgeport is the largest town within 50 miles of MCMWTC. Other communities in the vicinity include the California towns of Walker (population 500) and Coleville (population 400) located 20 miles and 23 miles, respectively, to the north.

3.2.1 Land Administration and Ownership

MCMWTC consists of a complex arrangement of parcels with various DoN users, other users, other government agencies (i.e., USFS, BLM, and CDFW), and land ownership (see Table 3-1 and Figure 3-2). Most of the land comprising MCMWTC is administered by the USFS, with a small area owned by the DoD. Private inholdings and CDFW land are not included as part of the MCMWTC installation, even if the parcel is within the larger overall boundary. The USMC needs to coordinate with CDFW for any military activities they would like to conduct on CDFW, regardless of where it occurs within MCMWTC. MCMWTC training activities in the HTNF have been authorized under the DoD and United States Department of Agriculture (USDA) Master Agreement of 1988, Public Law 100-693, Public Law 111-84, a 40-year SUP and other temporary or annual SUPs issued by the USFS. For more information on the TAs and their uses, see Section 3.2.2 and Table 3-2.



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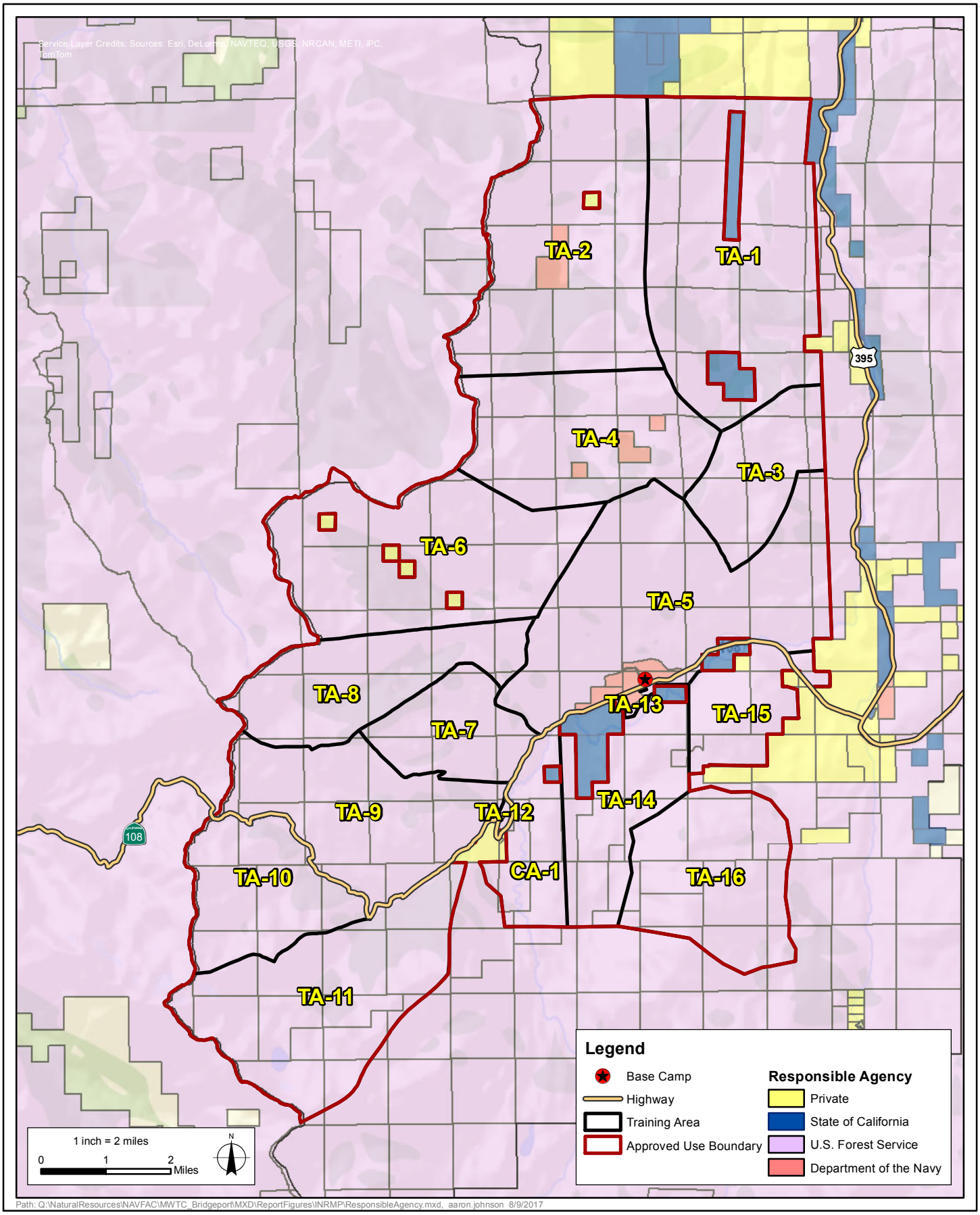
Regional Map
Marine Corps Mountain Warfare Training Center Bridgeport
Integrated Natural Resources Management Plan

FIGURE 3-1



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Responsible Agency
Marine Corps Mountain Warfare Training Center Bridgeport
Integrated Natural Resources Management Plan

FIGURE
3-2

Table 3-1. Land Ownership, Permits and Agreements for MCMWTC

Land Agent	Acres	Permit Reference	Primary USMC Use(s)	Other Users
DoN	68.5	Purchased 1983	Coleville Military Family Housing Area	No
DoN	346	Exchanged 2013	Intensive Use Area (IUA)/Base Camp	No
DoN	200	Purchased 2004	Summit Meadows	Yes
DoN	78	Purchased 2010	Sonora Junction (not within MCMWTC, purchased to support future land exchange)	No
USFS BRD	44,932 [a]	BRI250 (Appendix B) with AOP 2009–2049	IUA/Base Camp – 532 acres (now only 186 acres) [b] Limited Use Area (LUA): TAs 1-9 and TA 12 – 43,920 acres Sweetwater Airstrip Special Use Area – 480 acres (Nevada)	Yes
USFS BRD	9,157 [a]	Annual (BRI571) with Leavitt Lake AOP	Leavitt Lake: TAs 10 and 11 (Winter Only)	Yes
USFS BRD	1,050 [a] (mostly within other SUPs)	Annual (BRI572) with LZ/DZ AOP	Originally: 53 Landing Zones (LZs)/Drop Zones (DZs) 2015: 60 LZs and 7 DZs (including Swallow LZ and Sweetwater DZ in Nevada)	Yes
USFS BRD	8,178 [a]	Annual (BRI573) with Pickel Meadows AOP	Pickel Meadows: TAs 13, 14, 15, 16 (and Conservation Area [CA-1])	Yes
USFS BRD	n/a	Annual (BRI494) with Lucky Boy/Masonic AOP	Use of Lucky Boy Pass Road, Masonic Mountain Road, Burcham Flats Road, Lobdell Lake Road, Kirman Lake Road (California and Nevada)	Yes
Bently	Unconfirmed	Entry Permit with Bently Family Limited Partnership (2004)	Ingress and egress in support of limited training (adjacent to and east of TA15 and used for access to TA16)	Yes
Flying M	Unconfirmed	Entry Permit with Flying M Ranch (2010)	Ingress and egress, as well as bivouac and helicopter landings. In Nevada (on eastern edge of USFS land)	Yes
Approximate Total Acres	**62,960 [c]**			
	692.5	*Total DoN*		
	62,267 [d]	*Total USFS*		
	Unknown	*Total Other*		
	62,460	*Total California*	Does not include roads	
	500	*Total Nevada*	Does not include roads	

Sources: Compiled from the RCMP for MCMWTC (USMC 2011); personal communications with personnel at MCMWTC and NAVFAC Southwest; and GIS data available from the USFS available at http://data.fs.usda.gov/geodata/.

Notes:

[a] Acres listed are those identified in the SUP. However, those acreages do not account for land owned by other federal agencies or for private inholdings. TA12 is included under BRI250; it is not identified explicity in any SUP.

[b] A land exchange was completed in 2013 that swapped 240 acres owned by DoN with the 346 aces owned by USFS that comprised most of Base Camp.

[c] Estimated based on DoN owned and acres listed in USFS SUPs. Does not include CDFW or private agreements.

[d] Total based on acres identified in SUPs. See Table 3-2 for USFS total acreage based on GIS data and excluding any inholdings held by other entities.

Currently unused areas in Nevada (Finch LZ, Lucky Boy DZ) and in California (Crow LZ) are not included in this table.

Table 3-2. Land Use on MCMWTC

Training Area	Alternate Name	Land Agent/Owner (Acres)	Total Acres [a]	LZs, DZ, and Ranges (Acres) [b]	Uses
TA 1	Mill Canyon	USFS BRI250 (7,143)	7,143	Albatross LZ, Condor LZ Mill Creek DZ (104)	Expeditionary combat service support training, main supply route movement and training
TA 2	Lost Canyon	USFS BRI250 (6,547)	6,547	Merganser LZ, Red Tail LZ, Woodpecker LZ	Company-sized maneuver training and mortar non-live-fire training
TA 3	Grouse Meadows	USFS BRI250 (2,190)	2,190	Falcon LZ, Oriole LZ	Battalion-level bivouacking, winter unit operations, and skiing/environmental training
TA 4	Summit Meadows	USFS BRI250 (4,156) DoN (200)	4,356	Cardinal LZ and DZ (67) Hawk LZ and DZ (67) Chickadee LZ, Grosbeak LZ, Sandpiper LZ, Sparrow LZ Ranges 400 and 401	Company-level operations, survival training, and skiing/environmental training
TA 5	Sonora Bridge, Upper Bench, People's Gate, and Aspen Bowl	USFS BRI250 (6,747) DoN (310, part of Base Camp) Private (Bently, 40)	7,097	Cuckoo LZ, Dodo LZ, Dove LZ, Egret LZ, Grackle LZ, Mockingbird LZ, Nightingale LZ, Quail LZ, Teal LZ Expeditionary Airfield Ranges 501, 501, 502, 503	Dismounted patrolling, sniper training, Simulated Close Air Support, water purification training, small unit tactics, and advanced logistics base training.
TA 6	Silver Creek Meadows	USFS BRI250 (5,836)	5,836	Woody LZ and DZ (67) Bunting LZ, Buzzard LZ, Crane LZ, Eagle LZ, Loon LZ, Osprey LZ, Penguin LZ, Pigeon LZ Crow LZ (inactive) Swan LZ (10, another 10 in TA8) Ranges 600 and 601	Small arms training and company-level maneuver training Ski Lift Training Area
TA 7	Cloudburst	USFS BRI250 (1,994)	1,994	Goose LZ, Raven LZ	Small unit tactics and maneuver training
TA 8	Wolf Creek	USFS BRI250 (3,290)	3,290	Owl LZ, Partridge LZ Swan LZ (10, another 10 in TA6) Ranges 800 and 801	Supports downhill skiing and small arms sniper training
TA 9	Brownie Creek	USFS BRI250 (4,217; SUP states 3,351)	4,217	Blackbird LZ and DZ (67) Bluebird LZ, Canary LZ, Kiwi KZ, Mallard LZ, Parrot LZ, Snipe LZ, Snowbird LZ, Tern LZ	Small unit training
TA 10	Sonora Pass	USFS BRI571 (2,844; SUP states 3,718)	2,844	Robin LZ, Turkey LZ Range 1000 and portion of Demolition Range 1	Small unit over the snow training, avalanche training, snow caves, winter survival WINTER ONLY
TA 11	Leavitt	USFS BRI571 (5,448; SUP states 5,459)	5,448	Lark LZ, Vireo LZ, Yarup LZ Ranges 1100 and 1101, Demolition Ranges 2 and 3, and portion of Demolition Range 1	Small unit over the snow training, avalanche training, snow caves, ice breaching, small arms live fire, winter survival WINTER ONLY
TA 12	Leavitt Training Area	USFS (58)	58	None	Teaching location for rock climbing skills and rope suspension bridge training

Table 3-2. Land Use on MCMWTC (Continued)

Training Area	Alternate Name	Land Agent/Owner (Acres)	Total Acres [a]	LZs, DZ, and Ranges (Acres) [b]	Uses
TA 13	Pickel Meadow	USFS BRI573 (130) DoN (36, part of Base Camp)	166	Pickel Meadow DZ (partial, 55) [c]	Small unit (platoon or smaller) acclimatization, conditioning hikes on routes, and similar foot- mobile, non-live-fire activities
TA 14	Poore Lake	USFS BRI573 (2,675)	2,675	Bullet LZ, Flamingo LZ Pickel Meadow DZ (partial, 14) [c]	
TA 15	Kirman Lake	USFS BRI573 (1,712)	1,712	None	
TA 16	Emma Cross	USFS BRI573 (3,669)	3,669	Ostrich LZ, Pickel LZ, Vulture LZ	
Sweetwater Special Use Area		USFS BRI250 (480)	480	Sweetwater Airstrip Sweetwater DZ (264)	Helicopter and fixed-wing landing and takeoff; In Nevada
Swallow LZ		USFS BRI572 (20)	20	Swallow LZ	In Nevada
Finch LZ		BLM		Finch LZ – inactive	In Nevada
Lucky Boy DZ		USFS BRI572		Lucky Boy DZ – inactive	In Nevada
CA 1	Conservation Area	USFS BRI573 (1,759)	1,759	None	"Leave No Trace" Training, conservation education, recreation
Base Camp	Upper and Lower Base Camps	USFS BRI250 (186) DoN (346)	532 (included in other TAs)		Administrative and housing buildings
CMFHA	Coleville	DoN (68.5)	68.5	None	Housing
			62,487	**Total Acres (entire boundary, including Nevada)**	
			61,570	**Total Acres (excluding unpermitted areas)**	
		Total DoN	**615**		
		Total USFS (Permitted to DoN)	**60,915**		
		Total Private (Access Agreement with DoN)	**40**		

Sources: Range Complex Master Plan (USMC 2011), personal communications with MCMWTC personnel, GIS data provided by Range Control at MCMWTC.
Notes:
[a] Total acres for each area are based on GIS data, not real property documents. Acres listed for USFS are not the acres as listed in the SUP (which are presented in Table 3-1), but the acres as identified in GIS (excluding any inholdings by other agencies or private individuals).
[b] All LZs are 20 acres.
[c] Pickel Meadow DZ is a total of 217 acres, with some in TA 13, some in TA 14 and some on CDFW land not in a TA.
Photographs of most LZs are included in NAVFAC Southwest 2010.

3.2.1.1 DoN Land

DoN owns a total of 614.5 acres in different areas of MCMWTC, with another 78 acres in Sonora Junction (which is not used for training). The various DoN parcels are shown on Figure 3-2. DoN owns most of the Base Camp located on Highway 108, all of CMFHA located approximately 25 miles north of Base Camp, and 200 acres in Summit Meadows.

Coleville Military Family Housing Area

3.2.1.2 USFS Land

Humbold-Toiyable National Forest

The remainder of the MCMWTC Base Camp and most of the TAs, as well as the Sweetwater Special Use Area in Nevada, are located on lands that are managed by the USFS, HTNF, BRD. The use of these areas by MCMWTC is governed under a master agreement between DoD and USFS and subject to USFS permitting. The master agreement was established in 1988 and replaced agreements dating back to the 1950s. The USFS permitting consists of a framework that includes multiple types of SUPs based on the USFS Manual (Chapter 2710 – Special Use Authorizations), depending on the nature and expected duration of the proposed military activity. SUPs typically define and describe permitted activities in some detail, based on information contained in applications for SUPs provided to USFS by MCMWTC. SUPs typically are accompanied or preceded by environmental analysis of potential impacts of proposed activities on the environment. Each SUP is also supported by an AOP. The majority of USMC use of USFS land is authorized under a 40-year SUP and its terms and conditions established in 2009 and supported by an AOP (see Appendix B). Specific terms and conditions from the SUPs that relate to natural resources management are identified in Section 4.

3.2.1.3 Bureau of Land Management Land

There are a number of authorizations available to the USMC with the BLM, as described in BLM Instructional Manual No. 2001-030 (BLM 2001). There are currently no formal interagency agreements between MCMWTC and the BLM. MCMWTC, however, regularly coordinates its use of BLM lands for training activities with the BLM Field Office in Carson City, Nevada. Training activities, such as use of a convoy training route in Nevada, regularly have been categorized by BLM as permitted "casual use." Where necessary to retain casual use status, BLM has worked with MCMWTC to modify aspects of proposed training if an initial proposal would not, in the judgment of the BLM, fall within the casual use category. Examples of modifications have included, displacing proposed training from a road that is commonly used by the public to less-used road, or limiting the size of training units in order to reduce the environmental impact. There are various BLM administered parcels to the north and east of MCMWTC.

3.2.1.4 Other Land

CDFW owns inholdings of land within TA 1, TA 14 (including Pickel Meadow Drop Zone (DZ), TA 15, and CA-1. If there is incidental and/or unintentional use of this land – which is not marked in the field – by the USMC, the same conditions applied on the surrounding USFS land are followed. The USMC must seek permission from CDFW for each specific military activity prior to using CDFW lands and does not maintain a permanent agreement

for the use of CDFW land. NDOW also owns land along some of the Transit Corridors, particularly Lucky Boy Pass. There are also two agreements with private landowners for permission to pass through and temporarily use private land; one area in California and one in Nevada.

3.2.2 Land Use

3.2.2.1 Regional Land Use

The MCMWTC is located within the HTNF and is surrounded by the Carson-Iceberg Wilderness to the northwest, the Emigrant Wilderness and Stanislaus National Forest to the west, and the Hoover Wilderness to the south (see Figure 3-1). The HTNF is approximately 6.3 million acres and offers many recreational opportunities including skiing, snowmobiling, hiking, camping, backpacking, boating, windsurfing, horseback riding, hunting, and fishing. Yosemite National Park, Mammoth Mountain, Bridgeport Winter Recreation Area, Pacific Crest Trail, and Lake Tahoe are other recreational and tourist attractions that are located in proximity to the MCMWTC and the HTNF.

Major land uses within the vicinity include recreation, timber production, agriculture, livestock grazing, and residential use. Approximately 94 percent of the land in Mono County is publicly owned, the majority (88 percent) by the federal government. Public lands in the county are managed by the USFS, the BLM, the National Park Service, the CDFW, the California State Lands Commission, the Los Angeles Department of Water and Power, and several Native American tribal groups.

The use of public land resources has been an integral part of the rural lifestyle and local economy of Mono County. These lands provide rangeland resources, renewable energy resources, recreation, wildlife habitat, and viewsheds. Much of the federal land in Mono County is managed as open space by the Humboldt-Toiyabe and Inyo National Forests and the BLM as a source of outdoor recreation opportunities, grazing opportunities, timber production areas, and natural resource conservation.

Privately held lands in Mono County are primarily used for agricultural, residential, and commercial/industrial purposes. There are several unincorporated communities within Mono County including the town of Bridgeport southwest of the MCMWTC (see Figure 3-1). The only incorporated community is the town of Mammoth Lakes in southwestern Mono County with a population of 8,009 in 2014 (US Census Bureau 2015).

As the installation is located within the HTNF, land use in the immediate vicinity of the MCMWTC primarily includes recreation and timber production.

3.2.2.2 Installation Land Use

The land that MCMWTC operates on is a combination of land administered by the USFS and DoN (refer to Section 3.2.1). MCMWTC is divided into different TAs, each with their own approved uses and training infrastructure. Within the TAs, there are training ranges,

DZs (for equipment and/or personnel drops) and Landing Zones (LZs) (for helicopter landings). Base Camp is where the majority of the offices and infrastructure is located. Table 3-2 summarizes the size and approved uses for each TA. Figure 3-3 depicts the TAs, while Figures 3-4 and 3-5 show details of Base Camp and CMFHA, respectively. Additional detailed maps and training event information is provided in Appendix E.

3.2.2.3 Intensive-Use Area/Base Camp

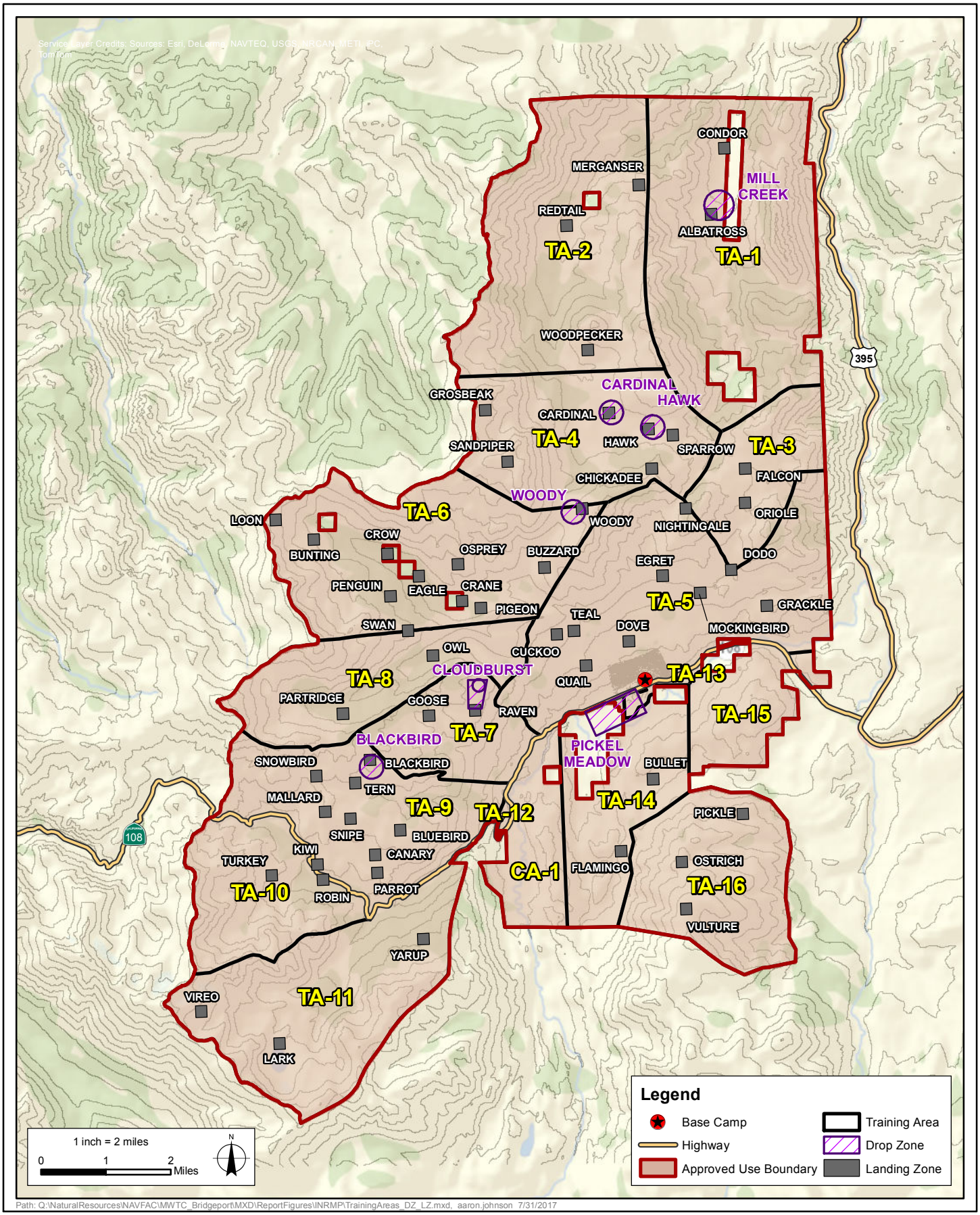
The MCMWTC headquarters (HQ) and facilities (Base Camp) are located in the 532-acre intensive-use area. Base Camp is divided into Upper and Lower Base Camps by Silver Creek, a tributary of the West Walker River which flows through Pickel Meadow just below the Base Camp (see Figure 3-4). Approximately 40 buildings currently exist on the site. Upper Base Camp includes buildings for administration, facilities support, staff and transient barracks, equipment and vehicle storage and maintenance, classrooms, a mess hall, exchange, recreational facilities, and a medical clinic. Lower Base Camp includes a landing strip for helicopters, air support facilities, temporary housing for students, and horse and mule stables (see Figure 3-3).

MCMWTC Upper Base Camp

MCMWTC Lower Base Camp

3.2.2.4 Limited-Use Area/Training Areas

The limited-use area is divided into 16 TAs that collectively accommodate training ranges, LZs and DZs (Table 3-2; Figure 3-3). The TAs also accommodate foot traffic in the form of maneuver elements from platoons (40 individuals) up to companies (120 individuals) traversing across a TA to access the training ranges, LZs and DZs. The TAs include 11 live-fire small arms ranges that support small arms training (from 9 millimeter up to 50 caliber ammunition) and three demolition/avalanche initiation ranges. A ski-lift was constructed in TA 6 in 1987 and is used for winter training purposes.



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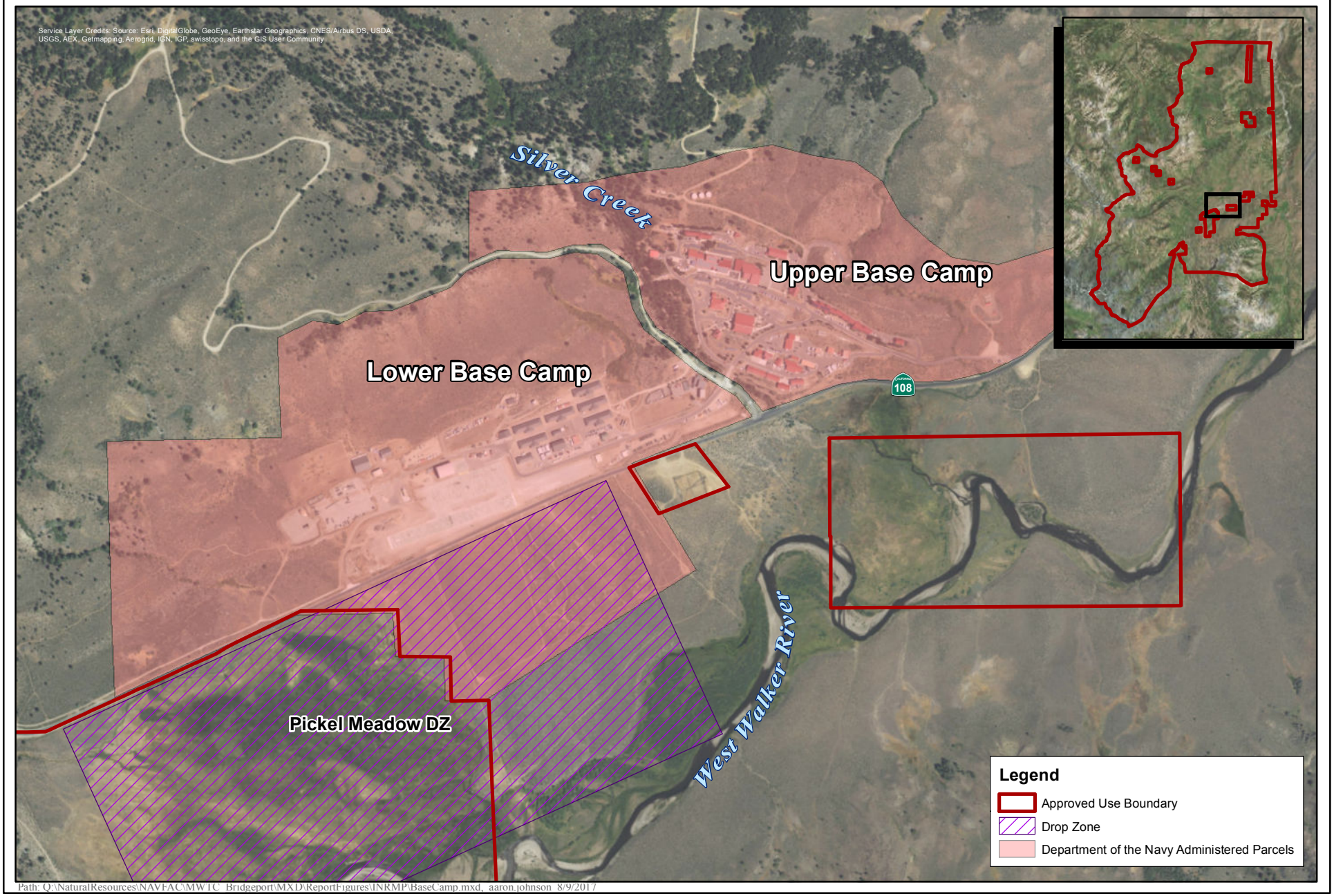
Training Areas
Marine Corps Mountain Warfare Training Center Bridgeport
Integrated Natural Resources Management Plan

FIGURE
3-3



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amec foster wheeler

Base Camp
Marine Corps Mountain Warfare Training Center Bridgeport
Integrated Natural Resources Management Plan

1 inch = 1,000 feet
0 500 1,000 Feet

N

FIGURE
3-4

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amec foster wheeler

Coleville Military Family Housing Area
Marine Corps Mountain Warfare Training Center Bridgeport
Integrated Natural Resources Management Plan

FIGURE
3-5

TA 10 and TA 11 are located within the Bridgeport Winter Recreation Area for "Winter Use Only" and available for training between 1 December and 30 April as long as there is a 24 inch snow cover. There are 60 helicopter LZs designated at the MCMWTC, one of which is located at the Sweetwater DZ and Airstrip in Nevada. The Sweetwater DZ and Airstrip in Lyon County, Nevada and are located outside of the MCMWTC and are authorized for use under a SUP BRI-494. Not all of these LZs are currently authorized for year-round use. Every LZ has some type of seasonal or activity restriction (see Section 3.4).

Per the recommendation of the USFS BRD, the USMC also established a CA-1 located on the southern edge of the MCMWTC (refer to Figure 3-3). CA-1 is not used for combat training activities, but is used to teach Marines "Leave No Trace" backcountry principles and to provide an environmental education venue for Marines training at the MCMWTC.

3.2.2.5 Transit Corridors

A number of transit corridors (TCs) located outside of the MCMWTC boundary are utilized for training activities and travel as described below (depicted on Figure 3-1). Activities on these TCs have been authorized by the USFS through temporary permits (refer to Section 5.4 for SUP details). While the majority of USMC activities are on USFS roads and land, other agencies may also have authority over the activities conducted in these TCs, including BLM, California Department of Transportation, and other road-related agencies.

Masonic Mountain Road – In 2010, the USFS issued a letter approving activity by the MCMWTC on Masonic Mountain Road (Forest Road 046) and issues SUP BRI-494 annually for the same use. Masonic Mountain Road is an improved dirt road that originates at the intersection of California SR 182 east of the Bridgeport Reservoir and continues over Masonic Mountain to intersect with the Lucky Boy Pass Road (Forest Road 028). The MCMWTC currently uses Masonic Mountain Road primarily for convoy driver training with no off-road vehicle travel.

Lucky Boy Pass Road – In 2009, the USFS issued a letter approving activity on Lucky Boy Pass Road by the MCMWTC, and the USFS issues SUP BRI-494 annually for the same use. Lucky Boy Pass Road (Forest Road 028/199) is an important training resource for the MCMWTC. This improved 32-mile dirt road provides a linkage between the Hawthorne Ammunition Depot in Nevada and the Bridgeport areas in California; it extends from the vicinity of the intersection of Highway 395 and Nevada SR 338, passing by the Lucky Boy Pass DZ and terminating at Nevada SR 359 south of the Hawthorne Ammunition Depot. Lucky Boy Pass Road has been used in training events to provide an area for convoy training and related logistics and movement training events in realistic terrain.

Kirman Lake Road – Kirman Lake Road is located within the Pickel Meadows area just outside the eastern boundary of the MCMWTC. This road is an access road from the MCMWTC to California SR 108 and is authorized for use under Pickel Meadows SUP BRI-1478. MCMWTC uses Kirman Lake Road for small unit movements and safety vehicle

convoys of four vehicles or less to support small unit logistics and camp activities at LZ Bullet. Foot traffic consisting of up to 120 individuals associated with small unit movements traverse Kirman Lake Road to access current TAs (e.g., TA 13).

Lobdell Lake Road – Lobdell Lake Road (Forest Road 067/089C) is located east of MCMWTC and connects Burcham Flat Road (Forest Road 031) southwest of Lobdell Lake in California to Risue Road (Forest Road 050) northwest of the Sweetwater DZ and Airstrip in Nevada. Lobdell Lake Road is a 14-mile road that is primarily used by the public to access Lobdell Lake in Mono County, California for recreational activities. Lobdell Lake Road is used by the MCMWTC for training activities and access to TAs such as the Sweetwater DZ and Airstrip in Nevada.

Burcham Flat Road – Burcham Flats Road (Forest Road 031) originates just north of the MCMWTC east of SR 395 and connects to Lobdell Lake Road before transitioning into SR-395 near Hot Creek. Burcham Flat Road is a 14-mile road that is primarily used by the public from May until November as an off-road recreational trail. Burcham Flat Road is used by the MCMWTC for training activities and access to TAs such as the Sweetwater DZ and Airstrip in Nevada.

Risue Road – Risue Road (Forest Road 050) is located entirely in Nevada, originating on private land north MCMWTC, and intersecting with Lobdell Lake Road before terminating at Nevada SR 338. Risue Road is a 17-mile road that is primarily used by the public from May until November as an off-road recreational trail. Burcham Flat Road is used by the MCMWTC for training activities and access to TAs such as the Sweetwater DZ and Airstrip in Nevada.

Private Land – Private land on Masonic Mountain Road, Lucky Boy Pass Road, Kirman Lake Road, Lobdell Lake Road, Risue Road, and Burcham Flat Road is currently used to provide access to TAs, including the Sweetwater DZ and Airstrip, and on occasion to provide logistical support and operational camps.

State Land – State land located on the east side of the MCMWTC is traversed by Burcham Flat Road. Burcham Flat Road is currently used as a link to other TCs such as Risue Road, to provide access between MCMWTC and TAs such as the Sweetwater DZ and Airstrip. There is also state land along Kirman Lake Road past Mud Lake, which is used to provide access to the southern portions of TA 14 including LZ Bullet.

Bureau of Land Management Land – BLM land located in California and Nevada outside of the MCMWTC is traversed by Masonic Mountain Road and Lucky Boy Pass Road to provide access to the Sweetwater DZ and Airstrip.

3.2.2.6 Special Use Permit Areas

The great majority of military activity occurs on USFS land, and execution of USMC training and other activities on these lands is subject to the USFS permitting framework.

This framework includes multiple types of SUPs, depending on the nature and particularly the expected duration of the proposed military activity.

SUPs typically define and describe permitted activities in some detail, based on information contained in applications for SUPs provided to USFS by MCMWTC. SUPs typically are accompanied or preceded by environmental analysis of potential impacts of proposed activities on the environment. Environmental analysis and documentation in support of a SUP may be prepared by USFS staff, or may be prepared by the USMC (or its contractor) in coordination with and for use by USFS. Permit conditions relevant to natural resources management are described in Section 4.

3.2.2.7 Public Land Use and Access

In addition to guiding natural resource management, the HTNF Plan (USFS 1986) also guides public access to the HTNF, including those areas used as part of MCMWTC. It recognizes the MCMWTC intensive-use area (Base Camp) and limited-use area (TAs) as important special land uses and specifies the following regarding public access to these areas: 1) allow for general public use of the area in addition to USMC use; 2) give priority to military uses within the intensive use area (Base Camp); and 3) provide for public access to the Silver Creek Road through and/or around Base Camp (USFS 1986).

Intensive Use Area/Base Camp

As of September 2010, all areas, roads and trails within the boundaries of the MCMWTC Base Camp, excluding Silver Creek and Silver Creek Road (Forest Service Road 058), have been closed to all unauthorized personnel. The closure order area does not include Silver Creek, Silver Creek Road, or any improvements thereon, to include the Gate Guard Building and barriers on Silver Creek Road, and the pedestrian bridge over Silver Creek (USFS 2010). The majority of Base Camp is now owned by DoN and no longer under the restrictions provided in the SUP.

Limited-Use Area/Training Areas

Public uses within the TAs are similar to those throughout the HTNF including skiing, hiking, camping, backpacking, horseback riding, hunting, and fishing.

Transit Corridors

Public use in the vicinity of the TCs primarily consists of personal-use firewood gathering and hunting.

Special Use Areas

Special use areas are generally open to the public. However, specific restrictions apply to the USMC (refer to Section 4). Winter public uses in the vicinity of Leavitt Lake include snowmobiling and Nordic skiing.

3.2.2.8 Agricultural Outlease

There are no agricultural outleases currently on any DoN owned land. CMFHA and Base Camp are not appropriate locations for agricultural activities. The remaining DoN land is not currently planned for agricultural outleases.

3.2.2.9 Grazing Areas

Seasonal livestock grazing permitted by the USFS occurs on some portions of the HTNF where MCMWTC TAs occur. This includes four active grazing allotments within MCMWTC, totaling 15,819 acres within MCMWTC TAs. The total acreage of these allotments is 54,089 acres, including areas outside MCMWTC TAs. These allotments include:

- Silver Creek sheep and goat allotment (inactive since the early 1990s, but reauthorized in 2006; ewes/lambs from 15 June through 30 September) for a total of 19,365 acres;
- Mill Canyon sheep and goat allotment (ewes/lambs from June 1 through June 25) for a total of 7,647 acres;
- Lost Cannon cattle and horse allotment (cows/calves from 16 July – 15 September) for a total of 10,227 acres; and
- Sardine cattle and horse allotment (cows/calves from 16 July through 15 September) for a total of 16,850 acres.

The USFS issues annual operating instructions for the active allotments. The instructions include preventing stream bank disturbance and avoiding areas known to contain federally listed or candidate T&E species (see Section 3.5.13). Installation Range Regulations require notification of the Range Control Officer in the event that livestock are grazing in a TA. If grazing interferes with training activities, the USMC wait until the livestock move from the area before continuing an exercise. The USMC also notifies appropriate allotment holders prior to a training activity, if it is scheduled to occur in a grazing allotment.

3.2.2.10 Water Supply

Base Camp

Wells are the only source of potable water for MCMWTC. The main well (Well 1) is located at the Lower Base Camp and has an output of 125 gallons per minute. A second well (Well 2), also at the Lower Base Camp, was taken offline due to a high manganese concentration in the water (USMC 2011b).

Coleville Military Family Housing Area

The CMFHA potable water system consists of five groundwater wells with a total production capacity of approximately 177 gallons per minute. Three of these wells (Wells #1, #4, and

#5) are operational; the other two wells (Wells #2 and #3) have been permanently disconnected from the water collection system piping due to high concentrations of uranium in the groundwater (USMC 2010).

The CMFHA potable water system operates under Domestic Water Supply Permit Number 86-048, issued by the California Department of Health Services to the Camp Pendleton & Quantico Housing Limited Liability Company (LLC) (USMC 2010)(USMC 2010).

3.2.2.11 Historic Military Use

Established in 1951, the precursor of MCMWTC was originally located at Camp Pendleton as Cold Weather Training Battalion, Provisional Staging Regiment, Training, and Replacement Command for replacement personnel to be deployed to Korea. The command was relocated to Bridgeport, California in September 1951 and renamed the Marine Corps Cold Weather Battalion, Bridgeport in September 1956. The command was re-designated as MCMWTC in November 1963 (USMC 2003). MCMWTC was placed in caretaker status from October 1967 until May 1976 when it was re-activated. From its re-activation in 1976, to the early 1990s, MCMWTC continued to expand and see a steady throughput of training as Cold War tensions increased and the need for a cold weather warfare capability persisted. During this period, many of the facilities and infrastructure of MCMWTC received their initial funding, or were upgraded to the permanent structures that now exist at Base Camp (USMC 2003, 2011b, 2015).

The Korean-bound 15th Replacement Draft marches to higher elevations to begin cold-weather training at MCMWTC in November 1951

During the 1990s, although the focus of USMC warfare capabilities migrated to arid desert environments, MCMWTC continued to support cold weather and mountain warfare training for United States forces. Training specifically supported preparation of Marines participating in Exercise Battle Griffin with other North Atlantic Treaty Organization forces in Norway, and the utilization of the Norway Air-Landed Marine Expeditionary Brigade equipment set that was stored in caves throughout Norway. Throughout this period, MCMWTC continued to maintain its capability as the only facility in the DoD's inventory capable of supporting battalion level mountain warfare training (USMC 2003, 2011b).

In 2001, with the start of Operation Enduring Freedom (OEF), MCMWTC once again emerged as a priority facility for conducting pre-deployment training for military operations in a mountain environment. In 2003, when USMC capabilities were redirected from Afghanistan to Operation Iraqi Freedom (OIF), interest in conducting training at MCMWTC

decreased significantly. In 2007 and 2008, when the focus of combat operations shifted from OIF back to OEF, MCMWTC once again emerged as a priority training venue for units preparing for deployment to Afghanistan (USMC 2003, 2011b).

During this period of growth, MCMWTC significantly increased capabilities and throughput of military units, while optimizing limited assets at MCMWTC. The effort to expand training capabilities to better reflect and prepare units for overseas military operations has resulted in a need to train more than a single infantry battalion and expand to facilities outside of the MCMWTC current inventory of facilities (USMC 2003, 2011b).

3.3 Operations and Infrastructure

3.3.1 Population

There are approximately 200 permanent personnel currently assigned to the MCMWTC to support pre-deployment training for military personnel. When training units are present, as many as 1,200 personnel may occupy the installation.

3.3.2 Cantonment Area

Base Camp

Cantonment facilities at MCMWTC are divided between the Upper Base Camp (permanent party enlisted personnel) and the Lower Base Camp (visiting students and training units) (see Figure 3-4). Permanent and temporary housing is available in Upper Base Camp with barrack facilities available in Lower Base Camp. The maximum total number of personnel that can be accommodated in Upper Base Camp is less than 200 and in the Lower Base Camp barracks is 1,320.

Coleville Military Family Housing Area

Gomez Court, Coleville Military Family Housing Area

The CMFHA is located on government-owned land in the Antelope Valley of the Eastern Sierra Nevada Mountains in northern Mono County, California, approximately 25 miles north of the MCMWTC (refer to Figure 3-1). The CMFHA is a 68.5-acre housing development that serves as the off-base family housing center for MCMWTC personnel (see Figure 3-5). Constructed in 1985, the CMFHA originally consisted of 77 housing units. Currently the CMFHA consists of 111 residential units (a combination of duplex and fourplex townhomes), a community center, indoor swimming pool, fitness area, baseball field, outdoor basketball court, housing office, convenience store, and security station. In 2003,

the DoN privatized the infrastructure, units, and land at the CMFHA and leased them by means of a 50-year ground lease under a Public Private Venture initiative to the Camp Pendleton & Quantico Housing LLC (USMC 2010).

3.3.3 Military Operations and Activities

The MCMWTC is the USMC's premier training site for Marines preparing to serve in high altitude environments. The MCMWTC conducts unit and individual training courses to prepare USMC, Joint, and Allied Forces for operations in mountainous, high altitude, and cold weather environments. Recent and current operations (e.g., Afghanistan) show that training to support mountain warfare must be an integral component of USMC readiness.

MCMWTC has the capability to support year round training ranging from individual training up to Marine Air Ground Task Force level exercises. Individual and unit training offered in the complex, compartmentalized and mountainous terrain of MCMWTC ensures that forces are properly trained in the tactics, techniques, and procedures required to support Regional Combatant Commanders with Areas of Responsibility that contain mountainous terrain. In recent years, an increased focus on mountain warfare capabilities throughout the DoD has continuously validated the purpose and mission of MCMWTC and has resulted in a need to increase the capabilities of the Base.

Typically, four active duty battalions are trained at MCMWTC each winter, with each training course lasting four weeks. Reserve units train at MCMWTC every other winter. Satellite training programs are conducted throughout the year. The winter operations school involves winter mountaineering, cold weather bivouac, snow mobility, and avalanche safety training. Summer operations schools include rappelling and mountaineering, ropes courses, navigation, vehicle operation, and safety exercises.

Headquarters and Service, 2nd Battalion, 7th Marine Regiment Marines hike down after reaching an elevation of approximately 7,600 feet above sea level at MCMWTC

3.3.4 Training Lands

As discussed above, MCMWTC is composed of 16 TAs located in California plus one Special Use Area (Sweetwater), one LZ in Nevada and TCs between all these areas, all governed under SUPs with USFS. The 16 TAs are shown on Figure 3-3 and described in Table 3-2. As reflected in Table 3-2, collectively the TAs accommodate training ranges, LZs, and DZs. The TAs also accommodate foot traffic in the form of maneuver elements of 40 individuals (platoon) and up to 120 individuals (company) traversing across a TA to access the training ranges, LZs and DZs. Table 3-3 summarizes training events within the TAs.

Each year, MCMWTC completes an annual TA Usage Plan for USFS approval that provides a description of proposed training activities in the primary TAs of MCMWTC. MCMWTC also routinely accommodates training requests from outside agencies. These requests are processed 60 to 120 days in advance and are conducted after a determination that there are no conflicts with available TAs and personnel, or with use of USFS lands.

MCMWTC has 16 TAs that accommodate platoon and company foot traffic

MCMWTC has developed four land use designations for both summer and winter operations: low, moderate, high, and intensive, with intensive use being the most heavily used areas. It is important to note that these land use designations were developed by MCMWTC Operations and are based solely on frequency of use of a particular area. Land use designations will vary depending on season. Base Camp and the Leavitt Meadow/Campground area are examples of locations that have been designated as intensive use areas during summer operations. Only Base Camp is designated as an intensive use area during winter operations.

Table 3-3. Summary of Existing Training Events at MCMWTC

Existing Training Events	Location	Annual Frequency	Duration (days)	Number of Personnel Per Event
Mountain Exercise	TAs 1-16, Masonic Road Transit Corridor (TC), Lucky Boy Pass TC, Kirman Lake Road	8	23	800
Javelin Thrust	TAs 1-16, Masonic Road, Lucky Boy Pass Road, Kirman Lake Road	1	23	1200
Summer Mountain Leaders Course	TAs 1-9 and 12-16	2	36	50
Winter Mountain Leaders Course	TAs 1-16	2	36	50
Mountain Scout Sniper Course	TAs 5,6,8,10,11	4	17	30
Mountain Medical Course	TAs 5-12	3	12	45
Cold Weather Medical Course	TAs 5-12	3	12	50
Animal Packer Course	TAs 5-9 and 13-16	4	12	50
Mountain Ops Staff Planning Course	TAs 1,4,5,6,7	1	8	45
Mountain Survival Course	TAs 2-6	1	20	50
Mountain Communications Course	TAs 1-16	6	15	50
Assault Climbers Course	TAs 2,5-9,12	6	15	50
Scout Skier Course	TAs 3-11,13-16	4	15	50
Mountain Engineer Course (Pilot)	TAs 5-12 and 13-16	2	12	50
Special Forces Training	TAs 1-16, Masonic Road, Lucky Boy Pass Road, Kirman Lake Road	8	8	120
Coalition Forces Training	TAs 1-16, Masonic Road, Lucky Boy Pass Road, Kirman Lake Road	4	21	120
High Altitude Aircraft Training	LZs 1-53, Masonic Road, Lucky Boy Pass Road, Kirman Lake Road, Risue Road, Sweetwater DZ and Airstrip	48	2	4-Aircraft
Training Support – MCMWTC Infrastructure	TAs 1-16, LZs 1-53, Masonic Road, Lucky Boy Pass Road, Kirman Lake Road, Burcham Flat Road, Sweetwater DZ and Airstrip	96	1	20

Source: USMC 2014.
Notes:
LZ = Landing Zone; TA = training area; TC = transit corridor. Not all areas used at once. Training personnel and equipment dispersed throughout the training areas for tactical and environmental considerations.

3.3.4.1 Summer Operations

Summer operations emphasize unit mastery of the mountaineering skills necessary for successful operations in a mountainous environment (refer to Table 3-3). Conducted in an austere and unpredictable environment, students learn mountain safety, military rock climbing, fixed rope installations, mountain navigation, rappelling, and planning/ coordinating platoon movement across rugged terrain. As few as 15 and as many as 600 personnel participate in exercises that provide application of offensive and defensive mountain combat tactics, including staff planning, and combat service support requirements.

Concurrent satellite programs include Sniper Sustainment Training, Assault Climbers Course, Tactical Rope Suspension Technician Certification, Animal Packing Course, Weapons Company Core Extension Package, Swift Water Rescue Course, Mountain Communications Course, Mountain Motor Transport Course, Mountain Engineer Course, and Recon Sustainment Training. Up to four active-duty battalions consisting of approximately 500 to 600 Marines are trained each summer (i.e., June – October), with each course lasting 24 days in length, 13 of which are spent in the field. One Marine Corps Reserve battalion completes a 14-day Summer Mountain Operations Course every other summer.

3.3.4.2 Winter Operations

The Winter Mountain Operations Course is designed to instruct units in the cold weather mountaineering skills necessary for winter combat operations (refer to Table 3-3). The course is conducted in an inherently dangerous environment with an emphasis on safety, individual survival, cold weather bivouacs, route selection, over-the-snow mobility techniques, and avalanche safety and awareness. Students apply battalion offensive/defensive tactics in field exercises representing real-world scenarios. The Winter Mountain Operations Course also teaches staff planning and combat service support requirements. Four active-duty battalions, including 500 to 600 Marines, are usually trained each winter (i.e., January – April), with each course 28 days in length, with 12 or 13 days spent in the field. One Marine Corps Reserve battalion completes a 14-day Winter Mountain Operations course every other December.

Concurrent satellite programs include Sniper Sustainment Training, Scout Skier, Weapons Company Core Extension Package, Mountain Communications, Mountain Motor Transport, Mountain Engineer Course, and Recon Sustainment Training. The only ordnance expended is limited to the small arms firing range. The only other ignition source occurs during avalanche training. The impacts to natural resources are limited due to snow cover.

Chango Lake/Silver Creek area generally experiences the heaviest use during winter training operations, followed by Grouse Meadows and Summit Meadows. Leavitt Lake and Finley Mine are also used for winter training operations but to a much lesser extent.

3.3.4.3 Survival Training

MCMWTC Survival Training provides instruction for Cold Weather Survival Courses and Summer Mountain Survival Courses. The instruction serves to train Marines in the fundamental skills that will enable them to survive in a winter or summer mountainous environment. Focus is placed on instilling confidence and resourcefulness, with the desired result of building sound decision-makers that can operate in austere environments. In between formal courses the Survival Section can be tasked to provide Mountain Training Packages for various units and agencies. No natural resources are consumed during training, with the exception of fishing for stocked fish during survival training. Fishing occurs under an annual take permit issued by CDFW to the USMC at MCMWTC and applies only to survival training. The latest permit (calendar year 2016) is included in Appendix B.

3.3.4.4 Live-Fire Ranges

Target locations and firing positions on each of the live-fire small arms ranges are designated by and included in the SUP issued by the USFS. Other than Range 500, there are no permanent firing lines, firing positions, or target locations on any of the small arms ranges. Other than small-arms, small detonation charges, blanks and pyrotechnics, use of military munitions is prohibited at MCMWTC by USFS rules. The locations of the ranges are summarized in Table 3-2.

3.3.5 Environmental Restoration Sites

MCMWTC staff recognizes that potential impacts to natural resources may result from the release of hazardous substances, pollutants and contaminants into the environment. The DoN Environmental Restoration Program (ERP) is responsible for identifying Comprehensive Environmental Response, Compensation and Liability Act releases, considering risks and assessing impacts to human health and the environment, including impacts to endangered species, migratory birds, and biotic communities, as well as developing and selecting response actions when it is likely that a release could result in an unacceptable risk to human health and the environment.

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

3.4 Constraints and Opportunities

The most significant constraints related to natural resources on MCMWTC are related to training restrictions and public encroachment. Special management measures include designation of a Protected Activity Centers (PACs) and the conditions imposed within Critical Aquatic Refuges (CARs), which are natural resources protection measures used by USFS. Provisions of SUPs stipulate that USFS can limit or modify authorized training in environmentally sensitive areas if it is determined that such activities may have a detrimental impact on protected species. Limits on training activities may take the form of seasonal restrictions (e.g., during breeding seasons), or constraints on types of activities, such as off-road vehicle traffic or use of LZs and DZs. Appendix F will contain constraints maps, once they are available, developed for an *EA for Enhancement of Operations and Training Proficiency at MCMWTC* that is currently under development.

Table 3-4 identifies seasonal restrictions on USFS lands under the current SUPs. Restrictions preclude use of certain areas during specified periods of the year that include species breeding seasons. More detail on the land ownership, land use permits, land uses, and training events is provided in Section 3.2 and Section 3.3. More information on the permit conditions provided in Section 4, with general permit conditions in Section 4.2 and resource-specific conditions under each resource area in Section 4.

Table 3-4. Training Restrictions in USFS Permits to Protect Sensitive Species

Species of Concern	Area Restricted (Training Area)	Species Status	Temporal Limitation
Federally Listed and Federally Protected Species			
Sierra Nevada yellow-legged frog	Critical Habitat in TAs 4, 5, 6, 8. Occupied habitat includes Summit Meadows, Silver Creek, Wolf Creek (TAs 6, 8, 10, 11). No disturbance within 330 feet from known habitat.	**ESA E**, USFS S, CA T (Final CH)	1 May – 30 July
Lahontan Cutthroat Trout	No fishing in Silver Creek or Mill Creek (TAs 1, 6, 8). CARs: Mill Canyon (TA1, 4), Wolf Creek (TA8) and Silver Creek (TAs 6). No disturbance within 330 feet from known habitat. No wading in occupied streams and foot crossings limited to less than 25 people. No creation of rock/log dams that impede fish passage.	**ESA T**, USFS MIS	All year
Yosemite toad	Critical Habitat and known occupied habitat occurs in TAs 9, 10, and 11. Additional potential breeding habitat occurs in TAs 4, 6, and 8. No disturbance within 330 feet from known habitat or within Critical Habitat.	**ESA T**, USFS S, CA SSC, (Final CH)	1 May – 30 July
Bald eagles	No disturbance within 330 feet of active nests (TAs 1, 5, 13-16)	BGEPA	1 February – 30 June
Greater sage-grouse	Sweetwater DZ and Airstrip (Nevada) – no runway maintenance, helicopters, or groups larger than 25 people	USFS MIS/S, CA PT/SSC, BLM S; bi-state agreement	1 March – 30 June
	No disturbance within ¼ mile of active leks		1 March – 15 May
Sierra Nevada red fox	No disturbance within 330 feet of den sites (All TAs, but primarily in TAs 10 and 11)	**ESA C (DPS)**, USFS S, CA T	1 January – 30 June
Whitebark pine		**ESA C,** USFS S, BLM S	
State-Listed and State Protected Species			
Great gray owl	Great gray owl PAC (TA9, TA10, CA-1). No disturbance within 330 feet of active nest. Limited disturbance within ¼ mile.	USFS S, MBTA, CA E	1 March – 15 August
Wolverine	Evaluate activities within 5 miles of sighting, limit activities if necessary.	USFWS PT, CA T/FP, USFS S	1 January – 30 June
Spotted bat, Townsend's big-eared bat	No disturbance within 330 feet of a maternity colony	USFS S, CA SSC and CA CT	15 April – 1 September
	No disturbance within 330 feet of a hibernacula or other occupied area.		1 November – 1 April
	No disturbance within 330 feet of roosting sites.		
Peregrine falcon	No disturbance within 330 feet of active nest (All TAs)	USFS S, CA FP	
Regionally Sensitive Species			
Northern goshawk	Silver Creek PAC, Mill Canyon PAC, and Lost Cannon PAC. No disturbance within 330 feet of active nests.	USFS S/MIS, BLM S, MBTA, CA SSC	15 February – 30 September
California spotted owl	California spotted owl PAC. No disturbance within 330 feet of active nest (All TAs). Limited disturbance within ¼ mile.	USFS S, CA SSC	1 March – 15 August
Flammulated owl	No disturbance within 330 feet of active nest (All TAs)	USFS S	15 May – 31 July
American marten	No disturbance within 330 feet of den sites (All TAs)	USFS S	1 May – 31 July
Masonic Mountain jewel flower	No climbing on rocky cliff in the north of Grouse Meadows (TAs 3, 4, 16) and 100 feet buffer around all occupied habitat during flowering season	USFS S, BLM S	1 May – 31 July
Alpine dusty maidens, Bodie Hills draba, Cup Lake Draba, skypilot	100 feet buffer around all occupied habitat during flowering season. No landing of aircraft, no concentrated activities on identified species in occupied habitat. No concentrated live fire where the impact zone is in occupied habitat but occurrences in Surface Danger Zone (SDZ) are permitted.	USFS S or BLM S	Flowering season

Table 3-4. Training Restrictions in USFS Permits to Protect Sensitive Species (Continued)

Species of Concern	Area Restricted (Training Area)	Species Status	Temporal Limitation
Other Species			
Mule deer	No disturbance in known fawning areas.	USFS MIS	1 June – 31 August
Migratory birds	Survey areas of ground/vegetation disturbance for active nests. No disturbance within 100 feet of active nests (All TAs).	MBTA	15 May – 31 August
Botrychium fern habitats	100 foot buffer around all occupied habitat during flowering season. No impacts within riparian habitat.	CA varies, NV At Risk	

Sources: Compiled from SUPs, 2014 and 2015 AOPs, and confirmed via personal communication with NAVFAC Southwest and MCMWTC in September 2015.
Notes:
BLM S = BLM sensitive species
CA E = California-listed endangered, CA T = California-listed threatened, CA PT = California-listed proposed threatened,
CA SSC = California Species of Special Concern, CA FP = California Fully Protected
ESA E = ESA-listed endangered, ESA T = ESA-listed threatened, ESA C = ESA candidate species, CH = Critical Habitat
MBTA = Protected under Migratory Bird Treaty Act, BGEPA = Protected under Bald and Golden Eagle Protection Act
USFS S = USFS sensitive species, USFS MIS = USFS management indicator species

The use of DZs and LZs is particularly affected by concerns over potential impacts to sensitive species and other natural resources, which are summarized in Table 3-5, including a summary of approved uses. Of the LZs permitted under the SUP BRI-477, none are permitted for use without restriction. Conditions of use include limits on numbers of rotary wing landings per day and days of usage per month. Further, it is generally the resource management practice of the USFS to restrict access to burned areas in order to facilitate habitat recovery. Due to the potential for these restrictions, fires within or near MCMWTC threaten access to lands for training activities.

Use of military munitions is severely restricted at MCMWTC, because the areas used for training are also open to public use and to minimize fire danger from use of some military munitions. Use of military munitions during MCMWTC training is prohibited on USFS lands, except for small-arms, small detonation charges, blanks and pyrotechnics. It is unlikely that these constraints on live-fire training can be reduced on USFS land; the current profile of allowable munitions at MCMWTC is not expected to increase. Moreover, the potential for increased public use of forest lands in the vicinity of MCMWTC is a possible source of concern about existing munitions uses. The ongoing expansion of the USMC range presence at Hawthorne Ammunitions Weapon Depot is intended to mitigate the inability to execute significant live-fire training at MCMWTC.

Table 3-5. Landing Zone and Drop Zone Restriction Summary

Name	LZ	DZ	RHU	COC	Mitigation
Albatross	Mit, Snow	No	Mit, Snow	No	Use prohibited in portion due to wetlands; RHUs only approved in tree stand at south end
Blackbird	Yes, Snow	Yes, Cert	Yes, Snow	Mit	COC only on disturbed ground.
Bluebird	Mit, Snow	No	Snow only	No	Use prohibited in portion due to wetlands; no digging or ground disturbance
Bunting	Snow only	No	Snow only	No	Use prohibited in portion due to wetlands; LZ
Buzzard	Yes, Snow	Yes, No Cert	No	No	
Bullet	Yes, Snow	Yes, No Cert	No	No	
Canary	Yes, Snow	Yes, No Cert	No	No	
Cardinal	Snow only	No, Cert	Snow only	No	Monitor for Sierra Nevada yellow-legged frog
Chickadee	Yes, Snow	Yes, No Cert	Snow only	No	
Condor	Mit, Snow	No	Snow only	Mit	Use prohibited in portion due to wetlands; no activities in irrigation ditches; overlaps slightly with CDFW land
Crane	Mit, Snow	No	Snow only	No	Monitor cultural site
Cuckoo	Yes, Snow	Yes, No Cert	No	No	
Dodo	Mit, Snow	No	Snow only	No	Use prohibited in portion due to wetlands; no digging or ground disturbance
Dove	Mit, Snow	No	Snow only	No	Use prohibited in portion due to wetlands; no digging or ground disturbance
Eagle	Snow only	No	Snow only	No	Use prohibited in portion due to wetlands; use only with 2 feet of snow
Egret	Yes, Snow	Yes, No Cert	No	No	
Expeditionary Airfield	Yes, Snow	Yes, No Cert	Yes, Snow	Mit	COC only on disturbed ground
Falcon	Mit, Snow	No	Mit, Snow	No	Use prohibited in portion due to wetlands; no digging or ground disturbance; landings limited to 2 aircraft at a time
Flamingo	Not approved for use				
Goose	Mit, Snow	No	Mit, Snow	No	No digging or ground disturbance
Grackle	Mit, Snow	No	Snow only	No	Use prohibited in portion due to wetlands; no digging or ground disturbance
Grosbeak	Snow only	No	Snow only	No	Monitor rare plant status
Hawk	Snow only	No, Cert	Snow only	No	Winter use only with 24 inch snow cover due to Sierra Nevada yellow-legged frog; no digging or ground disturbance
Kiwi	Snow only	No	Snow only	No	Use prohibited in portion due to wetlands; winter use only with 24 inch snow cover due to Yosemite toad
Lark	Mit, Snow only	No	Mit, Snow only	No	For emergency use only during winter; use prohibited in portion due to wetlands
Loon	Snow only	No	No	No	
Mallard	Mit, Snow only	No	Mit, Snow only	No	Use prohibited in portion due to wetlands; winter use only with 24 inch snow cover due to special status species
Merganser	Mit, Snow only	No	Mit, Snow only	No	Use prohibited in portion due to wetlands; no digging or ground disturbance
Mill Creek		Cert			Not be approved for use by USFS, and overlaps with CDFW land (note: Albatross located within it)
Mockingbird	Yes, Snow	Yes, No Cert	No	No	
Nightingale	Yes, Snow	Yes, No Cert	No	No	
Oriole	Snow only	No	Mit, Snow only	No	

Table 3-5. Landing Zone and Drop Zone Restriction Summary (Continued)

Name	LZ	DZ	RHU	COC	Mitigation
Osprey	Mit, Snow	No	Mit, Snow only	No	Use prohibited in portion due to wetlands; do not impact aspen trees; no use 15 February – 15 September due to goshawks, unless surveys show no goshawks
Ostrich	Not approved for use				
Owl	Yes, Snow	Yes, No Cert	No	No	
Parrot	Mit, Snow	No	Mit, Snow only	No	Use prohibited in portion due to wetlands; no digging or ground disturbance
Partridge	Mit, Snow	No	Mit, Snow only	No	Use prohibited in portion due to wetlands; no digging or ground disturbance
Penguin	Mit, Snow	No	Mit, Snow	No	Use prohibited in portion due to wetlands; do not impact aspen trees; no use 15 February – 15 September due to goshawks, unless surveys show no goshawks
Pickel	Not approved for use				
Pickel Meadows	Yes, Snow	Yes, Cert	No	Mit	COC only on disturbed ground; COC in corral with approval; CDFW approval needed for use of CDFW land
Pigeon	Mit, Snow	No	Mit, Snow	No	No use 15 February – 15 September due to goshawks, unless surveys show no goshawks
Quail	Yes, Snow	Yes, No Cert	Yes, Snow	Mit	COC only on disturbed ground
Raven	Yes, Snow	Yes, No Cert	Yes, Snow	Mit	COC only on disturbed ground
Red Tail	Mit, Snow	No	Mit, Snow only	No	Use prohibited in portion due to wetlands
Robin	Mit, Snow only	No	Mit, Snow only	No	Use prohibited in portion due to wetlands
Sandpiper	Mit, Snow	No	Mit, Snow only	No	Monitor for rare plants
Snipe	Mit, Snow	No	Mit, Snow only	No	Use prohibited in portion due to wetlands
Snowbird	Mit, Snow	No	Mit, Snow only	No	Monitor for rare plants
Sparrow	Yes, Snow	Yes, No Cert	Mit, Snow only	No	
Swan	Mit, Snow	No	Mit, Snow	No	No use 15 February – 15 September due to goshawks, unless surveys show no goshawks
Sweetwater	Mit, Snow	Mit, Cert	Mit, Snow only	Mit	Use prohibited in portion due to wetlands; no expansion, heavy equipment or digging outside landing strip; no use 15 March – 20 July due to sage grouse
Swallow	Mit, Snow	Mit, No Cert	Mit, Snow only	No	Use prohibited in portion due to wetlands
Teal	Yes, Snow	Yes, No Cert	Mit, Snow only	No	
Tern	Mit, Snow	No	Mit, Snow only	No	Monitor for rare plant
Turkey	Mit, Snow only	No	Mit, Snow only	No	For emergency use only during winter
Vireo	Mit, Snow only	No	Snow only	No	For emergency use only during winter
Vulture	Not approved for use				
Woodpecker	Yes, Snow	Yes, No Cert	Mit, Snow	Mit	COC and RHU only on disturbed ground
Woody	Yes, Snow	Yes, Cert	Yes, Snow	Mit	COC only on disturbed ground
Yarup	Mit, Snow only	No	Snow only	No	For emergency use only during winter

Sources: Compiled from SUP BRI477 and 2014 AOP.

Notes:

Yes = Authorized with no mitigation
Mit = Authorized but with a migitation
No = Not authorized
Snow = Use is authorized with 2 feet of snow
LZ = Landing zone (helicopters can land on site)
DZ = Drop zone (personnel and/or cargo can be dropped; helicopters can only land if also an LZ)
RHU = Relocatable housing units
COC = Command operation centers

No, Cert = Not Authorized by USFS, but has DoD CertificationYes, No Cert = Authorized by USFS, but no DoD certification

Cloudburst, Crow, Finch, and Lucky Boy not included since they are all currently inactive.

The 16 TAs and associated LZs, DZs, airfields, and ranges are shown in Figure 3-3, and their current and proposed uses are summarized in Table 3-2. Some of the important conditions of the existing permits are as follows.

- TAs 1-9 and 12 are authorized for year-round use, subject to the conditions of the current BRI250 SUP/AOP. Vehicles must remain on existing roads.
- Use of live ammunition is only authorized at established live-fire ranges in TAs 1-9. Blank ammunition can be used throughout TAs 1-12, except that use is prohibited within 60 feet of unprotected persons (i.e., civilians) and livestock.
- Under the Leavitt Lake SUP (BRI571), TAs 10 and 11 are authorized for use during the snow season only, 15 November to 15 April, provided training activities remain on areas with 2 feet (or more) of snowpack and do not occur on marshy areas during thaw regardless of time of year. Group size is limited to one group of 60 individuals or less within TA 10 and one group of 60 individuals or less in TA 11. No helicopter landings are allowed in TAs 10 and 11 except under emergency circumstances.
- TAs 12-16 (Pickel Meadow permit area) are authorized for year-round use with a number of restrictions listed in the temporary SUP (BRI573), including but not limited to:
  - Use of live or blank ammunition is not authorized. Limited pyrotechnics are authorized only to aid in LZ/DZ operations and in accordance with fire restrictions.
  - Use of explosives for ice breaching is restricted to Mud Lake (no later than 1 March) and has been authorized as conditions allow in previous annual SUPs for the Pickel Meadow area, but is not included in the current (2016) SUP.
  - Personnel will hike on existing roads, and off-road/trail hiking is limited to groups of 15 or less. MCMWTC currently abides by this restriction by limiting the use of Pickel Meadows to the small Formal Schools that can operate under this constraint and by breaking up any larger groups into groups smaller than 15 personnel each. The smaller groups are kept out of sight range (200 meters [m] or more) to enable training realism. This limitation does not allow for a Platoon (approximately 42 personnel) to train along a road or trail at one time.
  - Only one LZ (Bullet, within Pickel Meadow area) is authorized for helicopter landings, up to a maximum of 4 landings per day and 16 landings per month. Helicopter flights at lower than 3,000 feet above ground level (AGL) are only permitted as required for safe approach and landing at the MCMWTC Expeditionary Airfield and LZ Bullet in TA14
  - Use of Kirman Lake Road is limited to 4 vehicles and does not include convoy training.

  - Stream crossing consisting of rope bridges and stream fording on the West Walker River is restricted to groups of less than 150 persons.
  - Limited snowmobile use in TA-16 (Emma Crossing Area), restricted to when conditions permit.

- Under the LZ and DZ permit (BRI572), tilt-rotor aircraft (i.e., MV-22) were authorized to be used on certain dates in 2015 at 16 LZs. Landings were only permitted with 2 ft (or more) of snow cover at 11 LZs (Bluebird, Canary, Dove, Egret, Goose, Owl, Partridge, Penguin, Robin, Snowbird, and Tern). The other 5 LZs did not have snow cover restrictions (Blackbird, Dodo, Raven, Sparrow, and Woody). Currently, MV-22s are not permitted at any LZs but can be allowed at specific LZs on a case-by-case basis depending upon resource constraints and fire danger conditions.
- The Marine Corps established CA-1 to teach Marines the "Leave No Trace" backcountry principles and to provide an environmental education venue for Marines training at the MCMWTC. No combat training activities occur at CA-1.

There are some private and State of California inholdings within the current MCMWTC boundary. Any use of the inholdings by the USMC is coordinated with the owner on a case-by-case basis. The USMC and DoN will consider acquisition of the private parcels to support military training as the opportunities arise. In the meantime, any accidental and unintentional use of these unmarked inholdings will be governed by the same conditions as the use of USFS land.

3.4.1 Internal and External Encroachment

The USMC defines encroachment as "any action planned or executed in the vicinity of a USMC installation's normal area of operations which inhibits, curtails, or possesses the potential to impede USMC interests. Further, encroachment is not limited to the immediate civilian community. Although physical development in conflict with military operations is the most cited source of encroachment, the actions of more removed entities, such as counties, states, and other federal agencies which determine land use and occupancy, are equal potential sources" (MCO 11011.22A).

This definition of encroachment amplifies that which is set forth in DoD Directive 3200.15, which identifies range encroachment as those external influences which threaten range activities. This can include endangered species and critical habitat, unexploded ordnance and munitions, electronic frequency spectrum, maritime, airspace restrictions, air quality, airborne noise, and urban growth.

MCMWTC training lands are primarily located on public lands administered by the USFS (refer to Section 2.6). Military training is conducted in accordance with the AOP and specific SUPs issued by the USFS. Non-military encroachment pressures on MCMWTC are primarily associated with the use of training lands by the public on the HTNF. The USMC has no authority to restrict use of these lands (refer to Section 2.6).

The entire MCMWTC range complex is a co-use area, contains environmentally sensitive resources, and is subject to permit-based restrictions on land use for military training. Some adjacent lands are designated as wilderness pursuant to the Wilderness Act. These lands are generally not available for training, and the designation may create public expectations about appropriate noise emanating from MCMWTC training activities into wilderness areas. In addition, Congress designated a portion of MCMWTC as a National Winter Recreational Area for snowmobile use by the public. Further, USFS permits strictly limit live fire training within MCMWTC to limited use of small arms in designated areas. Fire danger is a significant concern, as is public safety. As a result, extensive live fire training at MCMWTC is not feasible.

As described in Section 2.6, the presence of non-military forest users significantly impacts training in that the rights of the public to use these forest lands is a factor in the limited use on most live fire training. As presented above, the USMC is conducting ongoing planning and analysis and examining options to acquire in-holdings (private lands within the forest area) that would support development of permanent training structures such as MOUT Facilities, to mitigate the limitations of USFS constraints.

MCMWTC has completed an Encroachment Control Plan, in cooperation with the Eastern Sierra Land Trust (USMC 2013c). This plan is proactive in its approach to identifying, preventing, and controlling encroachment issues to the MCMWTC, including continued urbanization, regional population shifts, environmental and natural resources restrictions, and siting of alternative energy projects (USMC 2013c). These situations tend to create a competition for resources between the military and surrounding civilian communities. The plan, prepared in accordance with MCO 11011.22B, provides:

- A comprehensive analysis of encroachment issues impacting or having the potential to impact operations and training;
- Prioritized issues based on impact severity and issue urgency; and
- Recommended management strategies to address each issue.

Four categories including Urban Growth, Endangered Species and Critical Habitat, Air and Land Space Restrictions, and Clean Water pose sufficient risk of encroachment to MCMWTC and justify a need for encroachment management strategies. Per the MCO 11011.22B, the Community Plans and Liaison Office (CPLO) is the focal point for the Encroachment Control Program. As such, the CPLO is the MCMWTC staff member responsible for monitoring, and assessing encroachment activities and incompatible resource uses that may have an impact on training and mission activities. The CPLO is also responsible for facilitating outreach and engagement for the base with the community of stakeholders. To facilitate cognizance of emerging encroachment activities, the CPLO is encouraged to continue to foster working relationships with community leaders, planners, and governing bodies. Participating on applicable local and regional planning councils is a means to maintain earliest awareness of the potential for incompatible land use or development (USMC 2013c).

3.5 Natural Environment

3.5.1 Climate

Base Camp and TAs

The MCMWTC Base Camp and TAs are within a climate classified as semi-arid, with cold, relatively moist winters and warm, dry summers. Average annual air temperature, precipitation and frost free period is strongly influenced by elevation and topography. The average annual temperature of the region can range from approximately 26.6 degrees Fahrenheit (°F) at high elevations to 62.6°F in lower elevations. Precipitation can range from a low of about 10 inches at lower elevations east of nearby Antelope Valley to over 50 inches at higher locations such as Ebbetts Pass and Leavitt Lake. Frost free periods range from about 100 days at lower elevations to less than 30 days at the highest elevations (Blake 2006).

The average annual temperature ranges from a minimum of 27.9°F to a maximum of 52.4°F, with average winter temperatures (January) between 16.4°F and 37.8°F and average summer temperatures (July) between 42.8°F and 71.3°F (Western Regional Climate Center [WRCC] 2013). Large variations in average annual precipitation occurs on lands within MCMWTC. The average annual precipitation is 49.60 inches, ranging between 8.99 inches in the winter months (January) and 0.65 inches in the summer months (July) (WRCC 2013). Most precipitation occurs as snow, with higher elevation areas receiving as much as 600 inches of snow per year.

Coleville Military Family Housing Area

The CMFHA is within a climate classified as arid continental, characterized by abundant sunshine, low humidity, and substantial diurnal variations in temperature throughout the year. The major influences on the regional climate are the Sierra Nevada mountain range to the west and elevation. Due to its location in the Great Basin and its distance from the moderating effects of the Pacific Ocean, the region experiences extreme temperature variations, both seasonally and diurnally. Average summer temperatures range from 36°F to 83°F; winter temperatures average from 9°F to 53°F (WRCC 2013). Due to being 25 miles north of MCMWTC and 1,000 feet lower in elevation, the precipitation at CMFHA is likely different than Base Camp, but precipitation data for both locations is only available from the station located in Bridgeport, California.

3.5.2 Ecoregions

Base Camp and Training Areas

Following the USEPA ecoregions hierarchy, the majority of lands utilized by MCMWTC are located in the Northwestern Forested Mountains Ecoregion (Level II) within Sierra Mountain Ecoregion (Level III) (USEPA 2013). The Sierra Mountain Ecoregion is characterized by the Sierra Nevada Mountain Range, a high, north-south mountain range of eastern California with a small extension into far western Nevada near Lake Tahoe. The

range runs 400 miles north-to-south, and is approximately 70 miles across east-to-west. The Base Camp and TAs of the MCMWTC are located within three Level IV sub-ecoregions, including Northern Sierra Subalpine Forests, Northeastern Sierra Mixed Conifer-Pine Forests, and Sierra Alpine (Level IV). The majority of acreage is located within the Northeastern Sierra Mixed Conifer-Pine Forests, with smaller areas located within the Northern Sierra Subalpine Forests and Sierra Alpine ecoregions (USEPA 2013). The montane zone lies between 4,000 and 7,000 feet and the subalpine zone ranges from 7,000 to 9,500. Each of these zones within the Northern Sierra Subalpine Forests ecoregion includes a number of pine (*Pinus* spp.), fir (*Abies* spp.), cedar (*Cedrus* spp.), and hemlock (*Tsuga* spp.) species.

Coleville Military Family Housing Area

The CMFHA is located in the Cold Deserts Region (Level II) within the Central Basin and Range Ecoregion (Level III) within the Cold Deserts Region (Level II) (USEPA 2013). The Central Basin and Range Ecoregion is composed of northerly trending fault-block ranges and intervening drier basins. Valleys, lower slopes, and alluvial fans are either shrub- and grass-covered, or shrub-covered. Higher elevation mountain slopes support woodland, mountain brush, and scattered forests. In particular, the CMFHA lies entirely within the Sierra Nevada-Influenced Semiarid Hills and Basins (Level IV) sub-ecoregion. This region includes the basins and lower mountain slopes immediately east of the Sierra Nevada that are affected by its climate or that have its characteristic granitic substrate (USEPA 2013).

3.5.3 Topography and Geology

MCMWTC is characterized by an alpine to high desert environment ranging in altitude from 6,762 feet to 11,459 feet. Because of the nature of the mountainous geography, the installation is uniquely suited for the training of military units in complex compartmented terrain as well as the development and testing of warfighting doctrine and specialized equipment for use in mountain and cold weather operations.

The Sierra Nevada, in which the MCMWTC Base Camp and TAs are located, are the result of a deeply dissected block fault that rises sharply from the arid, basin and range ecoregions on the east and slopes gently toward the Central California Valley to the west (Blake 2006). The region has hilly to steep mountain relief with elevations ranging from about 1,312 feet to 14,495 feet (Mt. Whitney). The area is typified by mountain ranges separated by externally drained valleys.

The MCMWTC area is dominated by mountains consisting mainly of Pliocene age volcanic rocks such as andesite, rhyolite and tuff breccia. Also of major extent are Mesozoic granitic rocks such as granodiorite and quartz monzonite. Of much lesser extent are areas of Pre-Cretaceous metasedimentary rocks such as schist and gneiss. Of local extent in valley areas are Quaternary glacial deposits and to a lesser extent Quaternary alluvial deposits (Blake 2006).

The CMFHA lies on a relatively flat portion of an alluvial fan at an elevation of approximately 5,100 feet above mean sea level on a slight west to east-southeast downward slope. The Great Basin physiographic province, in which the CMFHA is located, is distinguished by its basin-and-range topography, the result of block faulting, and interspersed interior playas. There are more than 300 isolated mountain ranges within the Great Basin, mostly oriented north-south, with narrow, intervening valleys and playas (Nachlinger et al. 2001).

3.5.4 Seismicity

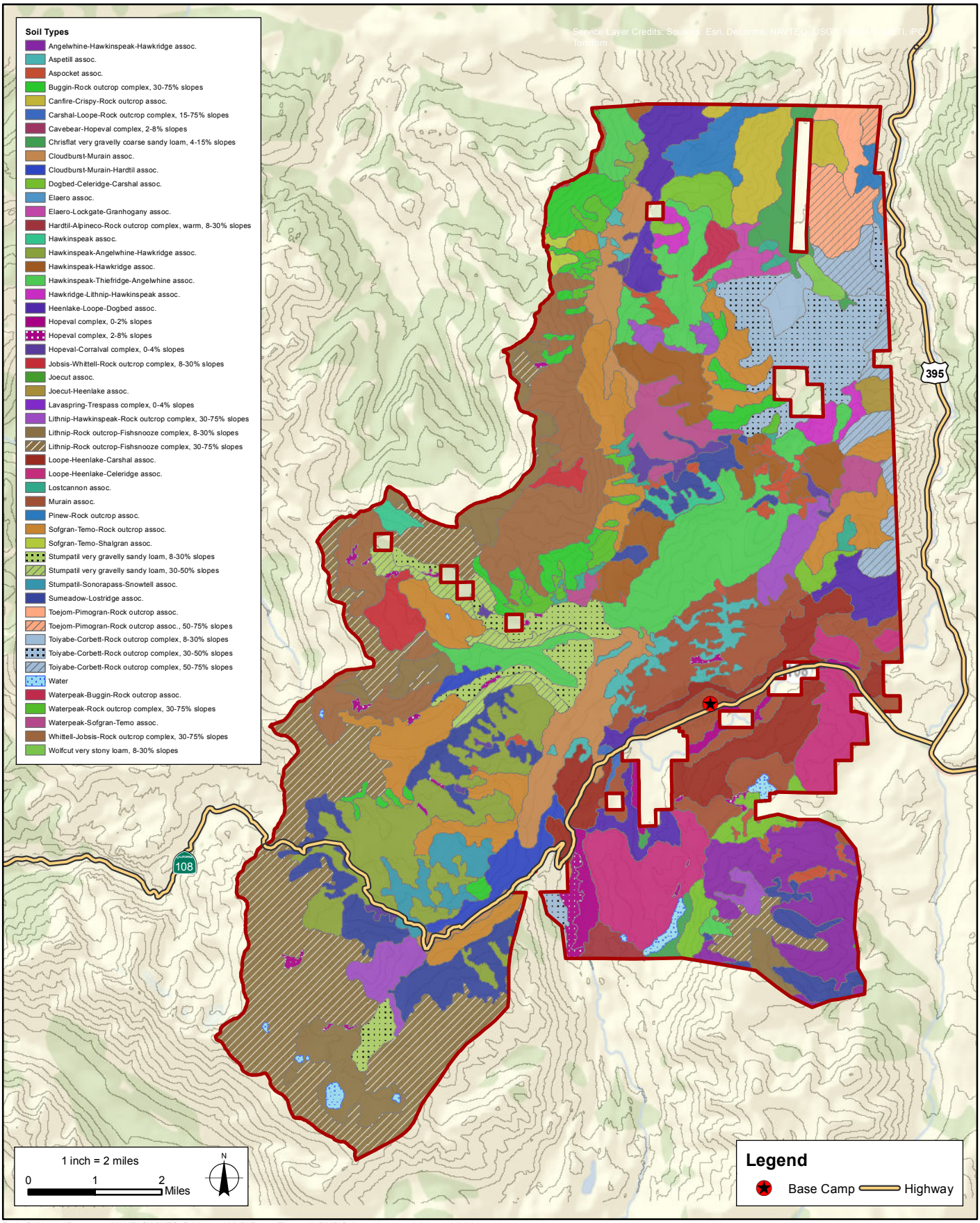
Mono County is located within a major fault system known as the Eastern California Shear Zone in which approximately 0.4 inches of slip occurs annually (Mono County 2008). Volcanic and seismic activity is highly localized but ongoing in the region, resulting in unique geological resources. However, most of this activity has historically taken place further south at Long Valley Caldera and the Inyo-Mono Craters (Hill et al. 2001). Located in the Antelope Valley fault zone, the CMFHA is in a seismically active region where earthquakes occur frequently (Sawyer et al. 1994).

3.5.5 Soil Resources

Base Camp and TAs

MCMWTC is underlain by mostly granitic rocks, soils that develop from these foundations are thin and rocky. There are some areas of metamorphic and volcanic rocks. MCMWTC is underlain by the following soil associations (Blake 2006; see Figure 3-6):

- Angelwhine Series
- Aspetill Series
- Aspocket Series
- Buggin Series
- Canfire Series
- Carshal Series
- Cavebear Series
- Chrisflat Series
- Cloudburst Series
- Dogbed Series
- Elaero Series
- Hardtil Series
- Hawkinspeak Series
- Heenlake Series
- Holbrook Series
- Hopeval Series
- Jobsis Series
- Joecut Series
- Koontz Series
- Lavaspring Series
- Lithnip Series
- Loope Series
- Lostcannon association
- Murain Series
- Pinew Series
- Sofgran Series
- Stumpatil Series
- Sumeadow Series
- Toejom Series
- Toiyabe Series
- Waterpeak Series
- Whittell Series
- Wolfcut Series



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amec foster wheeler

Soils
Marine Corps Mountain Warfare Training Center Bridgeport
Integrated Natural Resources Management Plan

FIGURE
3-6

The soils in CMFHA vicinity consists of deposits that are generally permeable with underlying weathered and fractured granitic and metamorphic bedrock material. The predominant soil type is Holbrook cobbly loamy sand with 2 to 8 percent slopes. The Holbrook series of soils normally occur on alluvial fans derived from different parent materials. Holbrook soils are very deep, well-drained soils with very low to medium surface runoff, moderately rapid permeability, and high hydraulic conductivity. These soils are often moist in the winter and spring and are dry in the summer and fall. Figure 3-8 illustrates the soils within CMFHA (NRCS 2011).

The soils around the Sweetwater DZ are the very gravelly loams in the Tenpin-Shree association (Archer 1984). These soils are on old alluvial fans with low slope and low annual precipitation and are well-drained and are depicted on Figure 3-9.

3.5.6 Landcover Types

Base Camp includes approximately 532 acres of improved and semi-improved lands. The TAs cover more than 60,000 acres of adjacent USFS lands. These areas are primarily unimproved and predominately open space with variable land cover characteristic of the Sierra Nevada Mountains. Within the TAs are various types of roads and trails, as well as some infrastructure (e.g., corrals, ski lift, etc.). CMFHA is primarily developed, improved lands. For more on the vegetated land cover, see Section 3.5.9.

3.5.7 Hydrology and Watersheds

MCMWTC is located within the Central Lahontan subregion (Hydrologic Unit Code [HUC] 1605) within the Great Basin Region (USGS 2012; USEPA 2015). Within the Central Lahontan subregion, the MCMWTC falls within the Walker basin (HUC 160503) and within the smaller West Walker subbasin (HUC 16050302). The MCMWTC occurs within two watersheds, the Middle West Walker River (HUC 1605030202) and Upper West Walker River (HUC 1605030201) (USEPA 2015). The MCMWTC falls within 6 further sub-watersheds. A graphical representation of watersheds present on the MCMWTC is presented in Figure 3-7. CMFHA is shown on Figure 3-8 and the Sweetwater DZ is shown on Figure 3-9.

3.5.7.1 Regional Hydrologic Conditions

The Walker River Basin encompasses approximately 2.7 million acres along the eastern side of the Sierra Nevada and western portion of the Great Basin. Headwaters of the East and West forks of the Walker River, which ultimately feed Walker Lake in Nevada, originate in the Sierra Nevada of California at elevations between 10,007 and 12,303 feet. The rivers flow through Bridgeport, Antelope, and Smith valleys and join in Mason Valley, Nevada, to create the main stem of the Walker River (Saxon et al. 2007). Many high-gradient perennial streams and rivers, along with numerous alpine lakes and several reservoirs are found in the region. The most prominent water bodies in the region include Bridgeport Reservoir, Twin Lakes, and Virginia Lakes.

3.5.7.2 Site-Specific Hydrologic Conditions

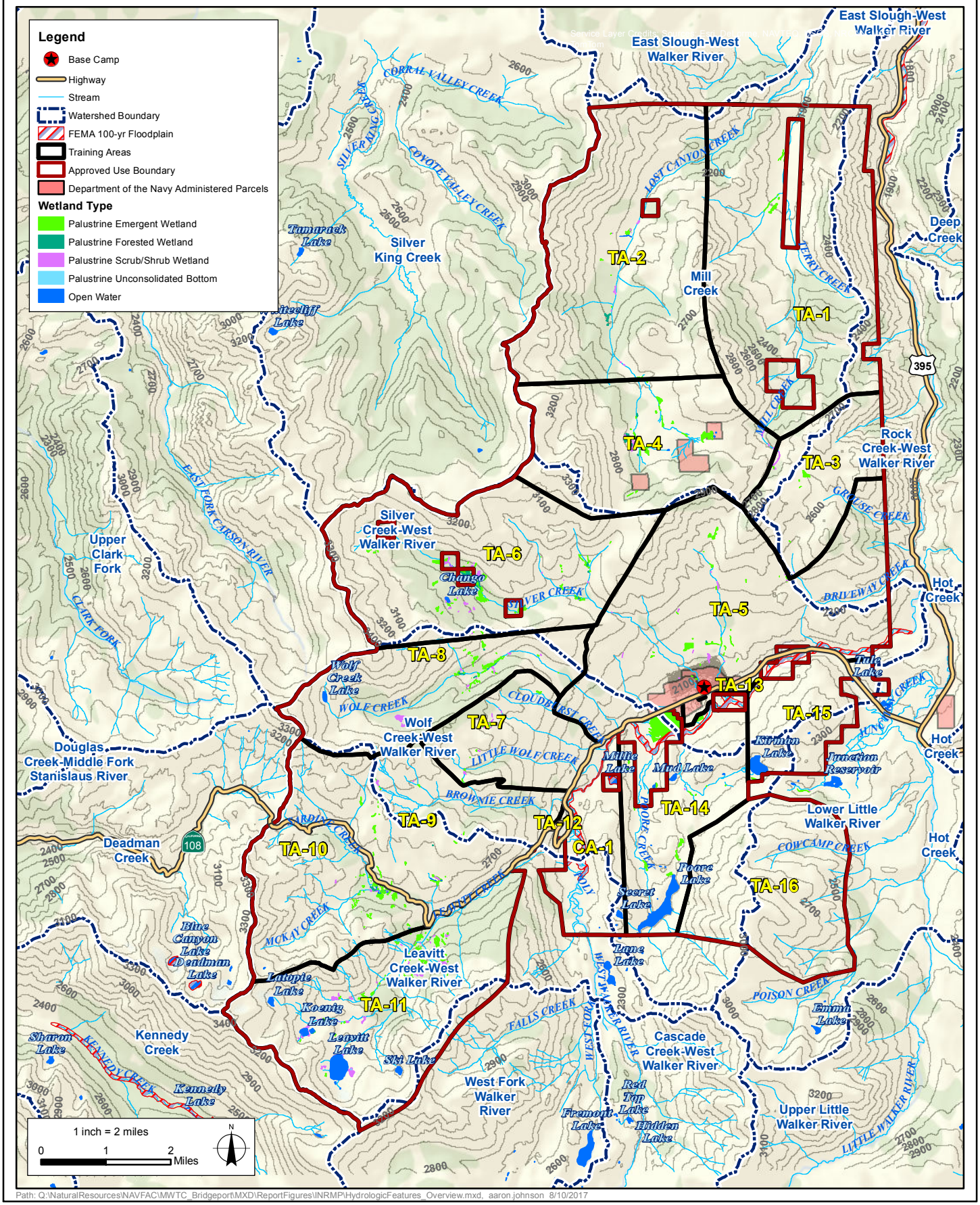
Base Camp & Training Areas

The MCMWTC Base Camp is located approximately 1 mile north of the West Walker River, which crosses the installation boundary through TA 14 and into TAs 13, 15, and 5 (refer to Figure 3-7). The major surface water features located within the MCMWTC boundaries include Leavitt Creek, Wolf Creek, Silver Creek, Sardine Creek, Lost Cannon Creek, and Mill Creek as well as their associated floodplains (USGS 2007; USEPA 2015).

These streams and additional smaller creeks are part of watersheds and sub-watersheds that drain the installation and discharge into the West Walker River. The majority of the floodplains map panels covering MCMWTC are non-printed (FEMA 2015); however, the floodplain maps that are available (e.g., FEMA Map Number 06051C0152D, Effective Date 18 February 2011) show that the floodplains in this area generally tightly fit West Walker River. Beyond the headwater region to the south of MCMWTC, the West Walker River travels due north dropping more than 4,000 feet over 14 miles by the time it enters the southern end of Leavitt Meadow. Within Leavitt Meadow, the West Walker River adds Leavitt Creek, which drains Leavitt Lake (elevation 9,556 feet) and other smaller lakes: Ski Lake, Koenig Lake, and Latopie Lake, as well as Sardine Creek. At the north (i.e., downstream) side of Leavitt Meadow, the West Walker River picks up Brownie Creek and then enters Pickel Meadow, traversing the southwest region of MCMWTC. Within Pickel Meadow, several small tributaries, including Poore Creek from the south, which drains Poore Lake (elevation 7,214 feet), and Little Wolf, Cloudburst, Wolf, and Silver creeks enter the West Walker from the north (California Department of Water Resources 1992; MultiMAC JV 2017a).

Waterfall on MCMWTC (Levitt Falls)

Hydrology in the region, including a number of intermittent and perennial creeks within Base Camp and TAs, is dominated by winter accumulation of snow in the upper elevations and subsequent snowmelt runoff in the May – July period. Precipitation is greatest in the headwater areas just east of the Sierra Nevada crest, which is related to the relatively consistent direction of winds during storms coming out of the southwest and crossing the Sierra Nevada. There is a steeply declining gradient in precipitation with distance east from the crest. 1 April snowpack averages are 50.8 inches at Leavitt Lake, 23.5 inches at Summit Meadow, 24.9 inches at Sonora Pass and 7.0 inches at Leavitt Meadows.



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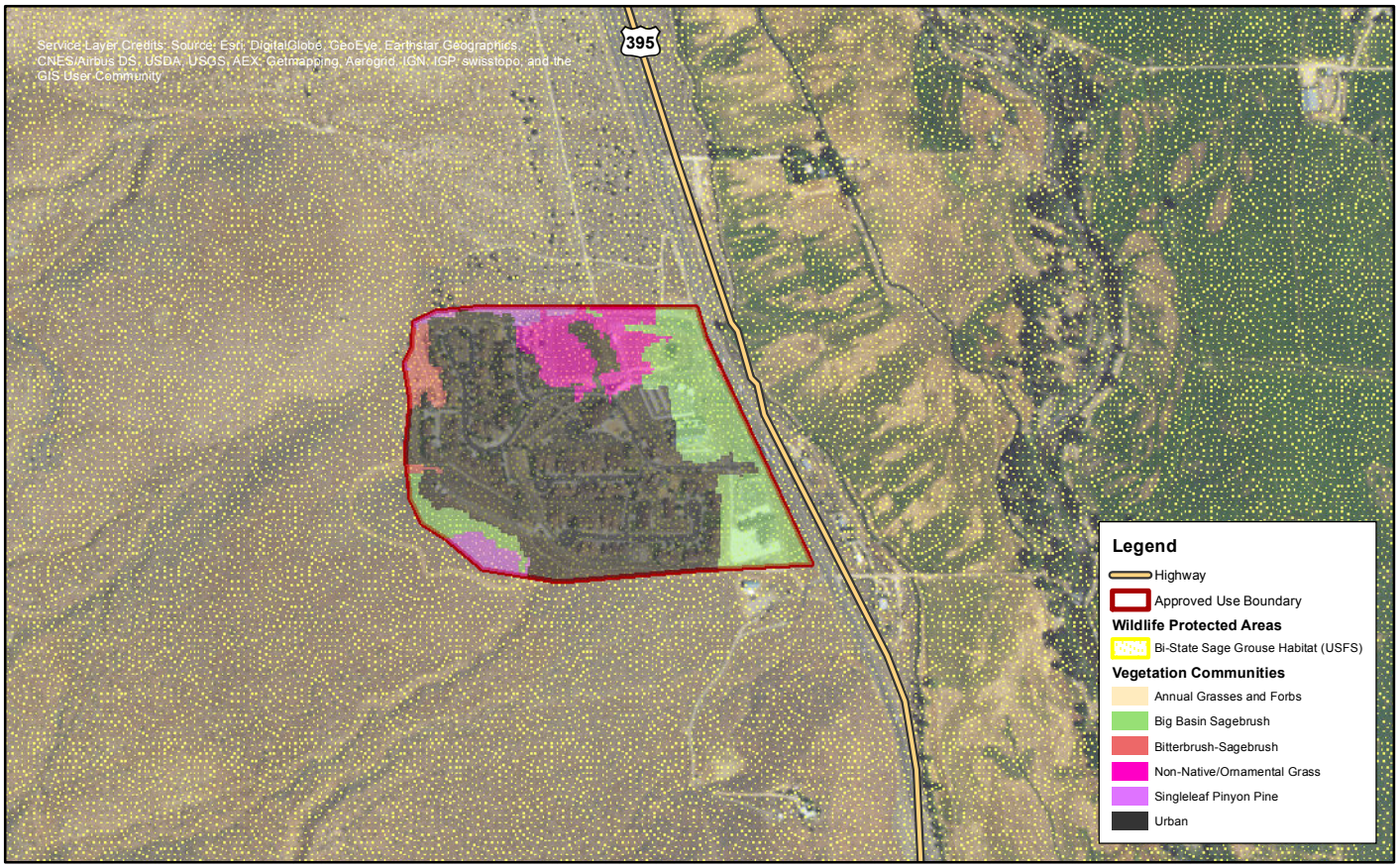
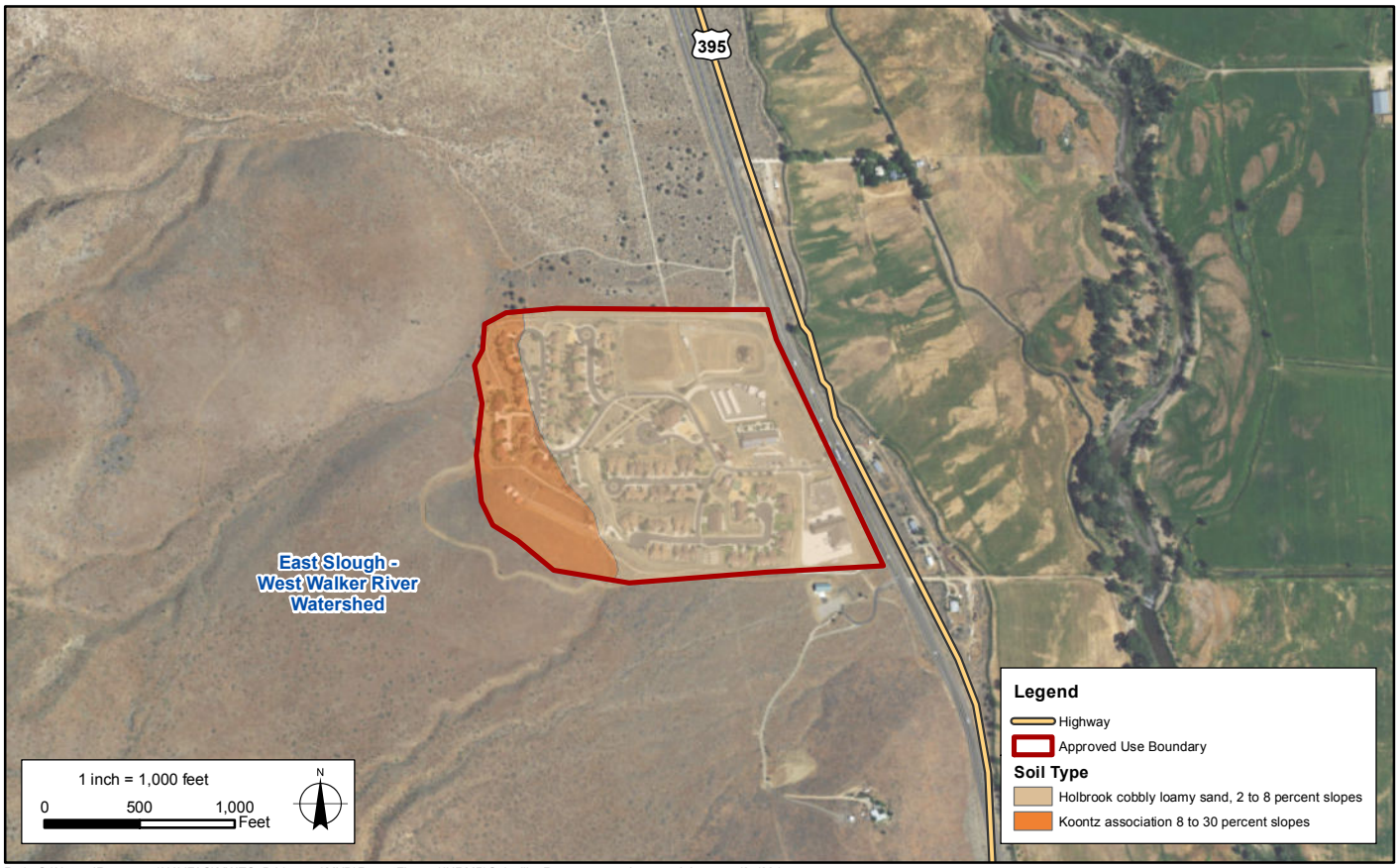
amec foster wheeler

Water Resources
Marine Corps Mountain Warfare Training Center Bridgeport
Integrated Natural Resources Management Plan

FIGURE
3-7





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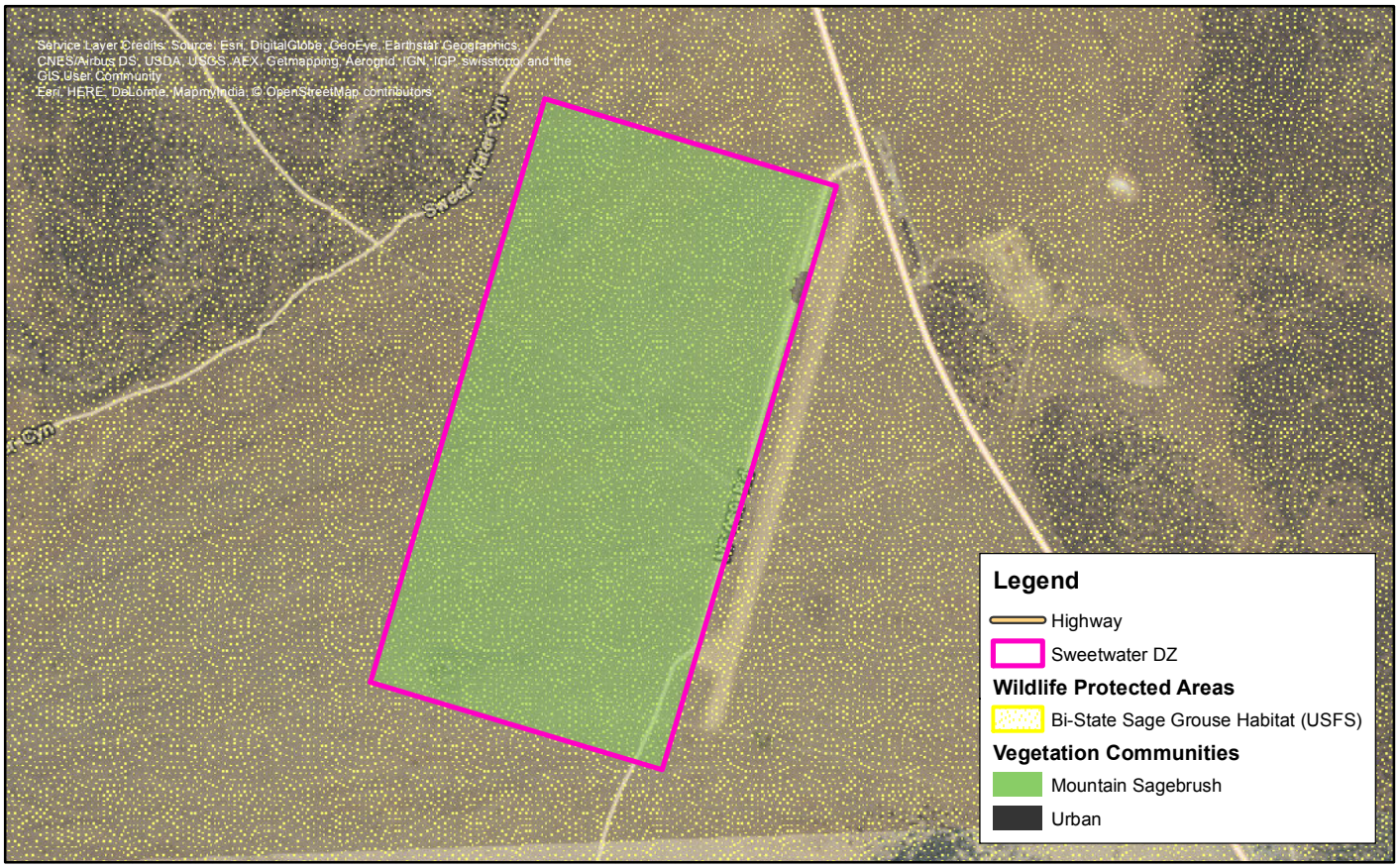
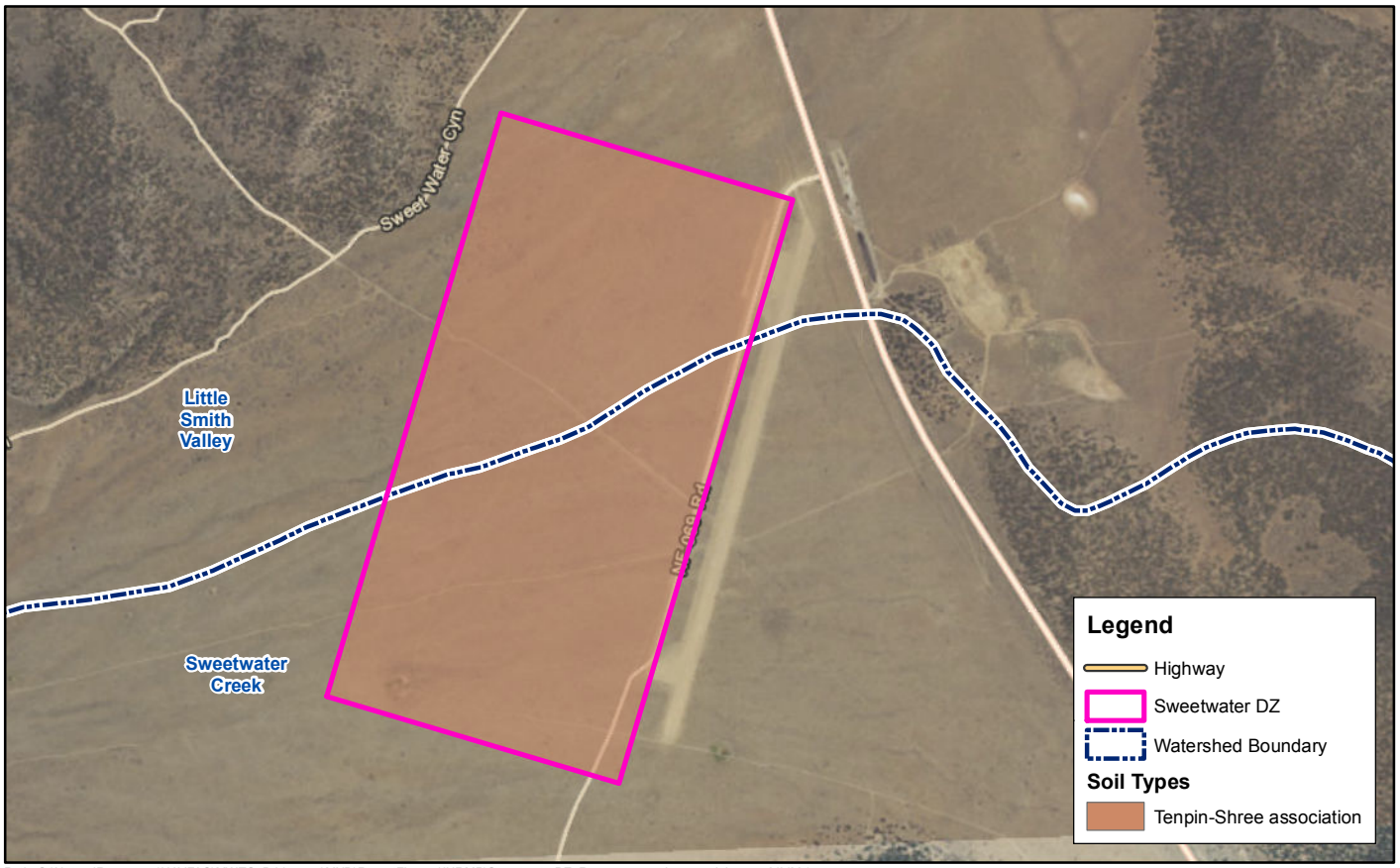
Coleville Military Family Housing Area
Soils, Vegetation, and Wetland Resources
Marine Corps Mountain Warfare Training Center Bridgeport
Integrated Natural Resources Management Plan

FIGURE
3-8





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Sweetwater DZ and Airstrip
Soils, Vegetation, and Wetland Resources
Marine Corps Mountain Warfare Training Center Bridgeport
Integrated Natural Resources Management Plan

FIGURE
3-9

Small springs also occur in many locations within TAs (e.g., Leavitt Meadow; Vernadero Group 2015), but the spring water typically infiltrates back into the groundwater in the higher elevations up gradient of MCMWTC Base Camp (Kleinfelder, Inc. 2001). There are no waters of the United States (WUS) on Sweetwater DZ in Nevada.

Coleville Military Family Housing Area

The CMFHA is located in the Antelope Valley, which is part of the 410-square mile West Walker River Watershed. Average annual precipitation (total water equivalent) at CMFHA is approximately 9 inches. The West Walker River provides more than 60 percent of the available water in the West Walker Basin (Mono County 2008).

Aside from the stormwater infiltration basin, there are no surface water features or floodplains located in CMFHA. The nearest prominent surface water feature, the West Walker River, is located approximately 1,500 feet east of CMFHA, just east of US Highway 395 (USEPA 2015). The stormwater infiltration basin seasonally contains stormwater runoff conveyed to the basin via a network of concrete stormwater conveyance channels. Stormwater collects in the infiltration basin where it percolates through the soil. To accommodate potential temporarily high stormwater runoff volumes, an existing pipe running from the top of the infiltration basin and beneath US Highway 395 can convey stormwater to an alkali ditch, which in turn flows into the West Walker River (USMC 2010).

3.5.8 Wetland Habitats

Under Section 404 of the CWA, the discharge of dredged or fill materials in WUS requires a permit from USACE. WUS to which Section 404 of the CWA applies, are defined in the USACE regulations at 33 CFR Part 328 and include surface waters such as navigable waters and their tributaries, all interstate waters and their tributaries, natural lakes, all wetlands adjacent to other waters, and all impoundments of these waters. Within this regulatory context, wetlands are defined as those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. In addition, EO 11990 directs all federal agencies to avoid the destruction and adverse modification of wetlands whenever possible. A summary of EO 11990 is provided in Appendix A.

Consistent with the above definition, wetlands that are under the jurisdiction of the USACE are not recognized unless, under normal circumstances, there is positive evidence of wetland hydrology, soils, and vegetation.

Recent wetland delineations of MCMWTC occurred in 2010 and 2011 in association with the Enhancement of Operations and Training Proficiency Project at MCMWTC (Cardno TEC, Inc. 2012). Additionally, in 2014 data was collected to assess stream habitat (MultiMAC JV 2017a) and meadow conditions (Vernadero Group 2015) on MCMWTC.

MCMWTC supports several wetland habitats described by the Cowardin et al. (1979) classification system including palustrine emergent (PEM), palustrine forested (PFO), palustrine scrub-shrub (PSS), and palustrine unconsolidated bottom (PUB) wetland habitats (Cardno TEC, Inc. 2012). Additionally, the installation supports 10 meadows and stream habitat of varying quality. However, these studies have primarily focused on TAs, DZs, LZs, and roads. Consequently, a comprehensive wetland delineation and/or aquatic habitat assessment has not been conducted within the entire installation, thus total acreages of each community that may occur within the bounds of MCMWTC are not available. There are no wetlands located in the Sweetwater DZ in Nevada.

3.5.8.1 Wetlands Delineation at MCMWTC (2012)

Cardno TEC, Inc. (2012) prepared a delineation of wetlands and other WUS at sites within TAs subject to relatively intensive operational and training use. These areas included roads and trails, DZs and LZ, and designated ranges.

Approximately 70 percent of the survey areas were completed in 2010. These areas were surveyed beginning in mid-July 2010 through the early October 2010. The remaining areas were surveyed from the end of May through September 2011. Cardno TEC, Inc. (2012) surveyed approximately 9,214 acres within the six general survey areas. Each survey area also included existing roads proposed for training, known as "Training Corridors."

- ***MCMWTC Survey Area*** – Includes the intensive use area (Base Camp) and limited use area (all other areas with the MCMWTC boundary) separated into different TAs; within TAs are LZs, DZs, ranges, and numerous USFS roads.
- ***Burcham Flats Road Survey Area*** – Includes Forest Road 031 from US Highway 395 to Rock Creek, near the town of Walker, California.
- ***Lobdell Lake Road Survey Area*** – Includes Forest Road 067 from Burcham Flats Road (Forest Road 031) to Risue Road (Forest Road 050) as well as Forest Road 089C.
- ***Lucky Boy Road Survey Area*** – Includes Forest Road 028 from NevadaSR 338, near the junction of Sweetwater Creek and the Walker River, to the Hawthorne Ammunition Depot; and the Lucky Boy DZ.
- ***Masonic Road Survey Area*** – Includes Forest Road 046 from California SR 182 (at the Bridgeport Reservoir) to Lucky Boy Road (Forest Road 028).
- ***Risue Road Survey Area*** – Includes the existing Risue Road (Forest Road 050) from near the Nevada border to Nevada SR 338, and the Sweetwater DZ to the south.

A total of 565 wetlands were delineated within these survey areas, and are summarized below in Table 3-6. A more detailed summary is provided in Appendix H.

Table 3-6. Summary of Delineated Wetlands Acres on MCMWTC (2012)

Area	Open Water	PEM	PSS	PFO	PUB	Total
MCMWTC (Total)	57.58	220.59	39.48	19.25	0.19	**337.09**
DZs	-	111.90	-	-	0.04	111.94
LZs	-	1.60	-	-	-	1.60
Ranges	56.44	88.06	34.02	16.42	0.15	195.08
Roads	1.14	19.03	5.46	2.83	-	28.46
Burcham Flats Road	-	0.30	-	-	-	0.30
Lobdell Lake Road	-	12.39	0.16	-	-	12.56
Lucky Boy Road	-	0.93	0.68	-	-	1.62
Masonic Road	-	0.35	-	-	-	0.35
Risue Road	-	0.97	-	-	-	0.97
Total Acres	**57.58**	**235.54**	**40.32**	**19.25**	**0.19**	**352.88**

Source: Cardno TEC, Inc. 2012.
Notes:
To avoid double counting, wetlands that occurred in overlapping survey areas were assigned in the following order: LZ, DZ, Range, and Road. When multiple wetland types were present in a single wetland, the most prevalent wetland type was assigned.

The three most dominant vegetation types within these delineated wetlands included lodgepole pine, wet meadows, and willow (shrub), described below. While a large portion of the wetlands delineated in the survey area were in areas mapped as forest (e.g., lodgepole pine), the majority are actually small wet meadows (Cardno TEC, Inc. 2012).

Lodgepole Pine – This alliance is dominated by lodgepole pine and tends to occur on flat to low gradient slopes at elevations mainly between 6,800 and 10,600 feet. Quaking aspen (*Populus tremuloides*) occasionally forms a hardwood understory at elevations below about 9,400 feet (Cardno TEC, Inc. 2012).

Wet Meadows – Wet meadows are seasonally or permanently wet herbaceous sites that have primarily been identified on saturated alluvium and coarse substrates within a wide elevation range from below 4,000 feet to about 12,000 feet. Indicator herbaceous species include western blue flag (*Iris missouriensis*), various rushes (*Juncus* spp.), corn lily (*Veratrum californicum*), buttercup (*Ranunculus* spp.), and various sedges (*Carex* spp.) (Cardno TEC, Inc. 2012).

Willow (shrub) – Shrub forms of willows are mapped as this alliance where they dominate the shrub layer in a riparian, seep, or meadow site. This community occurs at low to high elevations, often on gravel bars adjacent to or in permanent water sources, and chiefly in middle to upper montane locations. Willows in this alliance may include any combination of narrow-leaved (*Salix exigua*), Geyer's (*Salix geyeriana*), Lemmon's (*Salix lemmonii*), shining (*Salix lasiandra*), yellow (*Salix lutea*), and Sierra (*Salix orestera*) (Cardno TEC, Inc. 2012).

3.5.8.2 Previous Wetland Delineation within Landing Zones at MCMWTC (2009)

In 2009, a separate wetland survey was conducted by Science Applications International Corporation at 50 LZs scattered throughout MCMWTC and 8 LZ's in Nevada (NAVFAC Southwest 2010). Each LZ surveyed has dimensions of approximately 20 acres. These delineated wetland acreages are described below in Table 3-7. A more detailed summary is provided in Appendix H.

Table 3-7. Summary of Delineated Wetlands within Landing Zones on MCMWTC (2009)

LZ	PEM (acres)	PFO (acres)	PSS (acres)	Grand Total (acres)
Bluebird	0.44	-	0.03	0.47
Bunting	0.72	-	-	7.21
Cardinal	1.36	-	-	1.36
Condor	0.87	-	4.43	5.30
Crow	2.03	-	3.39	5.42
Dodo	0.06	-	0.13	0.18
Dove	6.64	-	0.07	6.71
Eagle	1.13	-	0.92	2.05
Egret	0.51	-	0.76	1.27
Falcon	3.77	-	-	3.77
Goose	5.56	-	0.84	6.40
Hawk	9.86	-	-	9.86
Kiwi	0.68	-	-	0.68
Lark	-	-	0.69	0.69
Mallard	0.01	-	0.04	0.05
Osprey	2.14	4.33	-	6.46
Owl	3.73	-	0.62	4.35
Parrot	3.59	-	0.58	4.17
Partridge	-	-	5.48	5.48
Penguin	5.03	-	-	5.03
Red Tail	2.06	-	0.25	2.32
Robin	3.58	-	0.40	3.98
Snipe	0.01	-	-	0.01
Snowbird	0.27	-	0.62	0.89
Swan	-	-	0.29	0.29
Tern	0.38	-	-	0.38
Turkey	-	-	0.25	0.25
Grand Total	**60.90**	**4.33**	**19.79**	**85.01**

Source: NAVFAC Southwest (2010).

3.5.8.3 Palustrine Habitats

Palustrine systems include all nontidal wetlands and tidal wetlands where salinity due to ocean derived salts is below 0.5 percent, and dominated by trees, shrubs, emergent mosses or lichens (Cowardin et al. 1979). The palustrine system comprises the vegetated wetlands traditionally called by such names as marsh, swamp, bog, fen, and prairie. It also includes the small, shallow, permanent or intermittent water bodies or "ponds." Palustrine wetlands may be situated shoreward of lakes, river channels, or estuaries; on river floodplains; in isolated catchments; or on slopes. They may also occur as islands in lakes or rivers. The following palustrine wetlands have been documented on MCMWTC (Cardno TEC, Inc. 2012).

Palustrine Emergent Wetland on MCMWTC

Palustrine Emergent (PEM) Wetlands – PEM wetlands are characterized by erect, rooted, herbaceous hydrophytic vegetation (Cowardin et al. 1979). The majority of fens, bogs, marshes, and wet meadows found in mountain habitats are classified under this system. These wetlands were the most commonly observed within MCMWTC and are the dominant Cowardin habitat in the meadows within the installation.

Meadow Habitat on MCMWTC

Dominant and/or commonly observed plant species within PEM habitats include: Nebraska sedge (*Carex nebrascensis*), Baltic rush (*Juncus balticus*), primrose monkeyflower (*Mimulus primuloides*), straightleaf rush (*Juncus orthophyllus*), Mexican rush (*Juncus mexicanus*), carpet clover (*Trifolium monanthum*), common yarrow (*Achillea millefolium*), American bistort (*Bistorta bistortoides*), Sierra shooting star (*Dodecatheon jeffreyi*), and tufted hairgrass (*Deschampsia cespitosa*). Cardno TEC, Inc. (2012) delineated and mapped a total of 236 acres of PEM wetlands within the survey area on MCMWTC.

Additionally, a Meadow Enhancement Study was completed that documented the existing condition/health of ten meadows on MCMWTC (Vernadero Group 2015). Meadow systems are some of the most productive habitats in the arid West, providing vital ecosystem services such as hosting sensitive species, attenuating flood flows, and providing forage for wildlife

and domestic stock. Vernadero Group (2015) assessed geomorphology and disturbance, aspen health, conifer encroachment, and presence of nonnative/invasive plants to determine the state of health of each of the following meadows:

- West Walker River, Pickel Meadow S1
- West Walker River, Pickel Meadow XS2
- West Walker River, Leavitt Meadow
- Sardine Creek, Sardine Meadow
- McKay Creek, Sardine Meadow
- Wolfe Creek, Wolfe Creek Meadow
- Grouse Creek, Grouse Meadow
- Silver Creek, Silver Creek Meadow
- Summit Creek, Summit Meadow XS1
- Summit Creek, Summit Meadow XS2
- LZ Goose Meadow
- Brownie Creek, Brownie Meadow
- LZ Dove Meadow

Wolfe Creek Meadow, Silver Creek Meadow, Summit Meadow, and LZ Dove Meadow were found to be healthy with a relatively low risk of future degradation.

The remaining meadows were found to be degraded due to natural fluvial processes and a combination of historic land management practices, including channelization, diversion, and livestock grazing. The objective study provided restoration and/or enhancement alternatives to maintain wet meadow hydrology, stabilize vegetation, and increase channel stability and floodplain connection for these habitats (Vernadero Group 2015).

Palustrine Scrub-shrub Wetland habitat on MCMWTC

Palustrine Scrub-Shrub (PSS) Wetlands – PSS wetlands are dominated by woody vegetation less than 20 feet tall (Cowardin et al. 1979). Component dominant species can include true shrubs, young trees, and trees or shrubs that are small or stunted because of environmental conditions. Many PSS wetlands were mixed with

PEM wetlands. Often, small PSS areas were included within larger PEM habitats. PSS wetlands within the project survey area were dominated by low-lying shrub species, such as Lemmons's willow, yellow willow, Jepson's willow (*Salix jepsonii*), and Sierra willow. Cardno TEC, Inc. (2012) delineated and mapped a total of 40 acres of PSS-dominated wetlands within the MCMWTC survey area.

Palustrine Forested (PFO) Wetlands **–** PFO wetlands are dominated by woody vegetation that is at least 20 feet tall, and are most common in the eastern U.S and in those sections of the West where moisture is relatively abundant, particularly along rivers and in the mountains (Cowardin et al. 1979). PFO wetlands occur in floodplains, springs, seeps, adjacent to running waters, and in other areas with high water tables (USACE 2010).

Palustrine Forested Wetland

On MCMWTC, these wetlands are dominated by large coniferous species, predominantly lodgepole pine, with herbaceous wetland species occupying the understory. Cardno TEC, Inc. (2012) delineated and mapped a total of 19 acres of PFO wetlands within the MCMWTC survey area.

Palustrine Unconsolidated Bottom (PUB) **–** PUB wetlands are shallow water or deep water habitats with at least 25 percent cover of particles smaller than stones, and a vegetative cover less than 30 percent. There are few shallow ponds on MCMWTC; Cardno TEC, Inc. (2012) delineated and mapped less than 0.2 acres of this wetland type.

3.5.8.4 Riverine Habitats

Riverine systems includes all wetlands and deepwater habitats contained within a channel, with the exception of wetlands dominated by trees, shrubs, persistent emergents, emergent mosses, or lichens (Cowardin et al. 1979). The term "channel" can refer to an artificially or naturally created watercourse that periodically or continuously contains moving water and/or connects two bodies of standing water. Riverine systems are generally bounded on the landward side by upland, by the channel bank (including natural and manmade levees), or by wetland dominated by trees, shrubs, persistent emergents, emergent mosses, or lichens (Cowardin et al. 1979). Water is typically, but not always, flowing in the riverine system. Riparian and/or wetland habitats often occur adjacent to the banks of the riverine system, often on a floodplain (Cardno TEC, Inc. 2012).

Cardno TEC, Inc. (2012) surveyed riverine systems within MCMWTC. This system is divided into four subsystems as defined by Cowardin et al. (1979), of which two classify all riverine habitats within MCMWTC:

Upper Perennial – The gradient is high and velocity of the water is fast. There is no tidal influence and some water flows throughout the year. The substrate consists of rock, cobbles, or gravel with occasional patches of sand. The natural dissolved oxygen concentration is normally near saturation. The fauna is characteristic of running water, and there are few or no planktonic forms. There is very little floodplain development.

Intermittent – The channel contains flowing water for only part of the year. When the water is not flowing, it may remain in isolated pools or surface water may be absent. Though many of these habitats lacked surface water during field investigations, they often provided evidence of connectivity and drainage between larger wetland habitats.

Cardno TEC, Inc. also mapped and delineated ephemeral streams, which were included in the intermittent category for purposes of the Cowardin classification. Another category of canal/ditch was also included for man-made features. The total lengths of these features as mapped are summarized in Table 3-8. A more detailed summary is provided in Appendix H. The features are depicted on Figure 3-7.

Table 3-8. Length of Streams that are Waters of the United States within MCMWTC

Project Component	Canal/ Ditch (feet)	Ephemeral (feet)	Intermittent (feet)	Perennial (feet)	Grand Total (feet)
MCMWTC (Total)	3,644	5,928	126,319	108,213	244,105
DZs	906	-	13,840	4,112	18,857
LZs	-	-	607	1,292	1,899
Ranges	-	2,556	97,714	69,340	169,609
Roads	2,738	3,372	14,159	33,469	53,739
Burcham Flats Road	-	-	-	4,415	4,415
Lobdell Lake Road	-	417	1,126	38,298	39,841
Lucky Boy Road	3,491	26,624	836	1,021	31,972
Lucky Boy Road (DZ)	-	17,338	-	-	17,338
Luck Boy Road (Road)	3,491	9,286	836	1,021	14,634
Masonic Road	-	2,598	4,595	3,403	10,596
Risue Road	-	692	21,710	7,722	30,124
Grand Total	**7,135**	**36,259**	**154,587**	**163,072**	**361,053**

Source: Cardno TEC, Inc. 2012.
Notes:
To avoid double counting, wetlands that occurred in overlapping survey areas were assigned in the following order: LZ, DZ, Range, and Road.

Stream habitat was surveyed on MCMWTC in order to collect information on key stream and riparian attributes for Lahontan cutthroat trout (*Oncorhynchus clarkii henshawi*) and other sensitive aquatic species (see Section 3.5.13) (MultiMAC JV 2017a). Ten streams within MCMWTC boundaries were snorkeled and surveyed in order to provide information on the status and distribution of Lahontan cutthroat trout. Surveys were concentrated in the

low-gradient (including meadow) reaches of the streams in areas that are most sensitive to management activities. The data collected was used to inform management recommendations for the streams and for Lahontan cutthroat trout.

3.5.8.5 Lacustrine Habitats


Lacustrine Habitat on MCMWTC

The lacustrine system includes wetlands and deepwater habitats that are tidal or nontidal, however, ocean derived salinity is always less than 0.5 percent. Lacustrine systems have the following characteristics: (1) situated in a topographic depression or a dammed river channel; (2) lacking trees, shrubs, persistent emergents, emergent mosses or lichens with greater than 30 percent areal coverage; and (3) total area exceeds 20 acres. Similar wetland and deepwater habitats totaling less than 20 acres are also included in the lacustrine system if an active wave-formed or bedrock shoreline feature makes up all or part of the boundary, or if the water depth in the deepest part of the basin exceeds 6.6 feet at low water. Lacustrine habitats that occur on MCMWTC include the following (Cardno TEC, Inc. 2012; Figure 3-7 and Appendix H):

***Lacustrine Aquatic Bed (LAB)* –** LAB habitats are dominated by plants that grow principally on or below the surface of the water for most of the growing season in most years. Water regimes include subtidal, irregularly exposed, regularly flooded, permanently flooded, intermittently exposed, semi-permanently flooded, and seasonally flooded (Cardno TEC, Inc. 2012).

***Lacustrine Unconsolidated Bottom (LUB)* –** LUB habitat includes all lacustrine habitats with at least 25 percent cover of particles smaller than stones, and a vegetative cover less than 30 percent (Cowardin et al. 1979). These habitats have bottoms that are characterized by the lack of large stable surfaces, and are usually found in areas with lower energy than rock bottom habitats (Cardno TEC, Inc. 2012).

3.5.9 Flora

The diversity of flora in the Sierra Nevada is high, with more than 3,500 native species of plants making up more than 50 percent of the plant diversity of California. At the lowest elevations, grasslands and foothill woodlands intermix with dense chaparral shrublands. A broad conifer zone composed of a variety of pine species (*Pinus* spp.) intermixed with hardwood species begins to dominate at elevations between 3,000 and 5,000 feet on the eastern side of the Sierra Nevada. With increasing elevation, the mixed conifer zone

transitions into white fir (*Abies concolor*) and red fir (*Abies magnifica*) forests. A diverse sub-alpine zone that includes species such as whitebark pine (*Pinus albicaulis*) and hemlock (*Tsuga* spp.) then develops, eventually giving way to alpine vegetation of low shrubs and cushion-plant communities.

Botanical surveys were conducted on MCMWTC during July and August 2010 and May, June, July, August, and September 2011 in preparation to complete the Biological Assessment/Biological Evaluation for the Enhancement of Operations and Training Proficiency at MCMWTC (Reynolds & Cardno TEC, Inc. 2012). These included surveys for USFS Region 4 Plants of Special Interest, Sensitive and Watchlist plant species from the BRD, noxious weeds, and vegetation communities.

Floristic surveys were conducted and reported on USFS roads (with an approximately 100-foot buffer on either side of the existing road edge) Ranges, DZs, and LZs throughout all of the MCMWTC use areas. The survey area was divided into the following six survey areas (see Table 3-9), including MCMWTC, Burcham Flat Road, Lobdell Lake Road, Masonic Road, Risue Road/Sweetwater DZ, and Lucky Boy Road/DZ. Within the MCMWTC survey area, surveys were conducted in 15 Ranges, 5 DZs, and 5 LZs south of Kirman Lake Road, including Pickel, Ostrich, Vulture, Flamingo, and Bullet LZs.

The vegetation in the region is classified as Classification and Assessment with Landsat of Visible Ecological Groupings (CALVEG) Zone 9, within the Great Basin Ecological Province, and includes three major categories: Conifer Forest Woodland (Pine and Conifer-Fir Alliances), Hardwood Forest-Woodland (Quaking Aspen Alliance), and Chaparral (Bitterbrush-Sagebrush Alliance) (Reynolds & Cardno TEC, Inc. 2012). The common vegetation types within the project survey areas are presented in Table 3-9. A different summary broken down by area is provided in Appendix I.

Detailed descriptions of these vegetation communities by survey area are provided in Reynolds and Cardno TEC, Inc. 2012 and the area of land cover on MCMWTC as mapped by the USFS (2009) throughout the Great Basin, is described in Section 3.5.10. A list of plant species documented on lands used by the MCMWTC can be found in Appendix J. In addition, Cardno Tec, Inc. (2012) documented vegetation types associated with the wetlands. A summary of those vegetation types is provided in Appendix I.

3.5.10 USFS Mapped Vegetative Communities

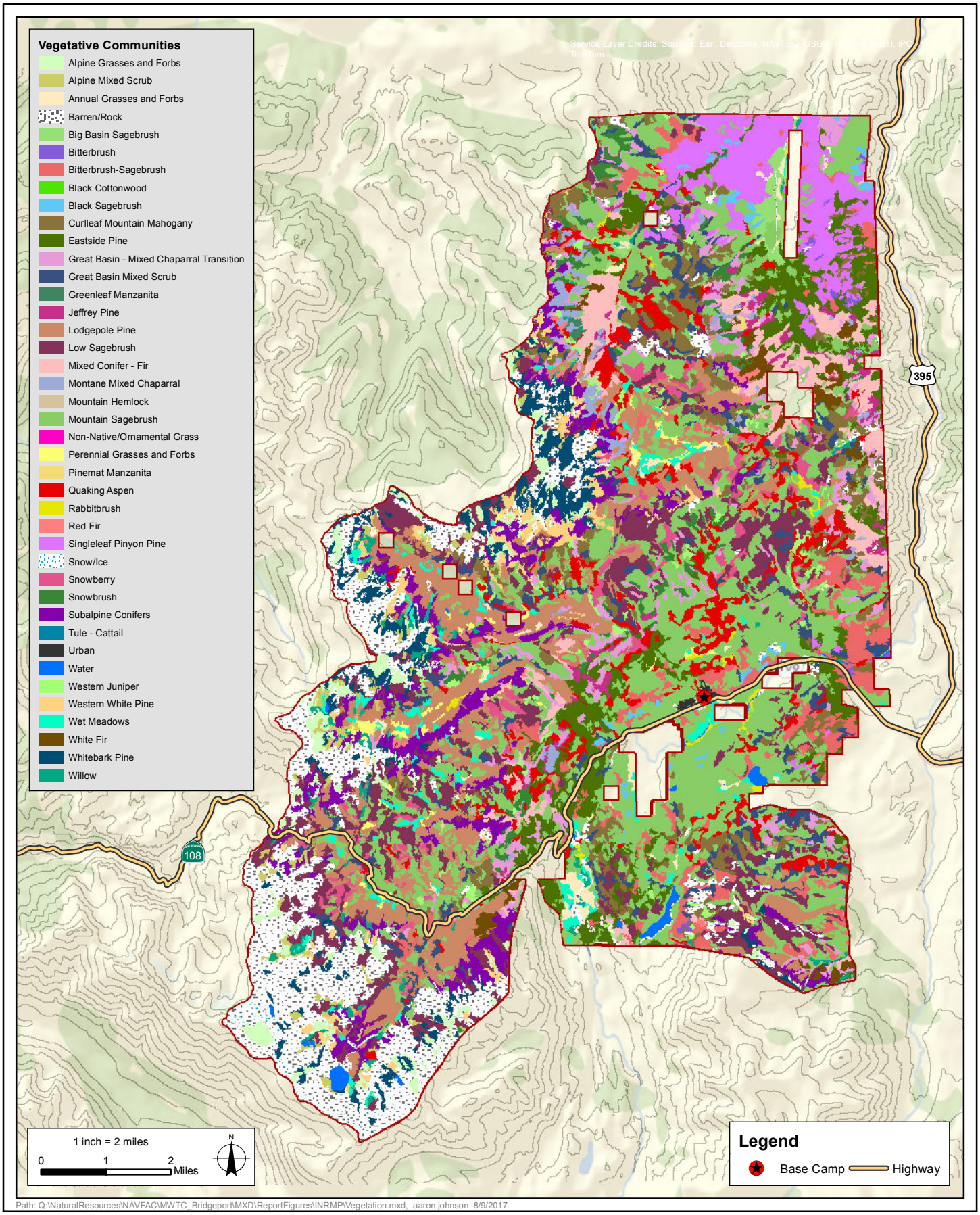
For classification of existing vegetation on USFS managed land, a set of standards and procedures has been established at the national and regional levels. The Pacific Southwest Region (R5) CALVEG classification system conforms to the upper levels of the United States National Vegetation Classification Standard (USNVC) hierarchy as it currently exists. The USNVC sets guidelines for all federal agencies involved in this work (USNVC 2015). Lowest (floristic) levels of this hierarchy are currently being developed and have not yet been finalized for their applicability to California (USFS 2009).

Table 3-9. Vegetation Types and Land Cover on MCMWTC and Related USFS Lands, California

Vegetation Alliance	Survey Areas					
	MCMWTC	Burcham Flat Road	Lobdell Lake Road	Risue Road	Lucky Boy Road	Masonic Road
Alpine Grasses and Forbs	✔					
Alpine Mixed Scrub	✔					
Annual Grasses and Forbs	✔					
Barren/Rock	✔	✔	✔	✔	✔	✔
Big Basin Sagebrush		✔		✔	✔	✔
Bitterbrush – Sagebrush	✔	✔	✔	✔		✔
Black Sagebrush					✔	
Curlleaf Mountain Mahogany (shrub)	✔				✔	
Curlleaf Mountain Mahogany (tree)	✔	✔	✔	✔		✔
Eastside Pine	✔					✔
Great Basin – Mixed Chaparral Transition	✔	✔	✔	✔		✔
Great Basin Mixed Scrub	✔	✔	✔	✔	✔	✔
Jeffrey Pine	✔					
Lodgepole Pine	✔	✔	✔			
Low Sagebrush		✔	✔	✔	✔	✔
Mixed Conifer – Fir	✔					
Montane Mixed Chaparral	✔	✔	✔			
Mountain Hemlock	✔					
Mountain Sagebrush	✔	✔	✔	✔	✔	✔
Perennial Grasses and Forbs	✔	✔	✔	✔	✔	✔
Quaking Aspen	✔	✔	✔			✔
Rabbitbrush	✔	✔	✔	✔	✔	✔
Singleleaf Pinyon Pine	✔	✔	✔	✔	✔	✔
Snow / Ice	✔					

Source: Reynolds and Cardno TEC, Inc. 2012; USFS 2009.

The Pacific Southwest Region (R5) has produced comprehensive spatial and tabular databases for existing vegetation covering all of the USFS lands within the region. A mapping methodology has been developed to capture vegetation characteristics using automated, systematic procedures that efficiently map large areas of the state with minimal bias and is supplemented with onsite field visits when appropriate. Map attributes consist of vegetation types using the CALVEG classification system and forest structural characteristics such as tree and shrub canopy cover and tree stem diameters. This project was completed in 2004 and the vegetative communities mapped within MCMWTC are depicted in Figure 3-10 and summarized in Table 3-10.



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Vegetative Communities
Marine Corps Mountain Warfare Training Center Bridgeport
Integrated Natural Resources Management Plan

FIGURE
3-10

Table 3-10. Vegetation Types and Land Cover on MCMWTC, California

Class	Sub-class	Acres
Base Camp and Training Areas		
Conifer Forest/Woodland	Eastside Pine Alliance	3,260
	Jeffrey Pine Alliance	393
	Lodgepole Pine Alliance	5,690
	Mixed Conifer – Fir Alliance	1,900
	Mountain Hemlock Alliance	4
	Red Fir Alliance	127
	Singleleaf Pinyon Alliance	2,500
	Subalpine Conifers Alliance	2,616
	Western (Mountain) Juniper Alliance	463
	Western White Pine Alliance	860
	White Fir Alliance	642
	Whitebark Pine Alliance	1,649
Hardwood Forest/Woodland	Black Cottonwood Alliance	3
	Curlleaf Mountain Mahogany Alliance (tree)	402
	Quaking Aspen Alliance	2,433
	Willow Alliance	9
Herbaceous	Alpine Grasses and Forbs Alliance	1,163
	Annual Grasses and Forbs Alliance	386
	Perennial Grasses and Forbs Alliance	272
	Tule-Cattail Alliance	9
	Wet Meadows Alliance	737
Non-Vegetation Classes	Barren	6,441
	Developed	58
	Snow / Ice	107
	Water	245
Non-Native Vegetation	Non-native / Ornamental Grass Alliance	2
Shrubs and Chaparral	Alpine Mixed Scrub Alliance	467
	Basin Mixed Scrub Alliance	1,902
	Big Basin Sagebrush Alliance	376
	Bitterbrush – Sagebrush Alliance	2,200
	Bitterbrush Alliance	90
	Black Sagebrush Alliance	234
	Curlleaf Mountain Mahogany Alliance (shrub)	2,397
	Great Basin – Mixed Chaparral Transition Alliance	1,766
	Greenleaf Manzanita Alliance	34
	Low Sagebrush Alliance	4,965
	Mountain Sagebrush Alliance	12,346
	Pinemat Manzanita Alliance	13
	Rabbitbrush Alliance	173
	Shrub Willow Alliance	422
	Snowberry Alliance	902
	Snowbrush Alliance	739
	Upper Montane Mixed Chaparral Alliance	535
Coleville Military Family Housing Area		
Shrubs and Chaparral	Big Basin Sagebrush Alliance	23.5
Other Vegetation Classes	Developed and/or Ornamental Vegetation	33

Source: USFS 2009. Only includes those areas within the primary MCMWTC boundary in California and not additional areas.

Base Camp & TAs

The vegetation within the vicinity of the MCMWTC Base Camp and TAs is classified as CALVEG Zone 4 within the Southern Sierran Ecological Province, and includes 5 major categories: Conifer Forest Woodland, Hardwood Forest-Woodland, Herbaceous, Shrubs and Chaparral, and Land Use and Non-Vegetated Classes. These vegetation types, as mapped by the USFS (2009), are listed in Table 3-10 and presented in Figure 3-10. Detailed vegetation maps are provided in Appendix I. The Sweetwater DZ is all mountain sagebrush based USFS (2009) data and shown in Figure 3-9.

Coleville Military Family Housing Area

The vegetation within the vicinity of the CMFHA is classified as CALVEG Zone 9 within the Great Basin Ecological Province. These vegetation types, as mapped by the USFS (USFS 2009), are listed with acreages in Table 3-10. Vegetative communities are also presented in Figure 3-8 for CMFHA.

3.5.11 Fauna

The high diversity of topography and microclimates and associated vegetative communities (refer to Section 3.5.10) of MCMWTC provides a large number of habitats for wildlife species.

A series of wildlife surveys were conducted at MCMWTC in 2010 and 2011 (Davenport Biological Services & Cardno TEC, Inc. 2012). This effort included surveys for sensitive and migratory birds, sensitive carninvores, bats, and pygmy rabbits (*Brachylagus idahoensis*). Birds observed during these surveys included over 180 occurrences of key species of interest including bald eagle (*Haliaeetus leucocephalus*), northern goshawk (*Accipiter gentilis*), mountain quail (*Oreortyx pictus*), California spotted owl (*Strix occidentalis*), flammulated owl (*Psiloscops flammeolus*), hairy woodpecker (*Picoides villosus*), yellow-rumped warbler (*Setophaga coronata*), yellow warbler (*Setophaga petechial*), greater sage-grouse (*Centrocercus urophasianus*), willow flycatcher (*Empidonax traillii*), and white-headed woodpecker (*Picoides albolarvatus*) (Davenport & Cardno TEC, Inc. 2012a). Additionally, 108 migratory birds were documented at MCMWTC (Davenport & Cardno TEC, Inc. 2012b).

Sensitive carnivore surveys identified a number of mammal species at camera stations including Sierra marten (*Martes americana sierrae*), long-tailed weasels (*Mustela frenata*), eastern spotted skunk (*Spilogale putorius*), gray fox (*Urocyon cinereoargenteus*), Sierra Nevada red fox (*Vulpes vulpes necator*), coyote (*Canis latrans*), bobcat (*Lynx rufus*), black bear (*Ursus americanus*), and cougar (*Puma concolor*) (Davenport & Cardno TEC, Inc. 2012c). Further, 11 bat species were observed during roost site surveys in 2011 (Davenport & Cardno TEC, Inc. 2012d). No Townsend's big-eared bat (*Corynorhinus townsendii*) or spotted bat (*Euderma maculatum*) were identified during these surveys; however, Townsend's big-eared bat was observed in another survey conducted in 2010. No pygmy rabbits (*Brachylagus idahoensis*) were detected (Davenport & Cardno TEC, Inc. 2012e).

A terrestrial invertebrate survey was completed in 2014 (MultiMAC JV 2017b). During this survey a total of roughly 80,000 arthropods were observed or processed. No federally listed species or subspecies were observed on MCMWTC during the course of this survey; however, two regionally sensitive butterfly species were encountered including the Monarch butterfly (*Danaus plexippus*) and the Apache fritillary (*Speyeria nokomis apacheana*) (MultiMAC JV 2017b).

In 2014 data was collected to support an assessment of existing conditions for Lahontan cutthroat trout, Yosemite toad, and Sierra Nevada yellow-legged frog (*Rana sierrae*), all of which are known to occur on MCMWTC, as well as other incidental fish and amphibian species (MultiMAC JV 2017a).

Appendix K presents a list of terrestrial and aquatic wildlife documented on the lands that comprise MCMWTC. A summary of all projects, completed and ongoing, that included surveys for animals is provided in Section 4.1.

3.5.12 Invasive Species

Invasive and exotic species may include plants, insects, or animals. An invasive species is defined as "an alien species whose introduction does or is likely to cause economic or environmental harm or harm to human health." An alien (or non-native) species is defined as a "species including its seeds, eggs, spores, or other biological material capable of propagating that species that is not native to that ecosystem (EO 13112 *Invasive Species*)."

Because of their invasive capacity, many exotic species have the ability to spread rapidly through ecosystems since their natural predators are often not present. Such species often retard natural succession and reforestation and generally cause a reduction of biological diversity in natural ecosystems.

MCO P5090.2A, Chapter 14 require all USMC activities that conduct pest management operations to have an IPMP. As such, MCMWTC has prepared an IPMP (NAVFAC Southwest 2008). All pest management programs at the MCMWTC are conducted in accordance with the IPMP.

3.5.12.1 Invasive Plants and Noxious Weeds

Both the California and Nevada SWAPs identify invasive plants. The California Invasive Plant Council (Cal-IPC; http://www.cal-ipc.org/) provides species profiles, management recommendations and training opportunities for invasive plants. There are also numerous national and regional invasive plant websites that provide further information.

The Federal Noxious Weed Act requires federal land managers to cooperate with state and federal agencies to manage undesirable plants. It defines noxious weed as, "any living stage (including seeds and reproductive parts) of a parasitic or other plant of a kind which is of foreign origin, is new to or not widely prevalent in the United States, and can directly or indirectly injure crops, other useful plants, livestock, poultry or other interests of agriculture,

including irrigation, navigation, fish and wildlife resources, or the public health". It also mandates a program and a person be assigned to deal with unwanted plants, funding needs, cooperative agreements, and the use of integrated pest management (IPM) systems.

In addition, DoD policy states that "noxious weeds and other objectionable plant growth shall be controlled by mowing, use of USEPA registered or approved herbicides, cultivation, or other appropriate means. Pesticide use should be minimized and used in accordance with DoD policy" (DoD 2011). While herbicides are sometimes essential to control unwanted plants, an integrated approach is usually the most effective, uses the least chemical necessary to achieve control and is required by DoD policy.

There are 42 invasive plant species documented within MCMWTC (Reynolds & Cardno TEC, Inc. 2012). The majority of the species have either a limited impact rank from Cal-IPC or no impact rank from Cal-IPC. A list of invasive plants and noxious weeds that are known to occur on MCMWTC are presented in Appendix L. The five species documented on MCMWTC with a high or moderate impact rank by Cal-IPC include:

- cheatgrass (*Bromus tectorum*) – high
- tall whitetop or broadleaved pepperweed (*Lepidium latifolium*) – high
- bull thistle (*Cirsium vulgare*) – moderate
- saltlover (*Halogeton glomeratus*) – moderate
- Dalmatian toadflax (*Linaria genistifolia* ssp. *dalmatica*) – moderate

3.5.12.2 Invasive Animals

Management of invasive animals on MCMWTC is limited to managing pest species, using the IPM program. These are pests typically found in buildings in the region, such as mice and insects. Pest management activities are conducted by a MCMWTC integrated pest management coordinator (IPMC). The IPMC coordinates and provides oversight of all the installation pest management activities. The USFS prohibits pesticide applications on National Forest lands without permission. However, pesticide applications indoors that do not impact lands can be performed with prior approval from the USFS and are contracted to Terminex. Pesticides used on DoD lands will be administered by the Base Operating Service contract, which includes inside and outside applications. The USMC does not manage forests pests, but will cooperate with USFS if requested.

3.5.13 Federally Listed Threatened and Endangered and Protected Species

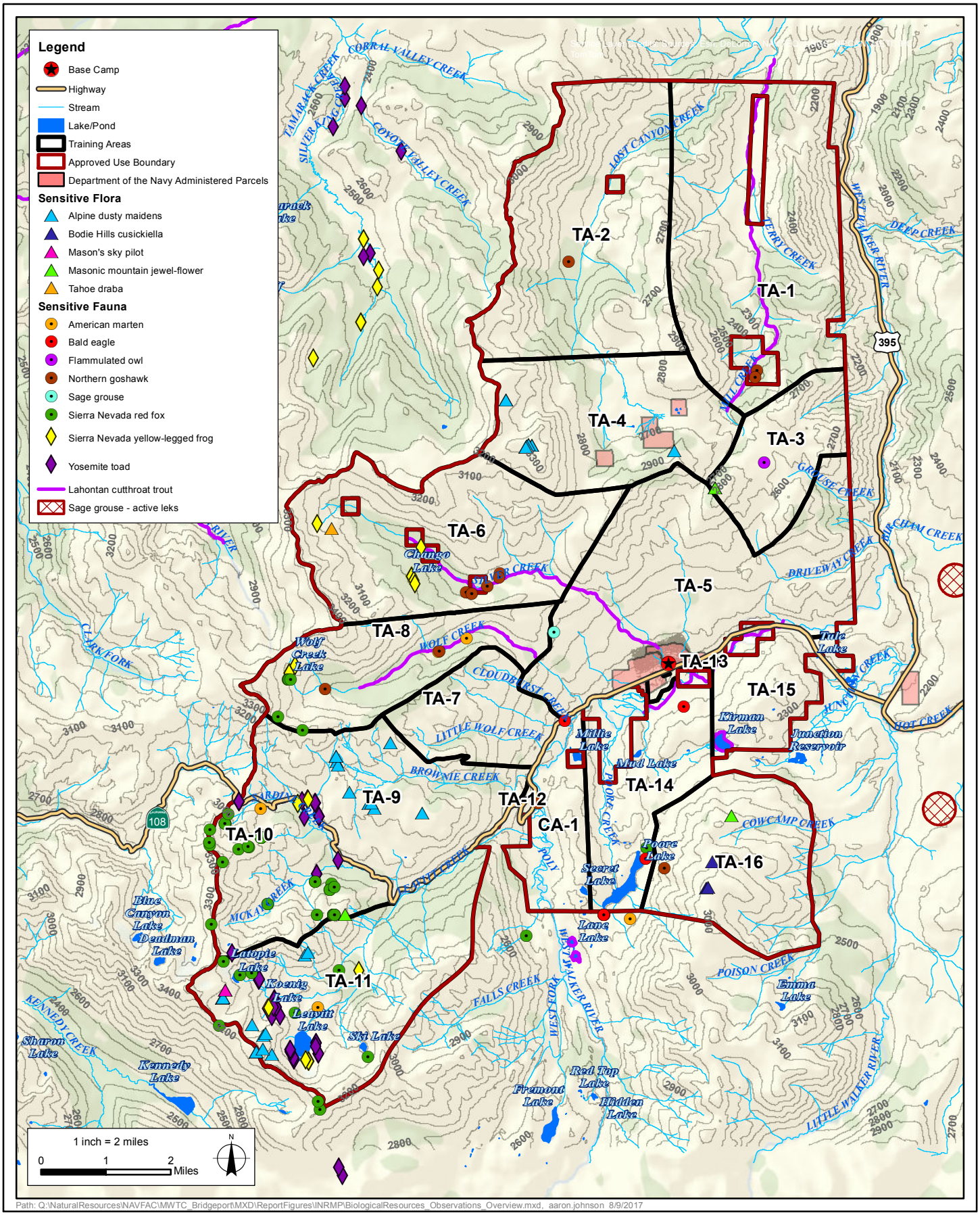
Federally listed T&E species include those listed by the federal government as threatened, endangered, proposed for listing as threatened or endangered, or candidates for such listing under the federal ESA. The definitions for these categories are as follows:

- Endangered – Any species that is in danger of extinction throughout all or a significant portion of its range.

- Threatened – Any species that is likely to become an endangered species within foreseeable future through all or a significant portion of its range.
- Candidate – Species for which there is sufficient information on biological vulnerability and threats to support proposals to list them as endangered or threatened.

Seven federally endangered and four threatened species are listed within Mono County (USFWS 2015b). Three of these species have been detected within the MCMWTC boundaries during recent survey efforts (Davenport Biological Services & Cardno TEC, Inc. 2012; Fleishman 2014; MultiMAC JV 2017a; Vernadero Group 2015). Additionally, both bald and golden eagles (*Haliaeetus leucocephalus*, *Aquila chrysaetos*) protected under the Bald and Golden Eagle Protection Act (BGEPA) have been detected within the MCMWTC boundaries. The greater sage-grouse (*Centrocercus urophasianus*) Bi-state Distinct Population Segment (DPS), which is also known to occur on MCMWTC, is considered a federally protected species as DoD is a participant in the Bi-State Action Plan (Bi-State Technical Advisory Committee 2012). See Appendix M for a list of special status species. Figure 3-11 depicts observations of special status species. Figure 3-12 depicts protected areas for special status species.

- Federally Listed Species Documented at MCMWTC
  - Sierra Nevada yellow-legged frog (*Rana sierrae*) – Federally Endangered
  - Lahontan cutthroat trout (*Oncorhynchus clarkii henshawi*) – Federally Threatened
  - Yosemite toad (*Bufo canorus*) – Federally Threatened
  - Sierra Nevada red fox (*Vulpes vulpes necator*) – Federal Candidate, State-listed Threatened
  - Whitebark pine (*Pinus albicaulis*) – Federal Candidate
- Federally Protected Species Documented at MCMWTC
  - Greater sage-grouse (*Centrocercus urophasianus*) (Bi-State DPS) – Federally Protected (Due to Bi-State Agreements)
  - Bald eagle (*Haliaeetus leucocephalus*) – BGEPA
  - Golden eagle (*Aquila chrysaetos*) – BGEPA



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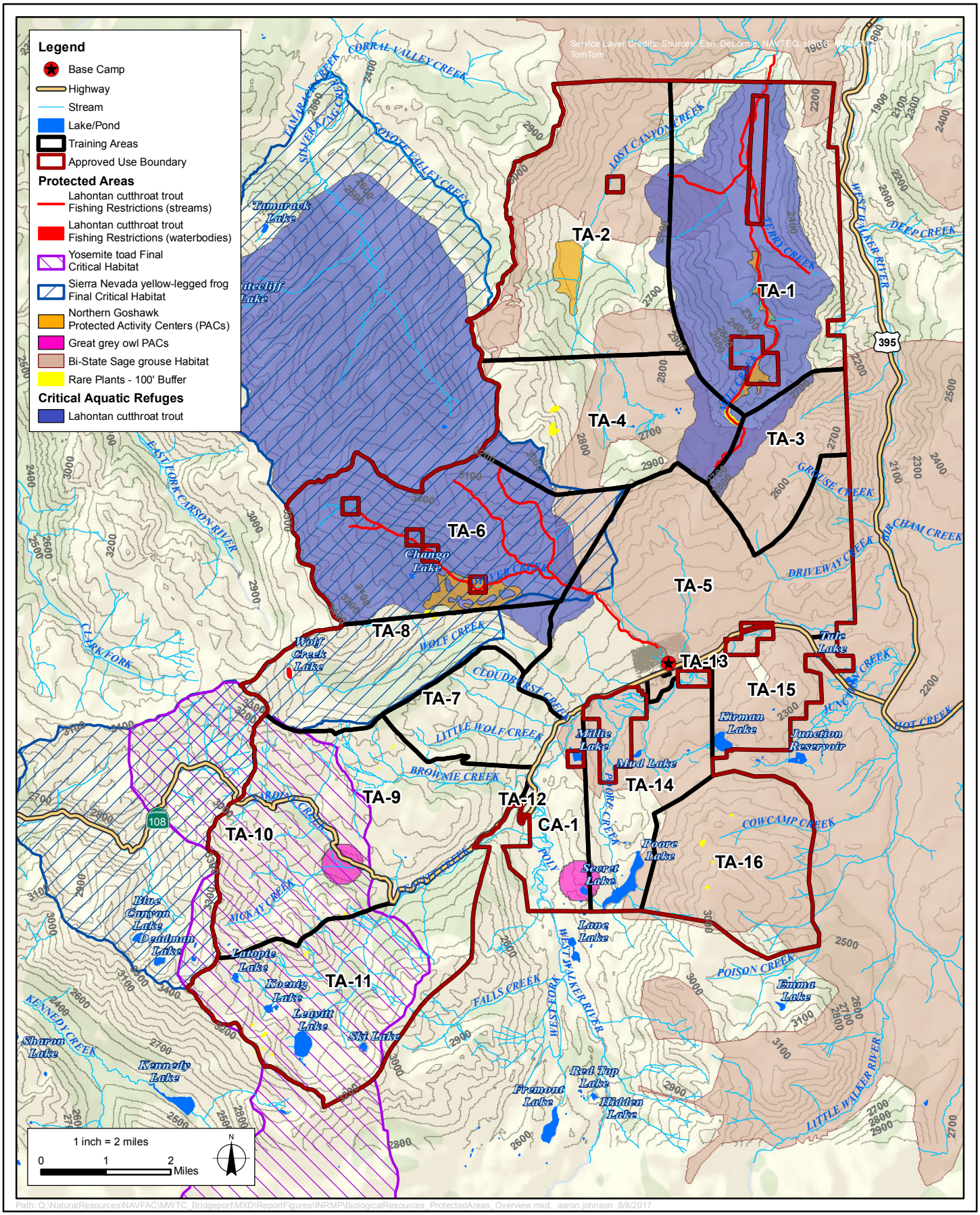
amec foster wheeler

Special Status Species Observations
Marine Corps Mountain Warfare Training Center Bridgeport
Integrated Natural Resources Management Plan

FIGURE
3-11



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amec foster wheeler

Special Status Species Protected Areas
Marine Corps Mountain Warfare Training Center Bridgeport
Integrated Natural Resources Management Plan

FIGURE
3-12

A description of these federally listed and federally protected species and where they are known to occur on MCMWTC is provided below. For federal T&E species permit restrictions and management recommendations, see Section 4.9. Federally designated critical habitat critical habitat for these species is discussed in Section 3.5.14.

Two of the primary management tools used by the USFS for managing federally listed species, as well as other special status species, are riparian conservation areas (RCAs) and CARs. The RCAs are defined in the Sierra Nevada Framework (USFS 2004, 2013a) and generally protect buffer zones of varying sizes around streams and rivers. These zones benefit not only the federally listed aquatic and amphibian species here, but also rare bird and plant species and generally protect water quality in these streams and rivers and the water bodies along them. The CARs are watersheds managed for specific rare species and that have specific management and use requirements within then. Refer to Section 4 for more on the management recommendations for both RCAs and CARs.

Figure 3-11 depicts known locations of special status species, including federally listed species. Figure 3-12 depicts areas protected or with specific conservation measures for special status species, including federally listed species.

3.5.13.1 Sierra Nevada yellow-legged frog

Mountain yellow-legged frogs are represented by two species (*Rana muscosa* and *Rana sierrae*) comprising the mountain yellow-legged frog complex, of which both species are the only members (USFWS 2012a). The Sierra Nevada yellow-legged frog (*Rana sierrae*) occurs within eastern Sierra Nevadas in Inyo and Mono counties (USFWS 2012a; Dungan et al. 2015). Sierra Nevada yellow-legged frogs are federally listed as endangered. This species is also a California state-listed threatened species as well as USFS sensitive species (USFS 2013b; CDFW 2015b; USFWS 2015b). Sierra Nevada yellow-legged frogs historically occurred in lakes, ponds, marshes, meadows, and streams at elevations ranging from 4,500 feet to over 12,000 feet. They are closely associated with high-elevation water bodies, and although they are rarely found more than 3 feet from water, they are capable of longer distance travel between breeding, foraging, and overwintering habitats (USFWS 2012a). At higher elevations, such as those that occur within the MCMWTC, the borders of alpine lakes and montane meadows that are used by Sierra Nevada yellow-legged frog are typically grassy or muddy. They utilize stream habitats of various types, although they are not usually present in the smallest creeks (Zweifel 1955; Dungan et al. 2015).

Sierra Nevada yellow-legged frog

MCMWTC historically supported several populations of Sierra Nevada yellow-legged frogs, primarily found in headwater lakes and meadows of the southern portion of the installation

(MultiMAC JV 2017a). The population and distribution of these frogs have declined dramatically over the past few decades and this decline is consistent with the trend in amphibian populations state-wide (MultiMAC JV 2017a). A study comparing surveys to historical localities found that over 90 percent of populations had gone extinct (Vredenburg et al. 2007).

During recent surveys, populations have been documented within the MCMWTC in the Silver Creek, and Koenig Lake CARs, at Wolf Creek Lake and Chango Lake (USFS 2004, 2005, 2008; Dungan et al. 2015). Currently occupied habitat and sightings for the Sierra Nevada yellow-legged frog as documented by the USFS, California Natural Diversity Database, and CDFW have been documented within TA 6 (LZ Eagle), TA 8 (Wolf Creek Lake), TA 10, and TA 11 (Dungan et al. 2015). Five surveys conducted by CDFW at Leavitt Lake area (within TA 11) between 2001 and 2011 did not detect any Sierra Nevada yellow-legged frogs. Therefore, the Leavitt Lake population is considered to be extirpated (Dungan et al. 2015). The Chango Lake population (within TA 6) and Wolf Creek Lake population (within TA 8) are routinely monitored by CDFW and are considered extant (Dungan et al. 2015).

Critical habitat was designated by the USFWS for this species in 2016 and encompasses nearly all of TAs 6 and 8 and small areas along the western boundaries of TAs 4 and 5 (USFWS 2016). In the final rule, the USFWS evaluated and considered the following Primary Constituent Elements (PCEs) essential to the conservation of the species:

- Aquatic habitat for breeding and rearing (lakes, streams, rivers, tarns, perennial creeks, or permanent plunge pools within intermittent creeks). The habitat must be of sufficient depth to not freeze during the winter (no less than 5.6 ft but generally greater than 8.2 ft; maintain a natural flow pattern; be free of fish or other introduced predators; and maintain water during entire tadpole growth phase (minimum of 2 years).

- Aquatic nonbreeding habitat (including overwintering habitat).

- Upland areas adjacent to surrounding breeding and nonbreeding aquatic habitat. For stream habitats, this area extends 82 ft from bank or shoreline. For areas between proximate (within 984 ft) water bodies (typical of some high mountain lake habitats), the upland area extends from the bank or shoreline between such water bodies.

3.5.13.2 Lahontan cutthroat trout

Lahontan cutthroat trout

Lahontan cutthroat trout are federally listed as threatened (USFWS 2015b). This subspecies is also a USFS sensitive species (USFS 2013b; CDFW 2015b) and is regulated as a game fish in Nevada under Nevada Administrative Code (NAC) 503.060. Lahontan cutthroat trout are native to lakes and streams throughout the physiographic Lahontan basin of northern Nevada, eastern California, and southern Oregon. Prior to this century, eleven lacustrine populations occupied approximately 334,000 acres of lakes and an estimated 400 to 600 fluvial populations inhabited more than 3,600 miles of streams (USFWS 1995). However, non-native trout species took over most of the streams in these basins during the 20th century. Consequently, Lahontan cutthroat throat are gone from most of their historic range, with the majority of California populations the result of re-establishment efforts (MultiMAC JV 2017a). In the mid-1980s, there were just 27 self-sustaining populations of Lahontan cutthroat trout in California and Nevada. Only two native, self-sustaining lacustrine populations persist in Independence and Summit Lakes. Fluvial California populations occur in the Truckee, Carson, and Walker River basins (USFWS 2009).

Lahontan cutthroat trout currently exist in approximately 155 streams and 6 lakes and reservoirs in Nevada, California, Oregon, and Utah (USFWS 1995). Within the vicinity of MCMWTC, Lahontan cutthroat trout currently occupy less than 3 percent of their historic range in the Walker, Truckee and Carson River basins. Many of the fluvial Lahontan cutthroat trout populations occupy isolated stream segments of larger river systems with no opportunity for natural re-colonization. Both lacustrine and fluvial forms are subject to unique high risk extinction factors. Lahontan cutthroat trout inhabit lakes and streams and require spawning and nursery habitat characterized by cool water, pools in close proximity to cover and velocity breaks, well vegetated and stable stream banks, and relatively silt free rocky substrate in riffle-run areas (USFWS 1995). Overhanging vegetation and woody debris are important habitat components, especially for juveniles (USFWS 2009).

Populations of Lahontan cutthroat trout have been reintroduced to Wolf Creek, Silver Creek, and Mill Creek. Distribution of Lahontan cutthroat trout in Wolf Creek is limited to approximately 3.2 miles of the creek, between Reach 1 and Reach 3. Increased gradient makes it unlikely that Lahontan cutthroat trout would extend their distribution downstream and low flows make it unlikely they would extend their distribution upstream (USFS 2004). Lahontan cutthroat trout distribution within Silver creek is approximately 3.3 miles (Reach 1 and Reach 2) with multiple age classes occurring within the creek (USFS 2004). A large self-sustaining population of brook trout (*Salvelinus fontinalis*) is thought to be the reason that Lahontan cutthroat trout have not moved downstream to other naturally occurring habitat (USFS 2004). Distribution of Lahontan cutthroat trout is limited in Mill Creek to approximately 5.4 miles of the creek (USFS 2004). Surveys conducted in Lost Cannon Creek did not identify any occurrence of Lahontan cutthroat trout; however, potential habitat is

present within the creek (USFS 2005). West Walker River is occasionally stocked with hatchery Lahontan cutthroat trout (Dungan et al. 2015). On MCMWTC, Lahontan cutthroat trout have been introduced to and documented in reaches within Mill Creek, Silver Creek, Wolf Creek, and Upper Leavitt (Davenport Biological Services & Cardno TEC, Inc. 2012; MultiMAC JV 2017a). Suitable habitat for this species has also been identified in portions of Lost Cannon Creek, Lost Cannon Tributary, Lower Leavitt, Silver Tributary, McKay Creek, Little Wolf Creek, Silver Creek Tributary, and Sardine Creek (MultiMAC JV 2017a). Additionally, a Salmonid Habitat Assessment was recently performed for six streams for which there was no previous documentation of Lahontan cutthroat trout presence, absence, or habitat suitability. Surveyed streams included Brownie, Cloudburst, Driveway, Grouse, Little Wolf, Terry and an unnamed tributary to Silver Creek. Brownie, Cloudburst, and Little Wolf Creek each have limited suitable habitat between the headwaters and the streams confluences with the Little Walker River (MultiMAC JV 2017a). Lahontan cutthroat trout were also observed in a reach of Leavitt Creek above Leavitt Falls but they were not observed below the falls. Overall, the density and size distribution of Lahontan cutthroat trout were very similar to data from previous surveys in 2004 conducted by the USFS.

Lahontan cutthroat trout recovery efforts have included recontouring of an old irrigation diversion along Mill Creek to allow upstream migration; the improvement of road crossings in Mill and By-Day Creeks by building low bridges to prevent vehicles from crossing in the streams and allowing fish to move more freely up- and downstream; and targeted removals of non-native fish from Silver Creek using rotenone from 1994 to 1996 and electrofishing since 2004 (USFWS 2009; Dungan et al. 2015). Catch and release of Lahontan cutthroat trout is not authorized under the 40-Year SUP. In addition, fishing is not authorized in Silver Creek, Mill Creek, Chango Lake, or Wolf Creek Lake in compliance with CDFW regulations. Wolf Creek is currently open to the public for catch and release angling from August 1 to November 15 per CDFW regulations.

3.5.13.3 Yosemite toad

Yosemite toad

Yosemite toads are federally listed as threatened (USFWS 2015b). This species is also a USFS sensitive species (USFS 2013b; CDFW 2015b). The Yosemite toad has been found in a wide variety of high montane and subalpine lentic (standing or slowly moving water) habitats including wet meadows, lakes, and small ponds, as well as in shallow spring channels, side channels of streams, and sloughs. The species is most commonly found in areas of shallow, warm water, including wet meadows, small permanent and ephemeral ponds, and shallowly flooded grassy areas and meadows adjacent to lakes (Karlstrom 1962). Some evidence indicates that toad populations may have been more abundant in lake environments than they are currently. Meadow habitats are often surrounded by lodgepole (*Pinus contorta*) or whitebark (*Pinus albicaulis*) pines. A recent study of Yosemite toads in Yosemite National Park suggests that

probability of occurrence is related to elevation, amount of meadow vegetation, and survey dates (Knapp 2003). That study did not find a significant correlation with water depth, littoral zone substrate, or the presence, or absence of non-native fish. Additional studies are underway to better delineate where Yosemite toad, and other rare amphibians, occur within MCMWTC.

The historical range of the Yosemite toad in the Sierra Nevadas extended from the Blue Lakes region north of Ebbetts Pass (Alpine County) to just south of Kaiser Pass in the Evolution Lake/Darwin Canyon area (Fresno County) at elevations ranging from 4,790 to 11,910 feet (USFWS 2014). The overall geographic extent for the current range of Yosemite toad has not changed from the historic range; however, there has been a range wide decline of Yosemite toad populations by approximately 50 percent compared to historical occurrences (USFWS 2014). Erosion, encroachment of invasive vegetation, and dewatering of meadows has led to meadow habitat loss and degradation of which meadows and pools are crucial to the Yosemite toad for breeding, rearing, and adult survival (USFWS 2014).

Populations have been documented in the Koenig Lake CAR at MCMWTC (MultiMAC JV 2017a). In the Koenig Lake CAR, individuals have been documented around Koenig Lake and immediately south and east of Leavitt Lake and just outside LZ Lark. A record for this species from 1974 is also noted east of the Koenig Lake CAR just outside the southeast corner of R1000-2. Chango Lake in the Silver Creek CAR were known to historically support populations of Yosemite toads. Wolf Creek Lake was also known to historically support a population of Yosemite toad, but none were found at these locations during a survey in 2001. The species was also documented in 2001 outside an established CAR in the Sardine Meadows area and there is a recorded observation within R1000-1, LZ Robin, and another record in the north of Range 1101 near Leavitt Creek (Dungan et al. 2015). Further, Yosemite toads were also recently observed on LZ Kiwi, LZ Robin, and near LZ Yarup (Davenport Biological Services & Cardno TEC, Inc. 2012). Current occupied habitat on MCMWTC is primarily within meadow habitats located within the southeastern portion of the installation, in TAs 9, 10, and 11 (Dungan et al. 2015).

Critical habitat was designated by the USFWS for this species in 2016 and encompasses nearly all of TAs 10 and 11 and a small area along the western boundary of TA 9 (USFWS 2016). The USFWS also evaluated and considered PCEs as elements of physical or biological environment that are essential to the species and include the following:

- Aquatic breeding habitat to include bodies of fresh water, including wet meadows, slow-moving streams, shallow ponds, spring systems, and that are typically inundated during snowmelt, holding water for a minimum of 5 weeks, and contain sufficient food for tadpole development.

- Upland area habitat to consist of areas adjacent to or surrounding breeding habitat up to a distance of 0.78 mi, includes seeps, springheads, and provides sufficient cover, foraging habitat, prey resources, physical structure predator avoidance, overwintering refugia and dispersal corridors.

In accordance with the 40-year SUP, MCMWTC is to avoid concentrated activities in marshy areas or wetlands located in the CAR. In addition, no disturbance activities are to occur within these areas during the Yosemite toad breeding season.

3.5.13.4 Sierra Nevada red fox


Sierra Nevada red fox

Sierra Nevada red fox is federal candidate and state-listed threatened species (USFWS 2015b). In October 2015, the USFWS issued a 12-month finding that listing the Sierra Nevada red fox as endangered or threatened was not warranted. However, it was found that the Sierra Nevada population segment of the Sierra Nevada red fox is a DPS of the subspecies and that listing the Sierra Nevada DPS is warranted (*Federal Register* Vol. 80, No. 195, 8 October 2015). This species is also a USFS sensitive species (USFS 2013b).

The Sierra Nevada red fox historically ranged throughout sub-alpine habitats of the Sierra Nevada and Cascade mountains ranges in California. While the Sierra Nevada red fox has always occurred at low densities, the species experienced a precipitous decline toward the end of the 20th century (Schempf & White 1977; Perrine et al. 2010). The Sierra Nevada red fox is generally restricted to habitats at elevations between approximately 4,900 feet and 11,800 feet, although they have been detected as low as 3,900 feet. The species is most closely associated with open conifer woodlands and mountain meadows, but has also been known to inhabit lodgepole pine and fir vegetation communities. Home ranges vary by season, expanding in the summer to more than 5,680 acres. The Sierra Nevada red fox is an elevational migrant, moving to lower areas with higher density forest vegetation and canopy coverage in the winter. Major prey items include mice, squirrels, and hares. Den sites are similar to other mountain foxes and include natural cavities in talus slopes or rockslides, earthen dens, and boulder piles (Perrine et al. 2010; Sierra Nevada Red Fox Interagency Working Group 2010).

The Sierra Nevada red fox was thought to have been extirpated from the Bridgeport Ranger District area, although there were numerous CNDDB records in the region in the 1980s and 1990s. However, according to Perrine et al. (2010), records of the Sierra Nevada red fox prior to 2010 were only verified from the Lassen region and the distribution outside of that region was unknown. In 2010, Sierra Nevada red fox was documented within the MCMWTC based on photos captured by a remote auto-triggered camera near Sonora Pass. Based on significant differences in pelage, at least two individual red fox have been photographed at that location. Since that discovery, additional Sierra Nevada red fox have been detected in the greater Bridgeport and Bishop areas through the use of remote auto-triggered cameras. In addition, a young female red fox was killed on Highway 395 near the intersection with State Route 108 (Dungan et al. 2015). In 2012, USFWS noted a small population in the

vicinity of Sonora Pass (USFWS 2012b). Studies conducted in connection with the Pacific Crest National Scenic Trail Crossing EA (USFS 2011a) documented centers of fox activity in Wolf Creek and McKay Creek and reported CDFW detections of Sierra Nevada red fox in the Bridgeport Winter Recreation Area along the Leavitt Lake Road and near Kennedy Lake. These studies did not locate any dens. Other centers of activity were found in other studies at several locations along the West Walker River drainage (USFS 2011a).

Potential habitat for the Sierra Nevada red fox occurs across most of the MCMWTC, although primarily in the western and southern portions of the base. Project-specific surveys for special status carnivores, including the Sierra Nevada red fox, were conducted in 2010 and 2011. The surveys were composed of auto-triggered, motion-sensitive cameras deployed in a loose grid across the MCMWTC. Cameras were operational for sampling periods during the spring, summer, fall, and winter in 2010 and 2011 and total operation time per camera ranged between 6 and 12 months (Davenport & Cardno TEC, Inc. 2012c). Surveys resulted in the detection of three Sierra Nevada red fox individuals at three locations. These locations were in Range 1100, just outside the western boundary of Range 1000, and 600 feet south of LZ Flamingo in TA-14.

In accordance with the 40-year SUP, the USMC must implement measures to prevent habituation to human food, an education program on these measures, and avoid activities from January 1 to June 27 within 0.25 miles of den sites.

3.5.13.5 Whitebark pine

Whitebark pine

Whitebark pine is federal candidate species as threatened (USFWS 2015b). In July 2011, in response to a petition to list whitebark pine as threatened or endangered under the federal ESA, the USFWS made a determination that listing is warranted, and added whitebark pine to the candidate species list. A proposed rule to list the species is expected in the near future. Whitebark pine was listed because of threats including mortality from white pine blister rust, mountain pine beetle, catastrophic fire and fire suppression, and environmental effects resulting from climate change. A recent review characterized the decline of whitebark pine as the most significant ongoing mortality episode in subalpine forests of North America and documented high mortality for the first time in recent years in the mountains of eastern California (Millar et al. 2012).

Whitebark pine is the dominant subalpine conifer throughout high elevations of the eastern Sierra Nevada Mountains, occurring from montane through subalpine elevations to the upper limit of treeline, which it often defines. It is a dominant or co-dominant tree species from approximately 8,000 to 10,000 ft, and extends in stunted “krummholz” form to tree line, typically at about 11,500 ft in this region (Millar et al. 2012).

Whitebark pine is an obligate mutualist of Clark's nutcracker, a bird species that feeds on the seeds of the pine. Whitebark pine has cones that are indehiscent, and therefore, nutcracker seed dispersal is required by whitebark pine for population-wide regeneration (Lorenz et al. 2008).

This species is found in the higher elevations of the western-central portion of MCMWTC. CWHR mapping indicates a substantial area of whitebark pine on the western side of Range 400 and some scattered at other locations. During project-specific surveys for the LZs (Cardno TEC, Inc. 2010), whitebark pine vegetation was mapped in areas adjacent, on the edges of, or in scattered small patches within LZ Crane, LZ Grosbeak, LZ Lark, LZ Loon, LZ Nightingale, and LZ Sandpiper. Whitebark pine was also documented near LZ Vulture and in areas along Wolf Creek Road in 2010 during project-specific botanical surveys.

In accordance with the USFS SUP, training activities will be monitored annually and adaptively managed, with adjustments made if it appears that conditions are degrading as a result of MCMWTC activities. If monitoring indicates impacts to biological resources from training activities, additional mitigation measures may be applied as part of adaptive management.

3.5.13.6 Greater sage-grouse

Greater sage-grouse

The geographic range of the greater sage-grouse includes portions of southern Canada and 11 states in the United States. In Canada, the greater sage-grouse occurs in southeastern Alberta and southwestern Saskatchewan. In the United States, the greater sage-grouse occurs in portions of Washington, Idaho, Montana, North Dakota, South Dakota, Wyoming, Colorado, Utah, Nevada, New Mexico, and California (Schroeder et al. 1999). A DPS of greater sage-grouse, the Bi-State DPS, inhabits the Great Basin region of western Nevada and north eastern California. The greater sage-grouse is a federal candidate species throughout its range; however, USFWS recently withdrew the proposed rule to list the Bi-State DPS of greater sage grouse as threatened under the ESA (80 FR 22827). This withdrawal was based on the conclusion that the threats to the DPS as identified in the proposed listing rule no longer are as significant due to the implementation of the Bi-State Action Plan. This plan outlines specific conservation measures, which have been occurring over the past decade, are currently occurring, and have been prioritized and placed on the signatory agencies' implementation schedules for future implementation (Bi-State Technical Advisory Committee 2012). Examples of conservation measures include pinyon-juniper removal, establishment of conservation easements for critical brood-rearing habitat, cheatgrass removal, permanent and seasonal closure of roads near leks, removal and marking of fencing, and restoration of riparian/meadow habitat. So long as signatory agencies continue to implement these measures this species will not be listed by the USFWS. However, this greater sage-grouse is also a USFS sensitive species, BLM sensitive species,

and a CDFW SSC (USFS 2013b; CDFW 2015b). The greater sage-grouse is also regulated as a game bird species within the State of Nevada under NAC 503.045.

In California, the range of the greater sage-grouse includes the Great Basin sagebrush (*Artemisia tridentata*) dominated plant communities near Bridgeport (Schroeder et al. 1999; Holloran & Anderson 2005). Greater sage-grouse feed mostly on leaves, buds, stems, flowers, fruit, and insects (Schroeder et al. 1999). Pair formation appears to occur in late March to early April. Leks are typically occupied from 1 March to 15 May (USFS & BLM 2014). Females disperse to nesting habitats that are variable distances but usually within the immediate vicinity of the leks where they mated. Habitat in the vicinity of the nest site is used for early brood-rearing, which occurs from approximately 1 April to 30 June (Knick & Connelly 2011; USFS & BLM 2014). The breeding and early brood-rearing periods are considered the most sensitive to disturbance (USFS & BLM 2014).

The greater sage-grouse is not a long-range migrant and generally occupies suitable habitat within MCMWTC throughout the year; however, this species may migrate seasonally between nesting, summer, and wintering areas, some combination thereof or not at all (Schroeder et al. 1999). Greater sage-grouse depend on a variety of shrub-steppe habitats throughout their life cycle, thus, sage-grouse distribution is strongly correlated with the distribution of sagebrush habitats. Greater sage-grouse exhibit strong site fidelity (i.e., loyalty to a particular area even when the area is no longer of value) to seasonal habitats, which includes breeding, nesting, brood rearing, and wintering areas (Dungan et al. 2015).

The mountain sagebrush and black sagebrush plant communities within MCMWTC are considered suitable habitat for the greater sage-grouse. Known leks include areas in the vicinity of the Sweetwater DZ, along Lucky Boy Pass Road, and south and north of US 395 just east of the junction with SR 108, including both sides of Burcham Flat Road. Nesting habitat is extensive in these areas (Dungan et al. 2015).

Surveys for greater sage-grouse were completed in 2010 and 2011 in conjunction with general breeding bird surveys. These surveys covered the most intensively used for training portions of MCMWTC (e.g., LZs, DZs, road corridors, and ranges). As such, they provide a snapshot in time for these areas, but should not be considered definitive evidence of the absence of the species where it was not detected, nor do they cover the full range of areas where the species potentially occurs. In 2010, nesting habitat and scat were observed in LZ Sweetwater. Additionally, project specific surveys have documented sage-grouse in TA 5 and in 2011 sage-grouse scat was detected in two new locations on MCMWTC in TA 9, well west of previously mapped habitat (Wildlife Resource Consultants 2014). The nearest known leks outside the boundaries of MCMWTC are approximately 9 miles to the east. Seasonal migrations of this distance are not uncommon for sage-grouse (Connelly et al. 2011).

Species-specific surveys for greater sage-grouse on MCMWTC were completed in 2015 and 2016 (Hopkins and Krakow 2017). No greater sage-grouse were documented on MCMWTC during this survey and only limited low-quality lek habitat available within the MCMWTC boundaries.

A Special Use Area has been designated for this species within the Sweetwater DZ and Airstrip which restricts activities within this area from 1 March through 20 July.

3.5.13.7 Bald eagle

Bald eagles were delisted from the federal ESA in 2007 (72 FR 37373); however, this species remains federally protected under the BGEPA. Additionally, this species is a California state-listed endangered species as well as a USFS sensitive species and a CDFW fully protected (FP) species (CDFW 2015b).

The bald eagle has an overall range encompassing Canada, Alaska, the 48 coterminous states of the United States, and northwest Mexico. Bald eagles in winter may be found throughout most of California at lakes, reservoirs, rivers, and some rangelands and coastal wetlands. The state's breeding habitats are mainly in mountain and foothill forests and woodlands near reservoirs, lakes, and rivers. Most breeding territories are in northern California, but the eagles also nest in scattered locations in the central and southern Sierra Nevada mountains and foothills, in several locations from the central coast range to inland southern California, and on Santa Catalina Island (CDFW 2015c).

Bald eagles are heavily associated with aquatic environments, specifically larger bodies of water (Peterson 1986). Bald eagles prey on a variety of small animals, usually fish or waterfowl, and they eat carrion, including salmon, deer, and cattle. Normally, the eagles build their large stick nests in the upper canopy of the tallest trees in the area. The adults may repair the same nest annually, increasing its size over time, or they may build a new nest in their territory or repair one they had used formerly. In many cases, the territory of a pair of eagles may include several nests in addition to the one they most recently used. In most of California, the breeding season lasts from about January through July or August (CDFW 2015c).

Hundreds of migratory bald eagles from nesting areas in northwestern states and provinces spend the winter in California, arriving during fall and early winter. These wintering birds may remain until February or March, or even into April. In late winter, some adult bald eagles in California have already started nesting, while other eagles have not yet returned to their more nesting territories north or northeast.

Surveys for bald eagles on MCMWTC were initiated in the summer of 2010 and continued during the spring and summer of 2011. The surveys were based on area searches for adults and their nests. Major bodies of water and adjacent habitats were surveyed during the nesting season. Nest site surveys in high-use TAs, LZs, and DZs were conducted where suitable habitat was present. Bald eagles were also observed and recorded opportunistically during surveys for all other species (Davenport & Cardno TEC, Inc. 2012a). In 2010, a pair of adults was observed at Poore Lake along with a large nest and the remains of three old nests. A juvenile bald eagle was detected near the western edge of Pickel Meadow during 2010 surveys. During a resurvey of Poore Lake in 2011, a pair of adult bald eagles were observed attending the nest. A subsequent 2011 survey detected a bald eagle nestling in the nest. Additional adults were detected foraging along the West Walker River (Davenport & Cardno

TEC, Inc. 2012a). Potential foraging habitat has also been identified within LZ Eagle and along Leavitt Lake within LZ Lark (Cardno TEC, Inc. 2012).

3.5.13.8 Golden Eagle

Similar to bald eagles, golden eagles are also protected under the BGEPA. Additionally, this species is also a BLM sensitive species as well as a CDFW FP species (CDFW 2015b).

Golden eagles are found throughout North America, but are more common in western North America. Most golden eagles in California are residents, but some migrate into California for winter. Those that stay year long may move downslope for the winter, or upslope after breeding season. Golden eagles inhabit a variety of habitats including forests, canyons, shrub lands, grasslands, and oak woodlands (CDFW 2015d). The golden eagle breeds from late January through August. Nests are constructed on platforms on steep cliffs or in large trees. The main prey species for the golden eagle are rabbits, hares and rodents; but eagles will also takes other mammals, birds, and reptiles. Carrion (e.g., carcasses found on the landscape) is also a part of the eagle diet, especially during winter months (CDFW 2015d).

On MCMWTC, golden eagles have been observed circling above LZ Kiwi as well as LZ Nightingale (Davenport Biological Services & Cardno TEC, Inc. 2012). No breeding has been confirmed.

3.5.14 Federally Designated Critical Habitat

The ESA requires the federal government to designate "critical habitat" for any species it lists under the ESA. Critical habitat is defined as: (1) specific areas within the geographical area occupied by the species at the time of listing, if they contain physical or biological features essential to conservation, and those features may require special management considerations or protection; and (2) specific areas outside the geographical area occupied by the species if the agency determines that the area itself is essential for conservation. Under Section 7 of the ESA, all federal agencies must ensure that any actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of a listed species, or destroy or adversely modify its designated critical habitat. Final critical habitat occurs on MCMWTC for Sierra Nevada yellow-legged frog and Yosemite toad. Proposed critical habitat for greater sage-grouse also occurred on MCMWTC; however, this proposed critical habitat was withdrawn by the USFWS as a part of the withdrawal of the proposed rule to list the bi-state DPS of greater sage-grouse (80 FR 22827).Critical habitat has not been designated for the Lahontan cutthroat trout. Table 3-11 summarizes critical habitat for federally listed threatened and endangered species on MCMWTC.

Table 3-11. Federally Listed Species and Critical Habitat on MCMWTC

Species	Federal Status	Critical Habitat Area
Lahontan cutthroat trout (*Oncorhynchus clarkii henshawi*)	Threatened	none
Sierra Nevada yellow-legged frog (*Rana sierrae*)	Endangered	9,190 acres
Yosemite toad (*Anaxyrus canorus*)	Threatened	8,217 acres

Source: USFWS 2015; USMC 2014.

Final critical habitat designated by the USFWS in 2016 for the Sierra Nevada yellow-legged frog is located along the western region of MCMWTC within TA 4, TA 5, TA 6, and TA 8 and immediately adjacent to the west of TA 2, TA 7 and TA 10 (Dungan et al. 2015; USFWS 2015b). It includes 134 acres along intensive use roads, 161 acres within LZs, 1,428 within ranges on MCMWTC. Similarly, final critical habitat designated by the USFWS in 2016 for the Yosemite Toad is located on the southwest corner of the installation within TA 9, TA 10, and TA 11. It includes 99 acres along intensive use roads, 63 acres within LZ, and 1,835 acres within ranges on MCMWTC.

The National Defense Authorization Act for fiscal year (FY) 2004 (Public Law 108-136) modified section 4(a) (3) of the ESA to preclude the designation of critical habitat on DoD lands that are subject to an INRMP prepared in accordance with the SAIA, as amended. As such, all DoD installations with T&E and proposed T&E listed species, candidate species, or unoccupied habitat for a listed species where critical habitat may be designated, may design the INRMP to avoid the designation of critical habitat. The INRMP may obviate the need for critical habitat if it specifically provides a benefit to the listed species and has provisions for the long-term conservation of the species. The USFWS uses a 3-point criterion in order to evaluate the adequacy of an INRMP to avoid a critical habitat listing:

1. The plan provides a conservation benefit to the species;
2. The plan provides certainty that the management plan will be implemented; and
3. The plan provides certainty that the conservation effort will be effective.

MCMWTC's conservation measures which address each of these criteria are presented in Section 4.9. This INRMP and its implementation may be used to the criteria outlined by the USFWS and, as such, the USMC has the potential to request that critical habitat proposed in the future for federally listed species should not be listed within the boundary of MCMWTC, if the USFWS concurs on the 3-point criterion listed above.

3.5.15 Other Special Status Species

3.5.15.1 State-Listed Threatened & Endangered and Protected Species

State-listed T&E species include those listed by the State of California as threatened, endangered, proposed for listing as T&E, or are candidates for such listing under the

California Endangered Species Act (CESA). The definitions for these categories are as follows:

- Endangered – A native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant which is in serious danger of becoming extinct throughout all, or a significant portion, of its range due to one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease.
- Threatened – A native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of the special protection and management efforts required by this chapter.
- Candidate – A native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that the commission has formally noticed as being under review by the department for addition to either the list of endangered species or the list of threatened species, or a species for which the commission has published a notice of proposed regulation to add the species to either list.

Four state listed threatened, one state endangered, and one candidate threatened species have been detected within the MCMWTC boundaries during recent survey efforts (Davenport Biological Services & Cardno TEC, Inc. 2012; Fleishman 2014; MultiMAC JV 2017a, 2017b; Vernadero Group 2015). Additionally, three CDFW FP species have also been identified. While these species do not receive statutory protection under the CESA, they are still state-protected species regulated by CDFW. The California Fish and Game Code sections dealing with FP species state that these species "...may not be taken or possessed at any time and no provision of this code or any other law shall be construed to authorize the issuance of permits or licenses to take any fully protected" species, although take may be authorized for necessary scientific research. See Appendix M for a tabular summary of all special status species.

- State-Listed Species Documented at MCMWTC
  - Great gray owl (*Strix nebulosa*) – State-listed Endangered
  - Swainson's hawk (*Buteo swainsoni*) – State-listed Threatened
  - Bank swallow (*Riparia riparia*) – State-listed Threatened
  - Sierra Nevada yellow-legged frog (*Rana sierrae*) – State-listed Threatened
  - Townsend's big-eared bat (*Corynorhinus townsendii*) – Candidate State Threatened
- State Protected Species Documented at MCMWTC
  - Golden eagle (*Aquila chrysaetos*) – CDFW Fully Protected
  - American peregrine falcon (*Falco peregrinus anatum*) – CDFW Fully Protected
  - Bald eagle (*Haliaeetus leucocephalus*) – CDFW Fully Protected

For state T&E permit restrictions and management recommendations, see Section 4.10.

3.5.15.2 California Native Plants Society California Rare Plant Rank Plants

The mission of the California Native Plant Society (CNPS) Rare Plant Program is to develop current, accurate information on the distribution, ecology, and conservation status of California's rare and endangered plants, and to use this information to promote science-based plant conservation in California. The Program currently recognizes more than 1,600 plant taxa (species, subspecies and varieties) as rare or imperiled. CNPS initially created five California Rare Plant Ranks (CRPR) in an effort to categorize degrees of concern. Plants with a CRPR of 1A are presumed extirpated or extinct because they have not been seen or collected in the wild in California for many years. Plants with a CRPR of 4 are of limited distribution or infrequent throughout a broader area in California, and their status should be monitored regularly.

California Rare Plant Rank Species: CRPR is a CNPS and CDFW recognized listing developed to categorize degrees of concern for California rare plant species. Ranking is as follows:

- CRPR 1A: Plants Presumed Extirpated in California and Either Rare or Extinct Elsewhere
- CRPR 1B: Plants Rare, Threatened, or Endangered in California and Elsewhere
- CRPR 2A: Plants Presumed Extirpated in California, But More Common Elsewhere
- CRPR 2B: Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere
- CRPR 3: Plants About Which More Information is Needed – A Review List
- CRPR 4: Plants of Limited Distribution – A Watch List

There are 27 CNPS designated CRPR species listed on the Inventory of Rare, Threatened, and Endangered Plants of California (CNPS 2015), which are known to occur on MCMWTC (Reynolds & Cardno TEC, Inc. 2012). There are 12 species with CRPR Rank 1B, 14 species with CRPR Rank 2B, and 1 species with CRPR Rank 4. These species are listed in Appendix M. The plants with CRPR Rank 1B include:

- Subalpine cryptantha (*Cryptantha crymophila*)
- Mono County phacelia (*Phacelia monoensis*)
- Bodie Hills rockcress (*Boechera bodiensis*)
- Bodie Hills cusickiella (*Cusickiella quadricostata*)
- Cup Lake (or Tahoe) draba (*Draba asterophora* var. *macrocarpa*)
- Masonic Mountain jewelflower (*Streptanthus oliganthus*)

- Long Valley milk-vetch (Astragalus johannis-howellii)
- Lavin's milk-vetch (Astragalus oophorus var. lavinii)
- Mono Lake lupine (*Lupinus duranii*)
- Father Crowley's lupine (*Lupinus padre-crowleyi*)
- Spjut's bristle moss (*Orthotrichum spjutii*)
- Mason's skypilot (Polemonium chartaceum)

3.5.15.3 Regionally Sensitive Species

In addition to federally and state listed species, a number of other regionally sensitive wildlife species are also known to occur on MCMWTC, including USFS and BLM sensitive species.

USFS Sensitive (USFS 1991): USFS Sensitive Species are defined as those plant and animal species identified by a Regional Forester for which population viability is a concern, as evidenced by significant current or predicted downward trends in population numbers or density and habitat capability that would reduce a species' existing distribution (Forest Service Manual [FSM] 2670.5). Management of sensitive species "must not result in a loss of species viability or create significant trends toward federal listing" (FSM 2670.32). The Regional Forester is responsible for identifying sensitive species and shall coordinate with federal and state agencies and other sources, as appropriate, in order to focus conservation management strategies and to avert the need for federal or state listing as a result of National Forest management activities.

Bureau of Land Management Sensitive : BLM Manual §6840 states that "BLM sensitive species are: (1) species listed or proposed for listing under the ESA, and (2) species requiring special management consideration to promote their conservation and reduce the likelihood and need for future listing under the ESA, which are designated as Bureau sensitive by the State Director(s). All federal candidate species, proposed species, and delisted species in the 5 years following delisting will be conserved as Bureau sensitive species."

- Regionally Sensitive Wildlife Species Documented at MCMWTC (excluding federal and state listed species)
  - Northern goshawk (*Accipiter gentilis*) – USFS and BLM sensitive
  - Flammulated owl (*Otus flammeolus*) – USFS sensitive
  - California spotted owl (*Strix occidentalis occidentalis*) – USFS and BLM sensitive
  - White-headed woodpecker (*Picoides albolarvatus*) – USFS sensitive
  - Mountain quail (*Oerortyx pictus*) – USFS sensitive
  - Pallid bat (*Antrozous pallidus*) – BLM sensitive

- Long-eared myotis (*Myotis evotis*) – BLM sensitive
- Fringed myotis (*Myotis thysanodes*) – USFS and BLM sensitive
- Yuma myotis (*Myotis yumanensis*) – BLM sensitive
- Monarch butterfly (*Danaus plexippus*) – USFS sensitive

- Regionally Sensitve Plant Species Documented at MCMWTC
  - Mono County phacelia (*Phacelia monoensis*) – USFS and BLM sensitive
  - Bodie Hills rockcress (*Boechera bodiensis*) – USFS and BLM sensitive
  - Bodie Hills cusickiella (*Cusickiella quadricostata*) – BLM sensitive
  - Cup Lake draba (*Draba asterophora* var. *macrocarpa*) – USFS sensitive
  - Masonic Mountain jewelflower (*Streptanthus oliganthus*) – USFS and BLM sensitive
  - Long Valley milk-vetch (*Astragalus johannis-howellii*) – California rare; USFS and BLM sensitive
  - Lavin's milk-vetch (*Astragalus oophorus* var. *lavinii*) – BLM sensitive
  - Mono Lake lupine (*Lupinus duranii*) – USFS and BLM sensitive
  - Father Crowley's lupine (*Lupinus padre-crowleyi*) – California rare; USFS sensitive
  - Upswept moonwort (*Botrychium ascendens*) – USFS sensitive
  - Scalloped moonwort (*Botrychium crenulatum*) – USFS sensitive
  - Mason's skypilot (*Polemonium chartaceum*) – USFS sensitive

3.5.15.4 USFS Management Indicator Species

USFS Management Indicator Species (MIS) are animal species identified in the Sierra Nevada Forests MIS Amendment Record of Decision (ROD) signed 14 December 2007, which was developed under the 1982 National Forest System Land and Resource Management Planning Rule (36 CFR 219). The 2007 Sierra Nevada Forests MIS Amendment ROD directs USFS resource managers to (1) at project scale, analyze the effects of proposed projects on the habitat of each MIS affected by such projects, and (2) at the bioregional scale, monitor populations and/or habitat trends of MIS (USFS 2007). There are nine MIS species known to occur on MCMWTC. These species are listed in Appendix M.

3.5.15.5 California Department of Fish and Wildlife Species of Special Concern

It is the goal and responsibility of the CDFW to maintain viable populations of all native species. To this end, the CDFW has designated certain vertebrate species as SS) because declining population levels, limited ranges, and/or continuing threats have made them vulnerable to extinction (CDFW 2015a). The goal of designating species as SSC is to halt

or reverse their decline by calling attention to their plight and addressing the issues of concern early enough to secure their long term viability. Not all "Species of Special Concern" have declined equally; some species may be just starting to decline, while others may have already reached the point where they meet the criteria for listing as a "Threatened" or "Endangered" species under the state and/or federal ESAs. However, SSC is an administrative designation and carries no formal legal status.

There are 15 species designated by the CDFW as SSC known to occur on MCMWTC and which are largely already identified under regionally sensitive wildlife. These species are listed in Appendix M.

3.5.15.6 Migratory Birds and Birds of Conservation Concern

Many of the birds that use MCMWTC lands for foraging and breeding habitat are protected by federal law under the MBTA of 1918 (16 USC 703-712; Ch. 128) and EO 13186, Birds of Conservation Concern (BCC).

The MBTA, enforced by the USFWS, makes it unlawful "by any means or manner, to pursue, hunt, take, capture [or] kill" any migratory bird except as permitted by regulation. The number of bird species covered by the MBTA is extensive, includes listed and non-listed species, and is listed at 50 CFR § 10.13. The regulatory definition of "migratory bird" is broad and includes any mutation or hybrid of a listed species and includes any part, egg, or nest of such bird (50 CFR §10.12.).

To provide guidance for conflicts arising between military readiness activities and the MBTA, the USFWS issued the final rule on, "Migratory Bird Permits: Take of Migratory Birds by the Armed Forces" (50 CFR Part 21 in Federal Register 28 February 2007, pages 8931-8950), hereinafter referred to as the Migratory Bird Rule. The Migratory Bird Rule authorizes the military to "take" migratory birds during military readiness activities under the MBTA without a permit. However, if the military determines that the activity will have a "significant adverse effect" on a population of migratory birds, they must work with the USFWS to develop and implement conservation measures to minimize and/or mitigate the effects.

Conservation measures under the Migratory Bird Rule require monitoring and record-keeping for years from the date the Armed Forces commence their conservation action. During INRMP reviews, the Armed Forces must report to the USFWS migratory bird conservation measures implemented and the effectiveness of the conservation measures in avoiding, minimizing, or mitigating take of migratory birds.

BCC are migratory and non-migratory birds that "without additional conservation actions "are likely to become candidates for listing under the Endangered Species Act of 1973" (Fish and Wildlife Conservation Act, amended 1988). Per the statutory requirements of the SAIA, as amended, in coordination with the USFWS, CDFW, and NDOW, MCMWTC is to ensure proper consideration of BCC and MBTA species.

Based on DoD policy, neotropical migratory bird programs shall be established in support of and consistent with the military mission. The DoD strategy is to focus on inventory, on-the-ground management practices, education, and long-term monitoring (DoD 2011). The DoD's Partners in Flight (PIF) program seeks to conserve and manage these birds and their habitat on military installations. A list of all bird species observed on MCMWTC with their federal status is provided in Appendix K.

3.6 Climate Change Vulnerability Assessment

The ecosystem effects of climate change will likely be incremental and challenging to distinguish and assess for duration of this INRMP. The analysis to assess potential impacts should be predictive in nature, relying on models to plan for probable complex and indirect changes that are likely to happen in the future. Addressing impacts to protected species and species of concern from global climate changes and developing modifications to natural resources management strategies to address them will require an adaptive process of developing, validating and improving models in the creation of forecasts needed for management.

3.6.1 Potential Local Mid- to Long-Term Climate Change

In order to assess the potential impacts from climate change on the natural resources at a given facility, the first step is to identify what the projected range of change might be in the future both in the mid- and long-term. The second step is to identify which species or ecological systems are most likely to be affected by the projected range of changes (see Section 3.6.2). Finally, the third step is to identify management activities and projects now and in the future that can respond to these challenges (see Section 4.17).

Due to the inclusion of multiple model outputs, the Nature Conservancy's ClimateWizard was used to summarize likely future climate regimes under different emissions scenarios (The Nature Conservancy 2012). ClimateWizard enables users to access leading climate change data and visualize the regional impacts to both temperature and precipitation that are likely to occur in areas within the United States. Similar climate tools and models can also be found at http://cal-adapt.org/tools/. In general, California's climate as well as Mono County's climate will grow considerably warmer and drier during this century. Within Mono County, the ensemble average of 16 models predict an average 4.14°F (range: 1.61 to 6.15°F) increase in average temperature and a 0.56 inch (range: -25.11 to 43.70 inches) decrease in annual precipitation by 2050 under a moderate emissions scenario as summarized on The Nature Conservancy's Climate Wizard site (http://www.climatewizard.org). Three climate change models were used for the analysis: B1, A1B, and A2. Table 3-12 presents a summary of the predictions for each model. Figure 3-13 depicts historical and projected annual precipitation and average temperature for California based on data from ClimateWizard.

Table 3-12. Summary of Results from Climate Change Models Predicted Values for Mono County by Mid-Century Under Different Emissions Scenarios

Climate Model	Change in Annual Precipitation (inches)			Change in Average Temperature (°F)		
	B1	A1B	A2	B1	A1B	A2
bccr_bcm2_0.1	0.89	6.38	-8.67	2.75	3.90	3.33
cccma_cgcm3_1.1	9.56	1.45	3.97	3.45	4.60	4.56
cnrm_cm3.1	-5.91	-6.36	-25.11	3.22	4.61	3.96
csiro_mk3_0.1	-2.92	-3.47	6.50	1.89	2.65	2.99
gfdl_cm2_0.1	-16.53	-16.09	-14.88	4.07	5.29	4.96
gfdl_cm2_1.1	-4.11	-13.14	-7.19	4.08	6.10	5.11
giss_model_e_r.1	-11.00	17.58	6.02	2.63	3.63	3.68
inmcm3_0.1	-4.43	8.97	21.04	3.89	5.32	5.29
ipsl_cm4.1	32.22	43.70	42.18	4.02	5.33	4.98
miroc3_2_medres.1	-16.82	-22.63	-19.20	5.00	6.00	5.87
miub_echo_g.1	-22.17	-6.70	-9.23	4.67	4.86	5.11
mpi_echam5.1	4.93	11.17	-1.61	3.95	4.49	4.22
mri_cgcm2_3_2a.1	13.31	14.55	18.31	2.27	2.93	2.43
ncar_ccsm3_0.1	-4.80	-19.63	-5.87	3.70	5.42	5.23
ncar_pcm1.1	-2.16	3.31	0.71	1.61	3.42	2.64
ukmo_hadcm3.1	-2.07	-10.99	-10.00	4.95	3.54	6.15
Ensemble Average	**-0.56**			**4.14**		

Source: http://www.climatewizard.org
Notes:
Emissions Scenarios: B1 = low, A1B = medium, A2 = high

For MCMWTC, the models all indicate some shift in growing season over the next century. Overall with the likely increase in temperature and minor decrease in rainfall, the resources most likely to be impacted by climate change are water resources, special status species, invasive species, and vegetation. For more detailed analysis associated with those resources, see Section 4.17.

Locally, winter temperatures are increasing more rapidly than summer temperatures, and there has been an increase in the length of the frost-free period (Loehman 2010). The onset of snow runoff in the Great Basin is currently 10 to 15 days earlier than 50 years ago, with significant impacts on the downstream utilization of this water (Ryan et al. 2008). Further, while future precipitation is the most difficult to predict with existing Global Circulation Models, higher temperatures will likely increase evapotransporation, and the region will likely become more arid. Related to this trend, the length of the active wildfire season will likely increase. Since 1986, the length of the active wildfire season has increased by 78 days and the average burn duration of large fires has increased from 7.5 days to 37.1 days (USFS 2011b). Additional information regarding the effects of climate change in Mono County and throughout California can be found at the California Climate Change Portal at: http://www.climatechange.ca .gov/climate_action_team/index.html.

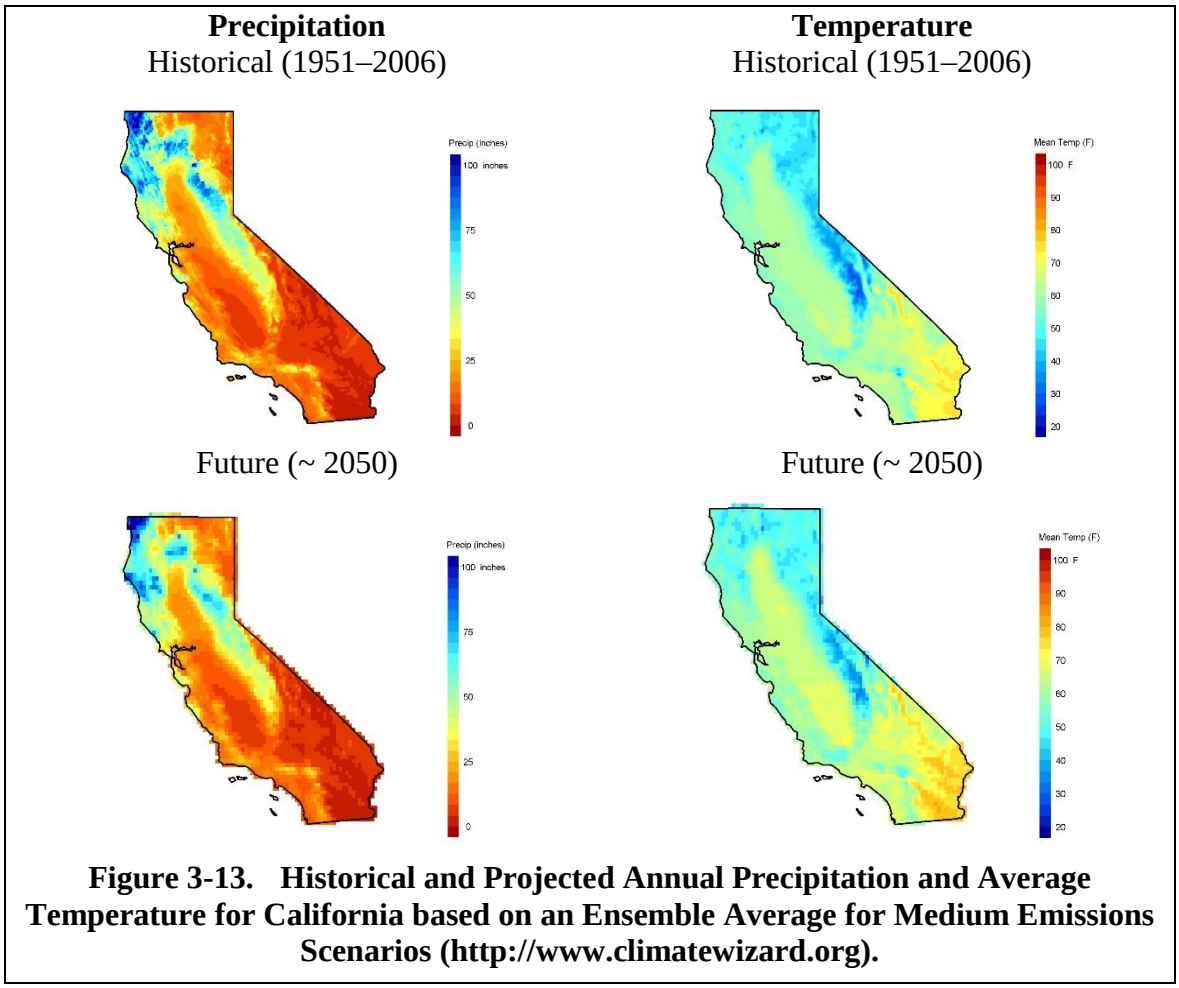

Figure 3-13. Historical and Projected Annual Precipitation and Average Temperature for California based on an Ensemble Average for Medium Emissions Scenarios (http://www.climatewizard.org).

Through the Mono County Resource Efficiency Plan (Mono County 2014), the County is establishing a policy framework to locally fulfill the goals of the California Global Warming Solutions Act of 2006 (AB 32). The Resource Efficiency Plan is designed to fulfill and implement the GHG reduction goals of the AB 32 Scoping Plan at the local level as well as to support Scoping Plan objectives for the state as a whole. The plan sets a goal for local achievement of a 10 percent reduction from 2005 emissions levels and a 20 percent reduction from 2010 emissions levels by 2020 through statewide emissions reduction polices and implementation of all feasible local GHG reduction measures.

3.6.2 Potential Impacts of Climate Change on Sensitive Species at MCMWTC

In general, montane wildlife species will likely be affected by altered snow and ice cover, precipitation, streamflow, humidity, soil moisture, and insolation (Morelli 2009). Suitable habitat may shrink or fragment as climate changes. In addition, wildlife species in alpine or subalpine habitats have narrow physiological tolerances and may be vulnerable to thermal stress, both heat and cold (Morrison & Hik 2007; Beever et al. 2008). Further, certain

migratory songbird species may be at risk if timing of their life history events, such as breeding and brooding, is mismatched against their habitat and food resources. Researchers have already noted some species arriving earlier in California (MacMynowski & Root 2007) and changing snowpack seasonality may be having negative effects on songbird populations in Yosemite National Park (Stock 2008). A comprehensive historical comparison also conducted in Yosemite National Park indicates that many small mammals have shifted to higher elevations or contracted their range at high elevations, although not all species followed a clear, predictable pattern (Moritz et al. 2008). Aquatic insects will likely be negatively affected by drying conditions (Holmquist & Schmidt 2008). Some animal species may also be directly affected by a decrease in a major food source, such as Clark's nutcrackers (*Nucifraga columbiana*) in their relationship with whitebark pine (*Pinus albicaulis*) (Davey et al. 2007).

In order to assess the potential risk for invidual wildlife species, the Nevada Natural Heritage Program (NNHP) prepared species-level climate change vulnerability assessments using the NatureServe Climate Change Vulnerability Index (CCVI). The CCVI is a cost-effective, rapid assessment tool used to assess the relative vulnerability of species to climate change. It uses a scoring system that aims to if a species population will decline, remain stable, or increase in the context of climate change, and also highlights the factors that contribute most (or least) to a species' vulnerability. NNHP assessed over 300 species, the majority of which are Species of Conservation Priority within the state. The assessment results for sensitive species known to occur on MCMWTC are included below in Table 3-13.

Similar to impacts on wildlife species, changes in climate are expected to alter habitat conditions, which may reduce or extirpate plant populations or require plant species to migrate to more suitable climates and/or habitats. Rare species are of special conservation concern because of their risk of extinction. Rare plants may be particularly vulnerable to climate change because traits such as limited geographic range, small population size, high habitat specificity, and low dispersal ability may make it difficult for them to migrate to more suitable areas as habitats shift with climate change. Anacker & Leidholm (2012) identified 156 representative sensitive plant species in California and assessed their risk using the CCVI. Ninety-nine of the 156 species were found to be vulnerable to climate change (scored as moderately vulnerable or worse) but none of these species occur on MCMWTC. While the Anacker & Leidholm (2012) analysis did not include species known to occur on MCMWTC, a number of general conclusions also likely apply to the sensitive plant species listed in Appendix M:

- Anthropogenic barriers were significantly related to the climate change vulnerability scores. This suggests that habitat configuration may play an important role in determining a species vulnerability to climate change.
- Climate change vulnerability scores were not related to level of rarity or other species characteristics. This suggests that vulnerability to climate change cannot simply be inferred based on how rare a plant species is, or other species traits.

- Topographic complexity, the variation in elevation surrounding a species occurrence, may provide complementary information on climate change vulnerability. Sites with low topographic complexity would be less likely to provide local refugia to buffer the effects of climate change.

Table 3-13. CCVI for Sensitive Wildlife Species on MCMWTC

Scientific Name	Common Name	Federal Status	USFS	BLM	CA State Status	CCVI
Birds						
Accipiter gentilis	Northern goshawk	-	S	S	-	MV
Aquila chrysaetos	Golden eagle	BGEPA	-	S	-	PS
Buteo swainsoni	Swainson's hawk	-	-	S	T	PS
Centrocercus urophasianus	Greater sage-grouse, Bi-State DPS	-	S, MIS	S	-	HV
Falco peregrinus anatum	American peregrine falcon	-	S	-	-	PS
Haliaeetus leucocephalus	Bald eagle	BGEPA	S	S	E	PS
Oerortyx pictus	Mountain quail	-	S	-	-	PS
Otus flammeolus	Flammulated owl	-	S	-	-	PS
Picoides albolarvatus	White-headed woodpecker	-	S	-	-	PS
Riparia riparia	Bank swallow	-	-	S	T	PS
Strix nebulosa	Great gray owl	-	S	-	-	N/A
Strix occidentalis occidentalis	California spotted owl	-	S	S	-	MV
Amphibians						
Anaxyrus canorus	Yosemite toad	T	S	-	-	N/A
Rana sierrae	Sierra Nevada yellow-legged frog	E	S	-	T	PS
Fish						
Oncorhynchus clarkii henshawi	Lahontan cutthroat trout	T	S, MIS	-	-	MV
Insects						
Danaus plexippus	Monarch butterfly	-	-	S	-	N/A
Mammals						
Antrozous pallidus	Pallid bat	-	-	S	-	N/A
Corynorhinus townsendii	Townsend's big-eared bat	-	S	S	-	PS
Myotis evotis	Long-eared myotis	-	-	S	-	IL
Myotis thysanodes	Fringed myotis	-	-	S	-	IL
Myotis yumanensis	Yuma myotis	-	-	S	-	N/A
Vulpes vulpes necator	Sierra Nevada red fox	C	S	-	T	PS

Source: NNHP 2011.
Notes: CCVI = Climate Change Vulnerability Indix
EV = Extremely Vulnerable – Abundance and/or range extent extremely likely to substantially decrease or diappear by 2050.
HV = Highly Vulnerable – Abundance and/or range extent within area assessed likey to decrease significantly by 2050.
MV = Moderately Vulnerable – Abundance and/or range extent within area assessed likey to decrease by 2050.
PS = Not Vulnerable/Presumed Stable – Available evidence does not suggest that abundance and/or range extent will change (increase/decrease) substantially by 2050. Actual range boundaries may change.
IL = Not Vulnerable / Increase Likely – Available evidence suggests that abundance and/or range extent is likely to increase.
N/A=– Not Available – Species was not scored in the NNHP (2011) analysis.

Federal and State Status T = Threatened, E = Endangered, C = Candidate, BGEPA = Bald and Golden Eagle Protection Act
USFS S = Region 4 Sensitive as identified by a Regional Forester, MIS = HTNF Management Indicator Species (HTNF Plan)
BLM S = Sensitive as designated by the BLM State Director

SECTION 4
NATURAL RESOURCES MANAGEMENT PROGRAM ACTIONS

Resource-specific management objectives and actions are provided in this section for obtaining the desired outcomes. The actions have been further divided into compliance-based actions and stewardship-based actions, defined as follows:

- Compliance-based actions – those that are required to meet the legal regulations governing the management of USMC lands and the needs of the military mission.
- Stewardship-based actions – those that are designed to meet ecosystem-based conservation practices but that are not legally required.

MCMWTC is a federal facility and, as such, is required to comply with applicable federal law and regulation. In general, actions designed to comply only with state and local law and regulation do not qualify as compliance-based actions. In some instances, federal law may require compliance with state law. In these instances, the actions are compliance-based. However, the ecosystem management approach of this INRMP recognizes the value of including stewardship-based management actions designed to meet the objectives of state and local natural resource law and regulation.

MCMWTC is composed of land administered by different federal agencies, with most of the land managed by the USFS (Section 3.2). The USMC must comply with certain conditions as part of their permits to use this land (Section 3.4 and 4.2).The general conditions relevant to natural resource management are presented in Section 4.2. Resource-specific conditions are identified under each resource area in this section. While these conditions do not necessarily apply on non-USFS lands, the USMC does generally follow the same restrictions and procedures on DoN administered land and land owned by other entities.

Furthermore, this section includes recommendations above and beyond those required by USFS permits for specific resources. These are recommendations that could be implemented by the USFS, the USMC with USFS approval and consultation, or by other agencies. Projects currently planned for execution by the USMC are included in Appendix G but additional projects can be added as approved by the USFS. The USMC is committed to sustainable, long-term management of natural resources within the areas used by MCMWTC, regardless of land ownership, and being an active cooperator with USFS (and other land owners) for natural resource management within the boundaries of MCMWTC. This section is focused on the USMC's management responsibilities but it does identify those of the other agencies involved where appropriate. The general nature of those responsibilities and the agreements governing them are described in Section 1.4. The purpose of listing the management measures being implemented by other agencies is to provide a complete picture of natural resources management on MCMWTC lands. This INRMP is not a proposal for management for any agencies other than the USMC.

The resource-specific recommendations, strategies, objectives, policies, and actions presented below are expected to be implemented as part of this INRMP. Many of these

overlap among resource areas and are meant to be implemented as part of an integrated program across the ecosystem that includes MCMWTC. Because the INRMP has been developed as an adaptive management program, modifications to the resource-specific management elements are anticipated and encouraged, as additional information becomes available. Any requirement for the obligation of funds for projects in this INRMP will be subject to the availability of funds appropriated by Congress, and none of the proposed projects will be interpreted to require obligation or payment of funds in violation of any applicable federal law, including the Anti-Deficiency Act, 31 USC Section 1341, et seq.

Management measures in this INRMP were generally developed to maintain the current conditions of natural resources on MCMWTC, including maintaining the biological diversity of terrestrial and aquatic ecosystems. In addition to meeting military mission requirements, the lands open to public access are also managed to meet multiple use requirements as identified in the SUPs governing USMC use of USFS lands. These SUP conditions are not included within the INRMP but are provided with the SUPs in Appendix B. However, permit conditions that impact natural resources management are included here, with general conditions presented in Section 4.2 and resource-specific ones in each subsection. General management recommendations based on the Sierra Nevada Framework (USFS 2004, 2013a) and the HTNF Plan (USFS 1986) are included. Finally for each resource area, MCMWTC-specific objectives, policies and actions are identified.

4.1 Natural Resources Projects on MCMWTC

Since 2003, a number of natural resources projects have been completed or initiated for MCMWTC by DoN. These projects have been undertaken in consultation and cooperation with USFS as they generally occur on land under USFS permit(s). The majority of the completed projects occurred between 2010 and 2012.

Completed Projects

- **Natural and Cultural Resources and Associated Support** (Potomac-Hudson Engineering, Inc. 2003). This report provides information required for Phase I of the baseline development process. It includes assessment of the natural and cultural resource and environmental support needs, an overview of requirement and data gaps, and develops a plan for scoping biological surveys to establish a natural and cultural resource baseline.
- **Biological Resources and Wetland Delineation Survey for Landing Zone TAs** (NAVFAC Southwest 2010). The purpose of this report was to provide an overview of biological resources that occur or could occur at proposed LZs based on rare plant, and habitat surveys in 2009, as well as detail the presence of likely jurisdictional wetland features at each location. Includes surveys of 52 LZ sites on USFS lands within the HTNF.
- **Wetland delineations** of MCMWTC occurred in 2010 and 2011 (Cardno TEC, Inc. 2012). Wetland delineations were conducted over six general survey areas

totaling 9,496 acres in both California and Nevada. A total of 565 wetlands, covering 442.28 acres were delineated in the survey areas, except for the LZs which were surveyed previously (NAVFAC Southwest 2010).

- **Botanical surveys** were conducted on MCMWTC during 2010 and 2011 (Reynolds & Cardno TEC, Inc. 2012). In support of the Biological Assessment for the EA for the Enhancement of Operations and Training Proficiency at MCMWTC surveys for botanical resources were conducted. These included surveys for plants of special interest, sensitive and watchlist plant species, noxious weeds, and vegetation communities.
- **Wildlife Surveys** (Davenport Biological Services & Cardno TEC, Inc. 2012). In support of the BA/BE for the EA for the Enhancement of Operations and Training Proficiency a number of wildlife surveys were conducted at MCMWTC. These included surveys for sensitive avian species, migratory birds, sensitive carnivores, Townsend's big-eared bats and spotted bats, and pygmy rabbits (see below).
  - Migratory Bird Survey (Davenport & Cardno TEC, Inc. 2012c). Survey for sensitive migratory birds in support of the EA. The survey included observations made at point stations distributed across MCMWTC. A total of 4,293 birds, comprised of 118 species total, were observed during the point counts. The number of observations varied depending on habitat type.
  - Pygmy Rabbit Survey (Davenport & Cardno TEC, Inc. 2012e). Survey conducted in 2011 for pygmy rabbits, a USFS sensitive species, in support of the EA. No pygmy rabbits were detected during this survey; however, other rabbits, hares, and jackrabbits were detected. Habitat located on the MCMWTC was found to generally not be suitable for pygmy rabbits.
  - Sensitive Avian Survey (Davenport & Cardno TEC, Inc. 2012a). Surveys conducted in 2010 and 2011 of eight birds considered sensitive by the USFS BRD as well as four MIS and one Species of Interest. Bald eagle, greater sage-grouse, mountain quail, northern goshawk, California spotted owl, and flammulated owl were all detected during the survey. However, no great gray owls were detected during the survey efforts.
  - Sensitive Carnivore Survey (Davenport & Cardno TEC, Inc. 2012c). Surveys conducted in 2010 and 2011 for rare carnivores. No wolverines (*Gulo gulo*) or Pacific fishers (*Martes pennanti*) were detected during the survey; however, six American martens (*Martes americana*) and three Sierra Nevada red fox were detected. Other native carnivores detected at camera stations included badger, long-tailed weasel, spotted skunk, mountain lion, bobcat, coyote, and gray fox.
  - Townsend's Big-eared and Spotted Bat Survey (Davenport & Cardno TEC, Inc. 2012d). Surveys conducted in 2010 and 2011 for sensitive bat species within the HTNF. No Townsend's big-eared bats or spotted bats were detected during surveys completed in 2010 or 2011. Although potential roost

sites, such as old mines and rock outcrops, are present in the survey area, no active roost sites of Townsend's big-eared bats or spotted bats were detected.

- **Meadow Enhancement Study** (Vernadero Group 2015). The meadow enhancement study surveyed the current status of select meadows within the MCMWTC, including the overall status of each meadow, the level of conifer encroachment, aspen health, presence of non-native invasive plants, and locations of disturbed areas. These 20 meadows comprise approximately 40 acres and include Summit Meadow, Grouse Meadow, Silver Creek Meadow, LZ Dove, Wolf Creek Meadow, LZ Good, Pickel Meadow, Brownie Creek Meadow, Sardine Meadow, and Leavitt Meadow. Additionally, a literature review was performed of the pre-existing biodiversity, weed, and rare plant data for each meadow area. The literature review and survey information documented a baseline status for the meadows and identified areas that need management attention. The final report summarized the results and provided recommendations to improve meadow condition, including reducing fuels and conifer encroachment.

- **Wildland Fire Management Plan** (VersarGMI & Vernadero Group, Inc. 2015)**.** This plan was completed in 2015 and describes in detail the fire management program, activities, and methods that could be used to manage wildland fire on MCMWTC, in conjunction with USFS wildland fire management. Ultimately, the WFMP was developed to reduce wildfire potential, outline program safety, protect and enhance valuable natural resources, integrate applicable state and local permit and reporting requirements, and implement ecosystem management goals and objectives at MCMWTC. The WFMP will evolve and revisions will occur as conditions change on the ground and as modifications become necessary to improve safety and maintain installation goals, mission requirements, and natural resource management.

- **Lahontan Cutthroat Trout Survey** (MultiMAC JV 2017a). A survey and inventory was completed in 2014 for Lahontan cutthroat trout along Wolf Creek, Silver Creek, Lost Cannon Creek, and Mill Creek. Density, age classes and other measurements were for Lahontan cutthroat trout. All non-native trout species found within these watersheds were documented. This project evaluated the potential for stream restoration, including habitat suitability analysis and mapping of the entire extent of the streams. The project included six miles of Wolf Creek, six miles of Silver Creek, five to ten miles of Lost Cannon Creek, and five to ten miles of Mill Creek.

- **Invertebrate Surveys** (MultiMAC JV 2017b). Aquatic invertebrate surveys were conducted in 2014 along Wolf Creek, Silver Creek, Lost Cannon Creek, and Mill Creek. Terrestrial invertebrate surveys were conducted in as many of habitat types as possible to investigate and recorded the diversity of terrestrial invertebrates. Surveys focused on identified specific high value areas such as riparian areas and/or other areas supporting unique assemblages of plants or specific host plant densities. Special attention was given to detecting rare,

threatened, or endangered species or subspecies and to species considered as pests due to their impacts on both natural and human environments. The results contribute to understanding species distributions, identifying potential habitat, and inform management recommendations. A museum quality collection was generated and deposited at MCMWTC, USFS Bridgeport Ranger Station, and with the NAVFAC Southwest entomologist.

- **Greater Sage-Grouse Surveys** (Hopkins and Krakow 2017)**.** This project completed a habitat assessment and species-specific surveys for the greater sage-grouse within the range TAs of MCMWTC in 2015 and 2016. The results provided geographic information system (GIS) data for suitable habitat, breeding sites, lek locations and forage locations for the greater sage grouse within the TAs. No greater sage-grouse were documented on MCMWTC during this survey and only limited low-quality lek habitat identified within the MCMWTC boundaries.

Ongoing Projects (Project already contracted and underway).

- **Birds and Butterflies.** Fleishman (2014) is conducting ongoing studies on *Methods for Assessment of Species Richness and Occupancy across Space, Time, Taxonomic Groups, and Ecoregions,* which is using existing and newly collected data on birds and butterflies in the Great Basin area. This project is funded by the DoD Strategic Environmental Research and Development Program and lead by Erica Fleishman at the University of California at Davis. This project will provide some insight in how to monitor and manage biological resources during climate change.
- **Sierra Nevada Red Fox Survey.** A survey for the Sierra Nevada red fox is underway in the range TAs of the MCMWTC, with a focus on suitable habitat that has the potential to support Sierra Nevada red fox populations. The results from the survey will be compared with previous surveys and any potential impacts from military training will be identified. The results of the survey project will be used to develop long term protection and management strategies for this sensitive animal. If den sites are discovered, potential adaptive adjustments with Limited Operating Period (LOP) standards will be implemented, as identified in the USFS (2004) Sierra Nevada Forest Plan Amendment. Expected completion 2017.
- **Sierra Nevada Yellow-legged Frog and Yosemite Toad Surveys.** A survey is being conducted for Sierra Nevada yellow-legged frogs and Yosemite toads in the TAs of MCMWTC. The surveys will also identify potential habitat. The results will include long-term management recommendations. Expected completion 2017, but likely to continue.
-

4.2 USFS Permit Conditions Applicable to Natural Resources

Across all the USFS SUPs issued for MCMWTC, there are a wide variety of conditions that apply to natural resources. The full SUPs are provided in Appendix B; SUPs and AOPs will be updated as available. Permit conditions that impact military use and minimize or mitigate potential environmental impacts but are not necessarily relating to specific natural resources are summarized in Section 3.4. Permit conditions specific to a resource (i.e., soils or federally listed species) are listed within those sections below. The following is a summary of permit conditions that apply to natural resources protection generally. This list will be updated when the new SUP that is being negotiated is finalized.

- Any activities not already authorized will be subject to an REIR and undergo USFS approval.
- USMC will maintain a program to inspect for damage from training exercises, implement corrective actions, monitor recovery, and report the results to the USFS.
- USMC will minimize damage to existing vegetation. If revegetation is necessary, erosion control and reseeding with native plants will be conducted in accordance with USFS specifications.
- Areas in need of rest or restoration will be identified and documented annually for environmental planning and management purposes. The USFS will coordinate with the USMC for temporary closures of sites needed to facilitate recovery. Training activities in these areas will be avoided as needed to allow rest/restoration of the land. These areas will be marked appropriately for the duration of the closure as off-limits to digging and driving, and recovery will be monitored. Closed areas will be added on an annual or as needed basis to the environmental sensitive areas map used to help military trainers for planning purposes.
- USMC will implement an Environment, Safety and Range Regulation Awareness training program for users of MCMWTC.
- All research, monitoring, surveys and inventories sponsored or funded by the DoN on USFS lands authorized for MCMWTC will be coordinated with and approved by the USFS. USMC will provide the USFS a brief prospectus and map showing the location(s) of any projects. USMC will provide the USFS with the findings, results, and/or a report for each project completed.
- Camps and Bivouac Sites: All camps will be temporary and training units will use "Leave No Trace – Ethics."
  - All gear, trash, and structures, including tent frames, will be temporary and removed at the end of training.
  - All camp facilities will be at least 100 feet from trails, streams, and lakes.

  - There will be no on-site storage of non-native equipment or material after the training exercise has ended unless specifically approved in writing by the USFS in advance on a case by-case basis for each camp.

- Aircraft operations over designated wilderness areas will be in accordance with Federal Aviation Administration policy and procedures. The landing of aircraft is prohibited within the boundaries of designated wilderness areas unless in an emergency situation.
- The USFS may designate permanent or temporary off-limits areas including, but not limited to sensitive areas, special interest areas, recreation areas, wildlife food plots, pipeline/utility corridors, and critical or unique ecosystems, with the potential to be impacted or damaged by military training, as allowed by federal law.
- Environmentally sensitive areas including cultural resource sites, sensitive plant sites, wildlife food plots and designated regeneration areas will be determined by the USFS and jointly marked with the USMC using a system identifiable to trainees in the field during day light and low-light conditions.
- No digging or drilling without archaeology clearance from the MCMWTC Environmental Office and/or the USFS.
- No formal training will be conducted within the Leavitt Meadows Campground, Leavitt Meadows Pack Station, Sonora Bridge Campground and Picnic Area, or the Pacific Crest Trail, unless by permit or accompanied by a USFS representative as part of an interpretive education series or other mutually agreed activity directed at a civilian audience.
- No driving of vehicles will be conducted on USFS designated trails. No military training will occur on the Pacific Crest Trail. No operating of vehicles off USFS roads.
- USMC will restrict live firing and demolition of explosives to established authorized ranges. The USMC will provide the USFS with an appropriate level of environmental analysis before constructing or relocating any range, surface danger zone (SDZ), impact area or TA on USFS administered land. Upon abandonment of range impact areas or when considered necessary by the USFS to protect other users, the USMC shall provide clearance of said areas to the maximum extent practical for the safe conduct of normal USFS activities. No leaving of refuse, debris, or litter in an exposed or unsanitary condition (including human waste). No leaving of training gear and equipment after training exercise has ended.
- TAs 10 and 11 are only authorized for winter use (1 December through 15 April), with a maximum of 60 individuals per TA and only with a 24 inch snow cover.
- Relocatable Housing Units (RHUs) are allowed in the Limited Use Area, with up to 5 per location and no more than 25 per exercise approved per the locations and

mitigations described in the current AOP for USFS Permit BRI477 (see Table 3-5 and Appendix B). RHUs must be placed only on disturbed ground areas.

- Combat Operation Centers (COCs) are allowed in the Limited Use Area, with up to one per one location and no more than four per exercise approved per the locations and mitigations described in the current AOP for USFS Permit BRI477 (see Table 3-5 and Appendix B). A typical COC set up includes 10 large tents, 100 individual sleeping tents, 20 vehicles up to 7-ton capacity, 4 generators and 120 personnel. All grey water produced at the COC must be contained and returned to MCMWTC Lower Base Camp Waste Water Treatment Plant.
- MOUT simulations are allowed in the Limited Use Area with up to 1 per location and no more than 4 per exercise approved per the locations and mitigations described in the current AOP for USFS Permit BRI477 (see Table 3-5 and Appendix B). A typical MOUT set up includes 10 large tents or structures, many individual sleeping areas or tents, up to 10 vehicles, a few generators and communication simulators and up to 40 personnel.
- RHUs, COCs, and MOUTs must be placed only on disturbed ground areas. RHUs, COCs, and MOUTs may only be in place 5 days before or after their use. RHUs, COCs, and MOUTs may be placed on snow, but only with adequate snow pack of 2 feet and at least 100 feet from any water source. All generators, vehicles and equipment with hazardous chemicals or fluids must have secondary containment in place to protect the soil and waterways from potential spills or leaks.
- In TAs 13-16, hiking will be on roads; any off-road hiking is limited to 15 personnel.
- Low elevation helicopter flights south of SR 108 in Pickel Meadows area are only approved for safe approach and landing at the MCMWTC Expeditionary Airfield, excepted as noted for LZ Bullet in TA14.
- Projects and activities in CA-1 require individual approval from the USFS. CA-1 is designated for public use and public outreach only.
- Corral and associated parking in TA 13 is limited to 120 personnel and 20 vehicles. Use is limited to a COC-equivalent training or smaller. All activities are to remain within footprint of the parking area. No ground disturbance or removal of vegetation is allowed. Snowgrooming and packing will not exceed current area of disturbance and will not move any dirt.
- Convoy training is authorized on USFS Roads per USFS Permit BRI494 but is limited to 20 vehicles and 120 personnel.
- Simulated improvised explosive devices and ambush training on USFS roads is limited to those areas identified in the AOP.
- For each approved LZ/DZ, a maximum 4 helicopter landings per day and four operations monthly are allowed for a total of 16 landings per month per each

LZ/DZ. Each flight is authorized to have a maximum of 10 jumpers. Cargo drops are limited to a maximum of 500 pounds per container. During jump and cargo drop maneuvers, aircraft must remain a minimum of 1,500 feet AGL.

- If ongoing wildlife, plant or cultural surveys detect a sensitive resource, additional mitigations may be implemented by USFS.
- No ground disturbing activities such as grading, digging, excavation, e.g., will occur on archaeological sites, however foot traffic is permitted. No damage to trees will occur including carving, cutting limbs, or chopping down.

4.3 Soils Management

Primary Regulatory Drivers
- Clean Water Act
- Porter-Cologne Water Quality Control Act
- DoDI 4715.03
- EO 11990
- MCO 5090.2A
- Soil Conservation Act
- NAVFAC P-73 Vol. II
- EO 13148

A description of MCMWTC soil resources is presented in Section 3.5.5 and illustrated on Figure 3-6, 3-8 and 3-10. The primary goals of soil resources management on MCMWTC are to protect soil resources, to identify areas prone to soil erosion, and to prevent soil erosion and its subsequent impact on military facilities, water, and wildlife habitat quality. Because of the topography of MCMWTC, soil resources are susceptible to erosion from hydraulic forces, particularly during the winter rainy season. In addition, the USMC has implemented a SWPPP to reduce impacts from erosion. Management measures and associated strategies to protect and enhance the soil resources at MCMWTC are provided below.

4.3.1 Relevant USFS Permit Conditions

There are also general permit conditions (Section 4.2) and wetlands and water permit conditions (Section 4.4) that protect soils and reduce erosion and sedimentation.

- Protect and preserve soil and vegetative cover to the maximum extent possible.
- Do not cut or clear any vegetation or disturb soil on USFS land without prior specific approval of the USFS.
- Institute erosion control in such disturbed areas mutually agreed upon by the USFS and the USMC.
- Convoy training on USFS roads is limited to existing road footprint and is not allowed in undisturbed areas.

4.3.2 Management Recommendations

General management recommendations are compiled from the HTNF Plan, the Sierra Nevada Framework (Section 2.7), biological reports (Section 4.1), and the various DoD,

DoN, USMC and MCMWTC policies (Section 1.7 and Appendix A), as applicable. Many of the management recommendations for soil resources are included under wetland and water management (Section 4.4.2), including the RCAs that are one of the core protective measures used by the USFS to achieve to protection of soils resources and to protect sensitive aquatic resources from sedimentation. Specifically, the Sierra Nevada Framework ROD (USFS 2004, 2013a) identifies the following management targets and objectives relevant to MCMWTC:

- **Watershed Condition**: Maintain and restore soils with favorable infiltration characteristics and diverse vegetative cover to absorb and filter precipitation and to sustain favorable conditions of stream flows.

Further the Sierra Nevada Framework ROD (USFS 2004) identifies a number of strategies and guidelines for minimizing erosion and sedimentation and protection of soil resources for achieving the targets and objectives, with the following relevant to MCMWTC:

Road Construction, Reconstruction, and Relocation

To protect watershed resources, meet the following standards for road construction, road reconstruction, and road relocation:

1. design new stream crossings and replacement stream crossings for at least the 100-year flood, including bedload and debris;
2. design stream crossings to minimize the diversion of streamflow out of the channel and down the road in the event of a crossing failure;
3. design stream crossings to minimize disruption of natural hydrologic flow paths, including minimizing diversion of streamflow and interception of surface and subsurface water;
4. avoid wetlands or minimize effects to natural flow patterns in wetlands; and
5. avoid road construction in meadows.

Wheeled Vehicles

Prohibit wheeled vehicle travel off of designated routes, trails, and limited off highway vehicle (OHV) use areas. Unless otherwise restricted by current forest plans or other specific area standards and guidelines, cross-country travel by over-snow vehicles would continue.

Restoration Projects

Design projects to reduce potential soil erosion and the loss of soil productivity caused by loss of vegetation and ground cover. Examples are activities that would: (1) provide for adequate soil cover in the short term; (2) accelerate the dispersal of coarse woody debris; (3) reduce the potential impacts of the fire on water quality; and (4) carefully plan restoration/salvage activities to minimize additional short-term effects.

The HTNF Plan identifies some additional management strategies for soil protection:

- Implement Best Management Practices (BMPs) for soil productivity and water quality protection and protect soil productivity and water quality by using erosion prevention and control measures as described in USFS Region 5 Soil and Water Conservation Handbook (USFS 2011c).
- Soil disturbing activities will not exceed estimated soil loss tolerance limits (300 pounds/acre/year for granitic and 500 lbs/acre/year for other soils). Exceptions may occur on specific sites where maintenance of soil productivity is not feasible or where research or studies demonstrate more accurate tolerance limits. The modified Universal Soil Loss Equation, or similar methodology, will be used to evaluate project alternatives.

4.3.3 MCMWTC Objectives

Objective: Prevent and control soil erosion and reduce likelihood of sediment entering water resources

USMC Policies for MCMWTC:

- Manage erosion control in accordance with several plans and permits including the SWPPP, SUPs, USFS Soil and Water Conservation Handbook, and State BMPs.
- Use the specific guidance for selecting BMPs as provided by California or Nevada sources, such as *Construction Site Best Management Practices (BMPs) Manual* (CalTrans 2003), and other proven techniques.
- Ensure incorporation of BMPs in the preliminary engineering, design, and construction of facilities involving ground disturbance.
- Prevent or minimize erosion to the maximum extent possible, utilize native plants for erosion control where possible.

USMC Actions for MCMWTC:

- Track known problem areas and identify priority locations for closure, implementation of BMPs, and/or revegetation.
- Develop new or use proven BMPs to prevent and control erosion and protect sensitive resources and habitats, in cooperation with USFS.
- Inventory and map existing and newly created roads to develop baseline data; identify and prioritize those that may contribute to erosion. Update INRMP with specific projects and implement at least 1 high priority project per year, in cooperation with USFS.
- Provide annual road maintenance training for public works personnel.

- Close selected areas to training for restoration and recovery of eroded sites (as required by USFS SUP, as well as other areas of MCMWTC). Monitor recovery and, if insufficient, implement rehabilitation/restoration to reverse damage.

4.4 Wetland and Water Management

Primary Regulatory Drivers
- Sikes Act
- Clean Water Act
- Porter-Cologne Water Quality Control Act
- MCO 5090.2A
- DoD Directive 5090
- DoDI 4715.03
- EO 11990
- EO 13112
- EO 13423
- EO 13514

Water resources are a fundamental part of not only natural resources management but facility management at MCMWTC. Not only does that make the water resources essential to ecosystem services, protecting biodiversity and native species, but essential to the long-term sustainability of the military mission at MCMWTC. As described in Section 3.5 and 4.1, there have been multiple studies of water resources on MCMWTC. Descriptions of the streams, open water and floodplains on MCMWTC are provided in Section 3.5.7. Most recently, a meadow study was completed that evaluated the hydrology, soils and vegetation in ten meadows (i.e., the open areas around streams which include wetlands and floodplains) and provided management recommendations (Vernadero Group 2015). Also recently completed is a study that evaluated streams and provided management recommmendations (MultiMAC JV 2017a).

Descriptions of the wetlands are provided in Section 3.5.8. A visual depiction of the locations of wetlands and other water resources is provided in Figure 3-7. Tables summarizing water resources and detailed maps are provided in Appendix I.

Wetlands and aquatic habitats are some of the most productive habitats and often provide important migration corridors for a variety of species. Wetlands provide essential breeding, spawning, nesting, and wintering ground for numerous fish and wildlife species. Wetlands also enhance the quality of surface waters by impeding erosive forces moving water and trapping waterborne sediment and associated pollutants.

Relevant USFS permit conditions, management recommendations, and the MCMWTC objectives and associated actions to protect and enhance the water and wetland resources at MCMWTC are provided below.

4.4.1 Relevant USFS Permit Conditions

There are also general permit conditions (Section 4.2) and soils permit conditions (Section 4.3) that protect wetlands and water resources.

- No waste or by-product will be discharged into water sources.

- Training units will stay 100 feet away from water sources for bivouac or human waste disposal. No camping within 100 feet of lake shore and streams. Protect and preserve soil and vegetative cover to the maximum extent possible.
- Do not cut or clear any vegetation or disturb soil on USFS land without prior specific approval of the USFS.
- Institute erosion control in such disturbed areas mutually agreed upon by the USFS and the USMC.
- Utilize water subject to all existing water rights.
- The USMC will cross streams and wetlands and wet meadows in motorized vehicles only at approved locations. Currently, approved stream crossings are located only in designated roads. Wetlands and wet meadows do not currently have authorized crossings. If additional low water crossings are needed to facilitate military training, the USMC will coordinate with the USFS.
- The USMC will coordinate with the CDFW for any activities that would affect waters of the State.
- No driving will be conducted in wetlands and meadows, except on designated roads and designated crossing points. Wetlands and meadows will be inspected for maneuver damage following training exercises and during annual inspection events. Corrective action to protect wetlands and rare/sensitive plant species will be implemented as appropriate following the guidelines of the USFS.
- Use of tracked vehicles on the Leavitt Lake Corridor Road is only authorized during non-snow conditions when the road surface is not saturated during the period 1 December – 15 April. Tracked vehicle operation is only allowed on Leavitt Lake Road when a minimum of 2 feet of snow is present at the USFS gate located at SR 108 and Leavitt Lake Road.
- Roads are not authorized for vehicle use when roads become water saturated and vehicle tires cause rutting more than 2 inches deep into the road surface.

4.4.2 Management Recommendations

General management recommendations are compiled from the HTNF Plan, the Sierra Nevada Framework (Section 2.7), biological reports (Section 4.1), and the various DoD, DoN, USMC and MCMWTC policies (Section 1.7 and Appendix A), as applicable. Protecting and enhancing aquatic resources is a significant component of the Sierra Nevada Framework with multiple goals and strategies identified to support those efforts. Both

RCAs[1] and CARs[2] are core protective measures used by the USFS to achieve this protection of aquatic resources. Specifically, the Sierra Nevada Framework ROD (USFS 2004) identifies the following management targets and objectives relevant to MCMWTC:

- A set of land allocations, specifically RCAs and CARs, that delineate aquatic, riparian, and meadow habitats, which are to be managed consistent with the six riparian conservation objectives and associated standards and guidelines;
  - **Objective #1:** Ensure that identified beneficial uses for the water body are adequately protected.
  - **Objective #2:** Maintain or restore: (1) the geomorphic and biological characteristics of special aquatic features, including lakes, meadows, bogs, fens, wetlands, vernal pools, springs; (2) streams, including in stream flows; and (3) hydrologic connectivity both within and between watersheds to provide for the habitat needs of aquatic-dependent species.
  - **Objective #3:** Ensure a renewable supply of large down logs that: (1) can reach the stream channel and (2) provide suitable habitat within and adjacent to the RCAs.
  - **Objective #4:** Ensure that management activities, including fuels reduction actions, within RCAs and CARs enhance or maintain physical and biological characteristics associated with aquatic- and riparian-dependent species.
  - **Objective #5:** Preserve, restore, or enhance special aquatic features, such as meadows, lakes, ponds, bogs, fens, and wetlands, to provide the ecological conditions and processes needed to recover or enhance the viability of species that rely on these areas.
  - **Objective #6:** Identify and implement restoration actions to maintain, restore or enhance water quality and maintain, restore, or enhance habitat for riparian and aquatic species.
- An adaptive management program that includes monitoring and research activities specifically aimed at assessing effects of management activities on the willow flycatcher and Yosemite toad; and
- The use of landscape analysis as a tool for assessing existing uses and identifying restoration and enhancement projects.

[1] RCAs include perennial Streams (300 feet each side); seasonally flowing streams (intermittent and ephemeral streams; 150 feet each side); special aquatic features (e.g., wetlands); other hydrological or topographic depressions without a defined channel.

[2] CARs are subwatersheds that contain either known locations of threatened, endangered, or sensitive species; highly vulnerable populations of native plant or animal species; or localized populations of rare native aquatic- or riparian-dependent plant or animal species.

Further the Sierra Nevada Framework ROD (USFS 2004) identifies a number of strategies and guidelines for RCAs and CARs for achieving these targets and objectives, with the following relevant to MCMWTC:

- Ensure that management activities do not adversely affect water temperatures necessary for local aquatic- and riparian-dependent species assemblages.
- Maintain and restore the hydrologic connectivity of streams, meadows, wetlands, and other special aquatic features by identifying roads and trails that intercept, divert, or disrupt natural surface and subsurface water flow paths. Implement corrective actions where necessary to restore connectivity.
- Ensure that culverts or other stream crossings do not create barriers to upstream or downstream passage for aquatic-dependent species. Locate water drafting sites to avoid adverse effects to in stream flows and depletion of pool habitat. Where possible, maintain and restore the timing, variability, and duration of floodplain inundation and water table elevation in meadows, wetlands, and other special aquatic features.
- Prior to activities that could adversely affect streams, determine if relevant stream characteristics are within the range of natural variability. If characteristics are outside the range of natural variability, implement mitigation measures and short-term restoration actions needed to prevent further declines or cause an upward trend in conditions. Evaluate required long-term restoration actions and implement them according to their status among other restoration needs.
- Prevent disturbance to streambanks and natural lake and pond shorelines caused by resource activities (for example, livestock, OHVs, and dispersed recreation) from exceeding 20 percent of stream reach or 20 percent of natural lake and pond shorelines (10 percent in areas occupied by sensitive species). Disturbance includes bank sloughing, chiseling, trampling, and other means of exposing bare soil or cutting plant roots. This standard does not apply to developed recreation sites, sites authorized under SUPs and designated OHV routes.
- Design prescribed fire treatments to minimize disturbance of ground cover and riparian vegetation in RCAs. In burn plans for areas that include, or are adjacent to RCAs, identify mitigation measures to minimize the spread of fire into riparian vegetation. In determining which mitigation measures to adopt, weigh the potential harm of mitigation measures, for example fire lines, against the risks and benefits of prescribed fire entering riparian vegetation. Strategies should recognize the role of fire in ecosystem function and identify those instances where fire suppression or fuel management actions could be damaging to habitat or long-term function of the riparian community.
- Post-wildfire management activities in RCAs and CARs should emphasize enhancing native vegetation cover, stabilizing channels by non-structural means, minimizing adverse effects from the existing road network, and carrying out

activities identified in landscape analyses. Post-wildfire operations shall minimize the exposure of bare soil.

- Prohibit or mitigate ground-disturbing activities that adversely affect hydrologic processes that maintain water flow, water quality, or water temperature critical to sustaining bog and fen ecosystems and plant species that depend on these ecosystems. During project analysis, survey, map, and develop measures to protect bogs and fens from such activities as trampling by livestock, pack stock, humans, and wheeled vehicles. Criteria for defining bogs and fens include, but are not limited to, presence of: (1) sphagnum moss (*Spagnum spp*.), (2) mosses belonging to the genus *Meessia*, and (3) sundew (*Drosera spp*.) Complete initial plant inventories of bogs and fens within active grazing allotments prior to re-issuing permits.
- Recommend restoration practices in: (1) areas with compaction in excess of soil quality standards, (2) areas with lowered water tables, or (3) areas that are either actively down cutting or that have historic gullies. Identify other management practices, for example, road building, recreational use, grazing, and timber harvests that may be contributing to the observed degradation.

A recently completed project by the USMC assessed the condition of ten meadows within MCMWTC (Vernadero Group 2015). There were 6 meadows (Pickel Meadow, Leavitt Meadow, Sardine Meadow, Grouse Meadow, LZ Goose Meadow, and Brownie Meadow) identified as degraded that have issues with either conifer encroachment and/or impaired river channels within the meadows that have impair stream function, mostly due to entrenchment and high erosion rates. General recommendations include removing conifers (either actively brush management, implementing various active bank stabilization techniques, and modifying banks and channels in key locations. Some of these recommendations involve substantial earthwork and potential temporary impacts. In addition, they identified an area in Summit Meadow that requires some level of restoration to prevent degrading the meadow and river nearby.

4.4.3 MCMWTC Objectives

These objectives, policies, and actions overlap with those for soils (Section 4.3), vegetation (Section 4.5), wildfire and fuels management (Section 4.6), and rare species (Sections 4.9-4.11).

Objective: Protect and enhance wetland and other water resources at MCMWTC.

USMC Policies for MCMWTC:

- Comply with USFS SUP conditions
- Avoid, minimize and mitigate for losses of wetlands and other WUS as required by EO 19990, *Protection of Wetlands*. This will be accomplished by maintaining

100 foot buffers around wetlands and other water resources and maintaining accurate data of identified wetlands and other water resources.

- Continue to implement buffers around water resources as required by the SUPs.
- Continue to implement, regulate, and monitor stream crossings within designated approved crossing locations.

USMC Actions for MCMWTC:

- Inventory and map wetlands and other WUS and the State of California as needed.
- Maintain a master, comprehensive GIS dataset of all water resources in areas approved for use as part of MCMWTC. Merge new datasets into the master dataset as they are developed.
- Conduct monitoring of wetland and riparian areas every five years. Monitor more often in areas used regularly for training.
- Enhance priority wetland habitats by annually eradicating and removing nonnative and invasive wetland plants, in cooperation with USFS.
- Restore identified wetland habitats that have been significantly disturbed. Revegetate these areas with appropriate regional, native species. Cooperate with USFS to plan and implement as appropriate.
- Monitor wetland community plant species composition and relative cover, with a focus on invasion by noxious weeds and aquatic vegetation cover during planning survey updates.
- Identify and prioritize wetland and riparian habitat restoration opportunities that enhance the mission or mitigate potential impacts. Cooperate with USFS to plan and implement as appropriate. Implement at least 1 high priority project every 3 years, either by USMC or a partner.
- Continue monitoring trails identified in the *Meadow Enhancement Study* (Vernadero Group 2015) as either already causing impacts or likely to cause impacts. Identify and prioritize specific projects to mitigate impacts from military training.

Objective: Manage new landscaping to minimize water use.

USMC Policies for MCMWTC:

- Implement low maintenance plant requirements as a criterion for selection of any new tree, shrub, perennial, vine, ground cover, or ornamental grasses.
- Water at night or early morning to reduce evaporation loss.

- Use mulches around shrubs and trees to decrease surface evaporation and subsequent water loss by up to 70 percent.
- Use native plant species only in new landscaping.

USMC Actions for MCMWTC:

- Perform a formal facility water conservation audit that would evaluate water conservation options for landscaped facilities.
- Evaluate timing of watering needs based on the amount of water the sprinkler systems apply per minute, which should be measured directly.
- Adjust irrigation systems, particularly with automatic timers, and adjust to the actual water needs so that excess water is not applied.
- Implement water conservation measures based on the results of a facility water conservation audit..

4.5 Vegetation Management

Primary Regulatory Drivers
- Sikes Act
- DoD Directive 5090
- DoDI 4715.03
- MCO 5090.2A
- EO 11990
- EO 11988
- EO 13112
- EO 11987

A description of MCMWTC's vegetation resources is presented in Section 3.5.10 and illustrated on Figures 3-8, 3-9, and 3-10. Plant surveys have been completed recently (NAVFAC Southwest 2010; Reynolds & Cardno TEC, Inc. 2012). The recent study of ten meadows documented aspen stands and encroaching conifers (Vernadero Group 2015). Only four meadows contained aspen stands and only four meadows contained more than 1 acre of conifers.

These communities provide wildlife habitat, support and contribute to biodiversity, and can serve as indicators of ecosystem health. Natural plant communities within the site include upland shrub dominant, tree dominant, and herbaceous cover types, as well as riparian/wetland habitats (Appendix H).

DoD policy calls for restoring and rehabilitating adversely altered or degraded habitats. Native plant species and communities shall also be maintained, enhanced, and restored to conserve their biodiversity and health (DoD 2011). The following management measures are intended to conserve and maintain natural plant communities and habitats within MCMWTC.

4.5.1 Relevant USFS Permit Conditions

There are also general permit conditions (Section 4.2), soils permit conditions (Section 4.3), wetlands and water resources permit conditions (Section 4.4) and wildland fire permit conditions (Section 4.6) that relate to vegetation management.

- Protect and preserve soil and vegetative cover to the maximum extent possible.
- Do not cut or clear any vegetation or disturb soil on USFS land without prior specific approval of the USFS.
- No cutting or damaging standing trees, live or dead. Abatis training (i.e., removal of trees with chainsaw or explosives to form a barricade) on individual trees can be approved on a case-by- case basis.
- The white pine bark will not be removed or pruned. No pinecones or limbs will be removed.
- The USMC will prevent unnecessary damage to forest tree seedlings, saplings, pole timber, and saw timber to the extent possible within authority of federal laws.
- The USMC will contact the USFS whenever timber is planned for removal from National Forest lands and the USFS, in coordination with the USMC, will then determine the method of disposal.

4.5.2 Management Recommendations

General management recommendations are compiled from the HTNF Plan, the Sierra Nevada Framework (Section 2.7), biological reports (Section 4.1), and the various DoD, DoN, USMC and MCMWTC policies (Section 1.7 and Appendix A), as applicable. Managing forests are a significant component of the Sierra Nevada Framework with multiple goals and strategies have been identified to support those efforts. Some of the management recommendations described for RCAs in Section 4.4 and for fuel management in Section 4.6 are applicable here as well. Specifically, the Sierra Nevada Framework ROD (USFS 2004) identifies the following management targets and objectives relevant to MCMWTC:

- General forest desired future conditions include:
  - Forest structure and function across old forest emphasis areas generally resemble pre-settlement conditions. High levels of horizontal and vertical diversity exist at the landscape-scale (roughly 10,000 acres).
  - Stands are composed of roughly even-aged vegetation groups, varying in size, species composition, and structure. Individual vegetation groups range from less than 0.5 to more than 5 acres in size. Tree sizes range from seedlings to very large diameter trees. Species composition varies by elevation, site productivity, and related environmental factors. Multi-tiered canopies, particularly in older forests, provide vertical heterogeneity. Dead trees, both standing and fallen, meet habitat needs of old-forest associated species.
  - Where possible, areas treated to reduce fuel levels also provide for the successful establishment of early seral stage vegetation.
- Objectives for general forest include:

- Establish and maintain a pattern of area treatments that is effective in modifying wildfire behavior.
- Reduce the risk of insect/pathogen drought related mortality by managing stand density levels.
- Design economically efficient treatments to reduce hazardous fuels.

Further the Sierra Nevada Framework ROD (USFS 2004) identifies a number of strategies and guidelines for vegetation management for achieving these targets and objectives. A number of these are developed specifically to support wildlife habitat (see Section 4.8) and rare species; vegetation management specific to listed species is provided in those sections (Section 4.9 and 4.10). The following are relevant to MCMWTC:

Mechanical Thinning Treatments

- For all mechanical thinning treatments, design projects to retain all live conifers 30 inches diameter at breast height (dbh) or larger. Exceptions are allowed to meet needs for equipment operability.
- For mechanical thinning treatments in mature forest habitat (Types 4M, 4D, 5M, 5D, and 6) outside wildland-urban interface defense zones (Section 4.6):
  - Design projects to retain at least 40 percent of the existing basal area. The retained basal area should generally be comprised of the largest trees.
  - Where available, design projects to retain 5 percent or more of the total treatment area in lower layers composed of trees 6 to 24 inches dbh within the treatment unit.
  - Design projects to avoid reducing pre-existing canopy cover by more than 30 percent within the treatment unit. Percent is measured in absolute terms (for example, canopy cover at 80 percent should not be reduced below 50 percent.)
  - Within treatment units, at a minimum, the intent is to provide for an effective fuels treatment. Where existing vegetative conditions are at or near 40 percent canopy cover, projects are to be designed remove the material necessary to meet fire and fuels objectives.

Within California Spotted Owl Home Range Core Areas:

- Where existing vegetative conditions permit, design projects to retain at least 50 percent canopy cover averaged within the treatment unit. Exceptions are allowed in limited situations where additional trees must be removed to adequately reduce ladder fuels, provide sufficient spacing for equipment operations, or minimize re-entry. Where 50 percent canopy cover retention cannot be met for reasons described above, retain at least 40 percent canopy cover averaged within the treatment unit.

Outside of California Spotted Owl Home Range Core Areas:

- Where existing vegetative conditions permit, design projects to retain at least 50 percent canopy cover within the treatment unit. Exceptions are allowed where project objectives require additional canopy modification. Where canopy cover must be reduced below 50 percent, retain at least 40 percent canopy cover averaged within the treatment unit.

Within California Spotted Owl PACs, where treatment is necessary, remove only material needed to meet project fuels objectives. Focus on removal of surface and ladder fuels.

Tree Species Composition: Promote shade intolerant pines (sugar and Ponderosa) and hardwoods.

Snags and Down Woody Material

- Determine down woody material retention levels on an individual project basis, based on desired conditions. Emphasize retention of wood in the largest size classes and in diverse decay classes. Consider the effects of follow-up prescribed fire in achieving desired down woody material retention levels.
- Determine snag retention levels on an individual project basis for vegetation treatments. Design projects to implement and sustain a generally continuous supply of snags and live decadent trees suitable for cavity nesting wildlife across a landscape. Retain some mid- and large diameter live trees that are currently in decline, have substantial wood defect, or that have desirable characteristics (teakettle branches, large diameter broken top, large cavities in the bole) to serve as future replacement snags and to provide nesting structure. When determining snag retention levels and locations, consider land allocation, desired condition, landscape position, potential prescribed burning and fire suppression line locations, and site conditions (such as riparian areas and ridge tops), avoiding uniformity across large areas.
- General guidelines for large-snag retention are as follows:
  - **Red fir forest typ**e – six of the largest snags per acre
  - Eastside pine and eastside mixed conifer forest types – three of the largest snags per acre
  - **Where standing live hardwood trees lack dead branches** – six of the largest snags per acre (where they exist to supplement wildlife needs for dead material).
- Use snags larger than 15 inches dbh to meet this guideline. Snags should be clumped and distributed irregularly across the treatment units. Consider leaving fewer snags strategically located in treatment areas within the wildland-urban interface. When some snags are expected to be lost due to hazard removal or the effects of prescribed fire, consider these potential losses during project planning to achieve desired snag retention levels.

Hardwood Management

- Manage hardwood ecosystems for a diversity of hardwood tree size classes within a stand such that seedlings, saplings, and pole-sized trees are sufficiently abundant to replace large trees that die.
- Retain the mix of mast-producing species where they exist within a stand.
- When planning prescribed fire or mechanical treatments in hardwood ecosystems: (1) consider the risk of noxious weed spread and (2) minimize impacts to hardwood ecosystem structure and biodiversity.
- Prior to commercial and noncommercial hardwood and fuelwood removal in hardwood ecosystems, pre-mark or pre-cut hardwood trees to ensure that stand goals are met. Retain a diverse distribution of stand cover classes.
- During or prior to landscape analysis, spatially determine distributions of existing and potential natural hardwood ecosystems (Forest Service Handbook 2090.11). Assume pre-1850 disturbance levels for potential natural community distribution. Work with province ecologists or other qualified personnel to map and/or model hardwood ecosystems at a landscape scale (approximately 30,000 to 50,000 acres). Include the following steps in the analysis: (1) compare distributions of potential natural hardwood ecosystems with existing hardwood ecosystems; (2) identify locations where existing hardwood ecosystems are outside the natural range of variability for potential natural hardwood ecosystem distribution; and (3) identify hardwood restoration and enhancement projects.
- Include hardwoods in stand examinations. Encourage hardwoods in plantations. Promote hardwoods after stand-replacing events. Retain buffers around existing hardwood trees by not planting conifers within 20 feet of the edge of hardwood tree crowns.

Habitat Connectivity for Old Forest Associated Species

- Minimize old forest habitat fragmentation. Assess potential impacts of fragmentation on old forest associated species in biological evaluations.
- Assess the potential impact of projects on the connectivity of habitat for old forest associated species.
- Consider retaining forested linkages (with canopy cover greater than 40 percent) that are interconnected via riparian areas and ridgetop saddles during project-level analysis.

4.5.3 MCMWTC Objectives

This objective, policies, and actions overlap with those for soils (Section 4.3), water resources (Section 4.4), wildfire and fuels management (Section 4.6), and forest management (Section 4.12).

Objective: Manage natural plant communities to promote biodiversity, erosion control, wildlife habitat, and aesthetics.

USMC Policies for MCMWTC

- Provide interagency coordination (federal, state and/or local as appropriate) to inventory and evaluate undesirable vegetation, as well as for vegetation treatments on (e.g., pinyon/juniper removal, fuels treatments, green stripping etc.). Limit off-road vehicle use to existing and designated roads and trails.
- As required by the SUPs and to provide long-term support of the military mission, conserve or enhance wet meadow complexes to maintain or increase amount of edge and cover.

USMC Actions for MCMWTC:

- Update vegetative community mapping every ten years, either directly or by incorporating updates from the USFS.
- Monitor vegetation condition every five years; more often in areas used regularly for military training. Monitoring should document percent cover, dominant species, and areas of disturbance.
- Maintain a comprehensive list of plant species, including invasive plants and aquatic vegetation that occurs within the installation (currently provided in Appendix J).
- Using the information provided in the *Meadow Enhancement Study* (Vernadero Group 2015), prioritize the management of conifer encroachment within sage brush and meadow habitats. Coordinate with USFS to implement control efforts of high priority areas, as appropriate.
- Working with USFS to reduce severe wildfire risk, reduce fuels, restore natural fire regimes in conifer stands, and create diversity within brush fields. Treatments could include prescribed fire and fuelwood/mechanical conifer removal.
- Working with USFS, restore stand health, reduce wildfire severity, and promote understory regeneration in sage-steppe, mountain shrub, mixed conifer, and aspen communities and improve wildlife habitat and help create defensible space.
- Repair communities damaged by maneuvers in accordance with USFS SUPs and requirements, using native plant species. Areas in need of rest or restoration will be identified and documented annually for environmental and planning purposes and prioritized based on input from USFS.
- Educate visiting units that conduct ground training activities about sensitive habitat areas (meadow and riparian/wetland habitats) and avoidance of such areas during training activities.

- Educate MCMWTC Base Camp grounds maintenance personnel about sensitive habitat areas (i.e., sage scrub habitats) to be excluded from landscape maintenance activities with the exception of weed control activities.
- Evaluate ski slope area and determine if any tree removal is required to maintain the slope and utility for military training.

4.6 Wildland Fire Management

The USMC and USFS will coordinate with the State of California and Mono County for fire suppression activities. A mutual aid agreement is in development and may be implemented in the future. The responsibility for fire-fighting costs and damages are determined in accordance with 43 CFR 9239.1-2. All USMC withdrawn and owned lands would match fire management objectives on adjacent USFS lands.

On DoD owned lands, MCMWTC will ensure sound fire management practices as described in the WFMP for MCMWTC (VersarGMI & Vernadero Group, Inc. 2015). The WFMP included a fire model in GIS and appropriate fuel models were mapped for the different vegetation assemblages at MCMWTC. Field investigations will be made to update or augment data, as necessary, to support fire behavior modeling.

4.6.1 Relevant USFS Permit Conditions

There are also general permit conditions (Section 4.2), soils permit conditions (Section 4.3), wetlands and water resources permit conditions (Section 4.4) and vegetation permit conditions (Section 4.5) that relate to wildland fire management.

- USMC and USFS will coordinate fire management activities in the form of a Cooperative Fire Agreement. Fire management activities include, but are not limited to prescribed burning and prevention, detection, and suppression of wildfires in and adjacent to each agency's area of responsibility
- USMC will limit and monitor the use of incendiary devices, ordnance, explosives, live ammunition, pyrotechnics and campfires during fire restriction. The USFS will notify the USMC when fire restrictions have been implemented. Fire restrictions will be no more restrictive to the military than for civilian users of the forest and will mirror the current fire restrictions in place.
- Blanks, live-fire (on appropriate ranges), and non-incendiary pyrotechnics (such as those used for simulated IED explosions) may be used year-round, except in TAs 13, 14, 15 and 16 where they are not allowed. Only blank ammunition is allowed during convoy training on USFS roads.
- USMC will notify the USFS without delay upon the occurrence or sighting of any wildfires and take immediate action. The USMC will consider suppression of wildfires within their USFS permit areas as the higher priority and discontinue or modify training while suppression actions are taking place as required by the

USFS. USMC will preserve point of origin on any wildland fires originating within any areas used by the MCMWTC.

- USMC and USFS shall cooperate and assist in prescribed burning or fuels reduction activities as requested by the other agency, if personnel and equipment are available. The USFS will notify the USMC and coordinate planning and implementation of all fuels reduction projects within the TA that may impact military training.
- No campfires without a permit or during fire restrictions.

4.6.2 Management Recommendations

General management recommendations are compiled from the HTNF Plan, the Sierra Nevada Framework (Section 2.7), biological reports (Section 4.1), and the various DoD, DoN, USMC and MCMWTC policies (Section 1.7 and Appendix A), as applicable. Managing wildland fire and associated fuels is a significant component of the Sierra Nevada Framework. The focus of the wildland fire and fuels management is reducing threats to communities and wildlife habitat from large, severe wildfires and reintroducing fire into fire-adapted ecosystems. Specifically, the Sierra Nevada Framework ROD (USFS 2004) identifies the following management goals relevant to MCMWTC:

- Treating fuels in a manner that significantly reduces wildland fire intensity and rate of spread, thereby contributing to more effective fire suppression and fewer acres burned;
- Treating hazardous fuels in a cost-efficient manner to maximize program effectiveness; and
- Actively restoring fire-adapted ecosystems by making demonstrated progress in reducing the acres with unnaturally dense conditions.

The Sierra Nevada Framework includes managing hazardous fuels in and around communities combined with strategic placement of fuels treatments across broad landscapes to modify wildland fire behavior. Goals for fuels treatments include:

- Strategically placing treatment areas across landscapes to interrupt potential fire spread,
- Removing sufficient material in treatment areas to cause a fire to burn at lower intensities and slower rates of spread compared to untreated areas, and
- Considering cost-efficiency in designing treatments to maximize the number of acres that can be treated under a limited budget.

Wildland Urban Intermix (WUI) management is a significant component of the wildland fire management approach identified in the Sierra Nevada Framework. The WUI is an area where human habitation is mixed with areas of flammable wildland vegetation. It extends out from the edge of developed private land into federal, private, and state jurisdictions. The

WUI is comprised of two zones: the defense zone and the threat zone. The WUI defense zone is the buffer in closest proximity to buildings. The WUI threat zone typically buffers the defense zone. Management objectives for WUI are:

- Design economically efficient treatments to reduce hazardous fuels.
- Defense Zone: Create defensible space near communities, and provide a safe and effective area for supressing fire.
- Threat Zone: Establish and maintain a pattern of area treatments that is effective in modifying wildfire behavior.

Further the Sierra Nevada Framework ROD (USFS 2004) identifies a number of strategies and guidelines for fire and fuels management for achieving these targets and objectives, with the following relevant to MCMWTC:

- Strategically place area fuels treatments across the landscape to interrupt fire spread and achieve conditions that: (1) reduce the size and severity of wildfire and (2) result in stand densities necessary for healthy forests during drought conditions. Complete a landscape-level design of area treatment patterns prior to project-level analysis. Develop treatment patterns using a collaborative, multi-stakeholder approach. Determine the size, location, and orientation of area fuels treatments at a landscape-scale, using information about fire history, existing vegetation and fuels condition, prevailing wind direction, topography, suppression resources, attack times, and accessibility to design an effective treatment pattern. The spatial pattern of the treatments is designed to reduce rate of fire spread and fire intensity at the head of the fire.
- Strategic placement of fuels treatments should also consider objectives for locating treatment areas to overlap with areas of condition class 2 and 3, high density stands, and pockets of insect and disease. Avoid PACs to the greatest extent possible when locating area treatments. Incorporate areas that already contribute to wildfire behavior modification, including timber sales, burned areas, bodies of water, and barren ground, into the landscape treatment area pattern. Identify gaps in the landscape pattern where fire could spread at some undesired rate or direction and use treatments (including maintenance treatments and new fuels treatments) to fill identified gaps.
- Vegetation within treatment areas should be modified to meet desired surface ladder, and crown fuel conditions as well as stand densities necessary for healthy forests during drought conditions. Site specific prescriptions should be designed to reduce fire intensity, rate of fire spread, crown fire potential, mortality in dominant and co-dominant trees, and tree density. Managers should consider such variables as the topographic location of the treatment area, slope steepness, predominant wind direction, and the amount and arrangement of surface, ladder, and crown fuels in developing fuels treatment prescriptions.

- Where young plantations are included within area treatments, apply the necessary silvicultural and fuels reduction treatments to: (1) accelerate the development of key habitat and old forest characteristics, (2) increase stand heterogeneity, (3) promote hardwoods, and (4) reduce risk of loss to wildland fire. In size class 2x plantations, treatments should be designed to reduce fire intensity, rate of fire spread and tree mortality. Design a sequence of fuel reduction projects to achieve the standards below.
- Design mechanical treatments in brush and shrub patches to remove the material necessary to achieve the following outcomes from wildland fire under 90th percentile fire weather conditions: (1) wildland fires would burn with an average flame length of 4 feet or less and (2) fire line production rates would be doubled. Treatments should be effective for more than 5 to 10 years.
- Design a sequence of fuel reduction treatments in conifer forest types to achieve the following standards within the treatment area:
  - An average of 4-foot flame length under 90th percentile fire weather conditions.
  - Surface and ladder fuels removed as needed to meet design criteria of less than 20 percent mortality in dominant and co-dominant trees under 90th percentile weather and fire behavior conditions.
  - Tree crowns thinned to meet design criteria of less than 20 percent probability of initiation of crown fire under 90th percentile weather conditions.

4.6.3 MCMWTC Objectives

This objective, policies, and actions overlap with those for soils (Section 4.3), water resources (Section 4.4), vegetation management (Section 4.5), and forest management (Section 4.12).

Objective: Implement a Wildland Fire Management Plan for DoN property that supports the USFS wildland fire program on MCMWTC.

USMC Policies for MCMWTC

- Coordinate and cooperate with the USFS in fire suppression, search and rescue, and maintenance of USFS roads within the limited-use areas.
- Protect high value human and natural resources areas from catastrophic wildfire while conservation natural resources and maintaining military operational flexibility.
- Use prescribed fire to promote wildlife habitat, restore and maintain natural communities, and manage fuel loads.
- Comply with any California and Nevada laws regarding wildfires and/or prescribed fire.

- Limit and monitor the use of incendiary devices, ordnance, explosives, live ammunitions, pyrotechnics and campfires during fire restrictions.
- Monitor fire danger ratings and weather information from the Sierra Front Interagency Dispatch Center for fire restrictions.
- Limit use of fire retardants near water resources, particularly near sensitive species. Note: USMC is not typically in charge of fire suppression operations, which are usually led by USFS.

USMC Actions for MCMWTC:

- Implement WFMP and update as needed.
- Update fuels model as needed to facilitate wildland fire planning. If necessary, conduct a survey to develop a detailed fuels map including data on fuel loading and estimated return interval that can be used to predict future fire behavior. Fuels map could be done in conjunction with USFS.
- Conduct fire suppression activities where they are determined to be necessary and safe, in accord with mutual aid agreements, if any.
- Control buildup of flammable vegetation in the areas surrounding operations, where possible.
- Update vegetation surveys, including mapping of fuels, regularly to maintain accurate estimates of fuels and to identify any fuels reduction projects needed. Areas where there is greater risk of wildfire from military activities should be updated more often than areas with lower risk of wildfire.

4.7 Invasive Species & Integrated Pest Management

Primary Regulatory Drivers
- Sikes Act
- Federal Noxious Weed Act
- National Aquatic Invasive Species Act
- MCO 5090.2A
- DoDI 4715.03 and 4150.07
- EO 11990
- EO 13112
- EO 11987

Pest management programs at MCMWTC are conducted under an IPMP (NAVFAC Southwest 2008) in accordance with DoDI 4150.07 and MCO P5090.2A. The Noxious Weed Control Act requires federal land managers to cooperate with federal and state agencies to manage undesirable plants. It also mandates a program and a person be assigned to deal with unwanted plants, funding needs, cooperative agreements, and the use of IPM systems. In addition, DoD policy states that "noxious weeds and other objectionable plant growth shall be controlled by mowing, use of USEPA registered or approved herbicides, cultivation, or other appropriate means. Pesticide use should be minimized and used in accordance with DoD policy (DoD 2011). Weeds listed by the State of California that are

designated as noxious weeds requiring control are listed in California Administrative Code 555.010. Herbicides can not be applied on USFS lands used as part of MCMWTC.

Various projects have documented invasive species, primarily plants, on MCMWTC (Cardno TEC, Inc. 2012; Reynolds & Cardno TEC, Inc. 2012; MultiMAC JV 2017a; Vernadero Group 2015). Overall, noxious weeds and invasive plants play a relatively minor role in habitat on MCMWTC. They occur primarily along roads, with a few species scattered more widely but at low, and apparently stable, densities. Section 3.5.12 discusses invasive species that occur within MCMWTC. Appendix L presents a list of species known to occur within the installation based on the various projects described in Section 4.1.

Based on Cal-IPC impact rankings, cheatgrass, broadleaved pepperweed, bull thistle, saltlover, and Dalmatian toadflax are the highest priority invasive plant species, although species that impact aquatic systems would also be a high priority due to their impacts to federally listed species.

4.7.1 Relevant USFS Permit Conditions

There are also general permit conditions (Section 4.2), wetlands and water resources permit conditions (Section 4.4) and vegetation permit conditions (Section 4.5) that relate to invasive species and IPM.

- USMC will comply with the USFS Weed Free Forage Requirements, purchase only feed that is certified weed free, and ensure that all pack animals are fed only feed that is certified weed free.USMC will contact the USFS whenever insect and disease infestations are detected. The USFS, in coordination with the USMC, will determine the means or methods of disposal or treatment when insect infestations occur in epidemic conditions.
- USMC will not use pesticides/herbicides without the prior written approval of the USFS. Requests for approval of planned uses of pesticides/herbicides will be submitted as needed by USMC before pesticide purchase or use. Only those materials registered by the USEPA for the specific purpose planned will be considered for use on USFS lands. Label instructions will be strictly followed in the application of pesticides and disposal of excess materials and containers. An environmental analysis is required for all proposed pesticide use.
- No pesticides or herbicides will be disposed of on USFS lands.
- Vehicles will be cleaned of vegetative matter prior to entering the TA to prevent the accidental introduction of noxious and invasive weed species and the spread of annual invasive grasses.

4.7.2 Management Recommendations

General management recommendations are compiled from the HTNF Plan, the Sierra Nevada Framework (Section 2.7), biological reports (Section 4.1), and the various DoD,

DoN, USMC and MCMWTC policies (Section 1.7 and Appendix A), as applicable. Managing noxious weeds is a significant component of the Sierra Nevada Framework; although there is little invasive animals, presumably similar goals and strategies apply. The focus of noxious weed management is reducing threats to natural communities and species from invasive plants. Specifically, the Sierra Nevada Framework ROD (USFS 2004) identifies the following management goals relevant to MCMWTC:

- Use an integrated weed management approach as required by USFS policy:
  - **Priority 1.** Prevent the introduction of new invaders.
  - **Priority 2.** Conduct early treatment of new infestations.
  - **Priority 3.** Contain and control established infestations.

Further the Sierra Nevada Framework ROD (USFS 2004) identifies a number of strategies and guidelines for noxious weed management (again, many would apply to invasive animals as well as plants) for achieving these targets and objectives, with the following relevant to MCMWTC:

- Inform forest users, local agencies, special use permittees, groups, and organizations in communities near national forests about noxious weed prevention and management.
- Work cooperatively with California and Nevada state agencies and individual counties (for example, Cooperative Weed Management Areas) to: (1) prevent the introduction and establishment of noxious weed infestations and (2) control existing infestations.
- As part of project planning, conduct a noxious weed risk assessment to determine risks for weed spread (high, moderate, or low) associated with different types of proposed management activities. Refer to weed prevention practices in the Regional Noxious Weed Management Strategy to develop mitigation measures for high and moderate risk activities.
- When recommended in project-level noxious weed risk assessments, consider requiring off-road equipment and vehicles (both USFS and contracted) used for project implementation to be weed free. Refer to weed prevention practices in the Regional Noxious Weed Management Strategy.
- Minimize weed spread by incorporating weed prevention and control measures into ongoing management or maintenance activities that involve ground disturbance or the possibility of spreading weeds. Refer to weed prevention practices in the Regional Noxious Weed Management Strategy.
- Conduct follow-up inspections of ground disturbing activities to ensure adherence to the Regional Noxious Weed Management Strategy.
- Encourage use of certified weed free hay and straw. Cooperate with other agencies and the public in developing a certification program for weed free hay

and straw. Phase in the program as certified weed free hay and straw becomes available. This standard and guideline applies to pack and saddle stock used by the public, livestock permittees, outfitter guide permittees, and local, state, and federal agencies.

- Consult with American Indians to determine priority areas for weed prevention and control where traditional gathering areas are threatened by weed infestations.
- Complete noxious weed inventories, based on regional protocol. Review and update these inventories on an annual basis.
- As outlined in the Regional Noxious Weed Management Strategy, when new, small weed infestations are detected, emphasize eradication of these infestations while providing for the safety of field personnel.
- Routinely monitor noxious weed control projects to determine success and to evaluate the need for follow-up treatments or different control methods. Monitor known weed infestations, as appropriate, to determine changes in weed population density and rate of spread.

4.7.3 MCMWTC Objectives

This objective, policies, and actions overlap with those for soils (Section 4.3), water resources (Section 4.4), and vegetation management (Section 4.6).

Objective: Manage invasive plant and animal species that have potential to alter native plant communities and increase wildfire fuels.

USMC Policies for MCMWTC

- Implement BMPs to avoid spread of noxious weeds, including but not limited to vehicle washing stations.
- Monitor pesticide/herbicide applications within MCMWTC.
- Ensure pesticide/herbicide applications will not negatively affect terrestrial or aquatic wildlife species by complying with all federal, military, state, and local environment standards and obtain necessary permits/certifications/licenses (contractors) for pesticide/herbicide application. Ensure that all pesticide use is compliant with the IPMP for MCMWTC.
- Coordinate with USFS if there is a need to use pesticide on USFS land and comply with relevants permit conditions for the SUPs.
- Coordinate with USFS for invasive species management and monitoring on USFS lands.
- Participate in the Eastern Sierra Weed Management Area and coordinate with the staff of the Inyo and Mono Counties Agricultural Commissioner's Office regarding preventative measures and treatments.

- Coordinate with adjacent state and private landowners for the comprehensive management of high priority invasive plant species in the watershed(s) occupied by MCMWTC.

USMC Actions for MCWTC

- Conduct an inventory of noxious weeds; identify and prioritize areas that are dominated by invasive species that are considered high and moderate priority by the Cal-IPC. Identify other high and moderate priority species based on potential impacts to military training, water resources, and special status species.
- Based on the results of the noxious weed inventory, identify management goals and strategies for the control of high priority noxious and invasive plant species.
- Maintain a comprehensive noxious and invasive plant species list and GIS geodatabase, updating as new data is collected. The current list is provided in Appendix L based on Reynolds and Cardno TEC, Inc. (2012).
- Annually eradicate or control the spread and introduction of nonnative and invasive upland plant species, with emphasis on those with greatest potential for negative impacts (i.e., cheatgrass, pepperweed, bull thistle, saltlover and toadflax).
- Evaluate the potential for noxious weed colonization prior to surface disturbance. If there is a high potential for colonization, the site will be monitored post project and weed control measures would be implemented if necessary.
- Prepare materials and educate Marines on high priority noxious weed species that occur within the installation. Promote feedback from Marines on the detection of such species within TAs.
- Implement pest management program and individual species control in accordance with the MCMWTC IPMP (NAVFAC Southwest 2008) and USFS Management Plans.
- Control identified pest species that pose a nuisance, significant property damage, or potential health hazard to a tolerable level, without jeopardizing the survival of the pest species or any incidental take of non-target wildlife.

4.8 Fish and Wildlife Management

Primary Regulatory Drivers
- Sikes Act
- Endangered Species Act
- DoDI 4715.03
- MCO 5090.2A
- Migratory Bird Treaty Act
- Fish and Wildlife Coordination Act
- EO 13186

Fish and wildlife management at MCMWTC focuses on maintaining and restoring natural habitat favorable for endemic fish and wildlife in a manner consistent with the military mission and all applicable laws and regulations. The wildlife management program provides for the management of wildlife populations and their habitats consistent with accepted scientific principles, in compliance with federal laws, SUPs with the USFS, other land use agreements and as required by the SAIA and other DoD regulations and policy. CDFW, NDOW, USFWS, and USFS all provide assistance to MCMWTC in management of wildlife.

Wildlife management includes, but is not limited to habitat protection, species surveys, and habitat improvement projects. Past and current projects relating to wildlife management are discussed in Section 4.1. The most recent surveys are detailed in Davenport Biological Services & Cardno TEC, Inc. (2012), which includes several sub-reports. Additionally, Fleishman (2014) is conducting ongoing studies on *Methods for Assessment of Species Richness and Occupancy across Space, Time, Taxonomic Groups, and Ecoregions,* which is using existing and newly collected data on birds and butterflies in the Great Basin area. Additional management for federally and state listed species, migratory birds and other sensitives species is discussed in Sections 4.9 – 4.11.

Information pertaining to fish and wildlife species known to occur on MCMWTC is included in Section 3.5.11. Relevant USFS SUP conditions are summarized below, followed by measures that have been identified in order to preserve and protect wildlife resources at MCMWTC. Federally listed T&E species, other federally protected species and other sensitive species are discussed under separate sections; this section is focused on general fish and wildlife management, including USFS MIS.

4.8.1 Relevant USFS Permit Conditions

There are also general permit conditions (Section 4.2), wetlands and water resources permit conditions (Section 4.4) and vegetation permit conditions (Section 4.5) that relate to wildlife management.

- USMC and USFS will cooperate with CDFW and USFWS for fish and wildlife management. This includes construction and management of ponds, stocking and management of fish populations, planting and maintaining wildlife food plots, and conducting managed hunts on USFS lands within MCMWTC.
- USMC and the USFS will meet annually with CDFW to coordinate wildlife management within MCMWTC.

- *Mule Deer Habitat* – Avoid disturbance in known fawning areas from 1 June – 31 August.
- *Fishing Restrictions* – Mill Creek and Silver Creek (and their tributaries), which are occupied by Lahontan cutthroat trout, are closed to all fishing. Wolf Creek Lake is closed to fishing. Wolf Creek is only open to catch and release fishing with artificial flies and barbless hooks from 1 August – 15 November. All anglers, including military personnel, within MCMWTC must have a valid state of California fishing license and be compliant with CDFW regulations when fishing open waters.
- No feeding, harassing, capturing or petting of wildlife unless you are participating in authorized survival training with a permit and an instructor.
- Report any collisions with wildlife to the USFS Ranger Station Wildlife Biologist.
- At no time should any life stage of any amphibian species be consumed during survival exercises.
- No creation of rock/log dams that could impede fish passage.

4.8.2 Management Recommendations

General management recommendations are compiled from the HTNF Plan, the Sierra Nevada Framework (Section 2.7), biological reports (Section 4.1), and the various DoD, DoN, USMC and MCMWTC policies (Section 1.7 and Appendix A), as applicable. Managing fish wildlife is part of the Sierra Nevada Framework, but is primarily reflected in the goals and strategies associated with vegetation management (Section 4.5) and riparian area (Section 4.4) management. See those sections for goals relevant to fish and wildlife management on MCMWTC.

Further the Sierra Nevada Framework ROD (USFS 2004) identifies a number of strategies and guidelines for wildlife management for achieving these targets and objectives, which are included under vegetation and riparian area management.

4.8.3 MCMWTC Objectives

This objective, policies, and actions overlap with those for water resources (Section 4.4), vegetation management (Section 4.6), and rare species management (Sections 4.9, 4.10, 4.11).

Objective: Promote a sustainable and diverse fish and wildlife community within MCMWTC lands through habitat stewardship, population protection and monitoring, invasive species removal, and wildlife damage control compatible with the USMC mission.

USMC Policies for MCMWTC

- Continue to cooperate with USFS, CDFW, and NDOW on fish and wildlife management to include construction, and management of ponds, management of fish populations, planting and maintaining wildlife food plots, and conducting managed hunts within MCMWTC, as appropriate.
- Coordinate with CDFW, NDOW, and USFS for sick or injured wildlife.
- Ensure that anyone handling or surveying wildlife have appropriate permits from USFWS, USFS, CDFW and/or NDOW.

USMC Actions for MCMWTC:

- Identify wildlife survey gaps and conduct a wildlife inventory within areas that have not been surveyed. Update basewide wildlife surveys every five years.
- Maintain a comprehensive list of species that have been identified within the installation by updating the list provided in Appendix K after every survey. Update GIS data accordingly after every survey.
- Mule Deer Study – Map fawning areas within MCMWTC. Coordinate with USFS and CDFW to monitor mule deer population and habitat use as needed. .
- Evaluate the potential for nest enhancement activities such as the installation of nest boxes to encourage breeding habitat for species (determined through bird inventory).
- Develop educational materials for Marines on preventative measures to reduce wildlife/human interactions and the importance of proper food storage and refuse disposal, emphasizing "Leave No Trace-Ethics".
- Develop a standardized system for recording and mapping significant resource observations (i.e., plants, wildlife, erosion, damage, etc.) when incidentally encountered.
- Develop protocols for handling injured, dead, nuisance, or otherwise encountered animals at MCMWTC. Develop a standard operating procedure for injured and dead wildlife response.
- Prepare a list of wildlife rehabilitation centers for placement of injured or abandoned wildlife.

4.9 Threatened and Endangered Species Management

Primary Regulatory Drivers
- Sikes Act
- Endangered Species Act
- Bald and Golden Eagle Protection Act
- DoDI 4715.03
- MCO 5090.2A
- Fish and Wildlife Coordination Act
- EO 13186

As required by the ESA, DoD and USMC policies and regulations, federally T&E species and their habitats shall be protected and managed. When compatible with military mission and USFWS requirements and recommendations, DoD components shall cooperate in studies, programs, plans, and experiments designed to enhance populations of federal T&E species. Relevant surveys include those by Davenport Biological Services & Cardno TEC, Inc. (2012), which includes sensitive avian survey, sensitive carnivore survey, bat survey, and wildlife survey (Davenport & Cardno TEC, Inc. 2012a, 2012b, 2012c, 2012d, 2012e), as well as those by MultiMAC JV (2017a, 2017b). It should be noted that almost all of MCMWTC is included within various CARs and must be managed accordingly (see Section 4.4).

T&E species summaries and their current status on MCMWTC are presented in Section 3.5.13. Appendix M includes all special status species, including their federal, state, USFS and BLM conservation status. This section includes the bald and golden eagles protected under the BGEPA, as similar consultation requirements and management needs apply and their protection is mandated by federal laws like ESA. Relevant spatial data is presented in Figures 3-11 and 3-12. Management of the following species known to occur on MCMWTC is included here, with federal status in parentheses:

- Lahontan cutthroat trout (threatened)
- Sierra Nevada yellow-legged frog (endangered)
- Yosemite toad (threatened)
- Sierra Nevada red fox (candidate)
- Whitebark pine (candidate)
- Greater sage-grouse (included here due to commitments under the Bi-State Action Plan, Bi-State Technical Advisory Committee, 2012)
- Bald eagle (protected under BGEPA; California endangered)
- Golden eagle (protected under BGEPA)

The USFS permit conditions specific to these species are presented here, followed by general management recommendations for each species, and finally the USMC objectives, policies and actions for federally protected species on MCMWTC. Included in this section are USMC actions and policies that provide a benefit to federal T&E species and may serve to support USMC and DoD requests to not apply critical habitat on MCMWTC for specific species.

4.9.1 Relevant USFS Permit Conditions

There are also general permit conditions (Section 4.2), wetlands and water resources permit conditions (Section 4.4) and vegetation permit conditions (Section 4.5) that relate to wildlife management.

- USFS may limit or require mitigations for military activities determined to have a detrimental impact on T&E species.
- USMC will ensure that military personnel will not initiate any action that may disrupt, endanger, or damage a T&E species, or the habitat of any T&E species.
- *Critical Aquatic Refuges (CARs):* For Lahontan cutthroat trout, Yosemite toad and Sierra Nevada yellow-legged frog. Concentrated activity within CARs should be avoided especially within 100 feet of a wetland and within 330 feet of known habitat (or Critical Habitat) for any of these species. There are current five CARs:
  - Summit Meadows (5,100 acres) for Sierra Nevada yellow-legged frog
  - Chango Lake/Silver Creek (6,000 acres) for Sierra Nevada yellow-legged frog and Lahontan cutthroat trout
  - Wolf Creek Lake (3,200 acres) for Yosemite toad and Sierra Nevada yellow-legged frog
  - Mill Canyon (6,404 acres) for Lahontan cutthroat trout
  - Koenig Lake (1,990 acres) supports Yosemite toad
  - Areas proposed or designated CH will receive similar protection as CARs.
- No ground disturbing activities within 330 feet of occupied Lahontan cuttroat trout streams or streams, lakes, or meadows occupied by Yosemite toad or Sierra Nevada yellow-legged frog.
- *Lahontan Cutthroat Trout* – See permit conditions in Section 4.8. No stream crossing by motorized vehicles of occupied streams. No wading or walking up and downstream within the stream channel in occupied streams. Stream crossings are allowed for small groups (< 25 people); larger groups should cross at hardened areas that contain naturally occurring boulders or downed logs.
- *Yosemite Toad and Sierra Nevada Yellow-Legged Frog Habitat* – LOP: 1 May – 30 July. No disturbance during breeding which occurs 1 May to 30 July. Avoid concentrated activities in marshy areas or wetlands located in CARs – minimum 330 feet from known Yosemite toad habitat. Areas designated as CH should be treated with the same prescription as CARs.
- *Sierra Nevada Red Fox* – LOP: 1 March – 30 June. If a Sierra Nevada red fox den site is located, maintain LOP from March 1 – June 30. No disturbance will be allowed within 330 feet of the den site during the LOP. To prevent red fox

habituation to human food, all food, including trash (i.e., food packaging, food scraps, etc.), should be stored in a manner that wildlife cannot access it and completely removed from the site at the conclusion of training activities. If monitoring indicates impacts to the Sierra Nevada red fox from training activities, additional mitigation measures may be applied. Military use, including avalanche initiation (use of explosives), small arms fire, snowmobiling and other loud noise will not be allowed within Sierra Nevada red fox den site buffers.

- *Whitebark Pine* - no permit conditions currently.
- *Greater Sage-Grouse* (Bi-State) – LOP: 1 March – 15 May. No disturbance will be allowed within 1/4 miles of active leks from 1 March – 15 May. Activities associated with the Sweetwater Airstrip including runway maintenance, landing of aircraft, or other concentrated activities (groups larger than 25 individuals) will not occur from 1 March – 30 June during the sage grouse breeding /early brood-rearing season.
- *Bald Eagles* – LOP: 1 February – 30 June. If bald eagles exhibiting breeding behavior are detected in the activity area, a localized nest search will be conducted by a qualified biologist. Maintain a LOP around occupied bald eagle nest sites from 1 February – 30 June or until young have fledged. No disturbance will be allowed within 330 feet of the nest during the LOP.

4.9.2 Management Recommendations

There are no recovery plans for Sierra Nevada yellow-legged frog or Yosemite toad, as they both have been recently listed. The Recovery Plan and Five-Year Review describe management recommendations for Lahontan cutthroat trout (USFWS 1995, 2009). Relevant recommendations for the Western Lahontan Basin population include:

- Secure habitat and manage populations;
- Conduct biological studies and research to validate recovery objectives; and
- Manage, monitor, and reintroduce Lahontan cutthroat trout, with at least six viable populations within each major river watershed. Management includes
  - Removing invasive species (including aquatic animals and terrestrial plants and animals);
  - Protecting high water quality with low sediments loads and low pollution loads; and
  - Protecting riparian buffers around all occupied habitat (e.g., RCAs) and managing the watersheds (e.g., CARs) to protect the water quality and minimize invasive species spread and introductions.

The Bi-State Action Plan describes management recommendations for greater sage-grouse (Bi-State Technical Advisory Committee 2012). The greater sage-grouse population on MCMWTC are within the Desert Creek/Fales Population Management Unit (PMU), which

has four known leks but likely more undocumented leks. An important component of the Bi-State Action Plan is to implement a coordinated research and monitoring program across multiple agencies, which includes standardized vegetation surveys, standardized lek surveys, and other shared data and management planning efforts, including use of the Conservation Planning Tool. Relevant recommendations include:

- Minimize direct habitat loss due to development;
- Treat pinyon-juniper encroachment in potential nesting and connectivity habitats and around historic springs where spring flow may be restored by tree removal;
- Minimize large scale habitat loss due to wildfire by implementing fuel reduction treatments, using greenstrips in strategic locations to protect sage-grouse habitat, and by prioritizing sage-grouse habitat for aggressive initial attack;
- Conserve and improve available meadow habitats and connectivity to them;
- Reduce human disturbance in key seasonal use areas;
- Reduce the impacts of current infrastructure;
- Minimize potential sources of direct mortality;
- Minimize the spread of noxious weeds and cheatgrass; and
- Improve grazing management practices in site-specific areas.
- Research objectives within the Desert Creek/Fales PMU include:
  - Identify habitat during the reproductive life-stages of female grouse using multi-scale analysis (measurements from field and GIS).
  - Estimate nest and brood survival rates in relation to selected vegetation parameters at multiple spatial scales.
  - Identify seasonal home-ranges and movement patterns by sex and age. Distinguish between habitat types during different life-stages if evident.
  - Estimate monthly and annual survival rates by sex and age and compare with other known research results.

The National Bald Eagle Management Guidelines describe recommendations for reducing impacts to and management of bald eagles (USFWS 2007). These recommendations would largely apply to golden eagles too, although their habitat use is rather different than bald eagles. The USFWS is working on management objectives for both eagles but has not yet released them (http://www.fws.gov/birds/management/managed-species/eagle-management.php). Relevant recommmendations include:

- To avoid disturbing nesting bald eagles, (1) keep a distance between the activity and the nest (distance buffers), (2) maintain preferably forested (or natural) areas between the activity and around nest trees (landscape buffers), and (3) avoid certain activities during the breeding season. The buffer areas serve to minimize

visual and auditory impacts associated with human activities near nest sites. Ideally, buffers would be large enough to protect existing nest trees and provide for alternative or replacement nest trees.

- Seasonal restrictions can prevent the potential impacts of many shorter-term, obtrusive activities that do not entail landscape alterations (e.g., fireworks, outdoor concerts). In proximity to the nest, these kinds of activities should be conducted only outside the breeding season. For activities that entail both short-term, obtrusive characteristics and more permanent impacts (e.g., building construction), we recommend a combination of both approaches: retaining a landscape buffer *and* observing seasonal restrictions.
- Off-road vehicle use (including snowmobiles). No buffer is necessary around nest sites outside the breeding season. During the breeding season, do not operate off-road vehicles within 330 feet of the nest. In open areas, where there is increased visibility and exposure to noise, this distance should be extended to 660 feet.
- Non-motorized human entry (e.g., hiking, camping). No buffer is necessary around nest sites outside the breeding season. If the activity will be visible or highly audible from the nest, maintain a 330-foot buffer during the breeding season, particularly where eagles are unaccustomed to such activity.
- Helicopters and fixed-wing aircraft. Except for authorized biologists trained in survey techniques, avoid operating aircraft within 1,000 feet of the nest during the breeding season, except where eagles have demonstrated tolerance for such activity.
- Blasting and other loud, intermittent noises. Avoid blasting and other activities that produce extremely loud noises within ½ mile of active nests, unless greater tolerance to the activity (or similar activity) has been demonstrated by the eagles in the nesting area.
- To avoid disturbance at foraging areas and communal roost sites:
  - Minimize potentially disruptive activities and development in the eagles' direct flight path between their nest and roost sites and important foraging areas.
  - Do not use explosives within ½ mile (or within 1 mile in open areas) of communal roosts when eagles are congregating, without prior coordination with the USFWS and your state wildlife agency.
  - Locate aircraft corridors no closer than 1,000 feet vertical or horizontal distance from communal roost sites.

General management recommendations are compiled from the Sierra Nevada Framework (Section 2.7), biological reports (Section 4.1), USFWS recovery or action plans, and the various DoD, DoN, USMC and MCMWTC policies (Section 1.7 and Appendix A), as applicable. Managing federally protected species is a critical part of USFS and USMC

management of the area that comprises MCMWTC. The RCAs and CARs described in the Sierra Nevada Framework apply at MCMWTC as the primary management tools to protect Lahontan cutthroat trout, Sierra Nevada yellow-legged frog and the Yosemite toad. As a result, many of the management goals, strategies and guidelines identified in Section 4.4 are also applicable in this section, but are not repeated here.

Specifically, the Sierra Nevada Framework ROD (USFS 2004) identifies the following management goals relevant federally protected species on MCMWTC:

- **S**pecies Viability: Maintain and restore habitat to support viable populations of native and desired non-native plant, invertebrate, and vertebrate riparian-dependent species. Prevent new introductions of invasive species. Where invasive species are adversely affecting the viability of native species, work cooperatively with appropriate state and federal wildlife agencies to reduce impacts to native populations.
- Plant and Animal Community Diversity: Maintain and restore the species composition and structural diversity of plant and animal communities in riparian areas, wetlands, and meadows to provide desired habitats and ecological functions.
- Special Habitats: Maintain and restore the distribution and health of biotic communities in special aquatic habitats (such as springs, seeps, vernal pools, fens, bogs, and marshes) to perpetuate their unique functions and biological diversity.

Further the Sierra Nevada Framework ROD (USFS 2004) identifies a number of strategies and guidelines for federally protected species management for achieving these targets and objectives with the following relevant to MCMWTC:

- The aquatic, riparian, and meadow ecosystem strategy has the following key elements:
  - A set of land allocations, specifically RCAs and CARs, that delineate aquatic, riparian, and meadow habitats, which are to be managed consistent with the Sierra Nevada Framework ROD riparian conservation objectives and associated standards and guidelines;
  - An adaptive management program that includes monitoring and research activities specifically aimed at assessing effects of management activities on the Yosemite toad; and
  - The use of landscape analysis as a tool for assessing existing uses and identifying restoration and enhancement projects.
- Within 500 feet of known occupied sites for the Yosemite toad and Sierra Nevada yellow-legged frog, design pesticide applications to avoid adverse effects to individuals and their habitats.

- Cooperate with state and federal agencies to develop streambank disturbance standards for threatened, endangered, and sensitive species. Use the regional streambank assessment protocol. Implement corrective action where disturbance limits have been exceeded.
- Within CARs, in occupied habitat or "essential habitat" as identified in conservation assessments for threatened, endangered, or sensitive species, evaluate the appropriate role, timing, and extent of prescribed fire. Avoid direct lighting within riparian vegetation; prescribed fires may back into riparian vegetation areas. Develop mitigation measures to avoid impacts to these species whenever ground-disturbing equipment is used.
- As appropriate, assess and document aquatic conditions following the Regional Stream Condition Inventory protocol prior to implementing ground disturbing activities within suitable habitat for Yosemite toad and Sierra Nevada yellow-legged frog.Complete one survey cycle in suitable habitat for the Yosemite toad within this species' historic range to determine presence of Yosemite toads.
- *Sierra Nevada red fox*: Detection of a Sierra Nevada red fox will be validated by a forest carnivore specialist. When verified sightings occur, conduct an analysis to determine if activities within 5 miles of the detection have a potential to affect the species. If necessary, apply a LOP from 1 January – 30 June to avoid adverse impacts to potential breeding. Evaluate activities for a 2-year period for detections not associated with a den site.

A recently completed project provided management recommendations specifically for Lahontan cutthroat trout on MCMWTC (MultiMAC JV 2017a). Some of these recommendations also apply generally to all CARs and to the Yosemite toad and Sierra Nevada yellow-legged frog. The recommendations specific to MCMWTC include:

- Restrict vehicular crossing of streams in Lahontan cuttroat trout habitat to those which already exist.
- Do not conduct fueling operations in RCAs.
- Do not camp within 50 feet of perennial streams.
- Locate USMC staging areas and other sites that compact soils and remove ground cover outside RCAs. For existing facilities that cannot be relocated, develop and implement practices to reduce erosion from these sites to the lowest practicable level. Practices should include drainage, soil scarification and/or addition of groundcover.
- Work with USFS to establish long term monitoring of riparian vegetation on representative sites.
- Surveys of fish passage at MCMWTC found several culverts that are barriers to aquatic passage, but because these streams provide habitat (or potential habitat) for Lahontan cuttroat trout, the recommendation is to take no action to improve connectivity, because these actions could also provide connectivity for invasive

species. USMC will cooperate with USFS, CDFW, and USFWS to identify and facilitate removal of any barriers that might benefit the trout.

- USMC should work with USFS to reduce impacts from roads on aquatic habitats.
- USMC should work with USFS to update Road Management Objectives (RMOs) for all Forest Service roads in MCMWTC. Updated RMOs should reflect the amount and timing of traffic associated with MCMWTC activities.
- USMC needs to adequately maintain roads they use in MCMWTC, or enter into an agreement with the USFS to conduct necessary maintenance. Maintenance should include road watering, maintenance of drainage structures and features and road surface. A road maintenance plan should be developed and included as part of the SUP. The Maintenance Plan should include 1) specifications for maintenance activities, 2) designs for drainage structures such that they can maintained, 3) provisions for training of equipment operators (if maintenance is to be conducted by USMC), and 4) Provisions for timely monitoring of maintenance activities.
- Where road drainage features have been removed or made ineffective by traffic, grading and other road maintenance practices, USMC should replace them, or construct alternative features that protect the road surface and reduce delivery of sediment and surface runoff. To provide guidance for this work, USMC should contract with USFS to conduct a road inventory and road improvement plan that includes locations and designs for drainage improvements. The improvement plan should include 1) placement of diversion prevention dips at sites that currently have diversion potential, 2) consideration of surfacing the approach to Silver Creek on 59 road, and 3) addition of drainage features to disconnect channel crossings from approaches.
- Until such time as USMC develops water pumping and screening requirements approved by the USFS and CDFW associated with water purification training, these recommendations are proposed for water pumping:
  - Operations are restricted to one hour after sunrise to one hour before sunset.
  - Pumping rate shall not exceed 350 gallons per minute.
  - The pumping rate shall not exceed ten percent of the stream flow.
  - Seek streams and pools where water is deep and flowing, as opposed to streams with low flow and small isolated pools.
  - Pumping shall be terminated when the tank is full. The effect of single pumping operations, or multiple pumping operations at the same location, shall not result in obvious draw-down of either upstream or downstream pools.
  - Each pumping operation shall use a fish screen. The screen face should be oriented parallel to flow for best screening performance. The screen shall be

designed and used such that it can be submerged with at least one-screen-height-clearance above and below the screen.

- These recommendations are proposed for screening:
  - The total (unobstructed) surface area of the screen shall be at least 2.5 square feet, based on the upper limit of pumping of 350 gallons per minute. Larger surface areas are recommended where debris buildup is anticipated, and where stream depth is adequate to keep the screen submerged at approximately mid-depth.
  - Screen mesh must be in good repair and present a sealed, positive barrier-effectively preventing entry of design fish into the intake.
  - Screen Design: water drafting screens may be off-the-shelf products, but they are often custommade devices appropriate to the scale and duration of pumping operation. To keep the screen supported and correctly positioned in the water column, adjustable support legs are advised. Screen geometry can be configured either as rectangular or cylindrical, i.e. – as a shallow box-shape or tubular. The intake structure should be designed to promote uniform velocity distribution at all external mesh surfaces.
  - Screen Structure: The screen frame must be strong enough to withstand the hydraulic forces it will experience. However, structural frames, braces, and other elements that block the flow, change flow direction, or otherwise decrease the screen surface area should be minimized.
  - Screen Cleaning: The screen shall be cleaned as often as necessary to prevent approach velocity from exceeding 0.33 feet per second. Operators should withdraw the screen and clean it after each use, or as necessary to keep screen face free of debris. Pumping should stop for screen cleaning when approximately fifteen percent or more of the screen area is occluded by debris.
- Work with USFS, USFWS and CDFW to develop a pre-suppression plan for wildfire. This plan should include provisions for emergency relocation of Lahontan cuttroat trout should a wildfire threaten to severely impact their habitat.
- Work with USFS to develop a FMP for areas under SUP to determine how naturally caused wildland fires will be managed.
- Take advantage of post-wildfire opportunities to work with USFS to improve the road system.
- Work with USFS and CDFW to conduct additional surveys of amphibian habitat within MCMWTC to better determine the current extent of Yosemite toad and Sierra Nevada yellow-legged frog distribution.
- Avoid activities that allow vehicular access in potential habitat for Yosemite toad and Sierra Nevada yellow-legged frog.

- Continue to include information on the location of Lahontan cuttroat trout within MWTC to area users.
- Work with CDFW to expand and improve signing in streams occupied by Lahontan cuttroat trout.
- Little Wolf Creek was not included in surveys of amphibian habitat. Sections with gradient compatible with amphibian habitat should be surveyed if more intensive amphibian survey work is conducted.
- Eliminate littering associated with USMC training activities.
- Monitor USMC training activities to identify sources of littering.

4.9.3 MCMWTC Objectives

This objective, policies, and actions overlap with those for water resources (Section 4.4), vegetation management (Section 4.6) and other rare species management (Sections 4.10 and 4.11).

Objective 1: Enhance, conserve and monitor T&E species and associated habitats within the installation.

USMC Policies on MCMWTC:

- Continue to implement special-status species conservation measures per the SUPs.
- Continue to coordinate to assess and manage greater sage-grouse among USMC, USFS, USGS, BLM, CDFW, and NDOW.
- Identify and coordinate with agencies (e.g., CDFW, NDOW, USFS, and USFWS) to undertake activities to secure, manage, and improve habitat for all existing Lahontan cutthroat trout populations.
- Continue to identify projects that gather more data on federally listed species, particularly when that data can assess potential impacts from military training or if the additional may modify the conditions placed on military training, cooperating with other agencies as appropriate.
- Coordinate study designs with USFS and USFWS for federally listed species. Share reports and resulting data with USFS and USFWS.
- Ensure that anyone handling or surveying listed species have appropriate permits from USFWS, USFS, CDFW and/or NDOW.
- In accordance with the 40-year SUP, avoid concentrated activities in marshy areas or wetlands located in CARs. In addition, no disturbance activities are to occur within these areas during breeding season for the Yosemite toad and Sierra Nevada yellow-legged frog.

USMC Actions on MCMWTC:

- Develop and distribute educational materials for installation tenants that identify T&E species that occur or have potential to occur and include specific conservation measures identified in the USFS SUP.
- Conduct new surveys for greater sage-grouse within suitable habitats according to accepted protocols. Update every three years.
- Maintain data on greater sage-grouse including GIS data of potential habitat, documented sage-grouse leks, and population data if available. Cooperate with other agencies to compile data as needed.
- Identify and prioritize opportunities to improve Lahontan cutthroat trout spawning habitat through stream restoration and enhancement activities, incorporating the results from MultiMAC JV (2017a), and in cooperation with USFS and CDFW.
- Identify and prioritize opportunities to implement non-native invasive species removal within Lahontan cutthroat trout bearing streams, incorporating the results from MultiMAC JV (2017a), and in cooperation with USFS and CDFW.
- Conduct focused surveys for Yosemite toad and Sierra Nevada yellow-legged frogs where surveys have not been conducted. If they occur in areas where military training regularly occurs, implement project to identify impacts from military training and develop avoidance and/or mitigation measures.
- Incorporate results of Sierra Nevada red fox surveys and adapt management and permit conditions accordingly.
- Survey for locations and condition of whitebark pine within MCMWTC.
- Conduct noise survey and identify areas which may be impacted by noise. Evaluate the potential for noise to impact sensitive species, including T&E species.
- Evaluate protective measures based on new data and modify the measures to best protect the species, while minimizing impacts to military training. If those measures are mandated by a SUP, discuss proposed modifications as appropriate.

4.10 Regional Species of Concern Management

Primary Regulatory Drivers
- Sikes Act
- DoDI 4715.03
- MCO 5090.2A

In addition to species protected under ESA and BGEPA, there are several other categories of sensitive species that are monitored and managed for on MCMWTC. California and Nevada both have state listed species and state rankings for species rarity. USFS and BLM both identify sensitive species. Several of these regional species of concern documented within MCMWTC. Other sensitive bird species are discussed in Section 4.11. For additional

information regarding previous survey efforts, please see Davenport Biological Services & Cardno TEC, Inc. (2012) for wildlife and Reynolds & Cardno TEC, Inc. (2012) for plants. A description of these species is presented in Section 3.5.16; Appendix M lists each species and their current listing status.

The various projects that have documented species of concern are described in Section 4.1. Special status species summaries and their current status on MCMWTC are presented in Section 3.5.15. Appendix M includes all special status species, including their federal, state, USFS and BLM conservation status. Relevant spatial data is presented in Figures 3-9 and 3-10. USFS and BLM sensitive species and state listed species that are also federally listed are not discussed here but are included in Section 4.9. Management of the following species known to occur on MCMWTC is included here, with state and USFS status in parentheses and an * indicating species-specific permit conditions:

Wildlife

- Fringed myotis (USFS and BLM sensitive)
- Long-eared myotis (BLM sensitive)
- Pallid bat (USFS and BLM sensitive)
- Yuma myotis (BLM sensitive)
- American marten (USFS MIS)*
- Mountain quail (USFS sensitive)
- Bank swallow (California threatened; BLM sensitive)
- California spotted owl (USFS and BLM sensitive, currently under review by USFWS for ESA listing)*
- Flammulated owl (USFS sensitive)*
- Great gray owl (California endangered; USFS sensitive)*
- Peregrine falcon (California fully protected; USFS sensitive)*
- Swainson's hawk (California threatened; BLM sensitive)
- Northern goshawk (USFS and BLM sensitive)*

Plants

- Mono county phacelia (USFS and BLM sensitive)
- Bodie Hills rockcress (USFS and BLM sensitive)
- Bodie Hills cusickiella (BLM sensitive)*
- Tahoe draba (USFS sensitive)*
- Masonic Mountain jewelflower (USFS and BLM sensitive)*

- Long Valley milk-vetch (California rare; USFS and BLM sensitive)
- Lavin's milk-vetch (BLM sensitive)
- Mono Lake lupine (USFS and BLM sensitive)
- Father Crowley's lupine (California rare; USFS and BLM sensitive)
- Upswept moonwort (USFS sensitive)*
- Scalloped moonwort (USFS sensitive)*
- Mason's skypilot (USFS sensitive)*
- Plus 23 rare plant species with a CRPR ranking but no other state, USFS or BLM status.

The USFS permit conditions specific to these species are presented here, followed by general management recommendations for each species, and finally the USMC objectives, policies and actions for state-listed and USFS sensitive species on MCMWTC.

4.10.1 Relevant USFS Permit Conditions

There are also general permit conditions (Section 4.2), wetlands and water resources permit conditions (Section 4.4), vegetation permit conditions (Section 4.5), and other rare species permit conditions (Sections 4.9 and 4.11) that relate to managing these rare species.

The permit conditions presented here are based on the 'design features' being proposed during the NEPA and permitting process between the USMC and the USFS to update the SUPs. LOPs are indicated as relevant.

- *American Marten* – LOP: 1 May – 31 July. If a marten den site is located, maintain a LOP from 1 May – 31 July. No disturbance will be allowed within 330 feet of the den site during the LOP. Military use, including avalanche initiation (use of explosives), small arms fire, snowmobiling and other loud noise (above 85db), will not be allowed within occupied marten den site buffers during the LOP.
- *Spotted Bat and Townsend's Big-Eared Bat* – LOP: 1 November – 1 April. Establish a 100-foot buffer around roosting sites. If a site is identified as a maternity colony, no disturbance will be allowed within 330 feet from 15 April – 1 September. If a site is identified as hibernacula, no disturbance will be allowed within 330 feet from 1 November – 1 April. No personnel shall enter a cave or adit where bat roosting or hibernation may occur without a prior survey from a qualified bat biologist. Cliff faces will be surveyed to rule out roost sites prior to training activities.
- *California Spotted Owl* – LOP: 1 March – 15 August. If California spotted owls exhibiting breeding behavior are detected in the activity area, a localized nest search will be conducted by a qualified biologist. Maintain a LOP around

occupied spotted owl nest sites from 1 March – 15 August or until young have fledged. No disturbance will be allowed within 330 feet of the nest during the LOP. Avoid any disturbing activities and noise-making activities including helicopter operations and pyrotechnics during the LOP in occupied California spotted owl PACs.

- *Flammulated Owl* – LOP: 15 May – 31 July. If flammulated owls exhibiting breeding behavior are detected in the activity area, a localized nest search will be conducted by a qualified biologist. Maintain a LOP around occupied flammulated owl nest sites from 15 May – 31 July or until young have fledged. No disturbance will be allowed within 330 feet of the nest during the LOP.
- *Great Gray Owl* – LOP: 1 March – 15 August. If great gray owls exhibiting breeding behavior are detected in the activity area, a localized nest search will be conducted by a qualified biologist. Maintain a LOP around occupied great gray owl nest sites from 1 March – 15 August or until young have fledged. No disturbance will be allowed within 330 feet of the nest during the LOP. Within PACs, avoid any disturbing activities and noise-making (troop movement, bivouacs, training exercises, helicopter operations and pyrotechnics) during the LOP within occupied great gray owl ¼ mile buffer.
- *Peregrine Falcon* – LOP: none. If peregrine falcons exhibiting breeding behavior are detected in the activity area, a localized nest search will be conducted by a qualified biologist. If an occupied peregrine falcon nest is located, no disturbance will be allowed within 330 feet of the nest while it is active.
- *Northern Goshawk* – LOP: 15 February – 30 September. If northern goshawks exhibiting breeding behavior are detected in the activity area, a localized nest search will be conducted by a qualified biologist. Maintain a LOP around occupied northern goshawk nest sites from 15 February – 30 September or until young have fledged. No disturbance will be allowed within 330 feet of the nest during the LOP (except for existing roads). Within PACs (Silver Creek PAC, Mill Canyon PAC and Lost Cannon PAC), avoid any disturbing activities and noise-making (troop movement, bivouacs, training exercises, helicopter operations and pyrotechnics) during the LOP within occupied northern goshawk ¼ mile buffer.
- Rare Plants (specifically Bodie Hills cusickiella, Tahoe draba, skypilot, Alpine dusty maidens) – Apply 100-foot buffer to all occupied habitat during flowering season. No landing of aircraft, no concentrated activities on identified species occupied habitat. No concentrated live fire where the impact zone is in identified species occupied habitat. Occurrences in mitigated or extended SDZ is authorized.
- *Botrychium Ferns* – Apply 100-foot buffer to all occupied habitat during flowering season. Due to the survey effort required to detect moonwort ferns, an emphasis will be placed to maintain riparian habitats including fens, wet meadows, lake shore vegetation, in good condition. Concentrated activities will

not occur in these areas. Evidence of impacts to riparian habitats attributed to USMC activities will be restored and the site will be avoided.

- *Masonic Mountain Jewel Flower Habitat* – LOP: 1 May – 31 July (flowering season). Apply 100 foot buffer to all occupied habitat during flowering season. Avoid flowering areas when setting up climbing lanes in the north of Grouse meadows on rocky cliff side, the north of the Grouse Meadows area during the 1 May – 31 July flowering season. Other restrictions apply within rare plant occupied habitat in the eastern portion of the district during planned maneuvers. This includes buffering Masonic Mountain jewel flower occurrences as described above and conducting activities outside of the occupied habitat.
- Along the Training Corridor roads, no concentrated or disturbance activities on known sensitive species locations.

4.10.2 Management Recommendations

General management recommendations are compiled from the HTNF Plan, the Sierra Nevada Framework (Section 2.7), biological reports (Section 4.1), and the various DoD, DoN, USMC and MCMWTC policies (Section 1.7 and Appendix A), as applicable. Managing regional species of concern (i.e., state listed species, USFS sensitive species) is a core part of USFS and USMC management of the area that comprises MCMWTC. As a result, many of the management goals, strategies and guidelines identified in Section 4.4, Section 4.5 and Section 4.9 are also applicable in this section, but are not repeated here. Specifically, the Sierra Nevada Framework ROD (USFS 2004) identifies the species-specific management objectives only for California spotted owl and northern goshawk PACs:

- Avoid vegetation and fuels management activities within PACs to the greatest extent feasible.
- Reduce hazardous fuels in PACs in defense zones when they create an unacceptable fire threat to communities.
- Where PACs cannot be avoided in the strategic placement of treatments, ensure effective treatment of surface, ladder, and crown fuels within treated areas. If nesting or foraging habitat in PACs is mechanically treated, mitigate by adding acreage to the PAC equivalent to the treated acreage wherever possible. Add adjacent acres of comparable quality wherever possible.

Further the Sierra Nevada Framework ROD (USFS 2004) identifies a number of strategies and guidelines for the management of regional species of concern for achieving these targets and objectives, with the following relevant to MCMWTC:

California Spotted Owls

- Within Home Range Core Areas: Where existing vegetative conditions permit, design mechanical thinning projects to retain at least 50 percent canopy cover

averaged within the treatment unit. Exceptions are allowed in limited situations where additional trees must be removed to adequately reduce ladder fuels, provide sufficient spacing for equipment operations, or minimize re-entry. Where 50 percent canopy cover retention cannot be met for reasons described above, retain at least 40 percent canopy cover averaged within the treatment unit.

- Within PACs, where treatment is necessary, remove only material needed to meet project fuels objectives. Focus on removal of surface and ladder fuels.
- Conduct surveys in compliance with the Pacific Southwest Region's survey protocols for California spotted owls during the planning process when proposed vegetation treatments are likely to reduce habitat quality in suitable California spotted owl habitat with unknown occupancy. Designate California spotted PACs where appropriate based on survey results.
- Maintain a LOP, prohibiting vegetation treatments within approximately ¼ mile of the activity center during the breeding season (1 March through 31 August), unless surveys confirm that California spotted owls are not nesting. Prior to implementing activities within or adjacent to a California spotted owl PAC and the location of the nest site or activity center is uncertain, conduct surveys to establish or confirm the location of the nest or activity center.
- Breeding season LOP restrictions may be waived, where necessary, to allow for use of early season prescribed fire in up to 5 percent of California spotted owl PACs per year on a forest.
- For California spotted owl PACs: Conduct vegetation treatments in no more than 5 percent per year and 10 percent per decade of the acres in California spotted owl PACs in the 11 Sierra Nevada national forests. Monitor the number of PACs treated at a bioregional scale.
- While mechanical treatments may be conducted in PACs located in WUI defense zones and, in some cases, threat zones, they are prohibited within a 500-foot radius buffer around a spotted owl activity center within the designated PAC. Prescribed burning is allowed within the 500-foot radius buffer. Hand treatments, including handline construction, tree pruning, and cutting of small trees (less than 6 inches dbh), may be conducted prior to burning as needed to protect important elements of owl habitat. Treatments in the remainder of the PAC use the forest-wide standards and guidelines for mechanical thinning.

Northern Goshawks

- Conduct surveys in compliance with the Pacific Southwest Region's survey protocols for northern goshawks during the planning process when vegetation treatments are likely to reduce habitat quality are proposed in suitable northern goshawk nesting habitat that is not within an existing California spotted owl or northern goshawk PAC. Suitable northern goshawk nesting habitat is defined based on the survey protocol.

  - Maintain a LOP, prohibiting vegetation treatments within approximately ¼ mile of the nest site during the breeding season (15 February through 15 September) unless surveys confirm that northern goshawks are not nesting. If the nest stand within a PAC is unknown, either apply the LOP to a ¼- mile area surrounding the PAC, or survey to determine the nest stand location.

- Breeding season limited operating period restrictions may be waived, where necessary, to allow for use of early season prescribed fire in up to 5 percent of northern goshawk PACs per year on a forest.
- For northern goshawk PACs: Conduct mechanical treatments in no more than 5 percent per year and 10 percent per decade of the acres in northern goshawk PACs in the 11 Sierra Nevada national forests.

California Spotted Owl and Northern Goshawk PACs

- Locate fuels treatments to minimize impacts to PACs. PACs may be re-mapped during project planning to avoid intersections with treatment areas, provided that the re-mapped PACs contain habitat of equal quality and include known nest sites and important roost sites. Document PAC adjustments in biological evaluations.
- When treatment areas must intersect PACs and choices can be made about which PACs to enter, use criteria to preferentially avoid PACs that have the highest likely contribution to owl productivity.
- If nesting or foraging habitat in PACs is mechanically treated, mitigate by adding acreage to the PAC equivalent to the treated acres using adjacent acres of comparable quality wherever possible.
- Mechanical treatments may be conducted to meet fuels objectives in PACs located in WUI defense zones. In PACs located in WUI threat zones, mechanical treatments are allowed where prescribed fire is not feasible and where avoiding PACs would significantly compromise the overall effectiveness of the landscape fire and fuels strategy.
- Mechanical treatments should be designed to maintain habitat structure and function of the PAC.
- In PACs located outside the WUI, limit stand-altering activities to reducing surface and ladder fuels through prescribed fire treatments. In forested stands with overstory trees 11 inches dbh and greater, design prescribed fire treatments to have an average flame length of 4 feet or less. Hand treatments, including handline construction, tree pruning, and cutting of small trees (less than 6 inches dbh), may be conducted prior to burning as needed to protect important elements of owl habitat.
- The LOP may be waived for vegetation treatments of limited scope and duration, when a biological evaluation determines that such projects are unlikely to result in breeding disturbance considering their intensity, duration, timing and specific

location. Where a biological evaluation concludes that a nest site would be shielded from planned activities by topographic features that would minimize disturbance, the LOP buffer distance may be modified.

- Mitigate impacts where there is documented evidence of disturbance to the nest site from existing recreation, off highway vehicle route, trail, and road uses (including road maintenance). Evaluate proposals for new roads, trails, off highway vehicle routes, and recreational and other developments for their potential to disturb nest sites.

Great Gray Owls

- Conduct additional surveys to established protocols to follow up reliable sightings of great gray owls.
- Apply a LOP, prohibiting vegetation treatments and road construction within ¼ mile of an active great gray owl nest stand, during the nesting period (typically 1 March through 15 August). The LOP may be waived for vegetation treatments of limited scope and duration, when a biological evaluation determines that such projects are unlikely to result in breeding disturbance considering their intensity, duration, timing and specific location. Where a biological evaluation concludes that a nest site would be shielded from planned activities by topographic features that would minimize disturbance, the LOP buffer distance may be reduced.
- In meadow areas of great gray owl PACs, maintain herbaceous vegetation at a height commensurate with site capability and habitat needs of prey species. Follow regional guidance to determine potential prey species and associated habitat requirements at the project level.

Marten

- Protect marten den site buffers from disturbance from vegetation treatments with a LOP from May 1 through 31 July as long as habitat remains suitable or until another regionally-approved management strategy is implemented. The LOP may be waived for individual projects of limited scope and duration, when a biological evaluation documents that such projects are unlikely to result in breeding disturbance considering their intensity, duration, timing, and specific location.
- Mitigate impacts where there is documented evidence of disturbance to the den site from existing recreation, off highway vehicle route, trail, and road uses (including road maintenance). Evaluate proposals for new roads, trails, off highway vehicle routes, and recreational and other developments for their potential to disturb den sites.

4.10.3 MCMWTC Objectives

This objective, policies, and actions overlap with those for water resources (Section 4.4), vegetation management (Section 4.6) and other rare species management (Sections 4.9 and

4.11). Federally listed and other federally protected species will always receive priority management and funding over state listed species. State listed species will always receive priority management and funding over other rare species. In the case of MCMWTC, priority management and funding may be implemented for other rare species due to permit conditions and agreements with USFS.

Objective 1: To conserve the habitat and populations of state and USFS sensitive species known on MCMWTC.

USMC Policies on MCMWTC:

- USMC will consider BLM sensitive species when planning for use of BLM lands.
- Coordinate with USFS on study design for projects on USFS sensitive species and share results and data.
- Coordinate with USFS and CDFW or NDOW on study design for projects on California or Nevada listed species and share results and data. For rare species tracked by NDOW or CDFW, share data to assist in their population tracking.
- Ensure that anyone handling or surveying listed species have appropriate permits from USFWS, USFS, CDFW and/or NDOW.
- Comply with relevant SUP conditions (Section 4.2 and Section 4.10.1).
- Avoid sensitive habitat areas (i.e., wetland and riparian areas) during training and project permitting, preventing damage to sensitive areas, and rehabilitating damaged areas.
- As additional information from surveys is gathered on MCMWTC regarding rare species, refine management strategies, actions and USFS permit conditions.

USMC Actions on MCMWTC:

- Maintain GIS geodatabase of regional species of concern that have been identified during surveys.
- Conduct a comprehensive bat inventory, with an emphasis on identifying roosting sites, maternity colonies, and hibernacula of bat species of concern. Update the bat inventory every five years.
- Cooperate with USFS to conduct surveys for nesting birds each year in areas where training is planned, particularly for northern goshawk and sensitive owls.
- Conduct owl survey to confirm overall presence or absence of the sensitive owls in MCMWTC. Coordinate with USFS to revise permit conditions to reflect documented presence/absence of sensitive owls.
- Conduct surveys for goshawk within suitable habitats that occur within 1.3 miles of training activities in accordance with accepted protocols. Active nests should be identified and annually monitored.

- Conduct great gray owl surveys to verify continued presence and implement restrictions according to results.
- Conduct rare plant surveys to map occupied habitat. Repeat surveys regularly until population stability is documented. Then conduct surveys every five years.
- Conduct a statistically robust population monitoring program for the American marten, including an evaluation of abundance and microhabitat use.
- Conduct a wildlife inventory every five years.

4.11 Other Special Status Bird Management

Primary Regulatory Drivers
- Sikes Act
- DoDI 4715.03
- MCO 5090.2B
- Migratory Bird Treaty Act
- Fish and Wildlife Conservation Act
- Fish and Wildlife Coordination Act
- EO 13186

All neotropical migratory birds, which include many of the species found at the facility, are generally protected from "take" under the MBTA (50 CFR 10). BCC, last updated in 2008, are migratory and non-migratory birds that without additional conservation actions are likely to become candidates for listing under the ESA. Appendix M includes all special status species, including their federal, state, USFS and BLM conservation status. In addition, the DoD participates in PIF and priority bird species for monitoring on DoD lands have been identified. As described in Section 4.1, a number of projects have resulted in documenting bird species present on MCMWTC. A total of 20 species protected under MBTA, 12 BCC, and 6 DoD PIF priority species have been documented on MCMWTC. Since there is much overlap between these lists, the result is a total of 20 bird species with one or more of these designations. Of those 20 species, 2 are federally protected under ESA or BGEPA (Section 4.9), 5 are state listed, and 11 are USFS sensitive species (Section 4.10).

The USFS permit conditions for rare birds not covered previously are presented here, followed by general management recommendations, and finally the USMC objectives, policies and actions for rare birds on MCMWTC.

4.11.1 Relevant USFS Permit Conditions

There are also general permit conditions (Section 4.2), wetlands and water resources permit conditions (Section 4.4) and vegetation permit conditions (Section 4.5) that relate to wildlife management.

- *Migratory/USFS MIS Birds* – LOP: 15 May – 31 August. If ground disturbing activities (including tree/vegetation removal) are planned between 15 May and 31 August, then the area should be surveyed for nests or evidence of nesting prior to implementation. If nests are observed, a minimum 100 foot buffer should be delineated to prevent disturbance to nests until they are no longer active.

4.11.2 Management Recommendations

General management recommendations are compiled from the HTNF Plan, the Sierra Nevada Framework (Section 2.7), biological reports (Section 4.1), and the various DoD, DoN, USMC and MCMWTC policies (Section 1.7 and Appendix A), as applicable. Managing migratory birds is a core part of USFS and USMC management of the area that comprises MCMWTC. As a result, many of the management goals, strategies and guidelines identified in Sections 4.4-4.10 are also applicable in this section, but are not repeated here. DoD PIF is a national group that provides assistance to DoD installations with respect to avian management and they provide several resources for specific types of management.

4.11.3 MCMWTC Objectives

This objective, policies, and actions overlap with those for water resources (Section 4.4), vegetation management (Section 4.6) and other rare species management (Sections 4.9 and 4.10).

Objective 1: Enhance, conserve, and monitor MBTA, BCC, and DoD PIF species and associated habitat within the installation.

USMC Policies for MCMWTC:

- Participate in DoD's PIF program to conserve and manage neotropical birds and their habitat.
- Evaluate proposed activities and construction projects for their likelihood to kill, injure, or significantly disturb MBTA and BCC birds and mitigate for potential impacts.
- Cooperate with USFWS to develop appropriate and reasonable conservation measures to minimize or mitigate identified significant adverse effects migratory birds and BCC.
- Ensure that anyone handling or surveying listed species have appropriate permits from USFWS, USFS, CDFW and/or NDOW.

USMC Actions for MCMWTC:

- Maintain a bird checklist for migratory and resident species that use the installation.
- In conjunction with other agencies, review and update migratory bird data for MCMWTC during peak migration periods and during nesting season.
- Update bird surveys on MCMWTC every five years, with an emphasis on the priority DoD PIF species, BCC species and MBTA species. When possible, identify breeding habitat for MBTA species during these surveys. These surveys

may be done in conjunction with other bird surveys for federally or state listed species or USFS sensitive species.

4.12 Forest Management

Primary Regulatory Drivers
- Sikes Act
- DoDI 4715.03
- MCO 5090.2A

MCMWTC owns lands potentially suitable for silvicultural activities, although it is of limited acreage. A program is under consideration where revenue from timber sales on USMC owned lands would be used to support natural resources activities. The following measures support forest management activities within DoD owned lands as well as comply with USFS requirements to protect timber trees on USFS land.

4.12.1 Relevant USFS Permit Conditions

There are also general permit conditions (Section 4.2), wetlands and water resources permit conditions (Section 4.4), vegetation permit conditions (Section 4.5), wildfire and fuels (4.6) and invasive species and integrated pest permit conditions (Section 4.7) that relate to forest management.

- The USMC will prevent unnecessary damage to forest tree seedlings, saplings, pole timber, and saw timber to the extent possible. The USMC will contact the USFS whenever timber is planned for removal from National Forest lands and the USFS, in coordination with the MCMWTC, will then determine the method of disposal.
- The USMC will be responsible for timber or trees cut through mistake, damaged with or without negligence, or willfully cut or unnecessarily damaged in training exercises. Liquidated damages will be governed by the USFS Manual relating to timber appraisals.
- The USMC is authorized to use any dead or down timber in connection with training activities or for camp use without further consultation with the USFS. A fuel wood permit will be required if wood is removed from the TA. Live trees will not be cut for survival structures. Abatis training will be approved on a case by case basis.
- Military personnel will not carve into trees and will not damage existing tree carvings.

4.12.2 Management Recommendations

General management recommendations are compiled from the HTNF Plan, the Sierra Nevada Framework (Section 2.7), biological reports (Section 4.1), and the various DoD, DoN, USMC and MCMWTC policies (Section 1.7 and Appendix A), as applicable. Managing wildlife is part of the Sierra Nevada Framework. The Sierra Nevada Framework

ROD (2004) management goals, strategies, and guidelines for forest management relevant to MCMWTC are included above in vegetation management (Section 4.5), wildfire and fuels management (Section 4.6) and invasive species and IPM (Section 4.7).

4.12.3 MCMWTC Objectives

Objective 1: Manage the DoN administered forest lands to promote a healthy, natural forest ecosystem.

USMC Actions on MCMWTC:

- Conduct a silvicultural inventory within DoN lands. Quantify variables contributing to good quality habitat.
- Promote high quality forest habitat on DoN lands through selective thinning.
- Implement pre-commercial thinning, as appropriate, incorporating protective measures for sensitive species, vegetation and water resources.
- Cooperate with USFS to evaluate and control for the presence of tree pests and pathogens (i.e., pine beetles) within forested areas.
- Maintain BMPs for all forestry related activities.

4.13 Agricultural Outleasing and Grazing Management

There is agricultural outleasing and grazing on USFS-managed land within MCMWTC, through USFS agreements. These agreements are implemented in accordance with USFS policies and regulations. There are no agricultural or grazing outleases on DoN-administered land within MCMWTC, although they may be considered in the future if they support the mission and natural resources management on MCMWTC.

Primary Regulatory Drivers
- Sikes Act
- DoDI 4715.03
- MCO 5090.2B

There are five USFS grazing allotments within the limited use area and one USFS allotment at the special use area, with only four active allotments currently. These grazing allotments are issued by the USFS to private entities, in addition to the military use of these areas. The details of these allotments are described in Section 3.2.2.9.

4.13.1 Relevant USFS Permit Conditions

There are also general permit conditions (Section 4.2), wetlands and water resources permit conditions (Section 4.4) and vegetation permit conditions (Section 4.5) that relate to wildlife management.

- USMC is responsible for the removal of cattle or horses on USFS lands as a result of damage to fences by military training. The USMC will repair to the USFS standards or pay for repair of fences damaged by military training.
- Pasture fences will not be cut or removed by troops. Fences will be avoided by military vehicles. Pasture gates will be left as they were found, either closed or open.
- The following safe distances are required whenever engines and rotors are running (excluding remote-controlled aircraft) to prevent animals from being injured by debris:
  - Aircraft will not hover over any animal at a distance closer than 100 feet
  - Aircraft will not fly over any animal at a distance closer than 50 feet.
  - Shotguns, semiautomatic shotguns and guns using blanks shall not be fired any closer than 25 feet from any animal.

4.13.2 Management Recommendations

General management recommendations are compiled from the HTNF Plan, the Sierra Nevada Framework (Section 2.7), biological reports (Section 4.1), and the various DoD, DoN, USMC and MCMWTC policies (Section 1.7 and Appendix A), as applicable. There are a number of grazing objectives, strategies, and guidelines in the Sierra Nevada Framework; however, they are not applicable to this INRMP. The USMC would not undertake grazing on USFS-administered lands and grazing on DoN-administered lands would not follow the same guidelines. The grazing allotments administered by USFS do follow the Sierra Nevada framework but the USMC has no authority over those allotments. In general, if any agriculture outlease or grazing were considered for MCMWTC on DoN-administered lands, then the USMC would ensure that it was implemented to avoid and minimize impacts to sensitive species, vegetation and water resources, in line with the rest of this INRMP.

4.13.3 Objectives and Recommendations

Objective 1: Minimize impacts to military training from agricultural activities within MCMWTC.

USMC Policies on MCMWTC:

- Assist and cooperate with the USFS to ensure that grazing allotments are managed according to the Sierra Nevada Framework and in accord with their individual agreements.
- Comply with SUPs permit conditions with respect to the grazing allotments.
- Evaluate all potential environmental impacts if an agricultural outlease and/or grazing program is considered for the DoN-administered portions of MCMWTC.

- Better communication and coordination will be established between the USFS, their lessees, and the USMC to facilitate timing of grazing to minimize conflicts with military training.

USMC Actions on MCMWTC:

- Maintain fences and gates as necessary to keep cattle out of natural habitat areas.
- Signs in Spanish and English will be erected stating that DoN-administered lands are off-limits for grazing. These signs and their maintenance will be given funding priority.

4.14 Outdoor Recreation Management

Primary Regulatory Drivers
- Sikes Act
- DoDI 4715.03
- Outdoor Recreation - Federal/State Programs Act

According to the SAIA, the DoN is required to provide outdoor recreation and interpretive opportunities to the public but only when it is compatible with military needs and security. In the event of potential conflicts of use, sound biological management practices shall prevail. As the majority of the installation is located on USFS lands which is primarily used for recreation, the sustained public access and use of natural resources for educational or recreational purposes that are compatible with MCMWTC mission activities is achieved within all areas that are open to public use. This multi-use is required by the SUPs issued by the USFS.

4.14.1 Relevant USFS Permit Conditions

There are also general permit conditions (Section 4.2) that relate to outdoor recreation.

- No military training will occur on the Pacific Crest Trail.
- No motorized vehicles are allowed to drive on or cross Pacific Crest Trail.
- Vehicles are permitted only on designated motorized trails.
- No motorized vehicles on non-motorized trails or off motorized trails (Use of motorized vehicle off designated roads or motorized trails is prohibited).

4.14.2 Management Recommendations

General management of outdoor recreation on MCMWTC is guided by the various DoD, DoN, USMC and MCMWTC policies (Section 1.7 and Appendix A), as applicable, on DoN-owned land. The HTNF Plan (USFS 1986) guides public access on the HTNF, including areas within the MCMWTC boundaries. It recognizes the limited-use area (TAs) as important special land uses and specifies the following regarding public access to these areas:

1. allow for general public use of the area in addition to USMC use; and
2. provide for public access to the Silver Creek road through and/or around the Base Camp.

4.14.3 MCMWTC Objectives

Objective 1: Promote compatible, sustainable outdoor recreation opportunities which enhance quality of life for military personnel, while conserving natural resources, and without compromising military readiness.

USMC Policies on MCMWTC:

- Comply with public use requirements in the USFS SUPs.
- Continue to provide accessible recreation opportunities for disabled veterans, disabled Americans, and their families.
- Manage outdoor recreation to allow public access but prevent conflicts with the military mission and in accordance with DoD and USMC regulations.
- Continue to promote recreation activities for installation personnel and public while protecting the natural environment.

USMC Actions on MCMWTC:

- Educate stationed and visiting Marines and their families about adhering to MCMWTC good-neighbor policies. Ensure that Marines are aware of prohibited activities identified in the SUP such as fishing restrictions in Silver Creek, Wolf Creek, and Mill Creek.
- Identify opportunities to improve nature trails to benefit the public and natural resources.

4.15 Public Outreach

It is DoD policy to encourage a conservation ethic by providing an understanding of the need to protect and conserve natural resources and the environment through good stewardship. An important objective of such programs is to gain proper public recognition of excellent stewardship.

Primary Regulatory Driver
- Sikes Act
- MCO 5090.2A

4.15.1 Relevant USFS Permit Conditions

The inclusion of CA-1 in the USFS SUPs indicates how important public outreach is for the USFS on MCMWTC. CA-1 can only be used by the USMC only for environmental education and public outreach.

4.15.2 Management Recommendations

There are no general management recommendations for public outreach available from regional sources. In general, public outreach will be guided by the various DoD, DoN, USMC and MCMWTC policies (Section 1.7 and Appendix A), as applicable.

4.15.3 MCMWTC Objectives

Objective 1: Promote sustainable public outreach opportunities compatible with mission requirements.

USMC Policies on MCMWTC:

- Host organized activities open to the public as compatible with military mission and security requirements.
- Identify opportunities to provide adequate public notice regarding day-to-day training activities (e.g., social media, website etc.).
- Continue raising MCMWTC visibility as a community partner.
- Maintain a current schedule of outreach activities to ensure a balance of monthly government, regulatory and community activities.
- Provide for public access to the Silver Creek road through and/or around the Base Camp.
- Use various media to create and maintain awareness of station personnel, general public, and lease and easement holders of the sensitivity, values, and obligations regarding the conservation of Special Status Species and their habitat.
- Coordinate with universities, other government agencies, and non-governmental organizations (NGOs) for large research endeavors.

USMC Actions on MCMWTC:

- Develop educational conservation materials for residents and tenants.
- Ensure proper DoD signs are posted in all areas that contain RHUs, dangerous/hazardous materials, unexploded ordnance and/or are outside of live fire range SDZs. Include informative information regarding timing of training activities (i.e., summer rock climbing, winter snow training etc.).
- Continue to implement a comprehensive public outreach program designed to inform the public about the MCMWTC and its mission, facilitate coordination with other agencies and public stakeholders, and reduce conflicting uses of MCMWTC lands.
- Sponsor conservation volunteer programs for trail maintenance and habitat restoration efforts, etc.

- Natural resources personnel shall have opportunities to participate in natural resource management job training activities and professional meetings, which helps convey the MCMWTC mission and natural resources program to various audiences.

4.16 Data Management

Primary Regulatory Driver
- MCO 5090.2A

MCMWTC uses GIS to manage information about the installation's environment and resources. GIS allows users to store and manipulate temporal and spatial data (e.g., maps, aerial photos, satellite images). GIS data are used to process and analyze information used in natural resources management. The primary GIS software used is ArcGIS by ESRI. The currently available GIS data for MCMWTC is summarized in Table 4-1.

Table 4-1. GIS Data Available for MCMWTC

GIS Data	Source(s)	Comment
MCMWTC Approved Use Boundary	USMC (MWTC_Inst_Area)	Not verified by real property. Discrepancies noted, particularly with respect to eastern boundary and private property. Updated based on CDFW GIS data.
Land Ownership	USFS (Surface_Owner_Parcel_detailed) combined with Mono County parcel data.	Not verified by real property. Consistent with USFS data.
Buildings, Fences	USMC	
Transportation (roads)	USMC, USFS, Mono County	
Drop Zones, Landing Zones,	USMC (Certified_Dropzones, Helicopter_Tiltrotor_LZ)	Verified by MCMWTC range control. Unofficial GIS data.
Training Areas, Transit Corridors, Training Ranges	Cardno TEC (Training_Areas, Training_Ranges, Proposed_Alt_Training Corridors)	GIS data from the draft Operations EA
Elevations	USMC	High resolution contour lines for parts of MCMWTC
National Forest Boundary, Bridgeport Ranger District Boundary	USFS (Administrative_Forest and Ranger_District)	
Streams, lakes, watersheds, and other open water	National Hydrology Dataset; Cardno TEC, Inc. 2012; NAVFAC Southwest 2010	Each data source has slightly different information. Recommend merging them together into one master dataset for MCMWTC. New data from 2015 reports not incorporated.
Wetlands	NAVFAC Southwest 2010; Cardno TEC, Inc. 2012; National Wetlands Inventory (CMFHA only)	Each data source has slightly different information. Recommend merging them together into one master dataset for MCMWTC.
Floodplains	Federal Emergency Management Agency	
Soils	Natural Resources Conservation Service	

Table 4-1. GIS Data Available for MCMWTC (continued)

GIS Data	Source(s)	Comment
Vegetative Communities	NAVFAC Southwest 2010; Reynolds and Cardno TEC, Inc. 2012; USFS 2004/2009	Only USFS covers the entire installation and areas in Nevada.
Critical Aquatic Refuges, Riparian Conservation Areas	USFS	Dated 2006, from Sierra Nevada Framework files
Noxious weed locations and species	Reynolds & Cardno TEC, Inc. 2012	
Rare plant locations and species	NAVFAC Southwest 2010; Reynolds & Cardno TEC, Inc. 2012	
Wildlife observations	Davenport Biological Services & Cardno TEC, Inc. 2012; Data provided by USFS	All data provided by the USFS is data from the draft Operations EA
Protected Wildlife Areas	USFWS (Critical Habitat); USFS	All data provided by the USFS is data from the draft Operations EA

4.16.1 Relevant USFS Permit Conditions

There are no permit conditions regarding data management specifically; however, the USMC is required to coordinate any research activities and resulting data with the USFS for projects on USFS lands.

4.16.2 MCMWTC Objectives

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

USMC Policies on MCMWTC:

- Store, analyze and maintain data for research and survey projects involving natural resources on MCMWTC, making the information accessible and readily available to multiple users. Data shall be maintained in a Spatial Data Standards for Facilities, Infrastructure, and Environment compliant manner.
- Ensure all global positioning system (GPS) hardware, software, and maintenance agreements are current. Ensure these are technologically advanced and capable of withstanding extreme mapping conditions (e.g., weather).
- Ensure that the GIS specialist responsible for operating and maintaining the system annually obtains focused training regarding current technologies and uses of GIS technology as related to natural and cultural resource management on a military installation.

USMC Actions on MCMWTC:

- Develop a standard for developing GIS database dictionaries and associated metadata for all MCMWTC GIS coverage.

- Maintain an inventory of surveys/projects and associated GIS data conducted by the CDFW, NDOW, USFS, and USFWS that occur within MCMWTC lands. Integrate GIS data between USMC and USFS to facilitate natural resources management and other communications.
- Update master GIS datasets as new data become available.

4.17 Climate Change and Regional Growth

Primary Regulatory Drivers
- Sikes Act
- DoDI 4715.03
- MCO 5090.2A

Scientific research indicates that global warming will have long-term, irreversible, adverse consequences on natural resources, including terrestrial and aquatic habitats. The California SWAP (CDFW 2005, 2015a) identifies climate change as one of four primary stressors affecting wildlife, along with growth and development, water management conflicts, and invasive species, and makes recommendations to include climate change science in restoration work. Models are the only way to project future changes for the MCMWTC and the surrounding region, and to evaluate needed research, data collection, and potential management strategies. However the use of models to explore the potential implications of climate change is rife with uncertainty. A range of scenarios is possible using accepted models, and local data sets need to be developed and integrated through collaboration and consensus.

The recently updated guidance for DoD INRMPs added a requirement to address climate change in INRMPs. It states that "the evidence for climate change is extensive and has generated consensus in the scientific community. Addressing climate change poses a new challenge for natural resources managers who will need to understand changes in ecosystem structure and function anticipated from climate change, in addition to understanding ecosystems as they function now and as they have in the past." The guidance continues with a framework for addressing climate change issues, and this is incorporated in the strategies outlined below.

4.17.1 Relevant USFS Permit Conditions

There are no USFS permit conditions with respect to climate change.

4.17.2 MCMWTC Objectives

Objective: Adapt and mitigate the adverse impacts of climate change through annual goal setting based on science-based scenarios, targets, collaborative planning, and adaptive management.

USMC Policies on MCMWTC:

- Collaborate with USFS and other partners to improve models, assess vulnerabilities, and develop graphical depictions of the potential impacts from climate change on MCMWTC.
- Establish partnerships for collaboratively addressing regional climate change issues, as needed and feasible.
- Provide for the management of threatened, endangered, and other special status species such that changes in distribution and abundance may be understood in the context of climate change.

USMC Actions on MCMWTC:

- Identify species and communities resilient/vulnerable to climate change impacts by collaborating with partners in conducting climate change vulnerability assessments.
- Collaborate with researchers to improve the application of models through data collection and validation (as feasible and needed) and for using such science based models in environmental and natural resource management planning.
- To the extent necessary, improve the graphical depiction of the potential impacts of climate change scenarios for MCMWTC to address anticipated shifts in species ranges and population abundances in climate change vulnerability assessments.

4.18 Conservation Law Enforcement Management

Primary Regulatory Drivers
- Sikes Act
- DoDI 4715.03
- MCO 5090.2A

There is currently no conservation law enforcement officer on MCMWTC. There is a USFS Law Enforcement Officer and a CDFW Game Warden in the area. Conservation law enforcement officer support on MCMWTC is coordinated with either USFS or CDFW depending on the situation. In addition, the USFWS has a Law Enforcement Officer in Reno, Nevada that can provide support for incidents with migratory birds, eagles and federally listed species.

SECTION 5
IMPLEMENTATION

5.1 Prescription Preparation

The USMC will manage natural resources to ensure sustainable use of these resources on MCMWTC. This INRMP is not intended to impair the ability of the USMC to perform its mission. However, the INRMP does identify usage restrictions on sensitive resources in accordance with applicable federal laws and USFS permits. Section 3.5 summarizes those constraints and Appendix F provides a natural resources Constraints Map for the installation. Section 4 summarizes the USFS permit conditions, general management recommendations and the MCMWTC objectives for each natural resources area. These all lead to the development of specific projects and associated prescriptions.

Implementation of this updated INRMP will be realized through the accomplishment of specific goals and objectives as measured by the completion of projects described herein (refer to Appendix G). An INRMP is considered implemented if an installation:

- Actively requests, receives, and uses funds for "must fund" projects and activities;
- Ensures that sufficient numbers of professionally trained natural resources management staff are available to perform the tasks required by the INRMP;
- Coordinates annually with cooperating agencies; and
- Documents specific INRMP action accomplishments undertaken each year.

Appendix G presents a summary of management measures to implement this INRMP. This includes both in-house activities, which may not require funding, as well as those that have project numbers and will require funding to implement. Only those measures where the USMC plays a role in management responsibility are presented in these two tables.

5.2 Natural Resources Priorities and Funding Classifications

Management programming and budgeting priority levels are detailed in DoDI 4715.03, which implements policy, assigns responsibilities, and prescribes procedures for funding the integrated management of natural and cultural resources on property under DoD control. Budget priorities are also described in MCO P5090.2A. Budget priorities for federally T&E species management, especially compliance with BOs, receive the highest possible budgeting priority, and supports the need to avoid critical habitat designations under Section 4(b)(2) of the ESA or Section 4(a)3 of the ESA (exemption from critical habitat designations for national security reasons). The budgeting plan for the INRMP is based on programming and budgeting priorities for conservation programs described in DoDI 4715.03 and Marine

Corps Installations Command Common Output Levels of Service (COLS) (August 2014). Funds will be requested for tasks within the INRMP, with priority given to COLS 3, COLS 2, COLS 1 projects, in that order, based on this guidance. Accordingly, the projects recommended in this INRMP have been prioritized based on compliance and risk to the mission and to compliance.

The highest priority (COLS 3) is assigned to projects or activities based compliance with federal legal requirements, such as under the ESA, CWA, or MBTA.

Funding is routinely programmed at least three years in advance of project implementation. Funding classes per Marine Corps Installations Command guidance are presented below:

1. COLS 3: Core requirements of the natural resources program to maintain compliance and implement essential elements.
2. COLS 2: Additional core requirements but the risks associated with non-completion are lower and unlikely to jeopardize program or result in non-compliance.
3. COLS 1: Additional requirements that enhance the core program and lower risk but are not necessary for compliance.

The DoN assigns an additional assessment level to projects to assist in recognizing appropriate funding sources. The following descriptions of Navy Assessment Levels are summarized from the Environmental Readiness Program Manual (DoN 2014). After each description is the approximate equivalent DoD Class.

- Level 1 (Federal and State Regulation). Level one requirements are those prescribed by existing laws, regulations, and EOs. These projects/ongoing efforts include responding to applicable federal, state and local laws and regulations. Level one also includes costs of ongoing compliance, such as: manpower, training, travel, and program management (same as DoDI 4715.03 Classes 0 & I).
- Level 2 (Navy Policy). Requirements derived from DoD and/or Navy policy. These projects/proposed efforts are not mandated by law or other federal, state or local regulations/orders, but reflect implementation of Navy and DoD policy decisions and initiatives (same as DoDI 4715.03 Class I).
- Level 3 (Pending Regulation). Requirements derived from pending federal, state or local regulations under development (where publication is scheduled). Using, if available, model state regulation/permit standards (same as DoDI 4715.03 Class I).

- Level 4 (Future Requirements). Requirements derived from future potential federal, state or local legislation. These requirements are speculative in nature (same as DoDI 4715.03 Class II).
- Level 5 (Leadership Initiatives). Requirements based on local proactive Navy initiatives not mandated by law, regulation, EO or policy (same as DoDI 4715.03 Class III).

Budget priorities for T&E species management, especially compliance with BOs, receive the highest possible budgeting priority, and supports the Installation's need to avoid critical habitat designations under Section 4(b)(2) of the ESA, or Section 4(a)(3) of the ESA (exemption from critical habitat designations for national security reasons).

5.3 Funding

Implementation of this INRMP is subject to the availability of funding every FY. The installation requests project validation and funding through a variety of resources. Funding for the staff and standard supplies comes from direct funding sources. The DoN and USMC intend to implement recommendations in this INRMP within the framework of regulatory compliance, national DoN and USMC mission obligations, anti-terrorism and force protection limitations, and funding constraints. The execution of any of the INRMP projects will be dependent on the availability of appropriate funding sources. Any requirement for the obligation of funds for projects or actions in the INRMP shall be subject to the availability of funds appropriated by Congress, and none of the proposed projects or actions shall be interpreted to require obligations or payment of funds in violation of any applicable federal law, including the Anti-Deficiency Act, 31 USC § 1341.

High priority compliance projects to meet legal obligations are generally funded within annual budget constraints, but future federal budgets could decrease available funding for both compliance and lower ranked stewardship projects. Annual funding for all conservation projects are ranked on a regional basis and each project must compete for available funds among multiple USMC installations. It is the USMC's policy to promote long term mission and environmental sustainability measures, including good stewardship practices, and all valid compliance and stewardship requirements are submitted for consideration during budget programming cycles.

Environmental compliance funds are special operations and maintenance (O&M) funds that are funded by DoD, but still subject to O&M funds restrictions. Compliance with laws is the key to acquiring environmental compliance funding. The program heavily favors high priority funding projects that will create or maintain compliance with federal or state laws, especially if noncompliance is backed by Notices of Violation or other enforcement agency action.

The following discussion of funding options is not all-inclusive of funding sources. Since many funding sources rely on a variety of grant programs, award criteria and amounts can change considerably from one year to another. Funding through grant programs can occur on a one-time award, annually, or in multiples of years.

Department of Defense Funds

DoD funds are requested through MCMWTC Environmental Division, where the Natural Resources Branch identifies natural resource conservation projects and requests funding. The costs of executing INRMP actions may be funded from a variety of DoD sources. The primary funding sources for the MCMWTC natural resources program includes:

1. O&M Environmental Funds. Environmental funds are a subcategory of O&M funds. Environmental funds are primarily used for compliance-related needs. The majority of natural resource projects are funded with O&M environmental funds. These appropriated funds are the primary source of resources to support just-in-time environmental compliance, (i.e., Level 1 projects). O&M funds are generally not available for Level 2 thru 5 projects.
2. The DoD Legacy Resource Management Program (Legacy Program) is a special congressionally mandated initiative to fund military conservation projects. Although the Legacy Program was originally only funded from 1991 to 1996, funds for new projects have continued to be available through this program. The Legacy Program can provide funding for a variety of conservation projects, such as regional ecosystem management initiatives, habitat preservation efforts, archaeological investigations, invasive species control, monitoring and predicting migratory patterns of birds and animals, and national partnerships and initiatives. [Note: Ongoing work at MCMWTC by Erica Fleishman is funded by this program.]
3. Fish and Wildlife Fees. These fees are associated with fishing and hunting permits that are collected by the installation. MCMWTC does not collect any fishing or wildlife permit fees, so this is not a viable funding source for MCMWTC.
4. Agricultural Outlease Funds. Money collected by leasing DoD-owned property for agricultural use is directed back into the natural resources program and reallocated throughout the DoN by NAVFAC HQ. These are the broadest use funds available exclusively to natural resource managers. However, proceeds must be used exclusively to fund natural resources management requirements and the administrative expenses of agricultural and grazing leases. Due to the limited DoN owned land on MCMWTC, this is also not a viable funding source for the natural resources program.
5. Forestry Funds. Revenues from the sale of forest products from DoN owned lands are a source of funding for natural resources management programs. Forestry

revenues provide funds for the annual DoN forestry funds and the DoD Forestry Reserve Account. Due to the limited DoN owned land on MCMWTC, this is also not a viable funding source for the natural resources program.

Appendix G includes cost estimates, funding classification, and projected timeframes for the implementation of projects that are proposed to support implementation of this INRMP. Detailed tables of prescriptions that drive the INRMP projects are also included in Appendix G. These proposed projects are evaluated during annual reviews and the next year's priorities are identified as well as any necessary changes to the project list.

5.4 Use of Cooperative and Interagency Agreements

In addition to those permits issued by the USFS to the USMC specifically for MCMWTC Bridgepeort (described in detail in Section 3.2), there are a number of cooperative agreements in place at a national or regional level that benefit natural resources on MCMWTC.

Intra- and inter-agency cooperation, coordination, and communication at the federal, state and local levels (e.g., USFWS and CDFW) are requisite to the success of the INRMP. The USFWS and CDFW review the INRMP and its implementation. Specialized expertise is required to adequately manage natural resources at the MCMWTC. Technical assistance will be sought from federal and state agencies, universities, and special interest groups as needed. Additional technical assistance is also available through the following two DoD initiatives.

- DoD Partners in Amphibian and Reptile Conservation (PARC) – initiative to support management of reptiles and amphibians on military installations. More information at http://www.dodnaturalresources.net/DoD-PARC.html.
- DoD PIF – initiative to support management of birds on military installations. It is part of the international PIF partnership and facilitates connections between DoD entities and other PIF partners. More information at http://www.dodpif.org/.

In addition, the DoD and subcommand entities have MOUs, Memoranda of Agreement (MOAs), and other cooperative agreements with other federal agencies, conservation and special interest groups, and various state agencies in order to provide assistance with natural resources management at installations across the United States. Generally, these agreements allow installations and agencies or conservation and special interest groups to obtain mutual conservation objectives. The DoD agreements applicable to the MCMWTC include:

- MOU between DoD and USFWS / Association of Fish & Wildlife Agencies for a Cooperative Integrated Natural Resource Management Program on Military Installations associated with the ecosystem-based management of fish, wildlife, and plant resources on military lands (2013).

- MOU between DoD and USFWS to promote the conservation of migratory birds (2011).
- MOU between the DoD and USEPA to form a working partnership to promote environmental stewardship by adopting IPM strategies to reduce the potential risks to human health and the environment associated with pesticides (2012).
- MOA for Federal Neotropical Migratory Bird Conservation Committee ("Partners in Flight-Aves De Las Americas") among DoD, through each of the Military Services, and over 110 other federal and state agencies and NGOs (1991). In addition, the USAF signed an addendum to this MOA, thereby including itself in the agreement (1991).
- MOU between the DoD and Ducks Unlimited, Inc. to provide a foundation for cooperative development of selected wetlands and associated uplands in order to maintain and increase waterfowl populations and to fulfill the objectives of the North American Waterfowl Management Plan, within the context of DoD's environmental security and military missions (2006).
- MOU between DoD and Natural Resources Conservation Service (NRCS) to promote cooperative conservation where appropriate (2006).
- MOU with Watchable Wildlife Incorporated (2002).
- MOU between the DoD and Bat Conservation International to identify, document and maintain bat populations and habitats on DoD installations (2011).
- Cooperative Agreement between DoD and The Nature Conservancy to work cooperatively in areas of mutual interest (2010).
- MOU between the DoD and USDA, including the USFS, for conservation of forests, vegetative cover, soil, and water on lands administered by DoD. Written plan between USFS and DoD for carrying out their separate activities in a coordinated and mutually beneficial manner and for documenting a framework for cooperation (MOU # 1533.06, 1990).
- Master Agreement between the DoD and USDA concerning the use of National Forest lands for military activity. This agreement replaced the Joint Policy Statements of the 1950's. (Agreement #1533.1, 1988).

For a further list of cooperative agreements and MOUs please visit http://www.denix.osd.mil/nr/LegislationandPolicy/MOUsandMOAs.cfm. The USDA agreements can be found at http://www.fs.fed.us/im/directives/fsm/1500/1533-1533.1.txt.

5.5 Staffing

The management of natural resources requires specialized skill sets. There are two full time staff within the Natural Resources Department on MCMWTC. Additional staffing is available through contractor support and NAVFAC Southwest.

Adequate training of natural resource personnel is important to the success of military sustainability and land management as identified in the SAIA and DoDI 4715.03. MCO P5090.2A Chapter 5 requires that USMC commands develop, implement, and enforce the management plan through personnel with professional training in natural resources. Natural resources programs shall support military readiness and sustainability, and commands shall assign specific responsibility, provide centralized supervision, and assign professionally trained personnel to the program. Natural resources personnel shall be provided an opportunity to participate in natural resource management job training activities and professional meetings.

5.6 Natural Resources Metrics Update

The DoN has also developed a set of Metrics to provide a standard method for the collection and reporting of business metric information for Natural Resources programs. The Metrics are used to determine how well the DoN and USMC are doing with respect to natural resources management and INRMP implementation across their installations. The Metrics is comprised of seven focus areas for which each installation is to evaluate the effectiveness of the INRMP on an annual basis. As presented in Section 1.8.2 of this INRMP, these focus areas include:

1. **INRMP Implementation –** Evaluate the execution of actions taken to meet goals and objectives outlined in the INRMP.
2. **Species and Habitats –** Evaluate the extent to which federally listed species have been identified and the INRMP provides conservation benefits to these species and their habitats.
3. **Ecosystem Integrity –** Evaluate the current status, management effectiveness, and trends of the ecosystems at the installation to support and maintain a community of organisms that have a species composition, diversity, and functional organization comparable to those in the respective region. This Focus Area is intended to define the ecosystems that occur on the installation and assess the integrity of those ecosystems.
4. **Public Access and Use –** Evaluate the availability and adequacy of public recreational use opportunities, such as fishing and hunting, and access for handicapped and disabled persons, given security and safety requirements for the installation.

5. **Team Adequacy –** Asses the adequacy of the natural resources team (the natural resource management professional and installation support staff) in accomplishing INRMP goals and objectives at each installation.
6. **Partnership Effectiveness –** Determine to what degree USFWS, state fish and wildlife agency, and when appropriate, National Oceanic and Atmospheric Administration Fisheries Service, partnerships are cooperative and result in effective INRMP development and review for operation and effect.
7. **Impact to the Mission –** Evaluate the level to which existing natural resources **requirements** support the installation's ability to sustain the current operational mission, ensuring no net loss of mission capability.

Each focus area has three to seven criteria that have been established by natural resources managers and are used to help determine the status of a given functional area within natural resources. This INRMP addresses and supports the requirements of these metrics.

Each installation must complete an evaluation of the effectiveness of its INRMP on an annual basis (see Section 1.8). The INRMP Annual Review process will also contribute to the USMC metrics, particularly with respect to the status of the MCMWTC with the wildlife agencies. The annual evaluation must be completed in cooperation with the appropriate field-level offices of the USFWS, CDFW, and NDOW. The cooperating partners will work together to measure both the successes and issues resulting from INRMP implementation. Appendix D presents the results of the annual review (once available).

SECTION 6
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APPENDIX A

LIST OF NATURAL RESOURCES MANGEMENT LEGAL DRIVERS

- Federal Laws
- EOs
- Department of Defense Policies
- Marine Corps Policies
- California Regulations
- Nevada Regulations

APPENDIX A
LEGISLATION AND REGULATIONS

Below is a list of the most significant federal and state laws and regulations and other regulatory instruments that may govern implementation of this Integrated Natural Resources Management Plan.

Federal Laws

American Indian Religious Freedom Act (42 US Code [USC])

Americans with Disabilities Act of 1990 (Public Law [PL] 101-336; 42 USC 12101)

Archaeological and Historic Preservation Act of 1974 (PL 93-291; 16 USC 469 *et seq*.)

Archaeological Resources Protection Act of 1979 (PL 96-95; 16 USC 470aa-11)

Bald Eagle Protection Act (PL 95-616; 16 USC 688 *et seq*.)

Clean Air Act (as amended through 1990)

Clean Water Act (PL 95-217; 33 USC 1251 *et seq*.)

Coastal Zone Management Act (16 USC 145 *et seq*.)

Conservation Programs on Military Reservations (see Sikes Act below)

Defense Appropriations Act of 1991 (Legacy Program)

Emergency Wetlands Resources Act of 1986 (16 USC 3901-3932)

Endangered Species Act of 1973 (PL 95-632; 16 USC 1531 *et seq*.)

Estuarine Areas Act (16 USC 1221-1226)

Farmland Protection Policy Act (7 USC 4201-4209)

Federal Facilities Compliance Act of 1992 (PL 102-386; amending 42 USC 6961)

Forest and Rangeland Renewable Resources Planning Act (PL 93-378)

National Forest Management Act (PL 94-588)

Federal Insecticide, Fungicide and Rodenticide Act (7 USC 136 *et seq*.)

Fish and Wildlife Conservation Act (FWCA) of 1980 (16 USC 2901 *et seq*.)

Fish and Wildlife Conservation and Natural Resource Management Programs on Military Reservation (Amends PL 86-797 [Sikes Act] [PL 96-561])

Hunting, Fishing and Trapping on Military Lands (an update to the Military Construction Authorization Act; 10 USC 2665)

Leases: Non-Excess Property of Military Departments (10 USC 2667)

Marine Mammal Protection Act (MMPA) of 1972, as amended (16 USC 1361 *et seq*.)

Marine Protection, Research, and Sanctuaries Act (MPRSA) of 1972, as amended (33 USC 1401 *et seq*. and 16 USC 1431 *et seq*.)

Migratory Bird Conservation Act (Chapter 257; 45 Stat 1222; 16 USC 715 *et seq*.)

Migratory Bird Treaty Act (PL 65-186; 16 USC 703 *et seq*.)

Military Reservation and Facilities: Hunting, Fishing and Trapping Act of 1958 (PL 85-337; 10 USC 2671)

National Environmental Policy Act of 1969, as amended (PL 91-190; 42 USC 4321 *et seq*.)

National Historic Preservation Act of 1966, as amended (PL 89-665; 16 USC 470 *et seq*.)

Native American Graves Protection and Repatriation Act (25 USC 3001 *et seq*.)

Non-Indigenous Aquatic Nuisance Prevention and Control Act of 1990

North American Wetlands Conservation Act (16 USC 4401 *et seq*.)
Noxious Plant Control Act (PL 90-583)
Outdoor Recreation on Federal Lands (16 USC 4601[1] *et seq*.)
Plant Protection Act of 2000 (7 USC 7701 *et seq*.) (replaces Federal Noxious Weed Act of 1973 [PL 93-629]
Plant Quarantine Act (7 USC 151-167)
Readiness and Environmental Protection Initiative (within Section 2811, FY 2003 National Defense Authorization Act) (10 USC 2684a)
Rivers and Harbors Act (33 USC 401)
Sale of Certain Interests In Lands; Logs (10 USC 2665)
Sikes Act (PL 105-85, as amended through 2004 including PL 108-136; 16 USC 670 *et seq*.)
Soil Conservation Act of 1938 (16 USC 5901 *et seq*.)
Soil Conservation and Domestic Allotment Act (7 USC 128)
Watershed Protection and Flood Prevention Act (PL 84-566; 16 USC 1001-1009)

Executive Orders and Presidential Memoranda

Executive Order 11593, Protection and Enhancement of the Cultural Environment
Executive Order 11644, Use of Off-Road Vehicles on the Public Lands
Executive Order 11987, Exotic Organisms
Executive Order 11988, Floodplain Management
Executive Order 11989, Off-Road Vehicles on Public Lands
Executive Order 11990, Protection of Wetlands
Executive Order 11991, Protection and Enhancement of Environmental Quality: Amends Executive Order 11514
Executive Order 12608, Protection of Wetlands: Amends Executive Order 11990
Executive Order 12898, Environmental Justice
Executive Order 13007, Indian Sacred Sites
Executive Order 13045, Protection of Children from Environmental Health Risks and Safety Risks
Executive Order 13112, Invasive Species
Executive Order 13148, Greening the Government through Leadership in Environmental Management
Executive Order 13175, Consultation and Coordination with Indian Tribal Governments
Executive Order 13186, Responsibilities of Federal Agencies to Protect Migratory Birds
Executive Order 13423, Strengthening Federal Environmental, Energy, and Transportation Management
Executive Order 13443, Facilitation of Hunting Heritage and Wildlife Conservation
Presidential Memorandum, Environmentally and Economically Beneficial Practices on Federal Landscaped Grounds (April 26, 1994)
Presidential Memorandum, Government-to-Government Relations with Native American Tribal Governments

Department of Defense Directives (DoDDs)/Instructions (DoDIs)

DoD Directive 4150.7, DoD Pest Management Program

DoDD 4700.4, Natural Resources Management Program
DoDD 4710.1, Archaeological and Historic Resources Management
DoDI 4715.1, Environmental Security
DoDD 4715.1E, Environment, Safety, and Occupational Health
DoDI 4715.9, Environmental Planning and Analysis
DoDI 5000.13, Natural Resources
DoDD 6050.1, Environmental Effects in the US of DoD Actions
DoDD 6050.2, Use of Off-Road Vehicles on DlD Lands
Department of Defense, American Indian and Alaska Native Policy

Marine Corps Orders (MCO)

MCO P5090.2A, Marine Corps Environmental Compliance Protection Manual

U.S. Fish and Wildlife Service (USFWS) Guidance

USFWS Guidelines for Coordination on Integrated Natural Resource Management Plans (June 2015)

California (CA) Regulations

California Coastal Act
California Constitution Article 10, Water California Department of Fish and Game Code California Endangered Species Act
California Environmental Quality Act
Porter-Cologne Water Quality Control Act

Nevada (NV) Regulations

The Nevada Revised Statutes (NRS) are the current codified laws of the State of Nevada and the Nevada Administrative Code (NAC) is the codified administrative regulations of the Executive Branch of the State of Nevada. Statutes listed below govern the activities related to natural resources management within the states.

Water Quality Standards (NRS 44A.420 and NAC 445.0552 – 445A.2234)
Water Pollution Control (NRS 445A and NAC 445A)
Air Pollution Control (NRS 445B.100 – 445B.640 and NAC 445B.001 – 445B.395)
Wetlands Mitigation Bank, Establishment, Use, and Operation (NRS 244.388)
Board of Wildlife Commissioners Regulations (NRS 501)
Hunting, Fishing and Tripping; Miscellaneous Protective Measures (NRS 503)
Protection and Propagation of Native Fauna (NRS 503.584 – NRS 503.589)
Protection of Bald Eagle and Golden Eagle (NRS 503.610)
Protection of Birds Included in Migratory Bird Treaty Act (NRS 503.620)
Introduction or Removal of Aquatic Life or Wildlife (NRS 503.597)
Management and Propagation (NRS 504)
Protection and Preservation of Timbered Lands, Trees and Flora (NRS 527)

Protection of Tees and Flora (NRS 527.050)
Control of Forest Insects and Diseases (NRS 527.130 – NRS 527.230)
Protection and Propagation of Selected Species of Native Flora (NRS 527.260 – NRS 527.300)
Navigable Water (NRS 537)
California-Nevada Instate Compact (NRS 538.600)
Noxious and Predatory Animals; Property-Destroying Birds (NRS 567)

APPENDIX B

AGREEMENTS, SPECIAL USE PERMITS, AND NATURAL RESOURCES COORDINATOR'S APPOINTMENT LETTER

(included when available and updated as needed)

- USFS Special Use Permit BRI250
- USFS Special Use Permit BRI571
- USFS Special Use Permit BRI477
- USFS Special Use Permit BRI478
- USFS Special Use Permit BRI494
- CDFW Take Permit for Survival Training

N6247309RP00098

Authorization ID: BRI250
Contact ID: USMC-MWTC
Expiration Date: 12/31/2049
Use Code: 431, 711, 753, 771, 806

FS-2700-4 (03/06)
OMB 0596-0082

U.S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE

SPECIAL USE PERMIT

AUTHORITY:
Organic Act of 1897
Federal Land Policy & Management Act of 1976, as amended

The Department of the Navy/United States Marine Corps (hereinafter called the Holder) is hereby authorized to use or occupy National Forest System lands in the Humboldt-Toiyabe National Forest subject to the conditions of this special use permit ("the permit"). The Navy/Marine Corps is represented by the Commanding Officer, Naval Facilities Engineering Command Southwest, 1220 Pacific Highway, San Diego, California 92132-5190. Routine administration of the terms and conditions of the permit will be executed by the Commanding Officer, Marine Corps Mountain Warfare Training Center, Bridgeport, CA 93517.

The Forest Service is represented by the Humboldt-Toiyabe Forest Supervisor or a delegated subordinate officer. In addition, there is a Forest Service Military Liaison Officer, employed by the Forest Service and selected in coordination with the Commanding Officer, Marine Corps Mountain Warfare Training Center or delegated subordinate, to serve year-round as the Staff Specialist for and as the local representative of the District Ranger, Bridgeport Ranger District, for all matters concerning the US Marine Corps Mountain Warfare Training Center (MCMWTC) use of National Forest land. The Marine Corps will reimburse half of the cost of providing the Military Liaison Officer including salary, overhead, vehicle, travel, and supplies. By August 15th of each year, the cost of the Military Liaison Officer will be jointly estimated for the upcoming fiscal year and approved in writing by the Forest Service and Marine Corps. The estimated cost will not be exceeded by the Forest Service without prior approval of the Marine Corps. The Forest Service will promptly inform the Marine Corps when it is believed that the actual cost will exceed the estimated cost. The Forest Service will submit an estimate of the current fiscal year costs incurred by the Military Liaison Officer by September 15th of each year and bill the Marine Corps as soon as possible thereafter. Fiscal year is 1 October through 30 September. The Marine Corps will make payment no later than 30 days after billing by the Forest Service. All obligations under this Special Use Permit are contingent upon the availability of appropriated funds.

This permit covers 44,932 acres, ("the permit area") as shown on the location map attached to and made a part of this permit as Appendix A, with legal descriptions in Appendix B, and described as: the Intensive Use Area consisting of National Forest System lands encompassing approximately 532 acres, also known as the Base Camp, where the MARINE CORPS may install and maintain facility improvements; the Limited Use Area consisting of National Forest System lands encompassing approximately 43,920 acres, also known as the Training Area; the Special Use Area consisting of National Forest System lands encompassing approximately 480 acres, also known as the Sweetwater Airstrip. The Intensive Use Area, Limited Use Area, and Special Use Area covered by this permit will be known as the Marine Corps Mountain Warfare Training Center.

This permit is issued for a 40-year term, to which the Forest Service Washington Office concurs, as an exception from the recommended 20-year tenure in policy as noted in FSH 2709.11, Chapter 10, Section 19, Exhibit 03, and is consistent with the Organic Act of 1897, and Public Law 100-693, Section 5, of November 18, 1988.

This permit is issued for the purpose of conducting military training activities and maintaining improvements as described below and in the incorporated operations plan as required by this permit in section VIID and at locations indicated on the maps in the Appendices.

In the interest of National Defense in periods of National Emergency proclaimed by the President of the United States per the National Emergency Act (Public Law 94-412; 90 State. 1255), the responsibilities for the terms and conditions of this Special Use Permit and any ensuing Amendments thereof will be transferred to and assumed by the Department of the Navy/Marine Corps within the statutory limitations and authorizations of Federal laws for the duration of the National Emergency. The Department of the Navy/Marine Corps shall notify the Forest Service in writing as soon as practicable after being notified of the National Emergency proclamation.

Activities authorized by this permit may occur within the permit area unless the location is restricted and identified in the annual operating plan and the activity map of environmentally sensitive areas. A schedule of activities identifying time, general locale, number of individuals and type of motorized use is to be described in the operating plan. These activities along with associated protective measures related to human health and safety, and environmental protection are further detailed in the attached operating plan (Appendix C), hereby made a part of this special use permit.

Intensive Use Area:

The following activities are authorized under the Organic Act of 1897 and include: conducting military training support activities, landing and takeoff and fueling of helicopters at expeditionary air field, operating small arms live fire range at Range 100, and maintaining facility improvements.

The facility improvements in the Intensive Use Area (Base Camp) are listed in and will be updated annually in the operating plan, and are authorized under the Federal Land Policy & Management Act of 1976, as amended. The Intensive Use Area does not include public road 059.1 (Silver Creek Road), which will remain open to public use. The holder will be allowed to install additional improvements in the Intensive Use Area on a case by case basis with prior written approval from the Forest Service.

Limited Use Area:

The following activities are authorized under the Organic Act of 1897 and include: multi-day mountain and winter over-land travel by foot, including patrolling and land navigation and ski/snowshoe travel; mule and horse packing; rock-climbing, fixed-rope installation, rappelling, and cliff rescue; basic bivouac / camping / troop assembly areas; field meals and sanitation; survival food and water procurement, survival fire building, survival shelter construction, and survival signaling using flares; real and simulated search and rescue, medical evacuation, and medical treatment; motorized snow vehicles/snowmobiles and motorized wheeled vehicles, road maintenance and repair with heavy equipment and snow grooming with grooming vehicles on designated roads; helicopter landing at authorized landing zones, parachute troop insertion at authorized drop zones and simulated live-fire support by low flying helicopters; pyrotechnics, blank ammunitions, and simulated improvised explosive devices (IED) and mine clearance; communications and surveillance operations; live arms fire of single-shot up to .50 cal (sniper) at certified ranges; demolition-initiated avalanche mitigation; and abattis training/removal of trees with chainsaw or explosives on individually approved trees on a case by case basis, to allow the holder to 1) conduct military training; 2) provide logistical support to training units; 3) test and evaluate cold weather and mountain clothing and equipment; and 4) develop and test cold weather and mountain operational doctrine.

For demolition-initiated avalanche mitigation involving hand charging of snow release zones, the following may be used: TNT, blasting caps (primary component is RDX), detonating cord (primary component is PETN), and time fuse (black powder). The method of storing and handling explosives will also conform to procedures contained in the Unified Facilities Criteria (UFC) for the development of military Ammunition Storage Points (ASPs).

N 6247 30 9RP 00 098

The following facility improvements in the Limited Use Area, the tramway (ski lift), Silver Creek Bridge, and approximately 65 miles of roads, are authorized under the Federal Land Policy & Management Act of 1976, as amended.

Special Use Area - Sweetwater Airstrip:

The following activities are authorized under the Organic Act of 1897 and include: helicopter landing, fixed-wing landing and takeoff, troop insertion from aircraft via parachute, troop pickup by vehicle, airstrip repair with heavy equipment, personnel over land movement by foot after parachute landing and the occasional trans-shipment of material and personnel by military aircraft.

The following facility improvement in the Special Use Area, the Sweetwater Airstrip, is authorized under the Federal Land Policy & Management Act of 1976, as amended.

The following appendices are attached and made a part of this permit:

Appendix A: Permit Boundary Map
Appendix B: Permit Boundary Legal Descriptions
Appendix C: Annual Operating Plan and subsequent amendments

The above described or defined area shall be referred to herein as the "permit area"

TERMS AND CONDITIONS

I. AUTHORITY AND GENERAL TERMS OF THE PERMIT

A. Authority. This permit is issued pursuant to the authorities enumerated at Title 36, Code of Federal Regulations, Section 251 Subpart B, as amended. This permit, and the activities or use authorized, shall be subject to the terms and conditions of the Secretary's regulations and any subsequent amendment to them.

B. Authorized Officer. The authorized officer is the Forest Supervisor or a delegated subordinate officer.

C. License. This permit is a license for the use of federally owned land and does not grant any permanent, possessory interest in real property, nor shall this permit constitute a contract for purposes of the Contract Disputes Act of 1978 (41 U.S.C. 611). Loss of the privileges granted by this permit by revocation, termination, or suspension is not compensable to the holder.

D. Amendment. This permit may be amended in whole or in part by the Forest Service when, at the discretion of the authorized officer, such action is deemed necessary or desirable to incorporate new terms, conditions, and stipulations as may be required by law, regulation, land management plans, or other management decisions.

E. Existing Rights. This permit is subject to all valid rights and claims of third parties. The United States is not liable to the holder for the exercise of any such right or claim.

F. Nonexclusive Use and Public Access. Unless expressly provided for in additional terms, use of the permit area is not exclusive. The Forest Service reserves the right to use or allow others to use any part of the permit area, including roads, for any purpose, provided, such use does not materially interfere with the holder's authorized use. A final determination of conflicting uses is reserved to the Forest Service.

G. Forest Service Right of Entry and Inspection. The Forest Service has the right of unrestricted access of the permitted area or facility to ensure compliance with laws, regulations, and ordinances and the terms and conditions of this permit.

H. Assignability. This permit is not assignable or transferable. If the holder through death, voluntary sale or transfer, enforcement of contract, foreclosure, or other valid legal proceeding ceases to be the owner of the improvements, this permit shall terminate.

I. Permit Limitations. Nothing in this permit allows or implies permission to build or maintain any structure or facility, or to conduct any activity unless specifically provided for in this permit. Any use not specifically identified in this permit must be approved by the authorized officer in the form of a new permit or permit amendment.

II. TENURE AND ISSUANCE OF A NEW PERMIT

A. Expiration at the End of the Authorized Period. This permit will expire at midnight on 12/31/2049. Expiration shall occur by operation of law and shall not require notice, any decision document, or any environmental analysis or other documentation.

B. Minimum Use or Occupancy of the Permit Area. Use or occupancy of the permit area shall be exercised at least 15 days each year, unless otherwise authorized in writing under additional terms of this permit.

C. Notification to Authorized Officer. If the holder desires issuance of a new permit after expiration, the holder shall notify the authorized officer in writing not less than six (6) months prior to the expiration date of this permit.

D. Conditions for Issuance of a New Permit. At the expiration or termination of an existing permit, a new permit may be issued to the holder of the previous permit or to a new holder subject to the following conditions:

1. The authorized use is compatible with the land use allocation in the Forest Land and Resource Management Plan.
2. The permit area is being used for the purposes previously authorized.
3. The permit area is being operated and maintained in accordance with the provisions of the permit.
4. The holder has shown previous good faith compliance with the terms and conditions of all prior or other existing permits, and has not engaged in any activity or transaction contrary to Federal contracts, permits laws, or regulations.

E. Discretion of Forest Service. Notwithstanding any provisions of any prior or other permit, the authorized officer may prescribe new terms, conditions, and stipulations when a new permit is issued. The decision whether to issue a new permit to a holder or successor in interest is at the absolute discretion of the Forest Service.

F. Construction. Any construction authorized by this permit may commence by N/A and shall be completed by N/A. If construction is not completed within the prescribed time, this permit may be revoked or suspended.

III. RESPONSIBILITIES OF THE HOLDER

A. Compliance with Laws, Regulations, and other Legal Requirements. The holder shall comply with all applicable Federal, State, and local laws, regulations, and standards, including but not limited to, the Federal Water Pollution Control Act, 33 U.S.C. 1251 et seq., the Resource Conservation and Recovery Act, 42 U.S.C. 6901 et seq., the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S. C. 9601 et seq., and other relevant environmental laws, as well as public health and safety laws and other laws relating to the siting, construction, operation, and maintenance of any facility, improvement, or equipment on the property.

B. Plans. Plans for development, layout, construction, reconstruction, or alteration of improvements on the permit area, as well as revisions of such plans, must be prepared by a qualified individual acceptable

to the authorized officer and shall be approved in writing prior to commencement of work. The holder may be required to furnish as-built plans, maps, or surveys, or other similar information, upon completion of construction.

C. Maintenance. The holder shall maintain the improvements and permit area to standards of repair, orderliness, neatness, sanitation, and safety acceptable to the authorized officer and consistent with other provisions of this authorization. If requested, the holder shall comply with inspection requirements deemed appropriate by the authorized officer.

D. Hazard Analysis. The holder has a continuing responsibility to identify all hazardous conditions on the permit area which would affect the improvements, resources, or pose a risk of injury to individuals. Any non-emergency actions to abate such hazards shall be performed after consultation with the authorized officer. In emergency situations, the holder shall notify the authorized officer of its actions as soon as possible, but not more than 48 hours, after such actions have been taken.

E. Change of Address. The holder shall immediately notify the authorized officer of a change in address.

F. Change in Ownership. This permit is not assignable and terminates upon change of ownership of the improvements or control of the business entity. The holder shall immediately notify the authorized officer when a change in ownership or control of business entity is pending. Notification by the present holder and potential owner shall be executed using Form SF-299 Application for Transportation and Utility Systems and Facilities of Federal Lands, or Form FS-2700-3a, Holder Initiated Revocation of Existing Authorization, Request for a Special Use Permit. Upon receipt of the proper documentation, the authorized officer may issue a permit to the party who acquires ownership of, or a controlling interest in, the improvements or business entity.

IV. LIABILITY

For purposes of this section, "holder" includes the holder's heirs, assigns, agents, employees, and contractors.

A. The holder assumes all risk of loss to the authorized improvements.

B. Damage to National Forest Interests, Property, or Resources. The holder, as an agency of the United States, is limited by Federal law as to the assumption of liability for its acts or omissions. The holder does agree, within its legal limitations, and limitations of appropriations, to be responsible for all costs of damages and injury to persons, personal property, and land caused by its operations and activities under the terms of this permit. The holder further agrees, to the extent legally permissible, to use its appropriations and resources as required to pay any awards or claims, and to repair damages to the land within the permit area. It is the intent of this provision that the appropriations of the Forest Service be shielded from burdens, other than administrative costs, which may occur as a result of the activities by the holder under the terms of this permit.

C. With respect to roads, the holder shall be proportionally liable for damages to all roads and trails of the United States open to public use caused by the holder's use to the same extent as provided above, except that liability shall not include reasonable and ordinary wear and tear.

D. The Forest Service has no duty to inspect the permit area or to warn of hazards and, if the Forest Service does inspect the permit area, it shall incur no additional duty nor liability for identified or non-identified hazards. This covenant may be enforced by the United States in a court of competent jurisdiction.

V. TERMINATION, REVOCATION, AND SUSPENSION

A. General. For purposes of this permit, "termination", "revocation", and "suspension" refer to the cessation of uses and privileges under the permit.

"Termination" refers to the cessation of the permit under its own terms without the necessity for any decision or action by the authorized officer. Termination occurs automatically when, by the terms of the permit, a fixed or agreed upon condition, event, or time occurs. For example, the permit terminates at expiration. Terminations are not appealable.

"Revocation" refers to an action by the authorized officer to end the permit because of noncompliance with any of the prescribed terms, or for reasons in the public interest. Revocations are appealable.

"Suspension" refers to a revocation which is temporary and the privileges may be restored upon the occurrence of prescribed actions or conditions. Suspensions are appealable.

B. Revocation or Suspension. The Forest Service may suspend or revoke this permit in whole or part for:

1. Noncompliance with Federal, State, or local laws and regulations.
2. Noncompliance with the terms and conditions of this permit.
3. Reasons in the public interest.
4. Abandonment or other failure of the holder to otherwise exercise the privileges granted.

C. Opportunity to Take Corrective Action. Prior to revocation or suspension for cause pursuant to Section V (B), the authorized officer shall give the holder written notice of the grounds for each action and a reasonable time, not to exceed 90 days, to complete the corrective action prescribed by the authorized officer.

D. Removal of Improvements. Prior to abandonment of the improvements or within a reasonable time following revocation or termination of this authorization, the holder shall prepare, for approval by the authorized officer, an abandonment plan for the permit area. The abandonment plan shall address removal of improvements and restoration of the permit area and prescribed time frames for these actions. If the holder fails to remove the improvements or restore the site within the prescribed time period, they become the property of the United States and may be sold, destroyed or otherwise disposed of without any liability to the United States. However, the holder shall remain liable for all cost associated with their removal, including costs of sale and impoundment, cleanup, and restoration of the site.

VI. FEES

A. Fees for this use have been exempted or waived in full pursuant to 36 CFR 251.57, or revisions thereto, and direction in FSH 2709.11, chapter 30.

VII. OTHER PROVISIONS

A. Members of Congress. No Member of or Delegate to Congress or Resident Commissioner shall benefit from this permit either directly or indirectly, except when the authorized use provides a general benefit to a corporation.

B. Appeals and Remedies. Any discretionary decisions or determinations by the authorized officer are subject to the appeal regulations at 36 CFR 251, Subpart C, or revisions thereto.

C. Superior Clauses. In the event of any conflict between any of the preceding printed clauses or any provision thereof and any of the following clauses or any provision thereof, the preceding printed clauses shall control.

D. Operating Plan (C8). The holder shall provide an Operating Plan and revise the plan every year. The plan shall be prepared in consultation with the authorized officer or designated representative and cover operation and maintenance of facilities, dates or season of operations, and other information required by

the authorized officer to manage and evaluate the occupation and/or use of National Forest System lands. The provisions of the Operating Plan and the annual revisions shall become a part of this authorization and shall be submitted by the holder and approved by the authorized officer or their designated representative(s). This Operating Plan is hereby made a part of the authorization.

E. Succeeding Authorization. The authorization succeeds a special use document for BRI000702 / 89-IA-11041702-001 issued to the holder on 4/13/1989 .

F. Periodic Revision (E8). The terms and conditions of this authorization shall be subject to revision in the years 2019, 2029, and 2039 to reflect changing times and conditions.

G. Explosives (B29).

1. Only exploding bridgewire (EBWs) shall be used for blasting except for hand charging of snow release zones.

2. In the use of explosives, the holder shall exercise the utmost care not to endanger life or property and shall comply with the requirements of the Forest Service. The holder shall be responsible for any and all damages resulting from the use of explosives and shall adopt precautions that will prevent damage to surrounding objects. The holder shall furnish and erect special signs to warn the public of blasting operations. Such signs shall be placed and maintained so as to be clearly evident to the public during all critical periods of the blasting operations, and shall include a warning statement to have radio transmitters turned off.

3. All storage places for explosives shall be marked "DANGEROUS-EXPLOSIVES." The method of storing and handling explosives shall conform to procedures contained in the "Blasters Guide EM-7100-14," and Title 27, Code of Federal Regulations, parts 1 to 199, Alcohol, Tobacco Products, and Firearms (Bureau of Alcohol, Tobacco and Firearms (BATF)).

4. When using explosives, the holder shall adopt precautions which will prevent damage to landscape features and other surrounding objects. When directed by the Forest officer in charge, trees within an area designated to be cleared shall be left as a protective screen for surrounding vegetation during blasting operations. Trees so left shall be removed and disposed of after blasting has been completed. When necessary, and at any point of special danger, the holder shall use suitable mats or some other approved method to smother blasts.

H. Surveys, Land Corners (D4). The holder shall protect, in place, all public land survey monuments, private property corners, and Forest boundary markers. In the event that any such land markers or monuments are destroyed in the exercise of the privileges permitted by this authorization, depending on the type of monument destroyed, the holder shall see that they are reestablished or referenced in accordance with (1) the procedures outlined in the "Manual of Instructions for the Survey of the Public Land of the United States," (2) the specifications of the county surveyor, or (3) the specifications of the Forest Service.

Further, the holder shall cause such official survey records as are affected to be amended as provided by law. Nothing in this clause shall relieve the holder's liability for the willful destruction or modification of any Government survey marker as provided at 18 U.S.C. 1858.

I. Pesticide Use (D23). Pesticides may not be used to control undesirable woody and herbaceous vegetation, aquatic plants, insects, rodents, trash fish, etc., without the prior written approval of the Forest Service. A request for approval of planned uses of pesticides will be submitted annually by the holder on the due date established by the authorized officer. The report will cover a 12-month period of planned use beginning 3 months after the reporting date. Information essential for review will be provided in the form specified. Exceptions to this schedule may be allowed, subject to emergency request and approval,

only when unexpected outbreaks of pests require control measures which were not anticipated at the time an annual report was submitted.

Only those materials registered by the U.S. Environmental Protection Agency for the specific purpose planned will be considered for use on National Forest System lands. Label instructions will be strictly followed in the application of pesticides and disposal of excess materials and containers.

N6247309RP00098

This permit is accepted subject to the conditions set out above.

HOLDER NAME:
USMC Mountain Warfare Training Center

By: _____
(Holder Signature)

By: **N. L. COOLING**
Colonel, US Marine Corps
Commanding Officer, MCMWTC

Date: 15 MAY 2009

U.S. DEPARTMENT OF AGRICULTURE
Forest Service

By: _____
(Authorized Officer Signature)

By: **EDWARD C. MONNIG**
Forest Supervisor
Humboldt-Toiyabe National Forest

Date: 15 May 2009

By: _____
(Signature)

By: **DAVID B. BIXLER**
Real Estate Contracting Officer
Real Estate Division
NAVFAC SW

Date: 15 May 2009

Authorization ID: BRI476
Contact ID: USMC-WMTC
Expiration Date: **9-30-2014**
Use Code: 431,146

FS-2700-4 (03/06)
OMB 096-0082

U.S. DEPARTMENT OF AGRICULTURE
Forest Service
SPECIAL USE PERMIT
AUTHORITY:
ORGANIC ADMINISTRATION ACT June 4, 1897

Leavitt Lake

U.S. MARINE CORPS – Mountain Warfare Training Center, HC83 BOX 1, BRIDGEPORT, CA 93517- (hereinafter called the Holder) is hereby authorized to use or occupy National Forest System lands, to use subject to the conditions set out below, on the National Forest or unit of the National Forest System.

This permit covers approximately 9,157 acres in the Leavitt Lake area and is described as: T. 5 N. R. 21 E., Sections 1,2,11,12,13,14,24; T.5.N, R.22.E, Sections 5-8,18,19; T6N, R21E, Sections 35,36 as shown on Appendix A, the location map attached to and made a part of this permit, and is issued for the purpose of:

Conducting US Marine Corps military training activities as described below and incorporated in Appendix B, the Operations Plan attached to and made part of this permit.

The following activities are authorized for snow season only, 1 December to 15 April of each year. To meet current military training objectives, group size is limited to one group of 60 individuals or less within TA 10 and one group of 60 individuals or less in TA11 for a combined total not to exceed 120 individuals at any given time within the Leavitt Lake Permit Area.

- Ski/snowshoe movement
- Basic bivouac
- Land navigation
- Ice fishing
- Survival shelters
- RHUs (Relocatable Housing Units) – 2ft Snow
- Ice breaching / coldwater immersion at Leavitt Lake and Koenig Lake (as an alternate site).
- Motorized oversnow vehicles only.
- Use of the BV 206 on the Leavitt Lake Corridor Road during non-snow conditions when the road surface is not saturated during the period 1 December - 15 April. When the road surface is saturated, use of the BV 206 is not authorized. BV 206 tracked vehicle operation on groomed Leavitt Lake Road only when a minimum of 2 feet of snow are present at the Forest Service gate located at the junction of HWY 108 and Leavitt Lake Road
- Snowmobile operation as detailed it the operating plan.
- Helicopter use authorized for emergency medevacs only.
- 5.56mm, 9mm, .45 cal, .50 cal, and 12 gauge live arms fire at Ranges R1000, R1100, and R1101.
    - Avoid live firing on weekends and Holidays).
    - When live firing at approved ranges, post signage, as approved by Forest Service at the Leavitt Lake Gate (near Hwy 108),to inform recreationists that military live firing is in progress.
    - Post range guards at locations near the range to verbally inform recreationists
- Avalanche initiation with small charges of TNT (less than 20 pounds) at AIS 1-3.
- For demolition-initiated avalanche mitigation involving hand charging of snow release zones, the following may be used: C4, TNT, blasting caps (primary component is ROX), detonating cord (primary component is PETN), and time fuse (black powder). The method of storing and handling explosives will

D. Amendment. This permit may be amended in whole or in part by the Forest Service when, at the discretion of the authorized officer, such action is deemed necessary or desirable to incorporate new terms, conditions, and stipulations as may be required by law, regulation, land management plans, or other management decisions.

E. Existing Rights. This permit is subject to all valid rights and claims of third parties. The United States is not liable to the holder for the exercise of any such right or claim.

F. Nonexclusive Use and Public Access. Unless expressly provided for in additional terms, use of the permit area is not exclusive. The Forest Service reserves the right to use or allow others to use any part of the permit area, including roads, for any purpose, provided, such use does not materially interfere with the holder's authorized use. A final determination of conflicting uses is reserved to the Forest Service.

G. Forest Service Right of Entry and Inspection. The Forest Service has the right of unrestricted access of the permitted area or facility to ensure compliance with laws, regulations, and ordinances and the terms and conditions of this permit.

H. Assignability. This permit is not assignable or transferable. If the holder through death, voluntary sale or transfer, enforcement of contract, foreclosure, or other valid legal proceeding ceases to be the owner of the improvements, this permit shall terminate.

I. Permit Limitations. Nothing in this permit allows or implies permission to build or maintain any structure or facility, or to conduct any activity unless specifically provided for in this permit. Any use not specifically identified in this permit must be approved by the authorized officer in the form of a new permit or permit amendment.

II. TENURE AND ISSUANCE OF A NEW PERMIT

A. Expiration at the End of the Authorized Period. This permit will expire at midnight on **9-30-2014**. Expiration shall occur by operation of law and shall not require notice, any decision document, or any environmental analysis or other documentation.

B. Minimum Use or Occupancy of the Permit Area. Use or occupancy of the permit area shall be exercised at least **30 days**, unless otherwise authorized in writing under additional terms of this permit.

C. Notification to Authorized Officer. If the holder desires issuance of a new permit after expiration, the holder shall notify the authorized officer in writing not less than six (6) months prior to the expiration date of this permit.

D. Conditions for Issuance of a New Permit. At the expiration or termination of an existing permit, a new permit may be issued to the holder of the previous permit or to a new holder subject to the following conditions:

1. The authorized use is compatible with the land use allocation in the Forest Land and Resource Management Plan.
2. The permit area is being used for the purposes previously authorized.
3. The permit area is being operated and maintained in accordance with the provisions of the permit.
4. The holder has shown previous good faith compliance with the terms and conditions of all prior or other existing permits, and has not engaged in any activity or transaction contrary to Federal contracts, permits laws, or regulations.

E. Discretion of Forest Service. Notwithstanding any provisions of any prior or other permit, the authorized officer may prescribe new terms, conditions, and stipulations when a new permit is issued. The decision whether to issue a new permit to a holder or successor in interest is at the absolute discretion of the Forest Service.

III. RESPONSIBILITIES OF THE HOLDER

A. Compliance with Laws, Regulations, and other Legal Requirements. The holder shall comply with all applicable Federal, State, and local laws, regulations, and standards, including but not limited to, the Federal Water Pollution Control Act, 33 U.S.C. 1251 et seq., the Resource Conservation and Recovery Act, 42 U.S.C. 6901 et seq., the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S. C. 9601 et seq., and other relevant environmental laws, as well as public health and safety laws and other laws relating to the siting, construction, operation, and maintenance of any facility, improvement, or equipment on the property.

B. Plans. Plans for development, layout, construction, reconstruction, or alteration of improvements on the permit area, as well as revisions of such plans, must be prepared by a qualified individual acceptable to the authorized officer and shall be approved in writing prior to commencement of work. The holder may be required to furnish as-built plans, maps, or surveys, or other similar information, upon completion of construction.

C. Maintenance. The holder shall maintain the improvements and permit area to standards of repair, orderliness, neatness, sanitation, and safety acceptable to the authorized officer and consistent with other provisions of this authorization. If requested, the holder shall comply with inspection requirements deemed appropriate by the authorized officer.

D. Hazard Analysis. The holder has a continuing responsibility to identify all hazardous conditions on the permit area which would affect the improvements, resources, or pose a risk of injury to individuals. Any non-emergency actions to abate such hazards shall be performed after consultation with the authorized officer. In emergency situations, the holder shall notify the authorized officer of its actions as soon as possible, but not more than 48 hours, after such actions have been taken.

E. Change of Address. The holder shall immediately notify the authorized officer of a change in address.

F. Change in Ownership. This permit is not assignable and terminates upon change of ownership of the improvements or control of the business entity. The holder shall immediately notify the authorized officer when a change in ownership or control of business entity is pending. Notification by the present holder and potential owner shall be executed using Form SF-299 Application for Transportation and Utility Systems and Facilities of Federal Lands, or Form FS-2700-3a, Holder Initiated Revocation of Existing Authorization, Request for a Special Use Permit. Upon receipt of the proper documentation, the authorized officer may issue a permit to the party who acquires ownership of, or a controlling interest in, the improvements or business entity.

IV. LIABILITY

For purposes of this section, "holder" includes the holder's heirs, assigns, agents, employees, and contractors.

A. The holder assumes all risk of loss to the authorized improvements.

B. The holder shall indemnify, defend, and hold the United States (USDA-Forest Service) harmless for any violations incurred under any such laws and regulations or for judgments, claims, or demands assessed against the United States (USDA-Forest Service) in connection with the holder's use or occupancy of the property. The holder's indemnification of the United States(USDA-Forest Service) shall include any loss by personal injury, loss of life or damage to property in connection with the occupancy or use of the property during the term of this permit. Indemnification shall include, but is not limited to, the value of resources damaged or destroyed; the costs of restoration, cleanup, or other mitigation; fire suppression or other types of abatement costs; third party claims and judgments; and all administrative, interest, and other legal costs. This paragraph shall survive the termination or revocation of this authorization, regardless of cause.

C. The holder has an affirmative duty to protect from damage the land, property, and interests of the United States (USDA-Forest Service).

D. In the event of any breach of the conditions of this authorization by the holder, the authorized officer may, on reasonable notice, cure the breach for the account at the expense of the holder. If the Forest Service at any time pays any sum of money or does any act which will require payment of money, or incurs any expense, including reasonable attorney's fees, in instituting, prosecuting, and/or defending any action or proceeding to enforce the United States rights hereunder, the sum or sums so paid by the United States (USDA-Forest Service), with all interests, costs and damages shall, at the election of the Forest Service, be deemed to be additional fees hereunder and shall be due from the holder to the Forest Service on the first day of the month following such election.

E. With respect to roads, the holder shall be proportionally liable for damages to all roads and trails of the United States open to public use caused by the holder's use to the same extent as provided above, except that liability shall not include reasonable and ordinary wear and tear.

F. The Forest Service has no duty to inspect the permit area or to warn of hazards and, if the Forest Service does inspect the permit area, it shall incur no additional duty nor liability for identified or non-identified hazards. This covenant may be enforced by the United States in a court of competent jurisdiction.

V. TERMINATION, REVOCATION, AND SUSPENSION

A. General. For purposes of this permit, "termination", "revocation", and "suspension" refer to the cessation of uses and privileges under the permit.

"Termination" refers to the cessation of the permit under its own terms without the necessity for any decision or action by the authorized officer. Termination occurs automatically when, by the terms of the permit, a fixed or agreed upon condition, event, or time occurs. For example, the permit terminates at expiration. Terminations are not appealable.

"Revocation" refers to an action by the authorized officer to end the permit because of noncompliance with any of the prescribed terms, or for reasons in the public interest. Revocations are appealable.

"Suspension" refers to a revocation which is temporary and the privileges may be restored upon the occurrence of prescribed actions or conditions. Suspensions are appealable.

B. Revocation or Suspension. The Forest Service may suspend or revoke this permit in whole or part for:

1. Noncompliance with Federal, State, or local laws and regulations.
2. Noncompliance with the terms and conditions of this permit.
3. Reasons in the public interest.
4. Abandonment or other failure of the holder to otherwise exercise the privileges granted.

C. Opportunity to Take Corrective Action. Prior to revocation or suspension for cause pursuant to Section V (B), the authorized officer shall give the holder written notice of the grounds for each action and a reasonable time, not to exceed 90 days, to complete the corrective action prescribed by the authorized officer.

D. Removal of Improvements. Prior to abandonment of the improvements or within a reasonable time following revocation or termination of this authorization, the holder shall prepare, for approval by the authorized officer, an abandonment plan for the permit area. The abandonment plan shall address removal of improvements and restoration of the permit area and prescribed time frames for these actions. If the holder fails to remove the improvements or restore the site within the prescribed time period, they become the property of the United States and may be sold, destroyed or otherwise disposed of without any liability to the United States. However, the holder shall remain liable for all cost associated with their removal, including costs of sale and impoundment, cleanup, and restoration of the site.

VI. FEES

B. Fees for this use have been exempted or waived in full pursuant to 36 CFR 251.57, or revisions thereto, and direction in FSH 2709.11, chapter 30.

VII. OTHER PROVISIONS

A. Members of Congress. No Member of or Delegate to Congress or Resident Commissioner shall benefit from this permit either directly or indirectly, except when the authorized use provides a general benefit to a corporation.

B. Appeals and Remedies. Any discretionary decisions or determinations by the authorized officer are subject to the appeal regulations at 36 CFR 251, Subpart C, or revisions thereto.

C. Superior Clauses. In the event of any conflict between any of the preceding printed clauses or any provision thereof and any of the following clauses or any provision thereof, the preceding printed clauses shall control.

D. Explosives (B29).

1. Only exploding bridgewire (EBWs) shall be used for blasting except for hand charging of snow release zones.

2. In the use of explosives, the holder shall exercise the utmost care not to endanger life or property and shall comply with the requirements of the Forest Service. The holder shall be responsible for any and all damages resulting from the use of explosives and shall adopt precautions that will prevent damage to surrounding objects. The holder shall furnish and erect special signs to warn the public of blasting operations. Such signs shall be placed and maintained so as to be clearly evident to the public during all critical periods of the blasting operations, and shall include a warning statement to have radio transmitters turned off.

3. All storage places for explosives shall be marked "DANGEROUS-EXPLOSIVES." The method of storing and handling explosives shall conform to procedures contained in the "Blasters Guide EM-7100-14," and Title 27, Code of Federal Regulations, parts 1 to 199, Alcohol, Tobacco Products, and Firearms (Bureau of Alcohol, Tobacco and Firearms (BATF)).

4. When using explosives, the holder shall adopt precautions which will prevent damage to landscape features and other surrounding objects. When directed by the Forest officer in charge, trees within an area designated to be cleared shall be left as a protective screen for surrounding vegetation during blasting operations. Trees so left shall be removed and disposed of after blasting has been completed. When necessary, and at any point of special danger, the holder shall use suitable mats or some other approved method to smother blasts.

E. Operating Plan (C8). The holder shall provide an Operating Plan. The plan shall be prepared in consultation with the authorized officer or designated representative and cover operation and maintenance of facilities, dates or season of operations, and other information required by the authorized officer to manage and evaluate the occupation and/or use of National Forest System lands. The provisions of the Operating Plan and the annual revisions shall become a part of this authorization and shall be submitted by the holder and approved by the authorized officer or their designated representative(s). This Operating Plan is hereby made a part of the authorization.

F. Surveys, Land Corners (D4). The holder shall protect, in place, all public land survey monuments, private property corners, and Forest boundary markers. In the event that any such land markers or monuments are destroyed in the exercise of the privileges permitted by this authorization, depending on the type of monument destroyed, the holder shall see that they are reestablished or referenced in accordance with (1) the procedures outlined in the "Manual of Instructions for the Survey of the Public Land of the United States," (2) the specifications of the county surveyor, or (3) the specifications of the Forest Service.

Further, the holder shall cause such official survey records as are affected to be amended as provided by law. Nothing in this clause shall relieve the holder's liability for the willful destruction or modification of any Government survey marker as provided at 18 U.S.C. 1858.

This permit is accepted subject to the conditions set out above.

MARINE CORPS
MOUNTAIN WARFARE TRAINING CENTER

By: _____
COLONEL J. J. CARROLL, JR.

Title: _____
Commanding Officer

Date: 5Sept 13

U.S. DEPARTMENT OF AGRICULTURE
Forest Service

By: _____
MICHAEL O. CRAWLEY

Title: _____
District Ranger

Date: 8-1-2013

Authorization ID: BRI477
Contact ID: USMC-WMTC
Expiration Date: **9-30-2014**
Use Code: 431

FS-2700-4 (03/06)
OMB 096-0082

U.S. DEPARTMENT OF AGRICULTURE
Forest Service
SPECIAL USE PERMIT
AUTHORITY:
ORGANIC ADMINISTRATION ACT June 4, 1897

Landing and Drop Zones

US Marine Corps Mountain Warfare Training Center, HC 83 Box 1, Bridgeport, CA 93517 (hereinafter called the Holder) is hereby authorized to use or occupy National Forest System lands, to use subject to the conditions set out below, on the Bridgeport Ranger District of the Humboldt-Toiyabe National Forest.

This permit covers approximately 1050 acres, is described as: 53 Landing Zone and Drop Zones (LZ/DZ) within the MCMWTC Limited Use Area and the Sweetwater Special Use Area, as listed in Appendix B, the Operating Plan and is issued for the purpose of conducting military training: helicopter landings, troop insertion via parachute, cargo drops, Re-locatable Housing Units (RHUs), Combat Operations Centers (COCs) and Military Operations in Urban Terrain (MOUTs) simulations at approved LZ/DZs as shown in Appendix A, the Map and listed in Appendix B, the Operating Plan, Exhibit A, the Matrix, attached to and made part of this permit.

For each Landing Zone listed in Appendix B and where authorized in accordance with Exhibit A the Matrix, a maximum 4 helicopter landings per day and 4 operations monthly are allowed for a total of 16 landings per month per each Landing Zone.

For each LZ/DZ where approved for troop parachute insertion and/or cargo drops, a maximum of 4 (four) flights per day and a total of 4 operations per month are authorized for a total maximum of 16 flights for any given month. Each flight is authorized to have a maximum of 10 jumpers. During jump maneuvers, aircraft must remain a minimum of 1,500 feet above ground level (AGL). Cargo Drops are limited to a maximum of 500 pounds per container. During cargo drop maneuvers, aircraft must remain a minimum of 1,500 feet above ground level (AGL).

The military training operations authorized under this permit are subject to the following stipulations:

1. No removal of vegetation in support of this project.
2. No use of heavy equipment.
3. No digging or ground disturbing activities.
4. No vehicle traffic off of approved roads.
5. No activity within 200 feet of water sources or in meadows.
6. No loud noises or interference with grazers or grazing animals (sheep or cattle).
7. Pursuant to the 1982 Environmental Assessment, at the Sweetwater Airstrip, no activity is allowed, including runway maintenance, or landing of aircraft from April 1-July 20.
8. MCMWTC Environmental in cooperation with the Forest Service must provide environmental monitoring and report any resource damage immediately to the Forest Service.

No other changes to the authorized activities within the Limited Use Area and Sweetwater Special Use Area are approved under this permit and all activities authorized under BRI 250 and the 2012 AOP remain in effect.

Due to the recent sightings of the Sierra Nevada Red Fox, the following mitigation is included:

- To prevent red fox habituation to human food, all food, including trash (i.e food packaging, food scraps, etc.),should be stored in a manner that wildlife cannot access it. Large camps should store food in bear-resistant metal containers (examples include http://www.bearsaver.com/, metal toolboxes such as Granger boxes). Overnight trips should use a canister listed at http://www.nps.gov/yose/planyourvisit/containers.htm. If food must be hung, the counter balance method should be used. For additional recommendations on food storage, please coordinate with the Bridgeport District wildlife biologist.
- If Sierra Nevada Red Fox (SNRF) dens are discovered, a limited operating period (LOP) will be instituted from January 1 to June 30. Military use, including avalanche initiation (use of explosives), small arms fire, snowmobiling and skiing, will not be allowed within ¼ mile of a den. This LOP and distance from the den may be adjusted if new information arises that indicates a change would be appropriate to protect denning individuals. A special treatment area (STA) would be established around any active den that would consider and include site-specific recommendations.
- All users to the area will be educated about proper food storage, behavior around wildlife, and how to report SNRF sightings. Signs about how to differentiate between SNRF, gray fox and coyote have been provided to the military for educational purposes.
- If monitoring indicates additional impacts to the SNRF from military use, additional restrictions may occur including; limits on night riding, trail closures and reroutes, and seasonal closures.
- If ongoing wildlife, plant or cultural surveys detect a sensitive resource, additional mitigations may apply.

Additional Stipulations of Use are detailed in Section V. and VI. of the Operating Plan.

The above described or defined area shall be referred to herein as the "permit area".

TERMS AND CONDITIONS

I. AUTHORITY AND GENERAL TERMS OF THE PERMIT

A. Authority. This permit is issued pursuant to the authorities enumerated at Title 36, Code of Federal Regulations, Section 251 Subpart B, as amended. This permit, and the activities or use authorized, shall be subject to the terms and conditions of the Secretary's regulations and any subsequent amendment to them.

B. Authorized Officer. The authorized officer is the Forest Supervisor or a delegated subordinate officer.

C. License. This permit is a license for the use of federally owned land and does not grant any permanent, possessory interest in real property, nor shall this permit constitute a contract for purposes of the Contract Disputes Act of 1978 (41 U.S.C. 611). Loss of the privileges granted by this permit by revocation, termination, or suspension is not compensable to the holder.

D. Amendment. This permit may be amended in whole or in part by the Forest Service when, at the discretion of the authorized officer, such action is deemed necessary or desirable to incorporate new terms, conditions, and stipulations as may be required by law, regulation, land management plans, or other management decisions.

E. Existing Rights. This permit is subject to all valid rights and claims of third parties. The United States is not liable to the holder for the exercise of any such right or claim.

F. Nonexclusive Use and Public Access. Unless expressly provided for in additional terms, use of the permit area is not exclusive. The Forest Service reserves the right to use or allow others to use any part of the permit area, including roads, for any purpose, provided, such use does not materially interfere with the holder's authorized use. A final determination of conflicting uses is reserved to the Forest Service.

G. Forest Service Right of Entry and Inspection. The Forest Service has the right of unrestricted access of the permitted area or facility to ensure compliance with laws, regulations, and ordinances and the terms and conditions of this permit.

H. Assignability. This permit is not assignable or transferable. If the holder through death, voluntary sale or transfer, enforcement of contract, foreclosure, or other valid legal proceeding ceases to be the owner of the improvements, this permit shall terminate.

I. Permit Limitations. Nothing in this permit allows or implies permission to build or maintain any structure or facility, or to conduct any activity unless specifically provided for in this permit. Any use not specifically identified in this permit must be approved by the authorized officer in the form of a new permit or permit amendment.

II. TENURE AND ISSUANCE OF A NEW PERMIT

A. Expiration at the End of the Authorized Period. This permit will expire at midnight on **9-30-2014**. Expiration shall occur by operation of law and shall not require notice, any decision document, or any environmental analysis or other documentation.

B. Minimum Use or Occupancy of the Permit Area. Use or occupancy of the permit area shall be exercised at least **30 days**, unless otherwise authorized in writing under additional terms of this permit.

C. Notification to Authorized Officer. If the holder desires issuance of a new permit after expiration, the holder shall notify the authorized officer in writing not less than six (6) months prior to the expiration date of this permit.

D. Conditions for Issuance of a New Permit. At the expiration or termination of an existing permit, a new permit may be issued to the holder of the previous permit or to a new holder subject to the following conditions:

1. The authorized use is compatible with the land use allocation in the Forest Land and Resource Management Plan.
2. The permit area is being used for the purposes previously authorized.
3. The permit area is being operated and maintained in accordance with the provisions of the permit.
4. The holder has shown previous good faith compliance with the terms and conditions of all prior or other existing permits, and has not engaged in any activity or transaction contrary to Federal contracts, permits laws, or regulations.

E. Discretion of Forest Service. Notwithstanding any provisions of any prior or other permit, the authorized officer may prescribe new terms, conditions, and stipulations when a new permit is issued. The decision whether to issue a new permit to a holder or successor in interest is at the absolute discretion of the Forest Service.

III. RESPONSIBILITIES OF THE HOLDER

A. Compliance with Laws, Regulations, and other Legal Requirements. The holder shall comply with all applicable Federal, State, and local laws, regulations, and standards, including but not limited to, the Federal Water Pollution Control Act, 33 U.S.C. 1251 et seq., the Resource Conservation and Recovery Act, 42 U.S.C. 6901 et seq., the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S. C. 9601 et seq., and other relevant environmental laws, as well as public health and safety laws and other laws relating to the siting, construction, operation, and maintenance of any facility, improvement, or equipment on the property.

B. Plans. Plans for development, layout, construction, reconstruction, or alteration of improvements on the permit area, as well as revisions of such plans, must be prepared by a qualified individual acceptable to the authorized officer and shall be approved in writing prior to commencement of work. The holder may be required to furnish as-built plans, maps, or surveys, or other similar information, upon completion of construction.

C. Maintenance. The holder shall maintain the improvements and permit area to standards of repair, orderliness, neatness, sanitation, and safety acceptable to the authorized officer and consistent with other provisions of this authorization. If requested, the holder shall comply with inspection requirements deemed appropriate by the authorized officer.

D. Hazard Analysis. The holder has a continuing responsibility to identify all hazardous conditions on the permit area which would affect the improvements, resources, or pose a risk of injury to individuals. Any non-emergency actions to abate such hazards shall be performed after consultation with the authorized officer. In emergency situations, the holder shall notify the authorized officer of its actions as soon as possible, but not more than 48 hours, after such actions have been taken.

E. Change of Address. The holder shall immediately notify the authorized officer of a change in address.

F. Change in Ownership. This permit is not assignable and terminates upon change of ownership of the improvements or control of the business entity. The holder shall immediately notify the authorized officer when a change in ownership or control of business entity is pending. Notification by the present holder and potential owner shall be executed using Form SF-299 Application for Transportation and Utility Systems and Facilities of Federal Lands, or Form FS-2700-3a, Holder Initiated Revocation of Existing Authorization, Request for a Special Use Permit. Upon receipt of the proper documentation, the authorized officer may issue a permit to the party who acquires ownership of, or a controlling interest in, the improvements or business entity.

IV. LIABILITY

For purposes of this section, "holder" includes the holder's heirs, assigns, agents, employees, and contractors.

A. The holder assumes all risk of loss to the authorized improvements.

B. The holder shall indemnify, defend, and hold the United States harmless for any violations incurred under any such laws and regulations or for judgments, claims, or demands assessed against the United States in connection with the holder's use or occupancy of the property. The holder's indemnification of the United States shall include any loss by personal injury, loss of life or damage to property in connection with the occupancy or use of the property during the term of this permit. Indemnification shall include, but is not limited to, the value of resources damaged or destroyed; the costs of restoration, cleanup, or other mitigation; fire suppression or other types of abatement costs; third party claims and judgments; and all administrative, interest, and other legal costs. This paragraph shall survive the termination or revocation of this authorization, regardless of cause.

C. The holder has an affirmative duty to protect from damage the land, property, and interests of the United States.

D. In the event of any breach of the conditions of this authorization by the holder, the authorized officer may, on reasonable notice, cure the breach for the account at the expense of the holder. If the Forest Service at any time pays any sum of money or does any act which will require payment of money, or incurs any expense, including reasonable attorney's fees, in instituting, prosecuting, and/or defending any action or proceeding to enforce the United States rights hereunder, the sum or sums so paid by the United States, with all interests, costs and damages shall, at the election of the Forest Service, be deemed to be additional fees hereunder and shall be due from the holder to the Forest Service on the first day of the month following such election.

E. With respect to roads, the holder shall be proportionally liable for damages to all roads and trails of the United States open to public use caused by the holder's use to the same extent as provided above, except that liability shall not include reasonable and ordinary wear and tear.

F. The Forest Service has no duty to inspect the permit area or to warn of hazards and, if the Forest Service does inspect the permit area, it shall incur no additional duty nor liability for identified or non-identified hazards. This covenant may be enforced by the United States in a court of competent jurisdiction.

V. TERMINATION, REVOCATION, AND SUSPENSION

A. General. For purposes of this permit, "termination", "revocation", and "suspension" refer to the cessation of uses and privileges under the permit.

"Termination" refers to the cessation of the permit under its own terms without the necessity for any decision or action by the authorized officer. Termination occurs automatically when, by the terms of the permit, a fixed or agreed upon condition, event, or time occurs. For example, the permit terminates at expiration. Terminations are not appealable.

"Revocation" refers to an action by the authorized officer to end the permit because of noncompliance with any of the prescribed terms, or for reasons in the public interest. Revocations are appealable.

"Suspension" refers to a revocation which is temporary and the privileges may be restored upon the occurrence of prescribed actions or conditions. Suspensions are appealable.

B. Revocation or Suspension. The Forest Service may suspend or revoke this permit in whole or part for:

1. Noncompliance with Federal, State, or local laws and regulations.
2. Noncompliance with the terms and conditions of this permit.
3. Reasons in the public interest.
4. Abandonment or other failure of the holder to otherwise exercise the privileges granted.

C. Opportunity to Take Corrective Action. Prior to revocation or suspension for cause pursuant to Section V (B), the authorized officer shall give the holder written notice of the grounds for each action and a reasonable time, not to exceed 90 days, to complete the corrective action prescribed by the authorized officer.

D. Removal of Improvements. Prior to abandonment of the improvements or within a reasonable time following revocation or termination of this authorization, the holder shall prepare, for approval by the authorized officer, an abandonment plan for the permit area. The abandonment plan shall address removal of improvements and restoration of the permit area and prescribed time frames for these actions. If the holder fails to remove the improvements or restore the site within the prescribed time period, they become the property of the United States and may be sold, destroyed or otherwise disposed of without any liability to the United States. However, the holder shall remain liable for all cost associated with their removal, including costs of sale and impoundment, cleanup, and restoration of the site.

VI. FEES

B. Fees for this use have been exempted or waived in full pursuant to 36 CFR 251.57, or revisions thereto, and direction in FSH 2709.11, chapter 30.

VII. OTHER PROVISIONS

A. Members of Congress. No Member of or Delegate to Congress or Resident Commissioner shall benefit from this permit either directly or indirectly, except when the authorized use provides a general benefit to a corporation.

B. Appeals and Remedies. Any discretionary decisions or determinations by the authorized officer are subject to the appeal regulations at 36 CFR 251, Subpart C, or revisions thereto.

C. Superior Clauses. In the event of any conflict between any of the preceding printed clauses or any provision thereof and any of the following clauses or any provision thereof, the preceding printed clauses shall control.

D-4. Surveys, Land Corners. The holder shall protect, in place, all public land survey monuments, private property corners, and Forest boundary markers. In the event that any such land markers or monuments are destroyed in the exercise of the privileges permitted by this authorization, depending on the type of monument destroyed, the holder shall see that they are reestablished or referenced in accordance with (1) the procedures outlined in the "Manual of Instructions for the Survey of the Public Land of the United States," (2) the specifications of the county surveyor, or (3) the specifications of the Forest Service.
Further, the holder shall cause such official survey records as are affected to be amended as provided by law. Nothing in this clause shall relieve the holder's liability for the willful destruction or modification of any Government survey marker as provided at 18 U.S.C. 1858.

This permit is accepted subject to the conditions set out above.

MARINE CORPS
MOUNTAIN WARFARE TRAINING CENTER

By: _____
COLONEL J. J. CARROLL, JR.

Title: _____
Commanding Officer

Date: 5 Sept 13

U.S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE

By: _____
MICHAEL O. CRAWLEY

Title: _____
District Ranger

Date: 8-1-2013

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0596-0082. The time required to complete this information collection is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, and marital or family status. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA?s TARGET Center at 202-720-2600 (voice and TDD).

To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, 1400 Independence Avenue, SW, Washington, DC 20250-9410 or call toll free (866) 632-9992 (voice). TDD users can contact USDA through local relay or the Federal relay at (800) 877-8339 (TDD) or (866) 377-8642 (relay voice). USDA is an equal opportunity provider and employer.

The Privacy Act of 1974 (5 U.S.C. 552a) and the Freedom of Information Act (5 U.S.C. 552) govern the confidentiality to be provided for information received by the Forest Service.

Authorization ID: BRI478
Contact ID: USMC-WMTC
Expiration Date: **9-30-2014**
Use Code: 431

FS-2700-4 (03/06)
OMB 096-0082

U.S. DEPARTMENT OF AGRICULTURE
Forest Service
SPECIAL USE PERMIT
AUTHORITY:
ORGANIC ADMINISTRATION ACT June 4, 1897

Pickel Meadows

U.S. MARINE CORPS – Mountain Warfare Training Center, HC83 BOX 1, BRIDGEPORT, CA 93517- (hereinafter called the Holder) is hereby authorized to use or occupy National Forest System lands, to use subject to the conditions set out below, on the National Forest or unit of the National Forest System.

This permit covers 8,178 acres in the Pickel Meadows areas, and is described as: T. 5 N. R. 22.Sections 1-3,), T.5.N, R.23.E, Sections 5,6, T.6.N,R.22.E Sections 23-27, 35,36; T.6.N R.23.E. Sections 17-20, 29-32, as shown on Appendix A, the location map attached to and made a part of this permit, and is issued for the purpose of:

Conducting US Marine Corps military training activities as described below and incorporated in Appendix B, the operations plan attached to and made part of this permit.

The following activities and areas are authorized year round:

1. Authorized activities within TAs 13,14,15, and16 as further detailed in Appendix A, the Annual Operating Plan and noted on Appendix B, the attached map focus on conditioning, acclimatizing and initial training activities for units up to Platoon size (approximately 40 individuals).
2. Troops will hike on existing roads and trails.
3. Off road/trail hiking is limited to groups *of 15 individuals or less.*
4. Troops will be supported by up to four vehicles on the Kirman Lake road.
5. One helicopter landing zone, LZ Bullet, as designated on the attached map.
6. Stream Crossings consisting of rope bridges and stream fording on the West Walker River is authorized year round for groups of less than or equal to 150 persons:
7. Use of the Pickel Corral parking area is authorized on a case by case basis. The MCMWTC shall contact the Marine Liaison Officer three weeks in advance of its intended use of the corral parking area to ensure corral permittees will not be using the area during that time period. Use of the corrals by the corral permit holders shall take precedence over any use authorized to the MCMWTC. Use of the parking area is limited to a maximum of 120 personnel and 20 vehicles so as not to increase the size of the current parking area. Use of the area is restricted to command centers, or similar types of operations and subject to conditions set forth in Appendix B, the operating plan.
8. Limited snowmobile use in TA16, Emma Crossing Area, if and when conditions warrant.
9. Mud Lake (Explosive) Ice Breaching
10. Millie Lake Road Loop (to access Millie Lake which is located on California state lands.
11. Kirman Lake Ice Breaching (mechanical only) and cold water immersion.
12. For safe air operations, Helicopter flights at less than 3000 AGL south of HWY 108 in the Pickel Meadows area to allow for safe approach and landing at LZ Bullet and the MCMWTC Expeditionary Airfield located on the Lower Base Camp north of HWY 108.

Due to the recent sightings of the Sierra Nevada Red Fox, the following mitigation is included:

- To prevent red fox habituation to human food, all food, including trash (i.e food packaging, food scraps, etc.),should be stored in a manner that wildlife cannot access it. Large camps should store food in bear-resistant metal containers (examples include http://www.bearsaver.com/, metal toolboxes such as Granger boxes). Overnight trips should use a canister listed at http://www.nps.gov/yose/planyourvisit/containers.htm. If food must be hung, the counter balance method should be used. For additional recommendations on food storage, please coordinate with the Bridgeport District wildlife biologist.

- If Sierra Nevada Red Fox (SNRF) dens are discovered, a limited operating period (LOP) will be instituted from January 1 to June 30. Military use, including avalanche initiation (use of explosives), small arms fire, snowmobiling and skiing, will not be allowed within ¼ mile of a den. This LOP and distance from the den may be adjusted if new information arises that indicates a change would be appropriate to protect denning individuals. A special treatment area (STA) would be established around any active den that would consider and include site-specific recommendations.
- All users to the area will be educated about proper food storage, behavior around wildlife, and how to report SNRF sightings. Signs about how to differentiate between SNRF, gray fox and coyote have been provided to the military for educational purposes.
- If monitoring indicates additional impacts to the SNRF from military use, additional restrictions may occur including; limits on night riding, trail closures and reroutes, and seasonal closures.
- If ongoing wildlife, plant or cultural surveys detect a sensitive resource, additional mitigations may apply.

Additional Stipulations of Use are detailed in Section V. and VI. of the Operating Plan.

The above described or defined area shall be referred to herein as the "permit area".

TERMS AND CONDITIONS

I. AUTHORITY AND GENERAL TERMS OF THE PERMIT

A. Authority. This permit is issued pursuant to the authorities enumerated at Title 36, Code of Federal Regulations, Section 251 Subpart B, as amended. This permit, and the activities or use authorized, shall be subject to the terms and conditions of the Secretary's regulations and any subsequent amendment to them.

B. Authorized Officer. The authorized officer is the Forest Supervisor or a delegated subordinate officer.

C. License. This permit is a license for the use of federally owned land and does not grant any permanent, possessory interest in real property, nor shall this permit constitute a contract for purposes of the Contract Disputes Act of 1978 (41 U.S.C. 611). Loss of the privileges granted by this permit by revocation, termination, or suspension is not compensable to the holder.

D. Amendment. This permit may be amended in whole or in part by the Forest Service when, at the discretion of the authorized officer, such action is deemed necessary or desirable to incorporate new terms, conditions, and stipulations as may be required by law, regulation, land management plans, or other management decisions.

E. Existing Rights. This permit is subject to all valid rights and claims of third parties. The United States is not liable to the holder for the exercise of any such right or claim.

F. Nonexclusive Use and Public Access. Unless expressly provided for in additional terms, use of the permit area is not exclusive. The Forest Service reserves the right to use or allow others to use any part of the permit area, including roads, for any purpose, provided, such use does not materially interfere with the holder's authorized use. A final determination of conflicting uses is reserved to the Forest Service.

G. Forest Service Right of Entry and Inspection. The Forest Service has the right of unrestricted access of the permitted area or facility to ensure compliance with laws, regulations, and ordinances and the terms and conditions of this permit.

H. Assignability. This permit is not assignable or transferable. If the holder through death, voluntary sale or transfer, enforcement of contract, foreclosure, or other valid legal proceeding ceases to be the owner of the improvements, this permit shall terminate.

I. Permit Limitations. Nothing in this permit allows or implies permission to build or maintain any structure or facility, or to conduct any activity unless specifically provided for in this permit. Any use not specifically identified in this permit must be approved by the authorized officer in the form of a new permit or permit amendment.

II. TENURE AND ISSUANCE OF A NEW PERMIT

A. Expiration at the End of the Authorized Period. This permit will expire at midnight on **9-30-2014**. Expiration shall occur by operation of law and shall not require notice, any decision document, or any environmental analysis or other documentation.

B. Minimum Use or Occupancy of the Permit Area. Use or occupancy of the permit area shall be exercised at least **30 days**, unless otherwise authorized in writing under additional terms of this permit.

C. Notification to Authorized Officer. If the holder desires issuance of a new permit after expiration, the holder shall notify the authorized officer in writing not less than six (6) months prior to the expiration date of this permit.

D. Conditions for Issuance of a New Permit. At the expiration or termination of an existing permit, a new permit may be issued to the holder of the previous permit or to a new holder subject to the following conditions:

1. The authorized use is compatible with the land use allocation in the Forest Land and Resource Management Plan.
2. The permit area is being used for the purposes previously authorized.
3. The permit area is being operated and maintained in accordance with the provisions of the permit.
4. The holder has shown previous good faith compliance with the terms and conditions of all prior or other existing permits, and has not engaged in any activity or transaction contrary to Federal contracts, permits laws, or regulations.

E. Discretion of Forest Service. Notwithstanding any provisions of any prior or other permit, the authorized officer may prescribe new terms, conditions, and stipulations when a new permit is issued. The decision whether to issue a new permit to a holder or successor in interest is at the absolute discretion of the Forest Service.

III. RESPONSIBILITIES OF THE HOLDER

A. Compliance with Laws, Regulations, and other Legal Requirements. The holder shall comply with all applicable Federal, State, and local laws, regulations, and standards, including but not limited to, the Federal Water Pollution Control Act, 33 U.S.C. 1251 et seq., the Resource Conservation and Recovery Act, 42 U.S.C. 6901 et seq., the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S. C. 9601 et seq., and other relevant environmental laws, as well as public health and safety laws and other laws relating to the siting, construction, operation, and maintenance of any facility, improvement, or equipment on the property.

B. Plans. Plans for development, layout, construction, reconstruction, or alteration of improvements on the permit area, as well as revisions of such plans, must be prepared by a qualified individual acceptable to the authorized officer and shall be approved in writing prior to commencement of work. The holder may be required to furnish as-built plans, maps, or surveys, or other similar information, upon completion of construction.

C. Maintenance. The holder shall maintain the improvements and permit area to standards of repair, orderliness, neatness, sanitation, and safety acceptable to the authorized officer and consistent with other provisions of this authorization. If requested, the holder shall comply with inspection requirements deemed appropriate by the authorized officer.

D. Hazard Analysis. The holder has a continuing responsibility to identify all hazardous conditions on the permit area which would affect the improvements, resources, or pose a risk of injury to individuals. Any non-emergency actions to abate such hazards shall be performed after consultation with the authorized officer. In emergency situations, the holder shall notify the authorized officer of its actions as soon as possible, but not more than 48 hours, after such actions have been taken.

E. Change of Address. The holder shall immediately notify the authorized officer of a change in address.

F. Change in Ownership. This permit is not assignable and terminates upon change of ownership of the improvements or control of the business entity. The holder shall immediately notify the authorized officer when a change in ownership or control of business entity is pending. Notification by the present holder and potential owner shall be executed using Form SF-299 Application for Transportation and Utility Systems and Facilities of

Federal Lands, or Form FS-2700-3a, Holder Initiated Revocation of Existing Authorization, Request for a Special Use Permit. Upon receipt of the proper documentation, the authorized officer may issue a permit to the party who acquires ownership of, or a controlling interest in, the improvements or business entity.

IV. LIABILITY

For purposes of this section, "holder" includes the holder's heirs, assigns, agents, employees, and contractors.

A. The holder assumes all risk of loss to the authorized improvements.

B. The holder shall indemnify, defend, and hold the United States (USDA-Forest Service) harmless for any violations incurred under any such laws and regulations or for judgments, claims, or demands assessed against the United States (USDA-Forest Service) in connection with the holder's use or occupancy of the property. The holder's indemnification of the United States (USDA-Forest Service) shall include any loss by personal injury, loss of life or damage to property in connection with the occupancy or use of the property during the term of this permit. Indemnification shall include, but is not limited to, the value of resources damaged or destroyed; the costs of restoration, cleanup, or other mitigation; fire suppression or other types of abatement costs; third party claims and judgments; and all administrative, interest, and other legal costs. This paragraph shall survive the termination or revocation of this authorization, regardless of cause.

C. The holder has an affirmative duty to protect from damage the land, property, and interests of the United States.

D. In the event of any breach of the conditions of this authorization by the holder, the authorized officer may, on reasonable notice, cure the breach for the account at the expense of the holder. If the Forest Service at any time pays any sum of money or does any act which will require payment of money, or incurs any expense, including reasonable attorney's fees, in instituting, prosecuting, and/or defending any action or proceeding to enforce the United States rights hereunder, the sum or sums so paid by the United States (USDA-Forest Service), with all interests, costs and damages shall, at the election of the Forest Service, be deemed to be additional fees hereunder and shall be due from the holder to the Forest Service on the first day of the month following such election.

E. With respect to roads, the holder shall be proportionally liable for damages to all roads and trails of the United States open to public use caused by the holder's use to the same extent as provided above, except that liability shall not include reasonable and ordinary wear and tear.

F. The Forest Service has no duty to inspect the permit area or to warn of hazards and, if the Forest Service does inspect the permit area, it shall incur no additional duty nor liability for identified or non-identified hazards. This covenant may be enforced by the United States in a court of competent jurisdiction.

V. TERMINATION, REVOCATION, AND SUSPENSION

A. General. For purposes of this permit, "termination", "revocation", and "suspension" refer to the cessation of uses and privileges under the permit.

"Termination" refers to the cessation of the permit under its own terms without the necessity for any decision or action by the authorized officer. Termination occurs automatically when, by the terms of the permit, a fixed or agreed upon condition, event, or time occurs. For example, the permit terminates at expiration. Terminations are not appealable.

"Revocation" refers to an action by the authorized officer to end the permit because of noncompliance with any of the prescribed terms, or for reasons in the public interest. Revocations are appealable.

"Suspension" refers to a revocation which is temporary and the privileges may be restored upon the occurrence of prescribed actions or conditions. Suspensions are appealable.

B. Revocation or Suspension. The Forest Service may suspend or revoke this permit in whole or part for:

1. Noncompliance with Federal, State, or local laws and regulations.
2. Noncompliance with the terms and conditions of this permit.
3. Reasons in the public interest.
4. Abandonment or other failure of the holder to otherwise exercise the privileges granted.

C. Opportunity to Take Corrective Action. Prior to revocation or suspension for cause pursuant to Section V (B), the authorized officer shall give the holder written notice of the grounds for each action and a reasonable time, not to exceed 90 days, to complete the corrective action prescribed by the authorized officer.

D. Removal of Improvements. Prior to abandonment of the improvements or within a reasonable time following revocation or termination of this authorization, the holder shall prepare, for approval by the authorized officer, an abandonment plan for the permit area. The abandonment plan shall address removal of improvements and restoration of the permit area and prescribed time frames for these actions. If the holder fails to remove the improvements or restore the site within the prescribed time period, they become the property of the United States and may be sold, destroyed or otherwise disposed of without any liability to the United States. However, the holder shall remain liable for all cost associated with their removal, including costs of sale and impoundment, cleanup, and restoration of the site.

VI. FEES

B. Fees for this use have been exempted or waived in full pursuant to 36 CFR 251.57, or revisions thereto, and direction in FSH 2709.11, chapter 30.

VII. OTHER PROVISIONS

A. Members of Congress. No Member of or Delegate to Congress or Resident Commissioner shall benefit from this permit either directly or indirectly, except when the authorized use provides a general benefit to a corporation.

B. Appeals and Remedies. Any discretionary decisions or determinations by the authorized officer are subject to the appeal regulations at 36 CFR 251, Subpart C, or revisions thereto.

C. Superior Clauses. In the event of any conflict between any of the preceding printed clauses or any provision thereof and any of the following clauses or any provision thereof, the preceding printed clauses shall control.

D. Explosives (B29).

1. Only exploding bridgewire (EBWs) shall be used for blasting except for hand charging of snow release zones.

2. In the use of explosives, the holder shall exercise the utmost care not to endanger life or property and shall comply with the requirements of the Forest Service. The holder shall be responsible for any and all damages resulting from the use of explosives and shall adopt precautions that will prevent damage to surrounding objects. The holder shall furnish and erect special signs to warn the public of blasting operations. Such signs shall be placed and maintained so as to be clearly evident to the public during all critical periods of the blasting operations, and shall include a warning statement to have radio transmitters turned off.

3. All storage places for explosives shall be marked "DANGEROUS-EXPLOSIVES." The method of storing and handling explosives shall conform to procedures contained in the "Blasters Guide EM-7100-14," and Title 27, Code of Federal Regulations, parts 1 to 199, Alcohol, Tobacco Products, and Firearms (Bureau of Alcohol, Tobacco and Firearms (BATF)).

4. When using explosives, the holder shall adopt precautions which will prevent damage to landscape features and other surrounding objects. When directed by the Forest officer in charge, trees within an area designated to be cleared shall be left as a protective screen for surrounding vegetation during blasting operations. Trees so left shall be removed and disposed of after blasting has been completed. When necessary, and at any point of special danger, the holder shall use suitable mats or some other approved method to smother blasts.

E. Operating Plan (C8). The holder shall provide an Operating Plan. The plan shall be prepared in consultation with the authorized officer or designated representative and cover operation and maintenance of facilities, dates or season of operations, and other information required by the authorized officer to manage and evaluate the

occupation and/or use of National Forest System lands. The provisions of the Operating Plan and the annual revisions shall become a part of this authorization and shall be submitted by the holder and approved by the authorized officer or their designated representative(s). This Operating Plan is hereby made a part of the authorization.

F. Surveys, Land Corners (D4). The holder shall protect, in place, all public land survey monuments, private property corners, and Forest boundary markers. In the event that any such land markers or monuments are destroyed in the exercise of the privileges permitted by this authorization, depending on the type of monument destroyed, the holder shall see that they are reestablished or referenced in accordance with (1) the procedures outlined in the "Manual of Instructions for the Survey of the Public Land of the United States," (2) the specifications of the county surveyor, or (3) the specifications of the Forest Service.

Further, the holder shall cause such official survey records as are affected to be amended as provided by law. Nothing in this clause shall relieve the holder's liability for the willful destruction or modification of any Government survey marker as provided at 18 U.S.C. 1858.

This permit is accepted subject to the conditions set out above.

HOLDER NAME:
MARINE CORPS
MOUNTAIN WARFARE TRAINING CENTER

By: _____
COLONEL J. J. CARROLL, JR

Title: _____
Commanding Officer

Date: 5 Sept 13

U.S. DEPARTMENT OF AGRICULTURE

Forest Service

By: _____
MICHAEL CRAWLEY

Title: _____
District Ranger

Date: 8-1-2013

Authorization ID: BRI494
Contact ID: USMC-WMTC
Expiration Date: **9-30-2014**
Use Code: 431

FS-2700-4 (03/06)
OMB 096-0082

U.S. DEPARTMENT OF AGRICULTURE
Forest Service
. SPECIAL USE PERMIT
AUTHORITY:
ORGANIC ADMINISTRATION ACT June 4, 1897

Lucky Boy Pass

US Marine Corps Mountain Warfare Training Center, HC 83 Box 1, Bridgeport, CA 93517 (hereinafter called the Holder) is hereby authorized to use or occupy National Forest System lands, to use subject to the conditions set out below, on the Bridgeport Ranger District of the Humboldt-Toiyabe National Forest.

This permit covers approximately 28 and is described as:

Lucky Boy Pass Road (FDR 028 &199) and the Masonic Road (FDR 046).

As shown on Appendix A, the location map and made part of this permit and issued for the purpose of:
conducting USMC military training activities and described below and subject to conditions as noted:

Conduct convoy training on Lucky Boy Pass Road (FS Roads 028 and 199) and Masonic Road (FDR046). Training entails military personnel conducting tactical convoy operations for hostile roads, crossings and terrain as expected in foreign countries. This training would provide the Marines with experience in dealing with staging, movement, ambushes, improvised explosive devices and medical evacuation procedures.

- Blank 5.56mm, 7.76mm, and 50.caliber ammunition only would be utilized for this training.
- Use of simulated Improvised Explosive Devices as approved and shown on Appendix A, the location map.
- Simulated ambush scenarios as shown on. Appendix A, the location map.
- Simulated medical evacuation training.
- Equipment would include up to 20 vehicles and involving up to 120 personnel.
- Use of the corral area at the Rosaschi Ranch as a staging area for 30-45 minute briefings prior to the start of the exercise to avoid traffic congestion on the road.
- All cultural and sensitive plant and wildlife sites would be avoided.
- Masonic Road - Exercises are restricted to the existing road disturbance or footprint and not to extend beyond this footprint onto undisturbed ground.

Subject to the following conditions:

1. MCMWTC will inform the Forest Service two days prior to any scheduled exercise.

2. Authorized roads will be used only in the dry season. Roads are not authorized for vehicle use when roads become water saturated and vehicle tires cause rutting no more than 2inches deep into the road surface.

3. MCMWTC is to power-wash all vehicles prior to use to eliminate noxious or undesirable weed seed from being carried onto the Forest.

4. The maximum speed limit for Forest roads is 25 miles per hour maximum. Convoy vehicles are expected to observe this speed limit.

5. If convoy vehicles stop or park, they are to do so at the extreme right side of the road in an area wide enough to allow public traffic to pass safely…safely meaning enough room for passing along side and visual clearance sufficient to see oncoming vehicles. If visual clearance is insufficient, a person would be appointed to direct traffic safely.

6. Report any collisions with wildlife to the Forest Service Ranger Station Wildlife Biologist.

7. Following any exercise, briefing stop or other activity, Marines would police the area, cleaning up and transporting trash generated to an off-forest facility for disposal.

8. No digging or ground disturbing activities are allowed except within the existing road footprint, including removal of vegetation. Any disturbance created in the roadway as a result of exercises would be restored to the original condition for public vehicle safety.

9. If ongoing wildlife, plant or cultural surveys detect a sensitive resource, additional mitigations may be applied.

For Lucky Boy Pass Road:

10. Prior to the start of each day's training, exercise controllers would place signs at the start of the Lucky Boy Pass Road, at Fletcher, and at the end of Lucky Boy Pass Road to alert the traveling public to the presence of military training on the road. A Marine safety vehicle would be located at Fletcher to provide additional information to the public. Signs would also be placed at the beginning and end of Masonic Road for the same purpose.

11. No stopping or exiting from vehicles between Fletcher and Mud Springs is allowed due to critical archeological sites and sage grouse habitat.

12. Personnel will not exit/depart convoy vehicles during military operations within a half mile to the east and west of the Lucky Boy Road/Masonic Road junction (Sonoma Stage Station).

13. Personnel will not exit/depart convoy vehicles during military operations within a half mile to the east and west of the Swallow LZ located roughly 300-400 meters south of Lucky Boy Road.

For Masonic Road:

14. Training operations would be restricted to the road footprint. No excursion of personnel or vehicles is allowed beyond the road, e.g. into sage brush, pinyons or grasses along the road, except as noted on Appendix A, the location map.

15. Prior to the start of each day's training, exercise controllers would place signs each termini of Masonic Road. to alert the traveling public to the presence of military training on the road.

16. No stopping or exiting from vehicles in the area of the Masonic Ghost Town site as this resource is a Forest Priority Heritage Asset.

17. MCMWTC Environmental in cooperation with the Forest Service must provide environmental monitoring and report any resource damage immediately to the Forest Service. Forest Service officers will periodically monitor activities.

Additional Stipulations of Use are detailed in Section V. and VI. of the Operating Plan.

The above described or defined area shall be referred to herein as the "permit area".

TERMS AND CONDITIONS

I. AUTHORITY AND GENERAL TERMS OF THE PERMIT

A. Authority. This permit is issued pursuant to the authorities enumerated at Title 36, Code of Federal Regulations, Section 251 Subpart B, as amended. This permit, and the activities or use authorized, shall be subject to the terms and conditions of the Secretary's regulations and any subsequent amendment to them.

B. Authorized Officer. The authorized officer is the Forest Supervisor or a delegated subordinate officer.

C. License. This permit is a license for the use of federally owned land and does not grant any permanent, possessory interest in real property, nor shall this permit constitute a contract for purposes of the Contract Disputes Act of 1978 (41 U.S.C. 611). Loss of the privileges granted by this permit by revocation, termination, or suspension is not compensable to the holder.

D. Amendment. This permit may be amended in whole or in part by the Forest Service when, at the discretion of the authorized officer, such action is deemed necessary or desirable to incorporate new terms, conditions, and stipulations as may be required by law, regulation, land management plans, or other management decisions.

E. Existing Rights. This permit is subject to all valid rights and claims of third parties. The United States is not liable to the holder for the exercise of any such right or claim.

F. Nonexclusive Use and Public Access. Unless expressly provided for in additional terms, use of the permit area is not exclusive. The Forest Service reserves the right to use or allow others to use any part of the permit area, including roads, for any purpose, provided, such use does not materially interfere with the holder's authorized use. A final determination of conflicting uses is reserved to the Forest Service.

G. Forest Service Right of Entry and Inspection. The Forest Service has the right of unrestricted access of the permitted area or facility to ensure compliance with laws, regulations, and ordinances and the terms and conditions of this permit.

H. Assignability. This permit is not assignable or transferable. If the holder through death, voluntary sale or transfer, enforcement of contract, foreclosure, or other valid legal proceeding ceases to be the owner of the improvements, this permit shall terminate.

I. Permit Limitations. Nothing in this permit allows or implies permission to build or maintain any structure or facility, or to conduct any activity unless specifically provided for in this permit. Any use not specifically identified in this permit must be approved by the authorized officer in the form of a new permit or permit amendment.

II. TENURE AND ISSUANCE OF A NEW PERMIT

A. Expiration at the End of the Authorized Period. This permit will expire at midnight on **9-30-2014**. Expiration shall occur by operation of law and shall not require notice, any decision document, or any environmental analysis or other documentation.

B. Minimum Use or Occupancy of the Permit Area. Use or occupancy of the permit area shall be exercised at least **30 days**, unless otherwise authorized in writing under additional terms of this permit.

C. Notification to Authorized Officer. If the holder desires issuance of a new permit after expiration, the holder shall notify the authorized officer in writing not less than six (6) months prior to the expiration date of this permit.

D. Conditions for Issuance of a New Permit. At the expiration or termination of an existing permit, a new permit may be issued to the holder of the previous permit or to a new holder subject to the following conditions:

1. The authorized use is compatible with the land use allocation in the Forest Land and Resource Management Plan.
2. The permit area is being used for the purposes previously authorized.
3. The permit area is being operated and maintained in accordance with the provisions of the permit.
4. The holder has shown previous good faith compliance with the terms and conditions of all prior or other existing permits, and has not engaged in any activity or transaction contrary to Federal contracts, permits laws, or regulations.

E. Discretion of Forest Service. Notwithstanding any provisions of any prior or other permit, the authorized officer may prescribe new terms, conditions, and stipulations when a new permit is issued. The decision whether to issue a new permit to a holder or successor in interest is at the absolute discretion of the Forest Service.

III. RESPONSIBILITIES OF THE HOLDER

A. Compliance with Laws, Regulations, and other Legal Requirements. The holder shall comply with all applicable Federal, State, and local laws, regulations, and standards, including but not limited to, the Federal Water Pollution Control Act, 33 U.S.C. 1251 et seq., the Resource Conservation and Recovery Act, 42 U.S.C. 6901 et seq., the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S. C. 9601 et seq., and other relevant environmental laws, as well as public health and safety laws and other laws relating to the siting, construction, operation, and maintenance of any facility, improvement, or equipment on the property.

B. Plans. Plans for development, layout, construction, reconstruction, or alteration of improvements on the permit area, as well as revisions of such plans, must be prepared by a qualified individual acceptable to the authorized officer and shall be approved in writing prior to commencement of work. The holder may be required to furnish as-built plans, maps, or surveys, or other similar information, upon completion of construction.

C. Maintenance. The holder shall maintain the improvements and permit area to standards of repair, orderliness, neatness, sanitation, and safety acceptable to the authorized officer and consistent with other provisions of this authorization. If requested, the holder shall comply with inspection requirements deemed appropriate by the authorized officer.

D. Hazard Analysis. The holder has a continuing responsibility to identify all hazardous conditions on the permit area which would affect the improvements, resources, or pose a risk of injury to individuals. Any non-emergency actions to abate such hazards shall be performed after consultation with the authorized officer. In emergency situations, the holder shall notify the authorized officer of its actions as soon as possible, but not more than 48 hours, after such actions have been taken.

E. Change of Address. The holder shall immediately notify the authorized officer of a change in address.

F. Change in Ownership. This permit is not assignable and terminates upon change of ownership of the improvements or control of the business entity. The holder shall immediately notify the authorized officer when a change in ownership or control of business entity is pending. Notification by the present holder and potential owner shall be executed using Form SF-299 Application for Transportation and Utility Systems and Facilities of Federal Lands, or Form FS-2700-3a, Holder Initiated Revocation of Existing Authorization, Request for a Special Use Permit. Upon receipt of the proper documentation, the authorized officer may issue a permit to the party who acquires ownership of, or a controlling interest in, the improvements or business entity.

IV. LIABILITY

For purposes of this section, "holder" includes the holder's heirs, assigns, agents, employees, and contractors.

A. The holder assumes all risk of loss to the authorized improvements.

B. The holder shall indemnify, defend, and hold the United States harmless for any violations incurred under any such laws and regulations or for judgments, claims, or demands assessed against the United States in connection with the holder's use or occupancy of the property. The holder's indemnification of the United States shall include any loss by personal injury, loss of life or damage to property in connection with the occupancy or use of the property during the term of this permit. Indemnification shall include, but is not limited to, the value of resources damaged or destroyed; the costs of restoration, cleanup, or other mitigation; fire suppression or other types of

abatement costs; third party claims and judgments; and all administrative, interest, and other legal costs. This paragraph shall survive the termination or revocation of this authorization, regardless of cause.

C. The holder has an affirmative duty to protect from damage the land, property, and interests of the United States.

D. In the event of any breach of the conditions of this authorization by the holder, the authorized officer may, on reasonable notice, cure the breach for the account at the expense of the holder. If the Forest Service at any time pays any sum of money or does any act which will require payment of money, or incurs any expense, including reasonable attorney's fees, in instituting, prosecuting, and/or defending any action or proceeding to enforce the United States rights hereunder, the sum or sums so paid by the United States, with all interests, costs and damages shall, at the election of the Forest Service, be deemed to be additional fees hereunder and shall be due from the holder to the Forest Service on the first day of the month following such election.

E. With respect to roads, the holder shall be proportionally liable for damages to all roads and trails of the United States open to public use caused by the holder's use to the same extent as provided above, except that liability shall not include reasonable and ordinary wear and tear.

F. The Forest Service has no duty to inspect the permit area or to warn of hazards and, if the Forest Service does inspect the permit area, it shall incur no additional duty nor liability for identified or non-identified hazards. This covenant may be enforced by the United States in a court of competent jurisdiction.

V. TERMINATION, REVOCATION, AND SUSPENSION

A. General. For purposes of this permit, "termination", "revocation", and "suspension" refer to the cessation of uses and privileges under the permit.

"Termination" refers to the cessation of the permit under its own terms without the necessity for any decision or action by the authorized officer. Termination occurs automatically when, by the terms of the permit, a fixed or agreed upon condition, event, or time occurs. For example, the permit terminates at expiration. Terminations are not appealable.

"Revocation" refers to an action by the authorized officer to end the permit because of noncompliance with any of the prescribed terms, or for reasons in the public interest. Revocations are appealable.

"Suspension" refers to a revocation which is temporary and the privileges may be restored upon the occurrence of prescribed actions or conditions. Suspensions are appealable.

B. Revocation or Suspension. The Forest Service may suspend or revoke this permit in whole or part for:

1. Noncompliance with Federal, State, or local laws and regulations.
2. Noncompliance with the terms and conditions of this permit.
3. Reasons in the public interest.
4. Abandonment or other failure of the holder to otherwise exercise the privileges granted.

C. Opportunity to Take Corrective Action. Prior to revocation or suspension for cause pursuant to Section V (B), the authorized officer shall give the holder written notice of the grounds for each action and a reasonable time, not to exceed 90 days, to complete the corrective action prescribed by the authorized officer.

D. Removal of Improvements. Prior to abandonment of the improvements or within a reasonable time following revocation or termination of this authorization, the holder shall prepare, for approval by the authorized officer, an abandonment plan for the permit area. The abandonment plan shall address removal of improvements and restoration of the permit area and prescribed time frames for these actions. If the holder fails to remove the improvements or restore the site within the prescribed time period, they become the property of the United States and may be sold, destroyed or otherwise disposed of without any liability to the United States. However, the holder shall remain liable for all cost associated with their removal, including costs of sale and impoundment, cleanup, and restoration of the site.

VI. FEES

B. Fees for this use have been exempted or waived in full pursuant to 36 CFR 251.57, or revisions thereto, and direction in FSH 2709.11, chapter 30.

VII. OTHER PROVISIONS

A. Members of Congress. No Member of or Delegate to Congress or Resident Commissioner shall benefit from this permit either directly or indirectly, except when the authorized use provides a general benefit to a corporation.

B. Appeals and Remedies. Any discretionary decisions or determinations by the authorized officer are subject to the appeal regulations at 36 CFR 251, Subpart C, or revisions thereto.

C. Superior Clauses. In the event of any conflict between any of the preceding printed clauses or any provision thereof and any of the following clauses or any provision thereof, the preceding printed clauses shall control.

D-4. Surveys, Land Corners. The holder shall protect, in place, all public land survey monuments, private property corners, and Forest boundary markers. In the event that any such land markers or monuments are destroyed in the exercise of the privileges permitted by this authorization, depending on the type of monument destroyed, the holder shall see that they are reestablished or referenced in accordance with (1) the procedures outlined in the "Manual of Instructions for the Survey of the Public Land of the United States," (2) the specifications of the county surveyor, or (3) the specifications of the Forest Service.
Further, the holder shall cause such official survey records as are affected to be amended as provided by law. Nothing in this clause shall relieve the holder's liability for the willful destruction or modification of any Government survey marker as provided at 18 U.S.C. 1858.

This permit is accepted subject to the conditions set out above.

HOLDER NAME:
MARINE CORPS
MOUNTAIN WARFARE TRAINING CENTER

By: _____
COLONEL J. J. CARROLL, JR.

Title: _____
Commanding Officer

Date: 5 Sept 13

U.S. DEPARTMENT OF AGRICULTURE
Forest Service

By: _____
MICHAEL O. CRAWLEY

Title: _____
District Ranger

Date: 8-1-2013

California Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Inland Deserts Region
3602 Inland Empire Boulevard, Suite C-220
Ontario, California 91764
http://www.wildlife.ca.gov

EDMUND G. BROWN, JR, Governor
CHARLTON H. BONHAM, Director

November 13, 2015

Commanding Officer
United States Marine Corps
Mountain Warfare Training Center
Bridgeport, California 93517-9802

TO WHOM IT MAY CONCERN:

Pursuant to action taken by the Fish and Game Commission on December 6, 1984, and Section 312 of the Fish and Game Code, permission is granted to:

Commanding Officer
United States Marine Corps
Mountain Warfare Training Center
Bridgeport, California 93517-9802

hereinafter referred to as the Permittee, to take the following wildlife notwithstanding the specific restrictions provided below, and any other law or regulation:

Bobcat	Bear	Beaver	Badger	Coyote	Rabbit
Deer	Mink	Muskrat	Opossum	Quail	Raccoon
Reptiles	Rodents	Skunk	Squirrels	Trout	

Birds **not** listed under the Migratory Bird Treaty Act.

The Permittee shall conduct survival training activities in accordance with the following restrictions and requirements:

1. No person engaged in survival training taking fish, amphibian, birds or mammals may use any firearm, bow and arrow, steel trap, explosive, chemical poison, drug, net or fish tackle except hooks or hand lines or improvised poles and lines for the taking of fish.

2. Take of trout in Mill, Silver, and Wolf creeks and their tributaries is prohibited due to the presence of Lahontan cutthroat trout.

3. Take of greater sage-grouse and Sierra Nevada red fox is prohibited.

4. Prior to undertaking survival training activities, trainees will be instructed in the identification and avoidance of all special status species by a CDFW staff person. Take of these species is expressly prohibited. Please

contact Tom Stephenson at (760) 937-0238 to arrange for special status species training to be performed prior to training activities.

5. In addition, United States Marine Corps Mountain Warfare Training Center (MCMWTC) personnel in uniform and in Marine Corps vehicles are authorized to collect "road kill" on the State Highway 395 from Bridgeport to the Nevada State border and on State Highway 108 from the Sonora Pass to the State Highway 395. This "road kill" is to be used for training purposes only, and no meat shall be transported to, or stored in, any personal quarters. The California Department of Fish and Wildlife office located at 787 North Main Street, Suite 220, Bishop, California 93514, telephone 760.872.1171, will be notified immediately upon collection of the "road kill". The permittee will provide any biological data from the carcasses requested by the Department of Fish and Wildlife.

6. Except as provided herein, this permit is valid only for regularly scheduled survival training conducted within the boundaries of the MCMWTC near Bridgeport, California, under the direct supervision of the permittee.

7. The permittee shall notify Assistant Chief John Baker via e-mail at John.Baker@wildlife.ca.gov of the dates of all scheduled survival training. If survival training classes are cancelled or rescheduled, notification of the new dates shall be made.

8. The permittee shall submit a report in writing to the California Department of Fish and Wildlife, Law Enforcement Division, 1416 Ninth Street, Room 1326, Sacramento, California, 95814, **and** the California Department of Fish and Wildlife, Bishop Field Office, Attn: Tom Stephenson, 787 North Main Street, Suite 220, Bishop, CA 93514 annually. The report shall include the numbers of persons participating in the training, the methods used to take the game, and the number and kind of each species taken. Upon receipt of the report, the Department may renew this permit for the following year.

9. The permittee shall require that a copy of this permit shall be in possession of each instructor in charge if each team participating in the survival training course, and that the permit shall be exhibited upon request of any officer authorized to enforce Fish and Game laws.

10. This permit does not relieve the permittee of responsibility to comply with any other federal, state, or county law, regulation, or permit which may apply to any activities authorized by this permit.

11. This permit does not authorize the taking of any fish or wildlife contrary to the provisions of Section 312 of the Fish and Game Code, nor does it authorize the training to be held on public or privately-owned lands outside

the boundaries of the MCMWTC. A copy of Section 312 of the Fish and Game Code is attached and is part of this permit.

This permit will expire on **December 31, 2016**. The permittee may ask for cancellation of this permit at any time. The Department may revoke the permit at any time if it is determined that the terms and conditions of this permit are not being complied with by the permittee.

Sincerely,

for Leslie MacNair,
Regional Manager
Inland Deserts Region

Attachment

cc: Dave Bess
Deputy Director,
Chief of Law Enforcement

Assistant Chief John Baker
Department of Fish and Game
Fresno, California

Attachment: Section 312, Fish and Game Code

Fish and Game Code
§312. Survival training course game permit.

The commission may issue a permit authorizing any member of the armed forces of the United States or any student or faculty member of an elementary or secondary school in the public school system actually assigned to, and participating in, an organized survival training course to take fish, amphibia, birds, or mammals, except rare or endangered species, notwithstanding any other law or regulation, pursuant to the terms and conditions of such permit. A permit involving training by the armed forces of the United States shall be issued to the commanding officer of the unit having jurisdiction over the conduct of the survival training course. A permit involving training by an elementary or secondary school in the public school system shall be issued to the governing board or superintendent of the district having jurisdiction over such school and the conduct of the survival training course. A permit shall be applicable only to the area established for such survival training as designated by the commission in the permit and for the species and numbers designated in the permit.

The commission may revise any conditions of a permit if it finds such revision is necessary to properly protect the fish, amphibia, birds, or mammals in the area.

The term of such a permit shall be for not more than a calendar year.

A report shall be submitted on the expiration of the permit period, or as otherwise required by the commission, of all fish, amphibia, birds, or mammals taken during the period covered by the report in each permit area. No new permit may be issued until such report has been submitted and any existing permit may be canceled if such a report is not submitted when required by the commission.

No person engaged in such survival training taking fish, amphibia, birds, or mammals pursuant to such a permit may use any firearm, bow and arrow, steel trap, explosive, chemical, poison, drug, net or fish tackle except hooks or handlines or improvised poles and lines for the taking of fish.

APPENDIX C

AGENCY INRMP REVIEW LETTERS

- USMC to USFS Draft Review Letter - March 3, 2016
- USMC to USFWS Draft Review Letter - March 3, 2016 (incorrect date on letter)
- USMC to CDFW Draft Review Letter - March 3, 2016
- USMC to NDOW Draft Review Letter - March 3, 2016
- USMC to BLM Draft Review Letter - March 3, 2016
- CDFW to USMC Delay in Comments Letter – May 27, 2016
- USFWS to USMC INRMP Comments Letter – May 1, 2017
- CDFW to USMC INRMP Comments Letter – May 5, 2017

  Note: The letters dated August 16, 2017 were not mailed until October 11, 2017.
- USMC to USFS Concurrence Request Letter – August 16, 2017
- USMC to USFWS Concurrence Request Letter – August 16, 2017
- USMC to CDFW Concurrence Request Letter – August 16, 2017
- USMC to NDOW Concurrence Request Letter – August 16, 2017

UNITED STATES MARINE CORPS
MARINE CORPS MOUNTAIN WARFARE TRAINING CENTER
BRIDGEPORT, CALIFORNIA 93517-9802

5090
ENV
MAR 3 2016

From: Commanding Officer, Marine Corps Mountain Warfare Training Center, Bridgeport, California
To: Mr. David Drake, U.S. Forest Service, Bridgeport Ranger District, Bridgeport, California

Subj: INTEGRATED NATURAL RESOURCES MANAGEMENT PLAN AND ASSOCIATED ENVIRONMENTAL ASSESSMENT FOR MARINE CORPS MOUNTAIN WARFARE TRAINING CENTER IN BRIDGEPORT, CALIFORNIA

Encl: (1) Draft Integrated Natural Resources Management Plan
(2) Draft Environmental Assessment

1. In accordance with Marine Corps Guidance for meeting Sikes Act Improvement Act requirements, the U.S. Marine Corps and Naval Facilities Engineering Command Southwest have completed a draft Integrated Natural Resources Management Plan (INRMP) and associated draft Environmental Assessment (EA) for the Marine Corps Mountain Warfare Training Center Bridgeport primarily located in Mono County, California. An INRMP Stakeholder Meeting was held in February 2012, which included representatives from the U.S. Forest Service, Bureau of Land Management, and California Department of Fish and Wildlife.

2. As a cooperating agency, we are seeking from your agency a review of the draft INRMP, in particular the sections relating to natural resources under your jurisdiction. The INRMP review process is described in Section 1.8. Natural resources management is described in Chapter 4. Federally protected species are discussed in detail in Section 3.5.13, with their management described in Section 4.9. A detailed discussion of natural resources present on MCMWTC Bridgeport is presented in Section 3.5.

3. One hard copy with a CD is enclosed, along with a hard copy and CD of the associated EA. We look forward to your comments on the draft INRMP and the associated draft EA for MCMWTC Bridgeport before 1 April 2016, which will enable us to complete this update within the scheduled timeframe. You may provide your comments on the hard copy, through track changes in the word documents, through comments in the PDF, or in the errata spreadsheet included on the CD. Once your review and comments have been received and incorporated into the final INRMP, the U.S. Marine Corps will ask for an endorsement signature.

4. If you have any questions concerning this request, please do not hesitate to contact Mr. Andrew Irvin at (760) 932-1564 or andrew.irvin@usmc.mil.

J. J. MORENO
By direction

UNITED STATES MARINE CORPS
MARINE CORPS MOUNTAIN WARFARE TRAINING CENTER
BRIDGEPORT, CALIFORNIA 93517-9802

ENV
5090
29 Jan 16

From: Natural Resources Manager, Marine Corps Mountain Warfare Training Center, Bridgeport, California
To: Lee Ann Carranza, U.S. Fish and Wildlife Service, Reno, Nevada

Subj: INTEGRATED NATURAL RESOURCES MANAGEMENT PLAN AND ASSOCIATED ENVIRONMENTAL ASSESSMENT FOR MARINE CORPS MOUNTAIN WARFARE TRAINING CENTER IN BRIDGEPORT, CALIFORNIA

Encl: (1) Draft Integrated Natural Resources Management Plan
(2) Draft Environmental Assessment

1. In accordance with Marine Corps Guidance for meeting Sikes Act Improvement Act requirements, the U.S. Marine Corps and Naval Facilities Engineering Command Southwest (NAVFAC SW) have completed a draft Integrated Natural Resources Management Plan (INRMP) and associated draft Environmental Assessment (EA) for the Marine Corps Mountain Warfare Training Center (MCMWTC) Bridgeport primarily located in Mono County, California. An INRMP Stakeholder Meeting was held in February 2012, which included representatives from the U.S. Forest Service, Bureau of Land Management, and California Department of Fish and Wildlife.

2. As part of the mutual cooperation required under the Sikes Act, we are seeking from your agency a review of the draft INRMP, in particular the sections relating to natural resources under your jurisdiction. The INRMP review process is described in Section 1.8, in which the USFWS plays a role. Natural resources management is described in Chapter 4. Federally protected species are discussed in detail in Section 3.5.13, with their management described in Section 4.9. A detailed discussion of natural resources present on MCMWTC Bridgeport is presented in Section 3.5.

3. We have also determined that the implementation of this INRMP may affect but is not likely to adversely affect federally listed species or critical habitat and request your concurrence on this determination.

4. One hard copy with a CD is enclosed, along with a hard copy and CD of the associated EA. We look forward to your comments on the draft INRMP and the associated draft EA for MCMWTC Bridgeport before 1 April 2016, which will enable us to complete this update within the scheduled timeframe. You may provide your comments on the hard copy, through track changes in the Word documents, through comments in the pdf, or in the errata spreadsheet included on the CD. Once your review and comments have been received and incorporated into the final INRMP, the U.S. Marine Corps will ask for an endorsement signature.

Subj: INTEGRATED NATURAL RESOURCES MANAGEMENT PLAN AND ASSOCIATED ENVIRONMENTAL ASSESSMENT FOR MARINE CORPS MOUNTAIN WARFARE TRAINING CENTER IN BRIDGEPORT, CALIFORNIA

5. If you have any questions concerning this request, please do not hesitate to contact the Mr. Andrew Irvin at (760)932-1564 or andrew.irvin@usmc.mil.

MARTIN B. HUSUNG

EVIRONMENTAL MANAGER

UNITED STATES MARINE CORPS
MARINE CORPS MOUNTAIN WARFARE TRAINING CENTER
BRIDGEPORT, CALIFORNIA 93517-9802

5090
ENV
MAR 3 2016

From: Commanding Officer, Marine Corps Mountain Warfare Training Center, Bridgeport, California
To: Mr. Tim Taylor and Dawn Emery, California Department of Fish and Wildlife, Bridgeport, California

Subj: INTEGRATED NATURAL RESOURCES MANAGEMENT PLAN AND ASSOCIATED ENVIRONMENTAL ASSESSMENT FOR MARINE CORPS MOUNTAIN WARFARE TRAINING CENTER IN BRIDGEPORT, CALIFORNIA

Encl: (1) Draft Integrated Natural Resources Management Plan
(2) Draft Environmental Assessment

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2. As part of the mutual cooperation required under the Sikes Act, we are seeking from your agency a review of the draft INRMP, in particular the sections relating to natural resources under your jurisdiction. The INRMP review process is described in Section 1.8, in which the CDFW plays a role. Natural resources management is described in Chapter 4. Federally protected species are discussed in detail in Section 3.5.13, with their management described in Section 4.9. A detailed discussion of natural resources present on MCMWTC Bridgeport is presented in Section 3.5.

3. One hard copy with a CD is enclosed, along with a hard copy and CD of the associated EA. We look forward to your comments on the draft INRMP and the associated draft EA for MCMWTC Bridgeport before 1 April 2016, which will enable us to complete this update within the scheduled timeframe. You may provide your comments on the hard copy, through track changes in the word documents, through comments in the PDF, or in the errata spreadsheet included on the CD. Once your review and comments have been received and incorporated into the final INRMP, the U.S. Marine Corps will ask for an endorsement signature.

4. If you have any questions concerning this request, please do not hesitate to contact Mr. Andrew Irvin (760) 932-1564 or andrew.irvin@usmc.mil.

J. J. MORENO
By direction

UNITED STATES MARINE CORPS
MARINE CORPS MOUNTAIN WARFARE TRAINING CENTER
BRIDGEPORT, CALIFORNIA 93517-9802

5090
ENV
MAR 3 2016

From: Commanding Officer, Marine Corps Mountain Warfare Training Center, Bridgeport, California
To: Mr. Mark Freese, Nevada Department of Wildlife, Carson City, Nevada

Subj: INTEGRATED NATURAL RESOURCES MANAGEMENT PLAN AND ASSOCIATED ENVIRONMENTAL ASSESSMENT FOR MARINE CORPS MOUNTAIN WARFARE TRAINING CENTER IN BRIDGEPORT, CALIFORNIA

Encl: (1) Draft Integrated Natural Resources Management Plan
(2) Draft Environmental Assessment

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2. As part of the mutual cooperation required under the Sikes Act, we are seeking from your agency a review of the draft INRMP, in particular the sections relating to natural resources under your jurisdiction. The INRMP review process is described in Section 1.8, in which the Nevada Division of Wildlife plays a role. Natural resources management is described in Chapter 4. Federally protected species are discussed in detail in Section 3.5.13, with their management described in Section 4.9. A detailed discussion of natural resources present on MCMWTC Bridgeport is presented in Section 3.5.

3. One hard copy with a CD is enclosed, along with a hard copy and CD of the associated EA. We look forward to your comments on the draft INRMP and the associated draft EA for MCMWTC Bridgeport before 1 April 2016, which will enable us to complete this update within the scheduled timeframe. You may provide your comments on the hard copy, through track changes in the word documents, through comments in the PDF, or in the errata spreadsheet included on the CD. Once your review and comments have been received and incorporated into the final INRMP, the U.S. Marine Corps will ask for an endorsement signature.

4. If you have any questions concerning this request, please do not hesitate to contact Mr. Andrew Irvin at (760) 932-1564 or andrew.irvin@usmc.mil.

J. J. MORENO
By direction

UNITED STATES MARINE CORPS
MARINE CORPS MOUNTAIN WARFARE TRAINING CENTER
BRIDGEPORT, CALIFORNIA 93517-9802

5090
ENV
MAR 3 2016

From: Commanding Officer, Marine Corps Mountain Warfare Training Center, Bridgeport, California
To: Ms. Terri Knutson, Bureau of Land Management, Carson City, Nevada

Subj: INTEGRATED NATURAL RESOURCES MANAGEMENT PLAN AND ASSOCIATED ENVIRONMENTAL ASSESSMENT FOR MARINE CORPS MOUNTAIN WARFARE TRAINING CENTER IN BRIDGEPORT, CALIFORNIA

Encl: (1) Draft Integrated Natural Resources Management Plan
(2) Draft Environmental Assessment

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J. J. MORENO
By direction

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Inland Deserts Region – Bishop Field Office
787 North Main Street, Suite 220
Bishop, CA 93514
www.wildlife.ca.gov

EDMUND G. BROWN JR., Governor
CHARLTON H. BONHAM, Director

May 27, 2016

Mr. Andrew Irvin
Natural Resources Manager
U.S. Marine Corps Mountain Warfare Training Center
Environmental Office, Building 2001
Bridgeport, CA 93517

RE: Marine Corps Mountain Warfare Training Center Environmental Assessment and Draft Integrated Natural Resource Management Plan

Dear Mr. Irvin:

The California Department of Fish and Wildlife (CDFW) received a copy of the March 2016 Environmental Assessment (EA) and March 2016 Public Draft Integrated Natural Resources Management Plan (INRMP) for the Marine Corps Mountain Warfare Training Center (MCMWTC) located in Bridgeport, California. CDFW was not able to meet the April 15, 2016 deadline for review and comment for the INRMP and associated EA. CDFW would like the opportunity to provide detailed comments on the plan and have input on potential impacts to natural resources including threatened and endangered species, critical habitat, wildlife, and CDFW Lands. In addition, CDFW is listed as a Concurring Agency Signatory in the draft INRMP. At this time, we are not able to recommend that our Regional Manager sign the INRMP as drafted.

The EA (page v and 1-7) references Agency Coordination/Intergovernmental Coordination, specifically with relevant state wildlife agencies including the California Department of Fish and Wildlife. CDFW may have participated in a 2012 meeting and been notified of the intent of MCMWTC to prepare a draft INRMP/EA. However, since that time, CDFW has not been engaged in coordination with MCMWTC on this subject. CDFW does not believe that the Bishop Field Office has had significant input into the development of the management goals, objectives, and projects included in the INRMP. The INRMP is very detailed and complex and requires review and input from multiple CDFW programs including Habitat Conservation, Lands North, Wildlife, and Fisheries. It is our understanding that additional coordination with the U.S. Forest Service and the U.S. Fish and Wildlife Service is also warranted before the INRMP is finalized.

CDFW would like to suggest a coordination meeting to allow MCMWTC the opportunity to present the purpose, goals, and intent of the INRMP as well as the associated environmental impacts as analyzed in the EA. Please contact me and I can help coordinate among CDFW Bishop Programs. After this coordination meeting, CDFW may provide written comments on the INRMP and EA. Please contact me at 760-872-0751 or Heidi.Calvert@wildlife.ca.gov. Thank you for your consideration.

Sincerely,

Heidi Calvert

Heidi A. Calvert
Senior Environmental Scientist (Supervisor)

ec: Bruce Kinney, CDFW (Bruce.Kinney@wildlife.ca.gov)
Alisa Ellsworth, CDFW (Alisa.Ellsworth@wildlife.ca.gov)
Tim Taylor, CDFW (Timothy.Taylor@wildlife.ca.gov)
Dawne Emery, CDFW (Dawne.Emery@wildlife.ca.gov)
Rose Banks, CDFW (Rose.Banks@wildlife.ca.gov)
Lee Ann Carranza, U.S. Fish and Wildlife Service (Lee_Carranza@fws.gov)
William Dunkelberger, U.S. Forest Service (WADunkelberger@fs.fed.us)

United States Department of the Interior

Pacific Southwest Region
FISH AND WILDLIFE SERVICE
Reno Fish and Wildlife Office
1340 Financial Blvd., Suite 234
Reno, Nevada 89502
Ph: (775) 861-6300 ~ Fax: (775) 861-6301

May 1, 2017
File No. 2017-CPA-0033

Colonel James E. Donnellan,
Commanding Officer
United States Marine Corps
Marine Corps Mountain Warfare Training Center
HC-83
Bridgeport, California 93517-9802

Subject: Comments on the draft Integrated Natural Resources Management Plan for Marine Corps Mountain Warfare Training Center, Mono County, California

Dear Colonel Donnellan:

The U.S. Fish and Wildlife Service (Service) appreciates the opportunity to comment on the draft Integrated Natural Resources Management Plan (INRMP) for Marine Corps Mountain Warfare Training Center (MCMWTC), Mono County, California.

The INRMP is the primary guidance document and tool for the management of natural resources at the Marine Corps Mountain Warfare Training Center (MCMWTC). The MCMWTC conducts training and other activities on approximately 700 acres of Department of Navy lands and approximately 63,000 acres managed by the Humboldt-Toiyabe National Forest under the authority of special use permits. MCMWTC also utilizes a small portion of lands that are private, state, or managed by other federal agencies. This creates a unique situation where the Marines train on public lands that are not under their direct control and are managed by another agency while being open to the general public.

In the INRMP, the MCMWTC identified several species of interest to the Service, including the following: federally endangered Sierra Nevada yellow-legged frog (*Rana sierrae*; SNYLF); federally threatened Yosemite toad (*Anaxyrus canorus*:YT); federally threatened Lahontan cutthroat trout (*Oncorhynchus clarkii henshawi*; LCT); federal candidate whitebark pine (*Pinus albicaulis*); federal candidate Sierra Nevada Distinct Population Segment of the Sierra Nevada

red fox (*Vulpes vulpes necator*); Bi-State population of the greater sage-grouse (*Centrocercus urophasianus*); pygmy rabbit (*Brachylagus idahoensis*); and California spotted owl (*Strix occidentalis occidentalis*). The INRMP describes environmental impacts to other species, such as the Bald eagle (*Haliaeetus leucocephalus*), that are protected under the Migratory Bird Treaty Act (16 U.S.C. 703) and/or the Bald and Golden Eagle Protection Act (16 U.S.C. 668). We recommend you coordinate directly with the Service's Migratory Bird Program for review and/or guidance on these species.

Upon reviewing the INRMP, the Service compiled resulting comments and recommendations in the attached comment matrix pursuant to the Endangered Species Act of 1973, as amended (ESA; 16 U.S.C. 1531 *et seq*). Other fish and wildlife resources are considered under the Sikes Act Improvement Act, as amended of 1997 (16 U.S.C. 670a *et seq.*), Fish and Wildlife Coordination Act as amended (48 Stat. 401; 16 U.S.C. 661 *et seq.*), and the Fish and Wildlife Act of 1956, as amended (70 Stat. 1119; 16 U.S.C. 742a-742j).

Although species that are protected under ESA are addressed in the INRMP, species that are ESA Candidate or have been petitioned for listing under ESA are only briefly mentioned. Please include management and conservation actions for these species to ensure potential actions on them are minimized to continue their protection. Examples of ESA Candidate or petitioned species include whitebark pine, Sierra Nevada red fox, and California spotted owl.

The Service has provided substantial comments on several drafts of the Environmental Assessment (EA) for the Enhancement of Operations and Training Proficiency at MCMWTC on January 22, 2016, April 10, 2016, June 10, 2016, and August 26, 2016. Many of these comments and the associated comment matrix are similar and applicable to the one provided for the INRMP. We request that you review these comments and incorporate into the INRMP as appropriate. We can provide you copies of the EA comments and the associated comment matrix upon request.

Please reference File No. 2017-CPA-0033 in any future correspondence concerning our comments on the INRMP. If you have any questions or require additional information, please contact me or Andy Starostka at (775) 861-6300.

Sincerely,

Carolyn Swed
Field Supervisor

Attachment

cc:

David Drake
Lands Special Uses / USFS Marine Liaison Officer
Supervisors Office
Humboldt-Toiyabe National Forest
1200 Franklin Way
Sparks, Nevada 89431

Comment/Response Matrix

April 2017

INRMP for MCMWTC Bridgeport, California

#	Page	Section/ Line	Reviewer	Comment	Response
1.	iii	10	FWS	The FWS signatory should be changed to Carolyn W. Swed, Field Supervisor, Reno, Nevada	
2.	vii	2	FWS	General Comment: Should the INRMP be just for the DOD lands since a large portion of MCMWTC is on HTNF lands under a special use permit and has FS regulations and procedures to protect natural resources?	FWS Note: All responses to the provided Comments should be incorporated into the document as appropriate. Addressing comments here in the matrix does not satisfy the intent of the document review.
3.	1-1	6	FWS	Is there more than one MCMWTC? If not, consider dropping "Bridgeport" for easier reading.	
4.	1-2	38	FWS	Items A-J: Should T&E or special status species be specifically identified?	
5.	1-4	1.3	FWS	How does the INRMP fit with the EA/BA and other documents related to the 40 year training plan? There appears to be redundancy between the INRMP and the 40 year permit renewal, plus existing natural resource planning/management guidelines by HTNF?	
6.	1-6	20	FWS	Wouldn't the need for a mutual agreement be appropriate for all trust resources for the signatory agencies including the land management agencies?	
7.	1-6	39&40	FWS	Is the INRMP a living document that can be amended/updated during the annual reviews or only every 5 years?	

8.	1-7	1,2,3	FWS	This identifies/acknowledges an earlier comment, in that the majority of the lands are FS, and are regulated by FS rules. Is the INRMP appropriate for these lands since it would be duplicative and redundant to these regulations?	
9.	2-8	24	FWS	Include White Bark Pine in the high sub-alpine zone since it is an ESA candidate species.	
10.	2-21	17	FWS	Is the name of the document/product that the EA is being developed for INRMP or 40 Year Permit?	
11.	2-22	1	FWS	Please cite or attach as an appendix the referenced MOU.	
12.	2-23	35 &36	FWS	Are the food plots and pond stocking intended activities on base or generic examples of coordination between state agencies and Marines?	
13.	2-24	1	FWS	Monitoring of Sierra amphibians is another collaborative project to include. Also meadow restoration if MC is involved in this.	
14.	2-24	5	FWS	The 40 year plan will merge all the FS SUP's into one, correct? If so, mention the 40 year plan here.	
15.	2-26	27	FWS	After "and public use" add ", and include".	
16.	3-2	5	FWS	To better describe the western boundary, consider using "and the crest of the Sierra Nevada Mountains" or "east of the Pacific Crest Trail"	
17.	3-8	19&20	FWS	Was the 40 year SUP signed in 2009 and we are now just working on the NEPA and Sec 7 consultations?	
18.	3-9	5 through 12	FWS	Might be worth mentioning the Pacific Crest Trail here since it is of national significance in this description.	
19.	3-9	36	FWS	Not sure how much timber production occurs currently on the HTNF or in this area, and it appears to be minimal. Grazing is far more active and wide spread. Consider revising language to "recreation and grazing"	
20.	3-10	21	FWS	Consider including helicopter types and add MV-22 if this may change management or the effects analysis for natural resources.	
21.	3-10	28	FWS	Please include all other small arms including 9 mm, 12 ga shotguns, 50 cal (and others if needed)	
22.	3-14	24	FWS	The travel corridors may also be managed by BLM, Cal Trans, and others beyond USFS. Include all organizations that have management responsibilities.	

23.	3-17	22	FWS	Lost Cannon Allotment: There is conflicting language between allotment type (horse and cattle) and type of animals being grazed (sheep)	
24.	3-26	Table 3-4	FWS	Please see USFWS and include the comments previously provided for the 40-year permit EA for additional restrictions.	
25.	3-26	Yosemite toad	FWS	Please include Sardine and Upper Sardine Meadows, including the wet meadow in TA 9 (at the intersection of Hwy 108 and Finley Mine Road). There are also known breeding ponds near Leavitt Lake. Wolf Creek is not located in TA 10 or 11.	
26.	3-26	Sierra Nevada red fox	FWS	Identify SNRF as an ESA candidate species throughout the document as appropriate. Identify all other ESA candidate species as well (example; white bark pine).	
27.	3-27	Table 3-4 (cont.), Notes;	FWS	Add all ESA Candidate species and include in the table as appropriate.	
28.	3-30	7&8	FWS	Review the EA and 40 year permit renewal documents including USFWS comments and incorporate into the INRMP	
29.	3-30	14	FWS	“unprotected persons (i.e., civilians)” and add “and livestock”	
30.	3-30	14	FWS	Include the minimum 24 inch snow depth stipulation for winter training.	
31.	3-55	22 and 39-40	FWS	It is indicated that wildlife surveys occurred in 2010 and 2011. We would appreciate receiving a copy of Davenport Biological Services and Cardno TEC, Inc. (2012c) for Sierra Nevada red fox information.	
32.	3-56	1-2	FWS	It is indicated that wildlife surveys occurred in 2010 and 2011. We would appreciate receiving a copy of Davenport Biological Services and Cardno TEC, Inc. (2012e) for pygmy rabbit information.	
33.	3-57	25	FWS	The more locally used common name is tall whitetop. Consider using this name for easier reading.	

34.	3-58	10 through 12	FWS	Candidate species are defined, but the Sierra Nevada red fox (Sierra Nevada DPS) and Whitebark pine are not included under that category. Sierra Nevada red fox has been a candidate species since October 8, 2015, and Whitebark pine has been a candidate since July 19, 2011. Should species information be provided?	
35.	3-58	25 through 36	FWS	Include ESA candidate species, such as whitebark pine and Sierra Nevada red fox on this list	
36.	3-61	3.5.13.1	FWS	Final critical habitat has been designated for the Sierra amphibians in 2016. Include the final CH to this document.	
37.	3-62	3.5.13.2	FWS	Please see the EA 40-year permit document for more up to date information for LCT.	
38.	3-62	41	FWS	Did the author mean Independence Lake (north of Truckee Ca.) instead of the mentioned Summit Lake, (NV)?	
39.	3-63	29	FWS	There are no known populations (documentation) of LCT in upper Leavitt Creek other than this one suspicious citation. We are unable to verify (from other sources) that this location is LCT occupied	
40.	3-64	26	FWS	The scientific name for whitebark pine is *Pinus albicaulis*, please revise.	
41.	3-64	3.5.13.3	FWS	Final critical habitat has been designated for the Sierra Amphibians in 2016. Add final CH to this document.	
42.	3-65	12	FWS	Also mention that there are ongoing surveys for Sierra amphibians to determine species range in the training areas.	
43.	3-65	3.5.13.4	FWS	See comments related to SG that we have provided in the 40 year permit renewal, EA/BA.	
44.	3-68	3.5.14	FWS	Final critical habitat rule for the Sierra Amphibians, https://www.gpo.gov/fdsys/pkg/FR-2016-08-26/pdf/2016-20352.pdf please update the entire INRMP to reflect this final rule.	
45.	3-69	10 through 13	FWS	Is there any potential for recovery projects for Sierra Nevada bighorn sheep within the project area? If unlikely, then consider removing this species.	

46.	3-69	20 &21	FWS	As mentioned early in this document, MCMWTC is unique in that the majority of the training lands are owned and managed by the HTNF, so this may complicate this statement. This statement may need to be reviewed by solicitors (DOD. FS, and FWS) for a legal interpretation/determination.	
47.	3-70	3.5.15 Line 1	FWS	Consider the development of a spreadsheet/matrix of all the sensitive species and the Federal, State, agency(s) status. Some species are protected/special status by multiple agencies.	
48.	3-70	3.5.15	FWS	Add ESA candidate species here? Also, include language to manage and protect all sensitive species so there is not a need to list (state, federal, or agency special status). This is beneficial to the Marines to show good stewardship of the lands/natural resources and minimize environmental restrictions to training.	
49.	3-79	Table 3-13	FWS	In this table, there is no status indicated under Federal (C for Sierra Nevada red fox, Sierra Nevada DPS) or under CA State column (T for threatened).	
50.	4-6	10	FWS	Amphibian surveys will continue at some level for several years beyond the 2017 date.	
51.	4-15	9	FWS	Add the 24 inch snow coverage language to other portions of the document referring to winter use of TA 10-11 as appropriate. The 24 inch snow coverage is a key item to protect (critical) habitat and ESA listed amphibians.	
52.	4-17	16	FWS	Not sure if this is the same metric, but we normally use 10% bank alteration metric in T&E occupied habitat. There are other "bank disturbance" measures that can be used, please clarify the metric and standard being used.	
53.	4-19	20 through 22	FWS	Currently, meadow restoration is ongoing and being conducted by HTNF and Cal Trout. It could be a great opportunity for the Marines to assist with this project and other monitoring, restoration, and management activities within the training area.	
54.	4-20	2&3	FWS	The use of local native plants would meet all of these "low maintenance plant" objectives. The Service recommends the use (planting) of native plants whenever possible.	

55.	4-22	1	FWS	"Westside hardwood forest"- on the east side of the Sierras, the majority of the hardwood forests are aspen or cottonwood, associated with riparian corridors. Protection of Aspen and cottonwoods is important, but this language appears to be more for upland oak-conifer woodlands common to the lower western slopes of the Sierras.	
56.	4-23	1	FWS	"Mechanical Thinning Treatments" This appears to be more like a FS management action. Are the Marines considering this management activity?	
57.	4-25		FWS	Is the "California black oak (*Quercus kelloggii*) and canyon live oak (*Quercus chrysolepis*)" forest community found in the project area?	
58.	4-28	4.6	FWS	General note: fire retardants are toxic to aquatic organisms. Avoid use in or near occupied streams and wetlands where listed/sensitive species may occur, when possible.	
59.	4-38	22	FWS	Where "cooperate with CDFW" is described, add "and FWS".	
60.	4-38	30 through 34	FWS	"Fishing Restrictions" Compare to the 40 year permit EA to ensure language is consistent between documents.	
61.	4-41	1	FWS	Please include Sierra amphibian surveys.	
62.	4-41	12	FWS	Consider adding ESA Proposed and Candidate Species to this list.	
63.	4-42	7	FWS	Update "proposed critical habitat" with final critical habitat.	
64.	4-42	31	FWS	Update "proposed critical habitat" with final critical habitat.	
65.	4-43	20 through 23	FWS	The need for protection of riparian buffers may extend beyond CARs and RCA's. Consider removing these designations to prevent restricting these beneficial actions.	
66.	4-48	3 through 7	FWS	This statement is true. However, continue to work to strategically remove barriers as appropriate to benefit LCT recovery.	
67.	4-48	32	FWS	What is the purpose of the water pumping? Fire suppression?	
68.	4-53	2	FWS	Sierra Nevada red fox (consider adding C for the Sierra Nevada red fox, Sierra Nevada DPS under Federal or USFWS).	

69.	4-53	12 through 26	FWS	Whitebark pine is a candidate for listing and not included in this list.	
70.	4-55	1	FWS	*California Spotted Owl:* Status, ESA, under review. May be an ESA candidate in the near future.	
71.	4-75	10&11	FWS	HTNF currently has a LEO in Bridgeport that may be able to assist. Consider additional coordination with this agency.	
72.	4-75	16	FWS	USFWS has a LEO in Reno that can asset with incidents that impact USFWS trust resources such as Migratory birds, eagles and T&E species. Consider additional coordination with this agency.	
73.	Appendix M	Table M1	FWS	For *vulpes vulpes necator*, the Federal status and USFWS status could be indicated as C for the Sierra Nevada red fox, Sierra Nevada DPS.	
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State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Inland Deserts Region
3602 Inland Empire Blvd., Suite C-220
Ontario, CA 91764
www.wildlife.ca.gov

EDMUND G. BROWN JR., Governor
CHARLTON H. BONHAM, Director

May 15, 2017

Andrew Irvin
Natural Resources Manager
U.S. Marine Corps Mountain Warfare Training Center
Bridgeport, CA 93517

Subject: Marine Corps Mountain Warfare Training Center Draft Integrated Natural Resource Management Plan

Dear Mr. Irvin,

The California Department of Fish and Wildlife (CDFW) appreciates the opportunity to comment on the Draft Integrated Natural Resources Management Plan (INRMP) at the Marine Corps Mountain Warfare Training Center (MCMWTC) located in Bridgeport, California.

CDFW is providing comments as the State agency which has statutory and common law responsibilities with regard to fish and wildlife resources and habitats. California's fish and wildlife resources, including their habitats, are held in trust for the people of the State by CDFW (Fish and Game Code Section 711.7). CDFW has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and the habitats necessary for biologically sustainable populations of those species (Fish and Game Code Section 1802).

CDFW owns approximately 1,250 acres of land located in multiple Training Units within the MCMWTC boundaries, including a portion of the Slinkard-Little Antelope Wildlife Area in the north and the entire Pickel Meadow Wildlife Area in the south. These lands are managed to provide optimal benefits for fish, wildlife, plants, and for the use and enjoyment by the public. Due to their proximity to the MCMWTC, as well as training activities occurring on and adjacent to CDFW lands, we encourage regular communication and coordination going forward.

CDFW would like to offer the following comments:

- Pg.1-1, Section 1.1: The plan should clearly state that CDFW lands, while surrounded by the MCMWTC installation, are not included and will not be administered under this plan. Maps and text describe some CDFW lands as being excluded while other parcels are not.

- Pg. 1-13, Section 1.8.2: CDFW looks forward to participating in the INRMP Annual Review and Coordination meetings. Please contact Alisa Ellsworth and Heidi Calvert at Alisa.Ellsworth@wildlife.ca.gov or Heidi.Calvert@wildlife.ca.gov, respectively.

- Pg. 1-15, Section 1.9 and Pg. 3-3, 3.4.1: CDFW has a shared interest in habitat conservation in the vicinity of MCMWTC and would like to request a copy of the Final Encroachment Control Plan, and that our agency be engaged in coordination in planning for future acquisition of inholdings and easements as appropriate.

- Pg. 2-8, Section 2.7.3: Please note that the 2015 California State Wildlife Action Plan has been finalized and is now available at https://www.wildlife.ca.gov/SWAP/Final. Please update the references in the text on the INRMP on page 2-8 and the heading of table 2-1.

- Pg. 3-3, Figure 3-1 Regional Map: Pickel Meadows Wildlife Area, including Millie Lake, is absent from this map and should be shown in purple as identified in the Legend for "State of California Land". CDFW staff can provide GIS layers for state owned lands upon request.

- Pg. 3-4, Figure 3-2 Responsible Agency Map: Those State of California lands occurring in CA-1, TA-1, and TA-5 should be shown as outside the red Approved Use Boundary as it is correctly shown for TA-14 and 15.

- Pg. 3-5, Table 3.1: CDFW staff are unware of the MOU referenced in this table regarding recreation occurring in CA-1. Please clarify or remove this reference in the table.

- Pg. 3-5, Table 3-2: As noted in Table 3.2, Landing Zone (LZ) "Condor" includes a portion of the Mill Creek Unit of the Slinkard-Little Antelope Wildlife Area within TA-1 in the vicinity of Mill Creek. Future use of this location should be coordinated with CDFW as is currently the practice at the Pickel Meadow Drop Zone (DZ).

- Pg. 3-5, Table 3-2: Please remove the reference to CDFW lands from the rows for TA-1 and CA-1 in Table 3-2.The rows for TA-13 and TA-14 correctly exclude CDFW lands within these units. CDFW lands are not authorized for use by MCMWTC training operations except as may be currently allowed on a case-by-case basis and would be more appropriately described in Section 3.2.1.4 "Other Land" as being located in the region but outside the MCMWTC Approved Use Boundary.

- Pg. 3-8, Section 3.2.1.4: CDFW owns land within TA-1, CA-1, and Pickel Meadow DZ as noted, however there are also CDFW lands within TA-13 and TA-

14 not mentioned here. This section should be clear that although CDFW lands are located within the area permitted for MCMWTC use by United States Forest Service (USFS), these state lands are not to be considered part of the installation. In addition to following conditions applicable to uses of surrounding USFS land, any incidental use of CDFW lands should be coordinated with our agency.

- Pg. 3-11, Figure 3-3, Figure E-a, Figure F-1, F-2a, Figure H-a, and others where the Approved Use Boundary is displayed: CDFW-owned lands in CA-1 and TA-1 should be shown as excluded from the Approved Use Boundary.

- Pg. 3-11, Figure 3-3 Training Areas: LZs Condor and Albatross, as well as Mill Creek DZ include a portion of the Mill Creek Unit of the Slinkard-Little Antelope Wildlife Area within TA-1. Future use of this location should be coordinated with CDFW as is currently the practice at the Pickel Meadow DZ.

- Pg. 3-11, Figure 3-3: The map of the training zones is difficult to decipher at this scale, but it appears that there may be a landing zone on or near Chango Lake, which is known Sierra Nevada yellow-legged frog (SNYLF) habitat. A hazardous spill at this site could extirpate this population.

- Pg. 3-12, Figure 3-4: Due to scale, this map is misleading and should be clarified by noting ownership within the red polygons is outside of the Approved Use Boundary.

- Pg. 3-15: As with Burcham Flat Road, it should be noted that Kirman Lake Road past Mud Lake traverses CDFW land to access the southern portions of TA 14 including LZ Bullet.

- Pg. 3-17, Section 3.2.2.9: The USFS Junction C&H permit is located within multiple TAs and currently includes CDFW lands of the Pickel Meadow Wildlife Area and should be noted here, as operations on the Pickel DZ may impact grazing operations.

- Pg. 3-24, lines 3-7 state that "the only ordnance expended is limited to the small arms firing range. The only other ignition source occurs during avalanche training. The impacts to natural resources are limited due to snow cover. Chango Lake/Silver Creek area generally experiences the heaviest use during winter training operations..." Please note that snow cover does not necessarily preclude impacts to wildlife. In addition, loss of ordnances during training over multiple years has resulted in a cumulative impact such that the Humboldt-Toiyabe National Forest (HTNF) has cancelled fuels reduction projects in the Silver/Wolf creek areas due to the accumulation of unexploded ordnances. Silver Creek and Chango Lake are habitat for federally listed SNYLF and Lahontan cutthroat trout (LCT). While the document implies that the HTNF permit restricts particular

activities on Silver Creek, it appears that Chango Lake may only be seasonally protected without particular activities being restricted. Activities that impact water quality and/or compact snow along the periphery of the lake can detrimentally impact the federally listed SNYLF.

- Pg. 3-28, Table 3-5: It should be noted that CDFW approval is required for use of state owned portions of LZs Albatross and Mill Creek, and DZ Pickel Meadows.

- Pg. 3-30: As previously noted, use of CDFW lands should be coordinated with our agency. These parcels are signed and our staff would be happy to meet with MCMWTC staff to discuss property boundaries and additional markers if needed.

- Pg. 3-49, lines 1-2 state that data was collected to inform management for LCT and streams. It is the responsibility of CDFW to manage LCT. CDFW did not receive data to facilitate our management of LCT streams within the MCMWTC training area, but looks forward to working with the MCMWTC in the future.

- Pg. 3-55 and Appendix L: CDFW appreciates efforts by MCMWTC to manage invasive plants on the installation. Perennial pepperweed, knapweeds, and star thistle are of particularly high concern and as an adjacent landowner our agency would like to request coordination on future management of these species and information about the known occurrences.

- Pg. 3-58, Figure 3-11 depicts SNYLF and Yosemite toad (YT) occupied habitat in numerous waters where they are not present.

- Pg. 3-62 discusses LCT distribution within Mill, Wolf, and Silver creeks. Depending upon climate, flows, and season, distribution of LCT within streams varies. MCMWTC should assume for their activities that the whole of these streams is occupied. The 2004 document referred to was not peer reviewed, and was only representative of the distribution of LCT at that time. In addition, LCT in Silver Creek had been present further downstream until the illegal stocking of brook trout reduced the distribution and density of LCT. CDFW has not received any data from MCMWTC consultants who conducted Salmonid Habitat Suitability surveys or other surveys with respect to LCT, SNYLF, or YT.

- Pg. 3-63, line 5: Please note that Wolf Creek is currently open to the Public for catch and release angling from August 1 to November 15.

- Pg. 3-64, lines 9-11: In accordance with the 40-year Special Use Permit (SUP), MCMWTC is to avoid concentrated activities in marshy areas or wetlands located in the Critical Aquatic Refuge (CAR). In addition, no disturbance activities are to occur within these areas during the YT breeding season.

- Pg. 3-70, lines 11-27 state that the presence of an INRMP could preclude the designation of Critical Habitat (CH) for listed species within the MCMWTC. CDFW does not support this statement. CH for some species (SNYLF and YT) has already been designated, prior to the completion of the INRMP. Department of Defense (DoD) does not own the land where CH has been designated. MCMWTC does not appear to have modified their exercises in designated CH to benefit these species. United States Fish and Wildlife Service (USFWS) has the discretion to exclude designated CH from DoD land when an INRMP is already in place. However, as this is not the case, and as a public trustee for California's fish and wildlife resources, CDFW strongly supports the existing designation of CH for whatever benefit it may provide to SNYLF and YT. For example, page 4-37 discusses limitations and restrictions imposed on training due to the presence of CARs and designated CH for YT, SNYLF, and LCT. It implies that if CH was not designated, MCMWTC may not limit their activities in such habitat. In further support of CDFW's stance, section 2.1, page 2-1, lines 9-12, state that: "Land use and natural resource management decisions should be evaluated so that resources are protected against short-term, project-by-project impacts that cumulatively could result in significant resource changes, thereby limiting the flexibility of military mission requirements."

- Pg. 4-2: The word "Land" in the heading "Biological Resource and Wetland Delineation Survey for Land Zone TAs" should be corrected to "Landing".

- Pg. 4-4: CDFW would like to request a copy of the Vernadero Group Meadow Enhancement Study referenced here, particularly the section(s) pertaining to Pickel Meadow.

- Pg. 4-6, lines 27-36: CDFW strongly supports this SUP condition. Past use of ordnances has resulted in management limitations by USFS due to safety concerns. Ordnances and shell casings are scattered all over Wolf and Silver creek areas (TA6 and 8) which has resulted in cancellation of fuels reduction projects that would benefit LCT, forest structure, and other wildlife. The USFS was unable to conduct fuels reduction projects either mechanically or by use of prescribed fire on HTNF lands within the permit area of MCMWTC due to the quantity of unexploded ordnance left in the TAs.

- Pg. 4-16: Please identify which 6 meadows were identified as impaired within the Vernadero report and coordinate with CDFW if any specific actions are proposed on or adjacent to CDFW lands.

- Pg. 4-17: The objective "Inventory and map wetlands and other WUS and the State of California as needed" is incomplete and should be reviewed.

- Pg. 4-32: CDFW requests that MCMWTC consider adding the following actions to the invasive plant objective on page 4-34 and Appendix G:

- Participate in the Eastern Sierra Weed Management Area and coordinate with the staff of the Inyo and Mono Counties Agricultural Commissioner's Office regarding preventative measures and treatments.

- Coordinate with adjacent state and private landowners for the comprehensive management of high priority invasive plant species in the watershed(s) occupied by MCMWTC.

- Pg. 4-34, line 9 should add "and their tributaries."

- Pg. 4-35: Please coordinate any additional monitoring of mule deer populations with CDFW in addition to USFS as our agency has and continues to conduct extensive study of this species. CDFW should be noted in this action on page 4-35 and Appendix G.

- Pg. 4-42, line 25 to Pg. 4-45, line 11 discusses MCMWTC activities that would reduce impacts to amphibians and LCT. CDFW supports these actions, and suggests adding that LZs and DZs should not occur within 100 yards of CARs or sensitive habitat such as wetlands, to reduce the risk of hazardous material spills.

- Pg. 4-43: Please note that pump operations are not permitted on CDFW lands without prior written approval from our agency.

- The table in Appendix G (pg. G-8) recommends that MCMWTC 'conduct a noise survey and identify areas which may be impacted by noise. Evaluate the potential for noise to impact sensitive species, including T&E species'. CDFW highly supports this action. Field work at Silver and Wolf creeks has been stalled at times when low flying overhead craft prevents conversation (and thus impacts safety when working in moving water) due to extremely high noise levels.

- Appendix E: From Figures E-a and E-b, LZs Condor, Bunting, Crow, Osprey, Penguin, and Owl, and DZ Albatross occur adjacent to LCT, SNYLF, and/or YT wetted habitat, and some are on meadow habitat. In addition, LZ Condor and DZ Albatross appear to occur on State lands. CDFW recommends that hazardous spill clean-up contingencies be in place and that qualified Hazwopper personnel be on site during operations to prevent impacts to federally listed species. To emphasize, Page 3-70, lines 4 and 7 state that LZ s occur/impact 161 acres within SNYLF CH and 63 acres within YT CH. (MCMWTC also states that intensive road use impacts CH for both species.) One spill could extirpate a population, and while temporal limits restrict LZ use during the breeding season, adults may be found outside of the wetted habitat, and tadpoles will still be present and susceptible to deleterious impacts.

Additional general comments:

- Heavy use of lands adjacent to or on sensitive habitats, such as wetlands, ponds, lakes and streams can increase sub-lethal risk to listed species. Trailing by MCMWTC troops within the riparian corridor of Wolf and Silver creeks has resulted in compacted soils, reduced vegetative growth, and increased erosion, which impacts recruitment of LCT by increasing sedimentation within the stream and reducing stream productivity (i.e., less vegetation equates with fewer terrestrial insects falling into the stream and increases diurnal temperature fluctuations). Landing and drop zones adjacent to or on such habitat should include training for emergency hazardous waste containment measures that should be taken in case of fuel spills. Helicopter crashes have occurred adjacent to Silver and Wolf creeks, as evidenced by debris still remaining. In addition, direct impacts to LCT have been documented, including take by spearfishing and noodling. Take in any form is not authorized. LCT can be found in MCMWTC TAs 1,4,5,6, and 8 which include Mill, Wolf, and Silver creeks.

- Studies in Yellowstone National Park have documented localized effects of snowmobile use on air and water quality when motor vehicle emissions are captured by snow. Impacts of over-snow vehicle use include: snow compaction (which endangers numerous species that burrow within the snow column); possible interruption of hibernation; and alteration of snowpack chemistry with the addition of volatile organics (carcinogens) and other petroleum-exhaust byproducts. These impacts could impact YT with their porous skin as well as numerous other species. Excessive winter use in YT habitat (TA 9, 10, 11) by motorized vehicles can result in concentration of contaminants in YT breeding habitat. Year-round use of TA9 may reduce recruitment of YT. Year-round use of TAs 1-9 may also impact habitat for LCT and SNYLF.

- While the document states that vehicles must remain on existing roads, there have been many occasions where CDFW staff have observed vehicles on meadows and off road.

- The document states that no training will occur in CARs for YT from May 1 to July 30; however the document states that TA9 has year-round access to training. All CARs listed within MCMWTC should have restricted use.

- The document states in numerous sections that there is a "Leave no trace" policy. CDFW appreciates the efforts of MCMWTC to ensure the removal waste, and while it is understandable that some garbage is missed, especially during winter training, the amount of on-site trash—including potentially toxic heating elements, liquid glow-lights, and desiccants—can be significant. CDFW crews have collected garbage-bags full of MWTC trash over the summer months, some of which were found in streams, habitat for LCT.

Thank you for the opportunity to provide comments on the Draft INRMP. Please contact me with questions regarding this letter at (760) 872-0751 or Heidi.Calvert@wildlife.ca.gov.

Sincerely,

Heidi Calvert

Heidi A. Calvert
Senior Environmental Scientist (Supervisor)

ec: CHRON
Alisa Ellsworth, CDFW

UNITED STATES MARINE CORPS
MARINE CORPS MOUNTAIN WARFARE TRAINING CENTER
BRIDGEPORT, CALIFORNIA 93517-9802

5090
ENV
16 Aug 17

From: Commanding Officer, Marine Corps Mountain Warfare Training Center, Bridgeport, California
To: Bill Dunkleberger, US Forest Service

Subj: CONCURRENCE WITH INTEGRATED NATURAL RESOURCES MANAGEMENT PLAN FOR MARINE CORPS MOUNTAIN WARFARE TRAINING CENTER IN BRIDGEPORT, CALIFORNIA

Encl: Draft Final Integrated Natural Resources Management Plan

1. In accordance with Marine Corps Guidance for meeting Sikes Act Improvement Act (Sikes Act) requirements, the US Marine Corps (USMC) and Naval Facilities Southwest (NAVFAC) have completed agency and public comment on the draft Integrated Natural Resources Management Plan (INRMP) and associated draft Environmental Assessment (EA) for the Marine Corps Mountain Warfare Training Center (MCMWTC) Bridgeport primarily located in Mono County, California. The Public Draft INRMP was provided in March 2016 for your agency's review and comment.

2. As part of the mutual cooperation required under the Sikes Act, we have addressed your agency's comments, along with those from other agencies. We received no public comments. We appreciate your review of the public draft INRMP and look forward to working together on natural resources management issues associated with MCMWTC.

3. One partial hard copy with a CD is enclosed. The partial hard copy includes your agency's signature page and the complete comment matrix summarizing each comment and the USMC response. The CD contains a "tracked changes" version of the edited Public Draft INRMP and the complete Draft Final INRMP including all appendices for your reference. The Final EA and Finding of No Significant Impact are included in Appendix N on the CD with the complete INRMP. Please send the completed signature page with or without an accompanying letter directly to Mr. Andrew Irvin at andrew.irvin@usmc.mil or the address in the letterhead.

4. If you have any questions concerning this request, please do not hesitate to contact Mr. Andrew Irvin at (760) 932-1564 or andrew.irvin@usmc.mil.

A. D. Armold
By direction

UNITED STATES MARINE CORPS
MARINE CORPS MOUNTAIN WARFARE TRAINING CENTER
BRIDGEPORT, CALIFORNIA 93517-9802

5090
ENV
16 Aug 17

From: Commanding Officer, Marine Corps Mountain Warfare Training Center, Bridgeport, California
To: Carolyn Swed, US Fish and Wildlife Service

Subj: CONCURRENCE WITH INTEGRATED NATURAL RESOURCES MANAGEMENT PLAN FOR MARINE CORPS MOUNTAIN WARFARE TRAINING CENTER IN BRIDGEPORT, CALIFORNIA

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By direction

UNITED STATES MARINE CORPS
MARINE CORPS MOUNTAIN WARFARE TRAINING CENTER
BRIDGEPORT, CALIFORNIA 93517-9802

5090
ENV
16 Aug 17

From: Commanding Officer, Marine Corps Mountain Warfare Training Center, Bridgeport, California
To: Heidi Calvert, California Department of Fish and Wildlife

Subj: CONCURRENCE WITH INTEGRATED NATURAL RESOURCES MANAGEMENT PLAN FOR MARINE CORPS MOUNTAIN WARFARE TRAINING CENTER IN BRIDGEPORT, CALIFORNIA

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A. D. Armold
By direction

UNITED STATES MARINE CORPS
MARINE CORPS MOUNTAIN WARFARE TRAINING CENTER
BRIDGEPORT, CALIFORNIA 93517-9802

5090
ENV
16 Aug 17

From: Commanding Officer, Marine Corps Mountain Warfare Training Center, Bridgeport, California
To: Mark Freese, Nevada Department of Wildlife

Subj: CONCURRENCE WITH INTEGRATED NATURAL RESOURCES MANAGEMENT PLAN FOR MARINE CORPS MOUNTAIN WARFARE TRAINING CENTER IN BRIDGEPORT, CALIFORNIA

Encl: Draft Final Integrated Natural Resources Management Plan

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A. D. Armold
By direction

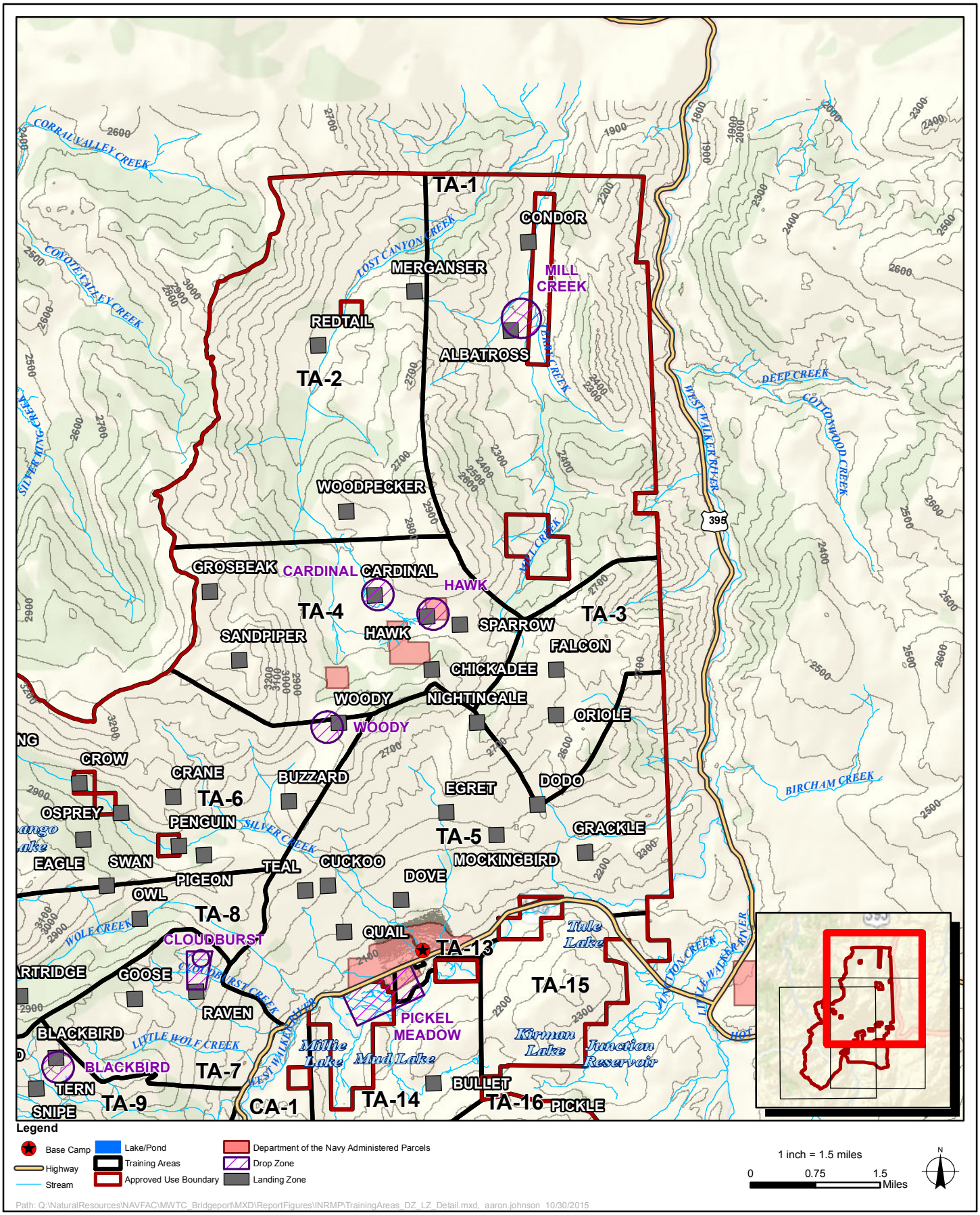
APPENDIX D

NATURAL RESOURCES METRICS AND ANNUAL REVIEWS (TO BE PROVIDED)

APPENDIX E

TRAINING AREA DETAIL MAPS AND SUMMARY OF TRAINING EVENTS

- Detailed Maps of Training Areas, LZs, Drop Zones, and Training Corridors
- Summary of Training Events



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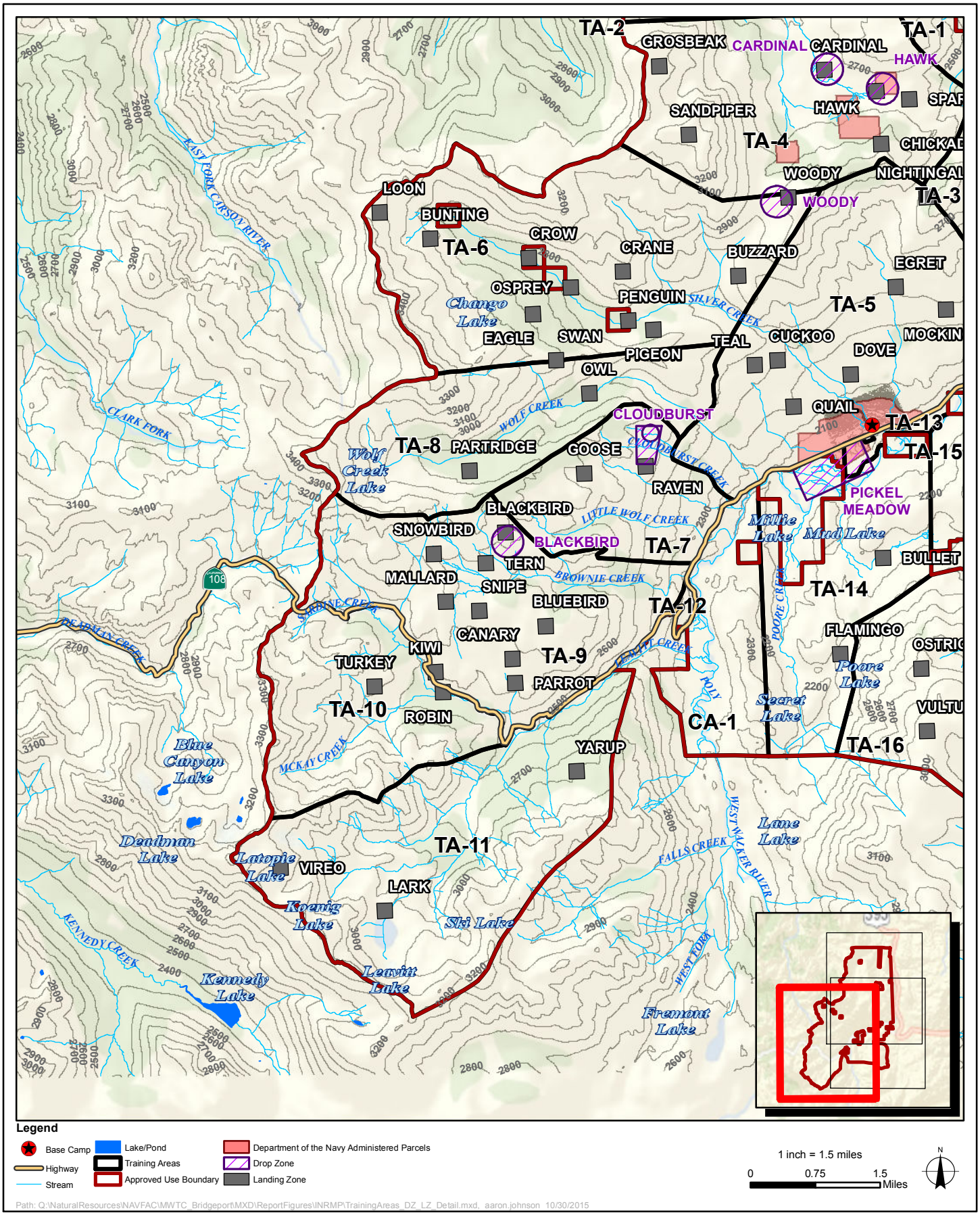
amec foster wheeler

Training Areas
Marine Corps Mountain Warfare Training Center Bridgeport
Integrated Natural Resources Management Plan

FIGURE
E-a



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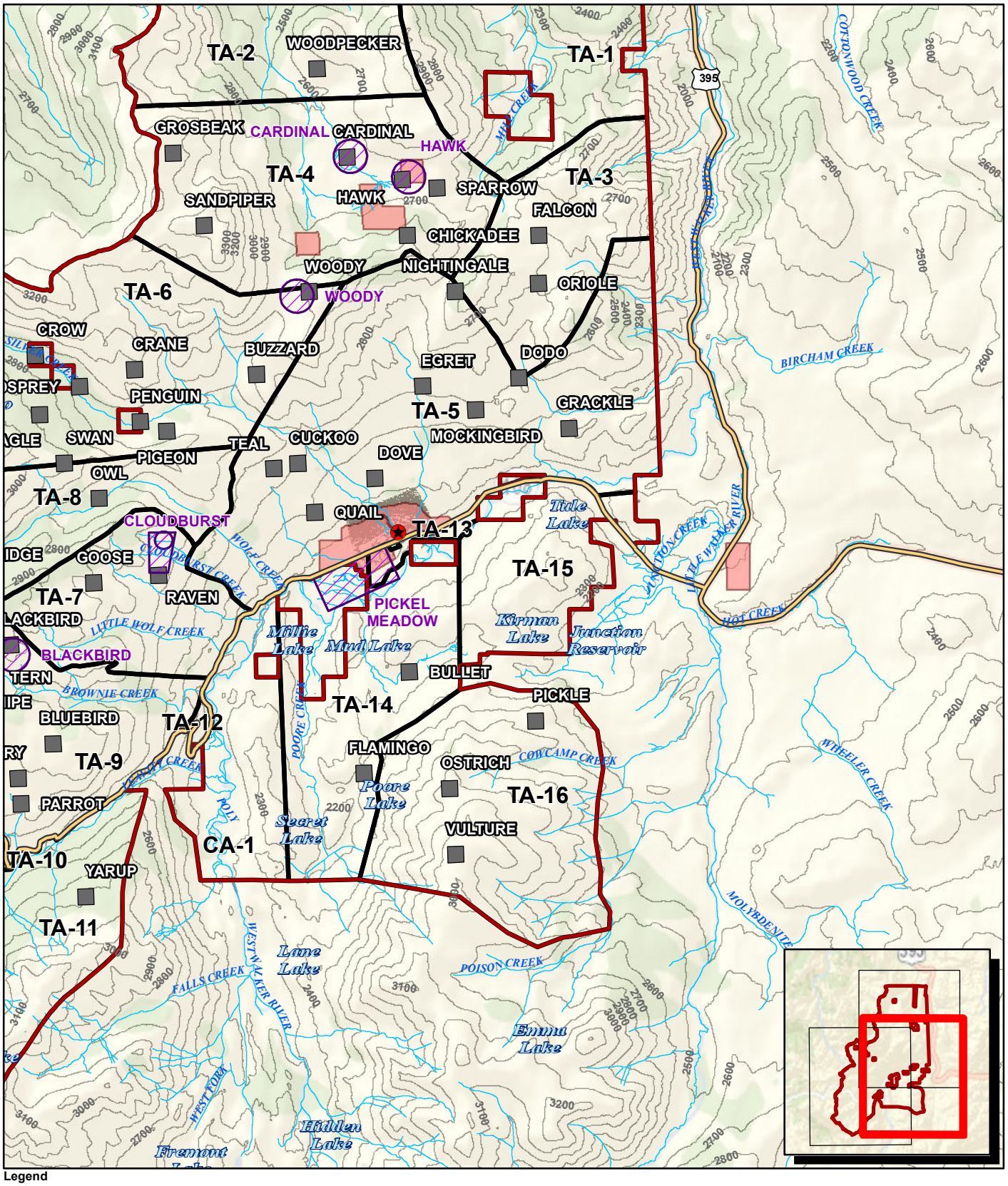
Training Areas
Marine Corps Mountain Warfare Training Center Bridgeport
Integrated Natural Resources Management Plan

FIGURE
E-b



Legend

- Base Camp
- Highway
- Stream
- Lake/Pond
- Training Areas
- Approved Use Boundary
- Department of the Navy Administered Parcels
- Drop Zone
- Landing Zone

1 inch = 1.5 miles

0 0.75 1.5 Miles

N

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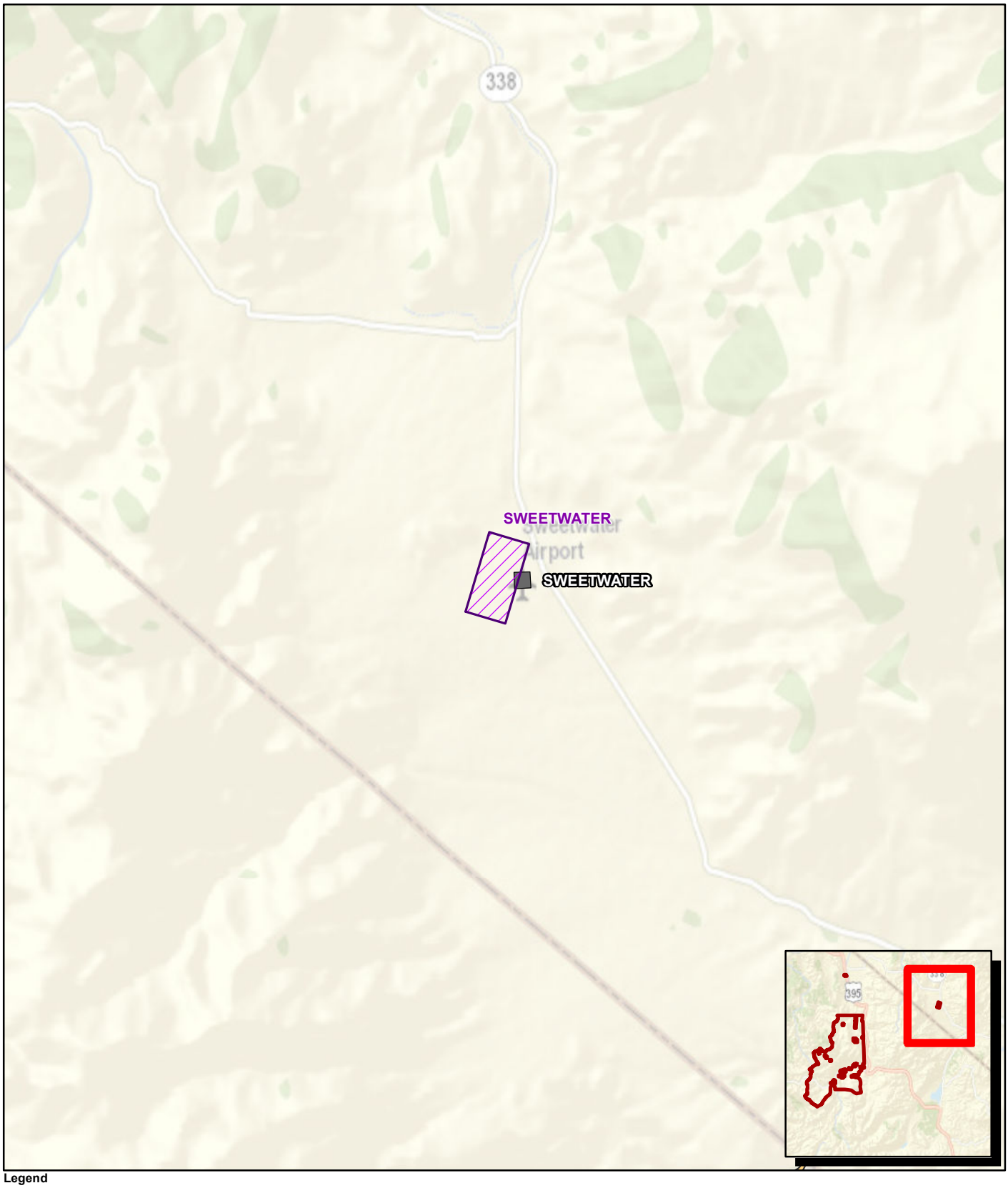
Training Areas
Marine Corps Mountain Warfare Training Center Bridgeport
Integrated Natural Resources Management Plan

FIGURE
E-c



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Training Areas
Marine Corps Mountain Warfare Training Center Bridgeport
Integrated Natural Resources Management Plan

FIGURE
E-d

APPENDIX E
SUMMARY OF EXISTING TRAINING EVENTS AT MCMWTC

Existing Training Events	Location	Annual Frequency	Duration (days)	Number of Personnel Per Event	Equipment and Weaponry Used[1]	Control Measures
*Mountain Exercise	TAs 1-16, Masonic Road TC, Lucky Boy Pass TC, Kirman Lake Road	8	23	800	M: 2-6; H: 1-8; E: 1-6; S: 1-9	TCO 3550.1C & Forest Service AOP
*Javelin Thrust	TAs 1-16, Masonic Road, Lucky Boy Pass, Kirman Lake Road	1	23	1200	M: 2-6, H: 1-8; E: 1-6; S: 1-9	TCO 3550.1C & Forest Service AOP
Summer Mountain Leaders Course	TAs 1-9 and 12-16	2	36	50	M: 1,4,8; E: 1; S: 1-2	TCO 3550.1C & Forest Service AOP
Winter Mountain Leaders Course	TAs 1-16	2	36	50	M: 1,4,8; E: 1; S: 1-2	TCO 3550.1C & Forest Service AOP
Mountain Scout Sniper Course	TAs 5,6,8,10,11	4	17	30	M: 1,4,8; E: 1; S: 1-2	TCO 3550.1C & Forest Service AOP
Mountain Medical Course	TAs 5-12	3	12	45	M: 1,4,8; E: 1; S: 1-2	TCO 3550.1C & Forest Service AOP
Cold Weather Medical Course	TAs 5-12	3	12	50	M: 1,4,8; E: 1; S: 1-2	TCO 3550.1C & Forest Service AOP
Animal Packer Course	TAs 5-9 and 13-16	4	12	50	M: 1,4,8; E: 1; S: 1-2	TCO 3550.1C & Forest Service AOP
Mountain Ops Staff Planning Course	TAs 1,4,5,6,7	1	8	45	M: 1,4,8; E: 1; S: 1-2	TCO 3550.1C & Forest Service AOP
Mountain Survival Course	TAs 2-6	1	20	50	M: 1,4,8; E: 1; S: 1-2	TCO 3550.1C & Forest Service AOP
Mountain Communications Course	TAs 1-16	6	15	50	1,4,8; E: 1; S: 1-2	TCO 3550.1C & Forest Service AOP
Assault Climbers Course	TAs 2,5-9,12	6	15	50	S: 1-4	TCO 3550.1C & Forest Service AOP
Scout Skier Course	TAs 3-11,13-16	4	15	50	S: 1-4	TCO 3550.1C & Forest Service AOP
Mountain Engineer Course (Pilot)	TAs 5-12 and 13-16	2	12	50	M: 1,4,8; H 1-8; E: 1-6; S: 1-2	TCO 3550.1C & Forest Service AOP
*Special Forces Training	TAs 1-16, Masonic Road, Lucky Boy Pass, Kirman Lake Road	8	8	120	1: 1,2,4,7; E: 1; S: 2,4,8-10	TCO 3550.1C & Forest Service AOP
*Coalition Forces Training	TAs 1-16, Masonic Road, Lucky Boy Pass, Kirman Lake Road	4	21	120	M: 2-6; H: 1-8; E: 1-6; S: 2,4,8-10	TCO 3550.1C & Forest Service AOP
*High Altitude Aircraft Training	LZs 1-53, Masonic Road, Lucky Boy Pass, Kirman Lake Road, Risue Canyon Road, Sweet Water Airstrip	48	2	4-Aircraft	A: 1-6,	TCO 3550.1C & Forest Service AOP

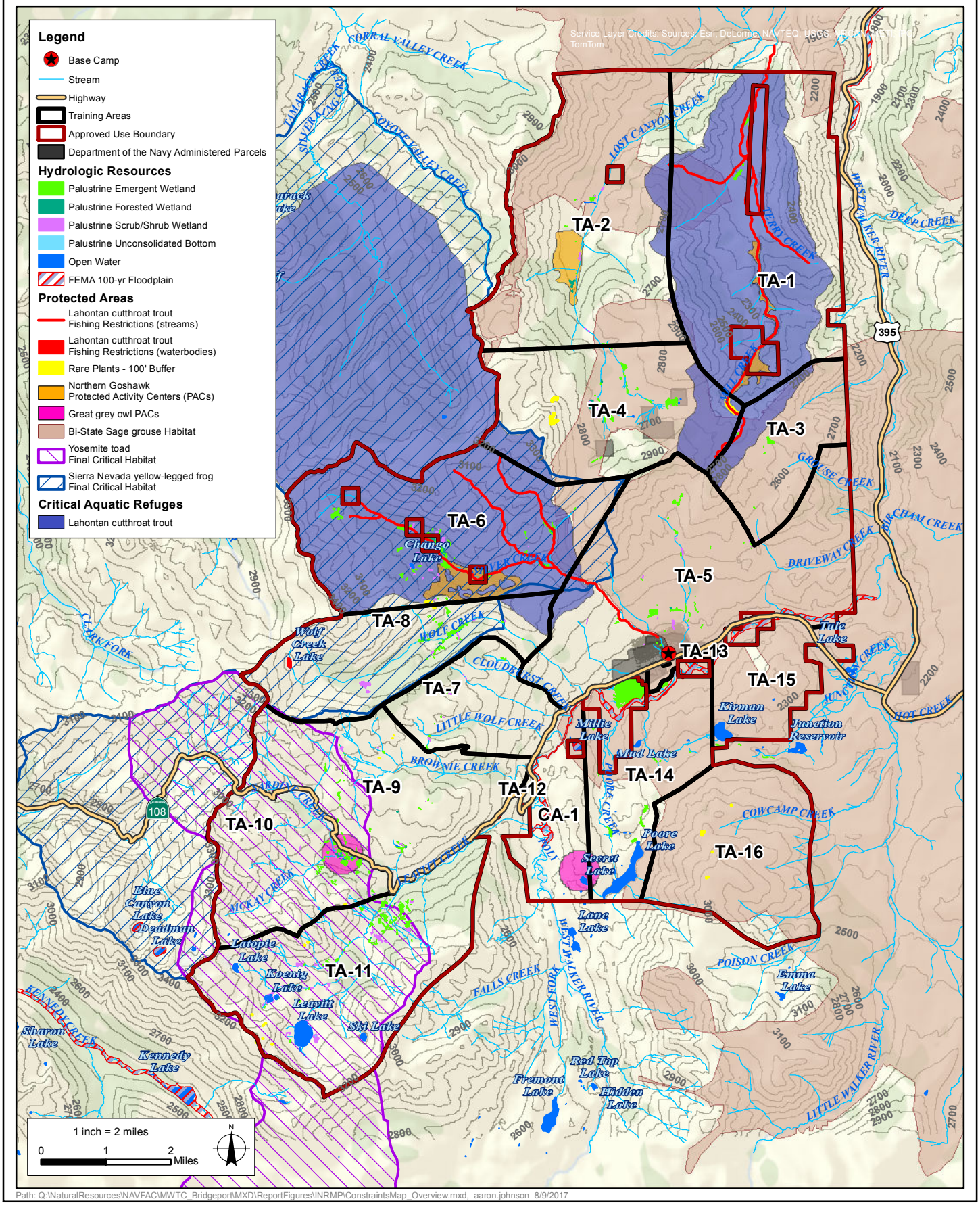
Existing Training Events	Location	Annual Frequency	Duration (days)	Number of Personnel Per Event	Equipment and Weaponry Used[1]	Control Measures
Training Support – MCMWTC Infrastructure	TAs 1-16, LZs 1-53, Masonic Road, Lucky Boy Pass, Kirman Lake Road, Burcham Flat Road, Sweet Water Airstrip	96	1	2 0	M: 1-9, H 1-11	TCO 3550.1C & Forest Service AOP

Notes: LZ = Landing Zone; TCO – Training Center Order; AOP – Annual Operating Plan; NA = not applicable; TA = training area; TC = transit corridor. * Not all areas used at once. Training personnel and equipment dispersed throughout the training areas for tactical and environmental considerations. [1] See Table 1-3 for definition of equipment and weaponry.

APPENDIX F

CONSTRAINTS MAPS

(To be replaced by constraints maps from Environmental Assessment for Enhancement of Operations and Training Proficiency at MCMWTC; To Be Provided When Complete)



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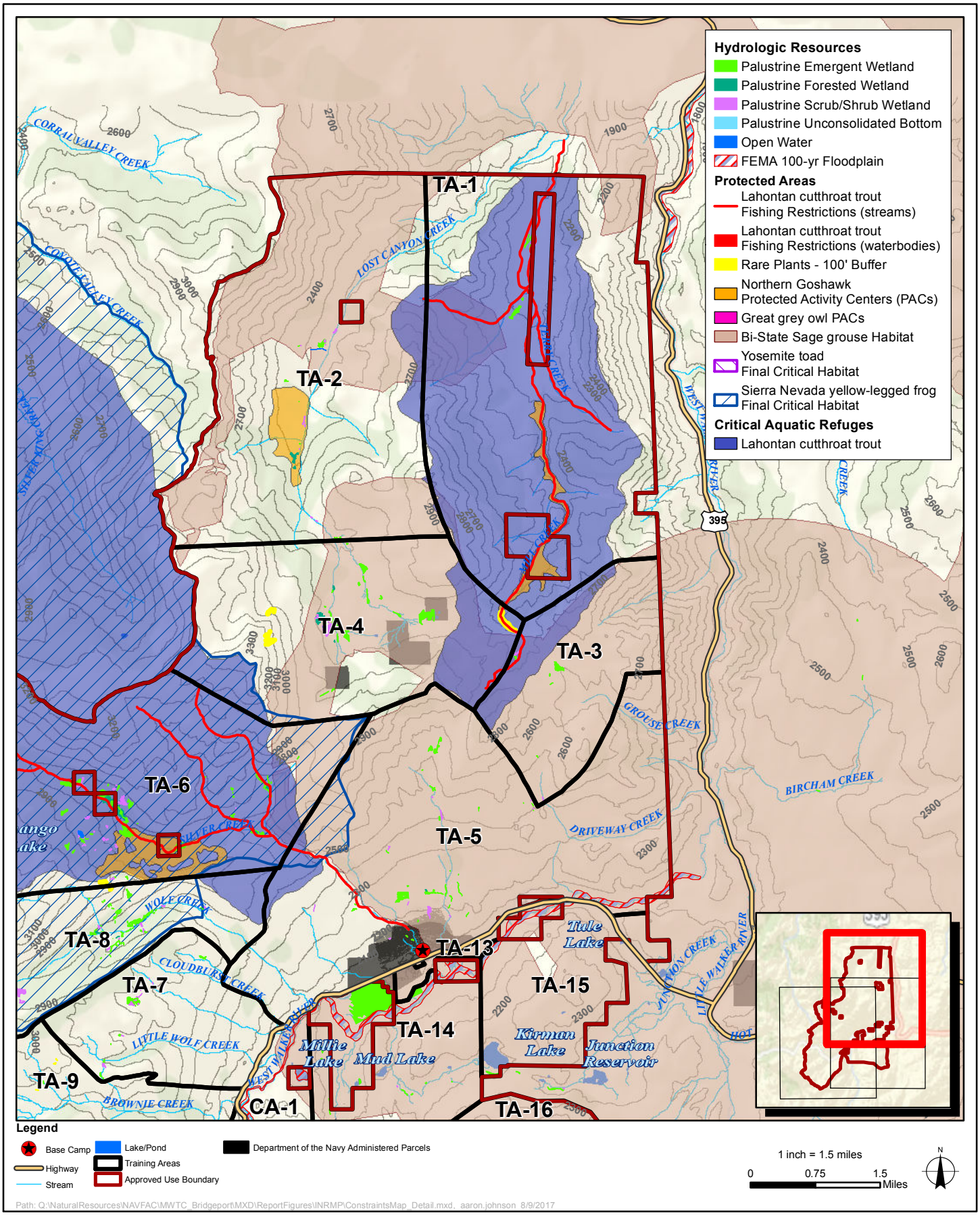
amec foster wheeler

Natural Resources Constraints - Overview
Marine Corps Mountain Warfare Training Center Bridgeport
Integrated Natural Resources Management Plan

FIGURE
F-1



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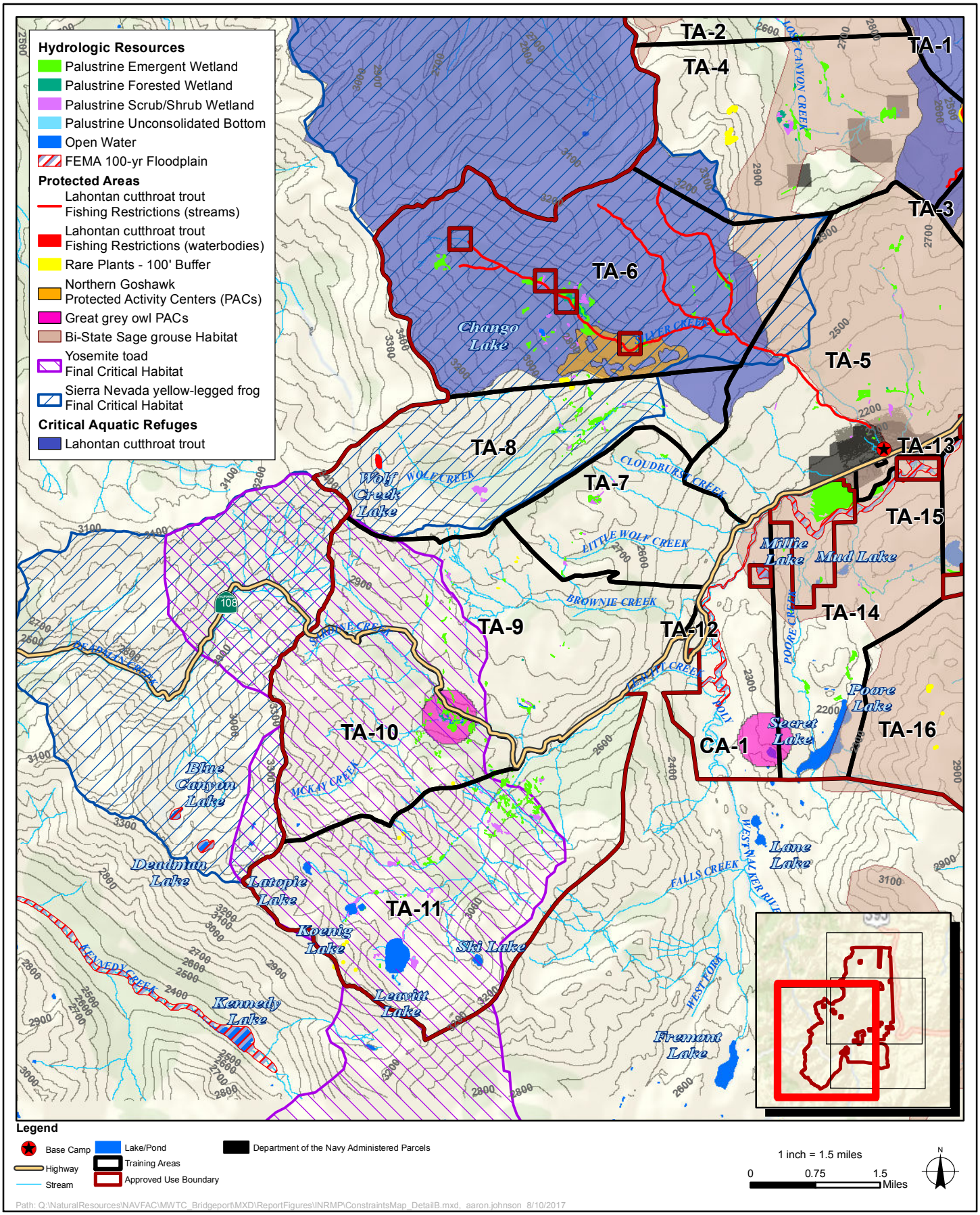
amec foster wheeler

Natural Resources Constraints - Detail
Marine Corps Mountain Warfare Training Center Bridgeport
Integrated Natural Resources Management Plan

FIGURE
F2-a



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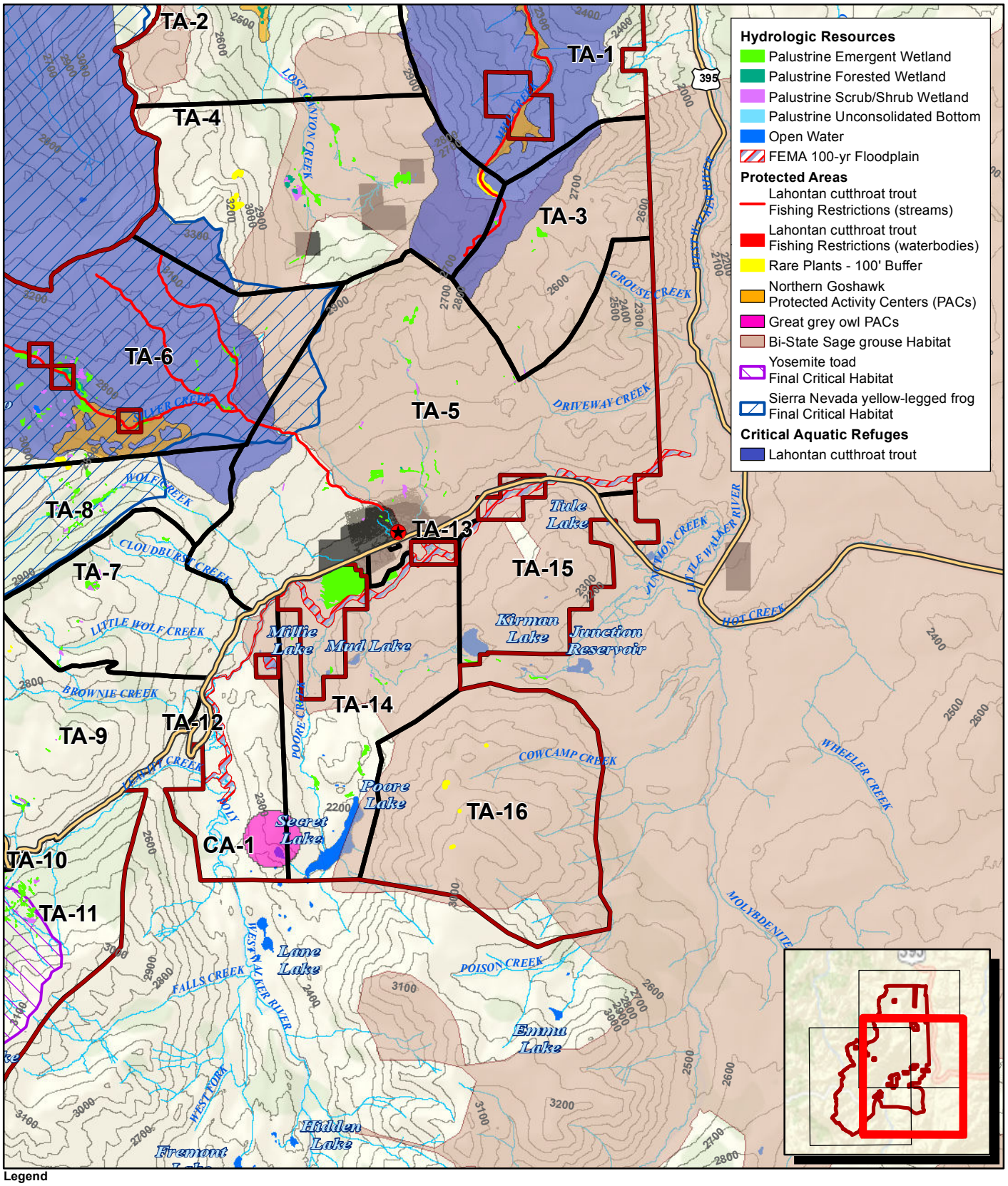
amec foster wheeler

Natural Resources Constraints - Detail
Marine Corps Mountain Warfare Training Center Bridgeport
Integrated Natural Resources Management Plan

FIGURE
F2-b



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amec foster wheeler

Natural Resources Constraints - Detail
Marine Corps Mountain Warfare Training Center Bridgeport
Integrated Natural Resources Management Plan

FIGURE
F2-c

APPENDIX G

MCMWTC PROJECTS

APPENDIX G
MARINE CORPS MOUNTAIN WARFARE TRAINING CENTER PROJECTS

Objective Actions/Projects (does not include policies)	Project Number	Cost Estimate	Scheduled Implementation	Prime Legal Driver	Funding Class	Responsible Party
Soil Management Program (Section 4.3)						
Objective 1: Prevent and control soil erosion and reduce likelihood of sediment entering water resources.						
Track known problem areas and identify priority locations for closure, implementation of BMPs, and/or revegetation.			As Needed	CWA	COLS 3	USMC
Develop new or use proven BMPs to prevent and control erosion and protect sensitive resources and habitats, in cooperation with USFS.			As Needed	CWA	COLS 3	USMC, USFS
Inventory and map existing and newly created roads to develop baseline data; identify and prioritize those that may contribute to erosion. Update INRMP with specific projects and implement at least 1 high priority project per year, in cooperation with USFS.			2017	CWA	COLS 3	USMC
Provide annual road maintenance training for public works personnel.			Annual	CWA	COLS 3	USMC
Close selected areas to training for restoration and recovery of eroded sites. Monitor recovery and, if insufficient, implement rehabilitation/restoration to reverse damage.			As Needed	CWA	COLS 3	USMC
Wetland & Waters Management Program (Section 4.4)						
Objective 1: To protect and enhance wetlands and water resources at MCWMTC Bridgeport.						
Inventory and map wetlands and other waters of the US and the State of California as needed.			As Needed	CWA	COLS 3	USMC, USFS
Maintain a master, comprehensive GIS database of all water resources in areas approved for use as part of MCMWTC. Merge new datasets into the master dataset as they are developed.			As Needed	CWA	COLS 3	USMC
Conduct monitoring of wetlands and riparian areas every five years. Monitor more often in areas used regularly for training.			Every 5 years	CWA	COLS 3	USMC

Objective Actions/Projects (does not include policies)	Project Number	Cost Estimate	Scheduled Implementation	Prime Legal Driver	Funding Class	Responsible Party
Enhance priority wetland habitats by annually eradicating and removing nonnative and invasive wetland plants, in cooperation with USFS.			Annual	CWA	COLS 2/3	USMC, USFS
Restore identified wetland habitats that have been significantly disturbed. Revegetate these areas with appropriate regional, native species. Cooperate with USFS to plan and implement as appropriate.			As Needed	CWA	COLS 3	USMC, USFS
Monitor wetland community plant species composition and relative cover, with a focus on invasion by noxious weeds and aquatic vegetation during planning level surveys.			Every 5 years	CWA	COLS 3	USMC, USFS
Identify and prioritize wetland and riparian habitat restoration opportunities that enhance the mission or mitigate potential impacts. Cooperate with USFS to plan and implement as appropriate. Implement at least 1 high priority project every 3 years, either by USMC or a partner.			As Needed	CWA	COLS 3	USMC, USFS, others
Continue monitoring trails identified in Vernadero Group (2015) as either already causing impacts or likely to cause impacts. Identify and prioritize specific projects to mitigate impacts from military training.			Annual	CWA	COLS 3	USMC
Objective 2: Manage new landscaping to minimize water use.						
Evaluate timing of watering needs based on the amount of water the sprinkler systems apply per minute, which should be measured directly.			2018	MCO	COLS 2	USMC
Perform a formal facility water conservation audit that would evaluate water conservation options for landscaped facilities.			2018	MCO	COLS 2	USMC
Implement water conservation measures based on the results of a facility water conservation audit.			As Needed	MCO	COLS 2	USMC

Objective Actions/Projects (does not include policies)	Project Number	Cost Estimate	Scheduled Implementation	Prime Legal Driver	Funding Class	Responsible Party
Vegetation Management Program (Section 4.5)						
Objective 1: Manage natural plant communities to promote biodiversity, resilience, erosion control, wildlife habitat, and aesthetics.						
Update vegetative community mapping every ten years, either directly or by incorporating updates from the USFS.			2025	Multiple	COLS 3	USMC, USFS
Monitor vegetation condition every five years; more often in areas used regularly for military training. Monitoring should document percent cover, dominant species, and areas of disturbance.			Every 5 years	Multiple	COLS 3	USMC, USFS
Maintain a comprehensive list of plant species, including invasive plants and aquatic vegetation that occurs within the installation.			As Needed	Multiple	COLS 3	USMC
Using the information provided in Vernadero Group (2015), prioritize the management of conifer encroachment within sage brush and meadow habitats. Coordinate with USFS to implement control efforts of high priority areas, as appropriate.			As Needed	Multiple	COLS 3	USMC, USFS
Working with USFS to reduce severe wildfire risk, reduce fuels, restore natural fire regimes in conifer stands, and create diversity within brush fields. Treatments would include prescribed fire and fuelwood/mechanical conifer removal.			As Needed	Multiple	COLS 3	USMC, USFS
Working with USFS, restore stand health, reduce wildfire severity, and promote understory regeneration in sage-steppe, mountain shrub, mixed conifer, and aspen communities and improve wildlife habitat and help create defensible space.			As Needed	Multiple	COLS 3	USMC, USFS
Repair communities damaged by maneuvers in accordance with USFS SUPs and requirements, including the use of native species. Areas in need of rest or restoration will be identified and documented annually for environmental and planning purposes and prioritized based on input from USFS.			Annual	Multiple	COLS 3	USMC

Objective Actions/Projects (does not include policies)	Project Number	Cost Estimate	Scheduled Implementation	Prime Legal Driver	Funding Class	Responsible Party
Educate visiting units that conduct ground training activities about sensitive habitat areas (meadow and riparian/wetland habitats) and avoidance of such areas during training activities.			Annual	Multiple	COLS 3	USMC
Educate MCWMTC grounds maintenance personnel about sensitive habitat areas (i.e. sage scrub habitats) to be excluded from landscape maintenance activities with the exception of weed control activities.			Annual	Multiple	COLS 3	USMC
Evaluate ski slope area and determine if any tree removal is required to maintain the slope and utility for military training.			As Needed	Multiple	COLS 3	USMC
Wildfire Management Program (Section 4.6)						
Objective: Implement a Wildland Fire Management Plan for DoN property that supports the USFS wildland fire program on MCMWTC.						
Implement Wildland Fire Management Plan and update as needed.			As Needed	Multiple	COLS 3	USMC
Update fuels model as needed to facilitate wildland fire planning. If necessary, conduct a survey to develop a detailed fuels map including data on fuel loading and estimated return interval that can be used to predict future fire behavior. Fuels map could be done in conjunction with USFS.			As Needed	Multiple	COLS 3	USMC, USFS
Conduct fire suppression activities where they are determined to be necessary and safe, in accord with mutual aid agreements, if any.			As needed	Multiple	COLS 3	USMC
Control buildup of flammable vegetation in the areas surrounding operations, where possible.			As needed	Multiple	COLS 3	USMC
Update vegetation surveys, including mapping of fuels, regularly to maintain accurate estimates of fuels and to identify any fuels reduction projects needed. Areas where there is greater risk of			Every 5-10 years	Multiple	COLS 3	USMC

Objective Actions/Projects (does not include policies)	Project Number	Cost Estimate	Scheduled Implementation	Prime Legal Driver	Funding Class	Responsible Party
wildfire from military activities should be updated more often than areas with lower risk of wildfire.						
Invasive Species & Pest Management Program (Section 4.7)						
Objective: Eradicate invasive plant species that have potential to alter native upland and wetland plant communities and contribute to wildland fuels.						
Conduct an inventory of noxious weeds; identify and prioritize areas that are dominated by invasive species that are considered high and moderate priority by the Cal-IPC. Identify other high and moderate priority species based on potential impacts to military training, water resources, and special status species.			2019	Multiple	COLS 3	USMC, USFS
Based on the results of the noxious weed inventory, identify management goals and strategies for the control of high priority noxious and invasive plant species.			2019	Multiple	COLS 3	USMC
Maintain a comprehensive noxious and invasive plant species list and GIS geodatabase, updating as new data is collected.			As needed	Multiple	COLS 3	USMC
Annually eradicate or control the spread and introduction of nonnative and invasive upland plant species, with emphasis on those with greatest potential for negative impacts (i.e., cheatgrass, pepperweed, bull thistle, saltlover and toadflax).			Annual	Multiple	COLS 3	USMC, USFS
Evaluate the potential for noxious weed colonization prior to surface disturbance. If there is a high potential for colonization, the site will be monitored post project and weed control measures would be implemented if necessary.			As needed	Multiple	COLS 3	USMC
Prepare materials and educate Marines on high priority noxious weed species that occur within the installation. Promote feedback from Marines on the detection of such species within training areas.			2019	Multiple	COLS 3	USMC

Objective Actions/Projects (does not include policies)	Project Number	Cost Estimate	Scheduled Implementation	Prime Legal Driver	Funding Class	Responsible Party
Implement pest management program and individual species control in accordance with the MCMWTC IPMP (2008) and USFS Management Plans.			As needed	Multiple	COLS 3	USMC, USFS
Control identified pest species that pose a nuisance, significant property damage, or potential health hazard to a tolerable level, without jeopardizing the survival of the pest species or any incidental take of non-target wildlife.			As needed	Multiple	COLS 3	USMC
Fish and Wildlife Management (Section 4.8)						
Objective 1: Promote a sustainable and diverse wildlife community within MCWMTC Bridgeport lands through habitat stewardship, population protection and monitoring, invasive species removal, and wildlife damage control compatible with the facility's mission and location.						
Identify wildlife survey gaps, and conduct a wildlife inventory within areas that have not been surveyed. Update basewide wildlife surveys every five years.			2017	Multiple	COLS 3	USMC, USFS
Maintain a comprehensive list of species that have been identified within the installation. Update GIS data accordingly after every survey.			As needed	Multiple	COLS 3	USMC
Mule Deer Study- Map fawning areas within MCMWTC. Coordinate with USFS to monitor mule deer population and habitat use as needed.			2017	Multiple	COLS 2	USMC, USFS
Evaluate the potential for nest enhancement activities such as the installation of nest boxes to encourage breeding habitat for species (determined through bird inventory).			2020	Multiple	COLS 3	USMC, USFS
Develop a standardized system for recording and mapping significant resource observations (plants, wildlife, erosion, damage, etc.) when incidentally encountered.			2017	Multiple	COLS 3	USMC
Develop educational materials for Marines on preventative measures to reduce wildlife/human interactions and the			2018	Multiple	COLS 3	USMC

Objective Actions/Projects (does not include policies)	Project Number	Cost Estimate	Scheduled Implementation	Prime Legal Driver	Funding Class	Responsible Party
importance of proper food storage and refuse disposal, emphasizing "Leave No Trace-Ethics".						
Maintain records of injured wildlife cases to monitor extent of problem.			As needed	Multiple	COLS 3	USMC
Develop protocols for handling injured, dead, nuisance, or otherwise encountered animals at MCMWTC Bridgeport. Develop a standard operating procedure for injured and dead wildlife response.			2018	Multiple	COLS 3	USMC, USFS
Prepare a list of wildlife rehabilitation centers for placement of injured or abandoned wildlife.			2017	Multiple	COLS 3	USMC
Threatened and Endangered Species Management (Section 4.9)						
Objective: Enhance, conserve and monitor T&E species and associated habitats within the installation.						
Develop and distribute educational materials for installation tenants that identify T&E species that occur or have potential to occur and include specific conservation measures identified in the USFS SUP.			2017	ESA	COLS 3	USMC
Conduct new surveys for sage-grouse within suitable habitats according to accepted protocols. Update every 3 years.			2017	ESA	COLS 3	USMC
Maintain data on greater sage-grouse including GIS data of potential habitat, documented sage-grouse leks, and population data if available. Cooperate with other agencies to compile data as needed.			As needed	ESA	COLS 3	USMC
Conduct a multi-year survey for LCT to confirm presence/absence in Upper Leavitt Creek.			2019	ESA	COLS 3	USMC
Identify and prioritize opportunities to improve Lahontan cutthroat trout spawning habitat through stream restoration and enhancement activities, incorporating the results from MultiMAC JV (2015a), and in cooperation with USFS and CDFW.			2016	ESA	COLS 3	USMC

Objective Actions/Projects (does not include policies)	Project Number	Cost Estimate	Scheduled Implementation	Prime Legal Driver	Funding Class	Responsible Party
Identify and prioritize opportunities to implement non-native invasive species removal within Lahontan cutthroat trout bearing streams, incorporating the results from MultiMAC JV (2015a), and in cooperation with USFS and CDFW.			2016	ESA	COLS 3	USMC
Conduct focused surveys for Yosemite toad and Sierra Nevada yellow-legged frogs where surveys have not been conducted. If they occur in areas where military training regularly occurs, implement project to identify impacts from military training and develop avoidance and/or mitigation measures			Ongoing	ESA	COLS 3	USMC
Incorporate results of Sierra Nevada red fox surveys and adapt management and permit conditions accordingly.			2017	Multiple	COLS 3	USMC, USFS
Survey for locations and condition of whitebark pine within MCMWTC.			2019	ESA	COLS 3	USMC, USFS
Conduct noise survey and identify areas which may be impacted by noise. Evaluate the potential for noise to impact sensitive species, including T&E species.			2018	ESA	COLS 3	USMC
Evaluate protective measures based on new data and modify the measures to best protect the species, while minimizing impacts to military training. If those measures are mandated by a SUP, discuss proposed modifications as appropriate			As needed	ESA	COLS 3	USMC
Species of Regional Special Concern Management (Section 4.10)						
Objective: To conserve the habitat and populations of state and USFS sensitive species known on MCWMTC Bridgeport.						
Maintain GIS geodatabase (and spreadsheet) of species of regional special concern that have been identified during surveys. Update master list after every survey and with incidental observation.			As needed	Multiple	COLS 3	USMC

Objective Actions/Projects (does not include policies)	Project Number	Cost Estimate	Scheduled Implementation	Prime Legal Driver	Funding Class	Responsible Party
Conduct a comprehensive bat inventory, with an emphasis on identifying roosting sites, maternity colonies, and hibernacula of bat species of concern. Update the bat inventory every five years.			2020	Multiple	COLS 3	USMC
Cooperate with USFS to conduct surveys for nesting birds each year in areas where training is planned, particularly for northern goshawk and sensitive owls.			Annual	Multiple	COLS 3	USMC
Conduct owl survey to confirm overall presence or absence of the sensitive owls in MCMWTC. Coordinate with USFS to revise permit conditions to reflect documented presence/absence of sensitive owls.			2018	Multiple	COLS 3	USMC
Conduct surveys for goshawk within suitable habitats that occur within 1.3 miles of training activities in accordance with accepted protocols. Active nests should be identified and annually monitored.			Annual	Multiple	COLS 3	USMC
Conduct great gray owl surveys to verify continued presence and implement restrictions according to results.			2019	Multiple	COLS 3	USMC
Conduct rare plant surveys to map occupied habitat. Repeat surveys regularly until population stability is documented. Then conduct surveys every five years.			2017	Multiple	COLS 2	USMC
Conduct a statistically robust population monitoring program for the American marten, including an evaluation of abundance and microhabitat use.			2022	Multiple	COLS 2	USMC, USFS
Conduct a wildlife inventory every five years.			Every 5 years	Multiple	COLS 3	USMC

Objective Actions/Projects (does not include policies)	Project Number	Cost Estimate	Scheduled Implementation	Prime Legal Driver	Funding Class	Responsible Party
Other Special Status Bird Management (Section 4.11)						
Objective: Enhance, conserve, and monitor MBTA, BCC, and DoD PIF species and associated habitat within the installation.						
Maintain a bird checklist for migratory and resident species that use the installation.			As needed	MBTA	COLS 3	USMC
In conjunction with other agencies, review and update migratory bird data for MCMWTC Bridgeport during peak migration periods and during nesting season.			2018	MBTA	COLS 3	USMC, USFS, others
Update bird surveys on MCMWTC every five years, with an emphasis on the priority DoD PIF species, BCC species and MBTA species. When possible, identify breeding habitat for MBTA species during these surveys. These surveys may be done in conjunction with other bird surveys for federally or state listed species or USFS sensitive species.			Every 5 years	MBTA	COLS 3	USMC, USFS
Forest Management (Section 4.12)						
Objective: Manage the DoN administered lands to promote a healthy, natural forest ecosystem.						
Conduct a silvicultural inventory within DoN lands. Quantify variables contributing to good quality habitat.			2022	DoDI	COLS 3	USMC
Promote high quality forest habitat on DoN lands through selective thinning.			As Needed	DoDI	COLS 2	USMC
Implement pre-commercial thinning, as appropriate.			As Needed	DoDI	COLS 2	USMC
Cooperate with USFS to evaluate and control for the presence of tree pests and pathogens (i.e. pine beetles) within forested areas.			As Needed	EO	COLS 2	USMC, USFS
Maintain BMP for all forestry related activities.			Annual	DoDI	COLS 2	USMC
Agricultural Outlease Program (Section 4.13)						
Goal: Minimize impacts to military training from agricultural activities within MCMWTC Bridgeport.						
Maintain fences and gates as necessary to keep cattle out of natural habitat areas.			As Needed	MCO	COLS 3	USMC, USFS

Objective Actions/Projects (does not include policies)	Project Number	Cost Estimate	Scheduled Implementation	Prime Legal Driver	Funding Class	Responsible Party
Signs in Spanish and English will be erected stating that DoN-administered lands are off-limits for grazing. These signs and their maintenance will be given funding priority.			As Needed	MCO	COLS 3	USMC, USFS
Outdoor Recreation (Section 4.14)						
Objective: Promote compatible, sustainable outdoor recreation opportunities which enhance quality of life for military personnel, while conserving natural resources, and without compromising military readiness.						
Educate stationed and visiting Marines and their families about adhering to MCMWTC good-neighbor policies. Ensure that Marines are aware of prohibited activities identified in the SUP such as fishing restrictions in Silver Creek, Wolf Creek, and Mill Creek.			Annual	SAIA	COLS 3	USMC
Identify opportunities to improve nature trails to benefit the public and natural resources.			As Needed	SAIA	COLS 1	USMC, USFS
Public Outreach (Section 4.15)						
Objective: Promote sustainable public outreach opportunities compatible with mission requirements.						
Develop educational conservation materials for residents and tenants			2019	Multiple	COLS 3	USMC
Ensure proper DoD signs are posted in all areas that contain RHUs, dangerous/hazardous materials, unexploded ordnance and/or are outside of live fir range surface danger zones. Include informative information regarding timing of training activities (i.e. summer rock climbing, winter snow training etc.).			As Needed	Multiple	COLS 3	USMC
Continue to implement a comprehensive public outreach program designed to inform the public about the MCMWTC and its mission, facilitate coordination with other agencies and public stakeholders, and reduce conflicting uses of MCMWTC lands.			Annual	Multiple	COLS 3	USMC

Objective Actions/Projects (does not include policies)	Project Number	Cost Estimate	Scheduled Implementation	Prime Legal Driver	Funding Class	Responsible Party
Sponsor conservation volunteer programs for trail maintenance and habitat restoration efforts, etc.			As Needed	SAIA	COLS 1	USMC, USFS, Others
Coordinate with universities, other government agencies, and non-governmental organizations for large research endeavors.			As Needed	Multiple	COLS 1	USMC, Others
Natural resources personnel shall have opportunities to participate in natural resource management job training activities and professional meetings, which helps convey the MCMWTC mission and natural resources program to various audiences.			As Needed	SAIA	COLS 3	USMC
Geographic Information System Management (Section 4.16)						
Objective: Ensure the technically sound, practical, and appropriate use of technology to manage, analyze, and communicate natural resource information in support of management decisions.						
Develop a standard for developing GIS database dictionaries and associated metadata for all MCMWTC Bridgeport GIS coverage.			As Needed	Multiple	COLS 3	USMC
Maintain an inventory of surveys/projects and associated GIS data conducted by the CDFW, USFS, and USFWS that occur within MCMWTC lands. Integrate GIS data between USMC and USFS to facilitate natural resources management and other communications.			As Needed	Multiple	COLS 3	USMC
Update master GIS datasets as new data become available.			As Needed	Multiple	COLS 3	USMC
Climate Change and Regional Growth (Section 4.17)						
Objective: Adapt and mitigate the adverse impacts of climate change through annual goal setting based on science-based scenarios, targets, collaborative planning, and adaptive management.						
Identify species and communities resilient/vulnerable to climate change impacts by collaborating with partners in conducting climate change vulnerability assessments.			As Needed	DoDI	COLS 2	USMC, Others
Collaborate with researchers to improve the application of models through data collection and validation (as feasible and needed)			As Needed	DoDI	COLS 2	USMC, Others

Objective Actions/Projects (does not include policies)	Project Number	Cost Estimate	Scheduled Implementation	Prime Legal Driver	Funding Class	Responsible Party
and for using such science based models in environmental and natural resource management planning.						
To the extent necessary, improve the graphical depiction of the potential impacts of climate change scenarios for MCMWTC to address anticipated shifts in species ranges and population abundances in climate change vulnerability assessments.			As Needed	DoDI	COLS 2	USMC, Others

Priority/Proponent for funding requests:

COLS 3 - Core requirement to maintain program and meet compliance
COLS 2 - Additional core requirement but lower risk of failure to meet compliance or jeopardize program
COLS 1 - Additional require to enhance core program

Acronyms:

CWA - Clean Water Act
DoD - Department of Defense
DoDI - Department of Defense Instruction
EO - Executive Order
ESA - Endangered Species Act
FNWA - Federal Noxious Weed Act
FWCA - Fish and Wildlife Coordination Act
MCO - Marine Corps Order
SAIA - Sikes Act Improvement Act
SCA - Soil Conservation Act

APPENDIX H

MCMWTC WATER RESOURCES

- Table 4 extracted from Final Biological Resources and Wetland Delineation Survey Report for the Marine Corps Mountain Warfare Training Center Land Zone Training Areas Project (NAVFAC Southwest 2010)
- Tables 6-3, 6-4, 6-5, 6-6, and 6-7 extracted from Delineation of Wetlands and Other WUS (Cardno Tec, Inc. 2012)
- Detailed Figures of Water Resources on MCMWTC

Table 4: Presence of Jurisdictional Waters of the US and Wetlands on Proposed LZ Sites

LZ name	*Waters of the US (feet/meters)*	*Jurisdictional Wetlands (acres/hectares)*	*WD Pit Number**
Albatross	None	None	n/a
Blackbird	None	None	n/a
Bluebird	None	0.47 ac/ 0.19 ha	1-Y 2-Y 3-N 4-Y
Bunting	None	0.721 ac/ 0.29 ha	1-Y 2-Y 3-Y 4-N 5-N 6-Y
Buzzard	None	None	n/a
Canary	None	None	1-N
Cardinal	Potential Waters of US within wetland	1.41 ac/ 0.57 ha	1-Y 2-N 3-Y 4-Y
Chickadee	None	None	n/a
Condor	Mill Creek 1,100 ft/ 335 m	5.46 ac/ 2.21 ha	1-Y 2-N 3-Y 4-Y
Crane	None	None	n/a
Crow	Silver Creek 1,420 ft 433 m	5.71 ac/ 2.31 ha	1-Y 2-N 3-Y 4-Y
Cuckoo	None	None	n/a
Dodo	Driveway Creek 1,454 ft/ 443 m	0.18 ac/ .07 ha	1-Y 2-N
Dove	Potential Waters of US within wetland	6.75 ac/ 2.73 ha	1-N 2-N 3-Y 4-Y 5-Y
Eagle	Unnamed Creek Potential Waters of US	3.75 ac/ 1.51 ha	1-Y 2-Y 3-N
Egret	Unnamed Creek 859 ft/ 262 m	1.29 ac 0.52 ha	1-Y 2-N 3-N
Falcon	None	3.79 ac/ 1.53 ha	1-Y 2-N
Goose	Unnamed Creek 1,130 ft/ 345 m	6.42 ac/ 2.60 ha	1-Y 2-Y 3-N
Grackle	None	None	1-N
Grosbeak	None	None	n/a

Table 4: Presence of Jurisdictional Waters of the US and Wetlands on Proposed LZ Sites

LZ name	*Waters of the US (feet/meters)*	*Jurisdictional Wetlands (acres/hectares)*	*WD Pit Number**
Hawk	None	9.91 ac/ 4.01 ha	1-Y 2-N 3-Y
Kiwi	Potential Waters of US within wetland	0.70 ac/ 0.28 ha	1-Y 2-N 3-Y
Lark	Leavitt Creek 680 ft/ 207 m	2.11 ac/ 0.85 ha	1-Y 2-Y 3-Y
Loon	None	None	n/a
Mallard	Snowmelt channels/ Potential Waters of US	0.01 ac/ 0.004 ha	1-Y
Merganser	None	None	n/a
Mockingbird	None	None	n/a
MWTC EAF	None	None	n/a
Nightingale	None	None	n/a
Oriole	None	None	n/a
Osprey	Silver Creek 1,220 ft/ 372 m	6.88 ac/ 2.78 ha	1-N 2-Y 3-Y 4-Y 5-Y
Owl	Wolf Creek 1,120 ft/ 342 m	4.71 ac/ 1.91 ha	1-Y 2-Y 3-Y
Parrot	Unnamed Creek 990 ft/ 302 m	4.59 ac/ 1.86 ha	1-Y 2-Y 3-N 4-Y
Partridge	None	5.85 ac/ 2.37 ha	1-N 2-Y 3-Y
Penguin	Silver Creek 1,233 ft/ 376 m	5.13 ac/ 2.08 ha	1-Y 2-N
Pigeon	None	None	n/a
Raven	None	None	n/a
Red Tail	Lost Cannon Creek 990 ft/ 302 m	2.40 ac/ 0.97 ha	1-Y 2-N 3-Y 4-N 5-Y
Robin	Sardine and McKay Creeks 1,760 ft/ 537 m	4.99 ac/ 2.02 ha	1-Y 2-Y 3-N 4-Y
Sandpiper	None	None	n/a
Snipe	Snowmelt channels: Potential Waters of US	0.24 ac/ 0.10 ha	1-Y

Table 4: Presence of Jurisdictional Waters of the US and Wetlands on Proposed LZ Sites

LZ name	*Waters of the US (feet/meters)*	*Jurisdictional Wetlands (acres/hectares)*	*WD Pit Number**
Snowbird	Unnamed Creek 960 ft/ 293 m	0.90 ac/ 0.36 ha	1-Y 2-Y 3-Y 4-N 5-Y
Sparrow	None	None	n/a
Swallow	None	None	n/a
Swan	None	0.30 ac/ 0.12 ha	1-Y 2-N
Sweetwater	None	None	n/a
Tern	None	0.40 ac/ 0.16 ha	1-Y 2-N
Turkey	None	0.25 ac/ 0.10 ha	1-Y 2-N
Vireo	None	None	n/a
Woodpecker	None	None	n/a
Woody	None	None	n/a
Yarup	Unnamed Creek 394 ft/ 120 m	None	n/a

Notes:

* Refer to Appendix C for copies USACOE Wetland Delineation (WD) Forms corresponding to Pit Numbers: a Y (Yes) or an N (No) indicates whether or not the Pit was determined to be within a wetland.

Table 6-3. Summary of Wetland and Open Water Acreage within the Project Areas

Project Component	*Open Water-Deep*	*Palustrine Emergent (PEM)*	*Palustrine Forested (PFO)*	*Palustrine Scrub/Shrub (PSS)*	*Palustrine Uncon-solidated Bottom (PUB)*	*Grand Total*
MWTC (Total)	**57.58**	**220.59**	**19.25**	**39.48**	**0.19**	**337.09**
DZ	-	111.90	-	-	0.04	**111.94**
LZ	-	1.60	-	-	-	**1.60**
Range	56.44	88.06	16.42	34.02	0.15	**195.08**
Road	1.14	19.03	2.83	5.46	-	**28.46**
Burcham Flats Road	-	0.30	-	-	-	**0.30**
Lobdell Lake Road	-	12.39	-	0.16	-	**12.56**
Luck Boy Road	-	0.93	-	0.68	-	**1.62**
Masonic Road	-	0.35	-	-	-	**0.35**
Risue Road	-	0.97	-	-	-	**0.97**
Grand Total	**57.58**	**235.54**	**19.25**	**40.32**	**0.19**	**352.88**

Notes: To avoid double-counting, wetlands that occurred in overlapping project areas were assigned in the following order: LZ, DZ, Range, Road. When multiple wetland types were present in a single wetland, the most prevalent wetland type was assigned.

2 **Table 6-4. Percent of Project Area that is Wetland**

Project Component	*Percent Wetland*
MWTC (Overall)	5.2%
MWTC DZs	29.9%
MWTC LZs (5 LZs, this survey)	1.6%
MWTC Ranges	4.3%
MWTC Roads	2.0%
Burcham Flats Road	0.1%
Lobdell Lake Road	2.8%
Lucky Boy Road	0.3%
Masonic Road	0.1%
Risue Road	0.3%
Overall	**3.4%**

Note: DZs and LZs outside of MWTC had no wetlands.

Table 6-5. Delineated Wetland and Open Water Acreages within Survey Areas

Project Component	*Open Water*	*PEM*	*PEM/ PSS*	*PFO*	*PFO/ PEM*	*PFO/ PSS*	*PSS*	*PUB*	*Grand Total*
MWTC (Total)	**57.58**	**160.43**	**74.07**	**9.95**	**6.04**	**4.43**	**24.39**	**0.19**	**337.08**
MWTC DZs (Total)	-	111.13	0.77	-	-	-	-	0.04	111.94
Cloudburst DZ	-	-	0.77	-	-	-	-	-	0.77
Mill Creek DZ	-	4.48	-	-	-	-	-	-	4.48
Pickel Meadows DZ	-	106.65	-	-	-	-	-	0.04	106.69
MWTC LZs (Total)	-	1.54	0.06	-	-	-	-	-	1.60
LZ Bullet	-	-	0.06	-	-	-	-	-	0.06
LZ Flamingo	-	1.54	-	-	-	-	-	-	1.54
MWTC Ranges (Total)	56.44	31.40	68.95	7.48	5.68	4.18	20.81	0.15	195.08
AIS-2	-	0.66	5.06	-	-	-	0.26	-	5.98
Brownie Creek Training Area	-	0.10	-	-	-	-	-	-	0.10
R1000 AIS-1	-	2.10	11.27	-	-	0.78	0.65	-	14.80
R1100	56.13	0.75	9.06	-	-	-	1.57	0.15	67.65
R1101-Leavitt Lake Road	-	1.03	22.65	0.42	0.28	0.70	6.01	-	31.09
R400	-	7.10	0.02	2.70	-	1.90	5.49	-	17.21
R500	-	2.50	0.14	-	0.03	-	2.06	-	4.72
R501 R502 R503	-	3.35	-	-	-	-	-	-	3.35
R600	-	1.76	2.56	1.30	-	0.09	0.10	-	5.80
R601	0.31	10.91	8.04	3.06	5.37	0.11	4.03	-	31.85
R800 R801	-	1.16	10.15	-	-	0.59	0.64	-	12.54
MWTC Roads (Total)	1.14	16.37	4.30	2.46	-	-	-	-	28.46
Brownie Creek Rd	-	1.42	0.38	0.03	-	-	-	-	1.83
Brownie Creek Spur	-	0.05	-	-	-	-	-	-	0.05
Cloudburst Creek Road	-	0.10	-	-	-	-	-	-	0.10
Grouse Meadows Road	-	0.22	0.06	-	-	-	0.03	-	0.31
Kirman Lake Road	1.14	3.98	-	-	-	-	0.18	-	5.30
Leavitt Lake Road	-	-	0.81	-	-	-	<0.01	-	0.81
Lost Cannon Creek Road	-	2.20	0.42	1.52	-	-	1.28	-	5.43
Marine Corps Loop	-	0.30	0.26	-	-	-	0.11	-	0.67
Mill Canyon Rd	-	1.01	-	0.54	-	0.25	1.69	-	3.49
North Trails	-	0.06	0.22	0.37	-	-	-	-	0.65
Poore Lake Road	-	4.46	1.37	-	-	-	-	-	5.83
POW Camp Road	-	0.02	-	-	-	-	-	-	0.02
Summit Meadows Road	-	1.07	-	-	0.36	-	0.13	-	1.56
Wolf Creek Road	-	1.41	0.62	-	-	-	0.16	-	2.19
Wolf Creek Spur Road	-	0.07	0.16	-	-	-	-	-	0.23
Burcham Flats Road	**-**	**0.30**	**-**	**-**	**-**	**-**	**-**	**-**	**0.30**
Lobdell Lake Road	**-**	**12.31**	**0.08**	**-**	**-**	**-**	**0.16**	**-**	**12.56**
Lucky Boy Road	**-**	**0.93**	**-**	**-**	**-**	**-**	**0.68**	**-**	**1.62**
Masonic Road	**-**	**0.35**	**-**	**-**	**-**	**-**	**-**	**-**	**0.35**

Project Component	*Open Water*	*PEM*	*PEM/ PSS*	*PFO*	*PFO/ PEM*	*PFO/ PSS*	*PSS*	*PUB*	*Grand Total*
Risue Road	**-**	**0.97**	-	-	-	-	-	-	**0.97**
Grand Total	**57.58**	**175.30**	**74.15**	**9.95**	**6.04**	**4.43**	**25.23**	**0.19**	**352.88**

Note: To avoid double-counting, wetlands that occurred in overlapping project areas were assigned in the following order: LZ, DZ, Range, Road. Areas in which no streams are present were removed from the table.

Table 6-6. Lengths (ft) of Streams that are Waters of the U.S. within the Project Areas (Summarized)

Project Component	*Canal/ Ditch*	*Ephemeral*	*Intermittent*	*Perennial*	*Grand Total*
MWTC (Total)	**3,644**	**5,928**	**126,319**	**108,213**	**244,105**
DZ	906	-	13,840	4,112	**18,857**
LZ	-	-	607	1,292	**1,899**
Range	-	2,556	97,714	69,340	**169,609**
Road	2,738	3,372	14,159	33,469	**53,739**
Burcham Flats Road	**-**	**-**	-	**4,415**	**4,415**
Lobdell Lake Road	**-**	**417**	**1,126**	**38,298**	**39,841**
Lucky Boy Road (Total)	**3,491**	**26,624**	**836**	**1,021**	**31,972**
Lucky Boy Road (DZ)	-	17,338	-	-	**17,338**
Lucky Boy Road (Road)	3,491	9,286	836	1,021	**14,634**
Masonic Road	**-**	**2,598**	**4,595**	**3,403**	**10,596**
Risue Road	**-**	**692**	**21,710**	**7,722**	**30,124**
Grand Total	**7,135**	**36,259**	**154,587**	**163,072**	**361,053**

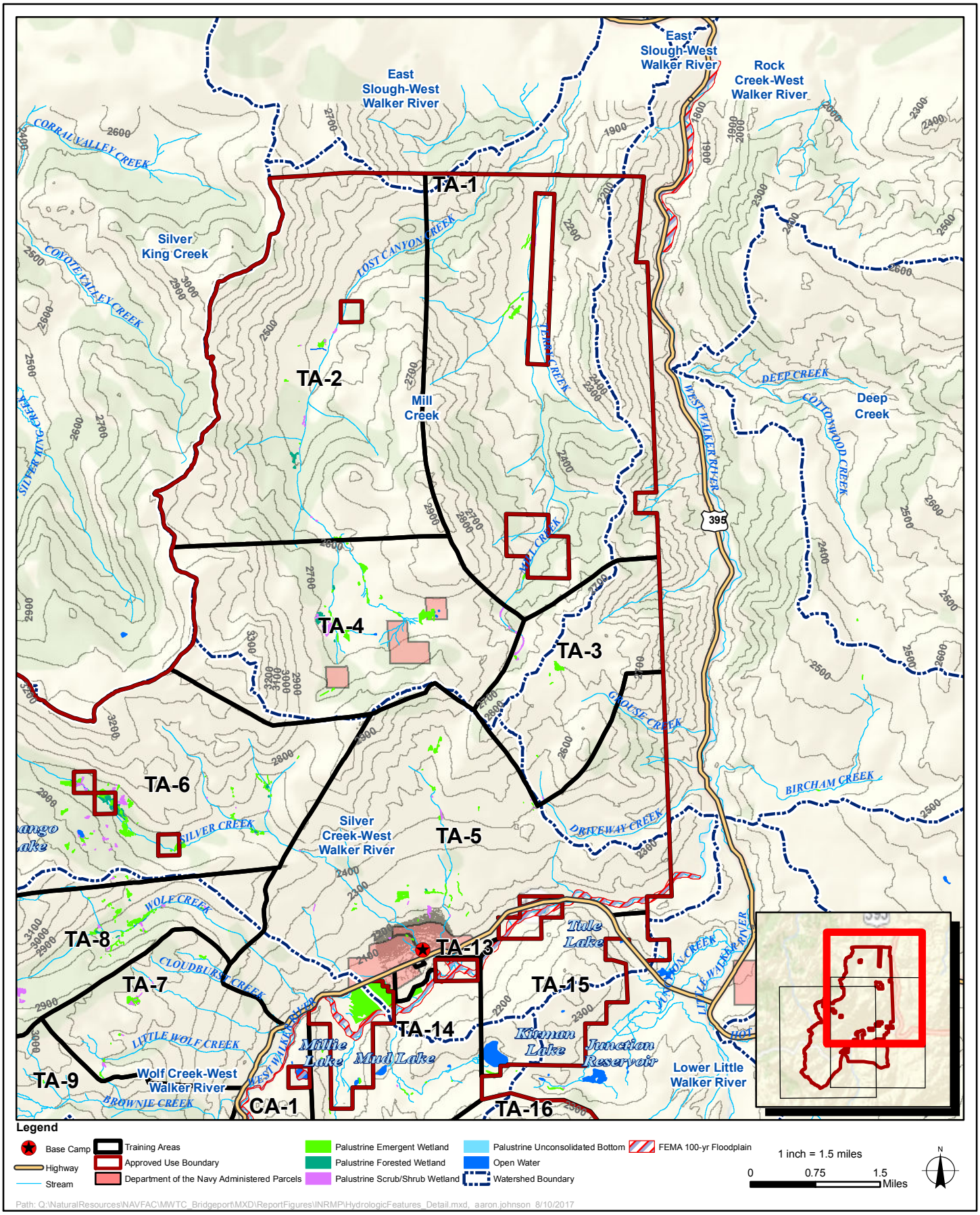
Note: To avoid double-counting, wetlands that occurred in overlapping project areas were assigned in the following order: LZ, DZ, Range, Road.

Table 6-7. Lengths (ft) of Streams that are Waters of the U.S. within the Project Areas (Detailed)

Project Component	*Canal/ Ditch*	*Ephemeral*	*Intermittent*	*Perennial*	*Grand Total*
MWTC (Total)	**3,644**	**5,928**	**126,319**	**108,213**	**244,105**
MWTC DZs (Total)	906	-	13,840	4,112	**18,857**
Cloudburst DZ	-	-	2,710	3,236	**5,946**
Mill Creek DZ	906	-	4,289	-	**5,195**
Pickel Meadows DZ	-	-	6,840	876	**7,717**
LZ Bullet	-	-	607	1,292	**1,899**
MWTC Ranges (Total)	-	2,556	97,714	69,340	**169,609**
AIS-2	-	-	727	573	**1,300**
R1000	-	-	440	-	**440**
R1000 AIS-1	-	317	14,899	11,211	**26,428**
R1100 AIS-3	-	-	2,310	6,651	**8,961**
R1101	-	387	40,274	6,307	**46,968**
R1101 AIS-3	-	-	440	-	**440**
R400	-	-	2,840	7,771	**10,611**
R500	-	1,851	5,646	6,741	**14,238**
R501 R502 R503	-	-	10,912	443	**11,356**

Project Component	*Canal/ Ditch*	*Ephemeral*	*Intermittent*	*Perennial*	*Grand Total*
R600	-	-	2,578	15,061	**17,639**
R601	-	-	9,301	8,061	**17,362**
R800 R801	-	-	7,346	6,521	**13,868**
MWTC Roads (Total)	2,738	3,372	14,159	33,469	**53,739**
Brownie Creek Rd	-	-	122	863	**985**
Chango Lake Road	-	-	176	-	**176**
Cloudburst Creek Road	-	-	388	18	**406**
Creek Spur Road	-	-	461	-	**461**
Deer Run Trail	-	-	-	270	**270**
Grouse Meadows Road	249	825	1,763	369	**3,206**
Kirman Lake Road	-	114	1,874	482	**2,471**
Leavitt Lake Road	-	-	3,689	495	**4,183**
Lost Cannon Creek Road	-	701	682	6,010	**7,393**
Marine Corps Loop	408	-	401	1,158	**1,967**
Mill Canyon Rd	-	432	2,557	12,394	**15,384**
North Trails	-	31	-	2,237	**2,267**
Poore Lake Road	2,081	117	-	3,786	**5,984**
POW Camp Road	-	-	-	699	**699**
Sierra Street	-	-	-	5	**5**
Silver Creek Meadows Road	-	-	-	181	**181**
Summit Meadows Road	-	-	714	1,961	**2,675**
Wolf Creek Road	-	1,152	1,333	2,542	**5,027**
Burcham Flats Road	-	-	-	**4,415**	**4,415**
Lobdell Lake Road	-	**417**	**1,126**	**38,298**	**39,841**
Lucky Boy Road (Total)	**3,491**	**26,624**	**836**	**1,021**	**31,972**
Lucky Boy Road (DZ)	-	17,338	-	-	**17,338**
Lucky Boy Road (Road)	3,491	9,286	836	1,021	**14,634**
Masonic Road	-	**2,598**	**4,595**	**3,403**	**10,596**
Risue Road	-	**692**	**21,710**	**7,722**	**30,124**
Grand Total	**7,135**	**36,259**	**154,587**	**163,072**	**361,053**

Note: To avoid double-counting, wetlands that occurred in overlapping project areas were assigned in the following order: LZ, DZ, Range, Road. Areas in which no streams are present were removed from the table.



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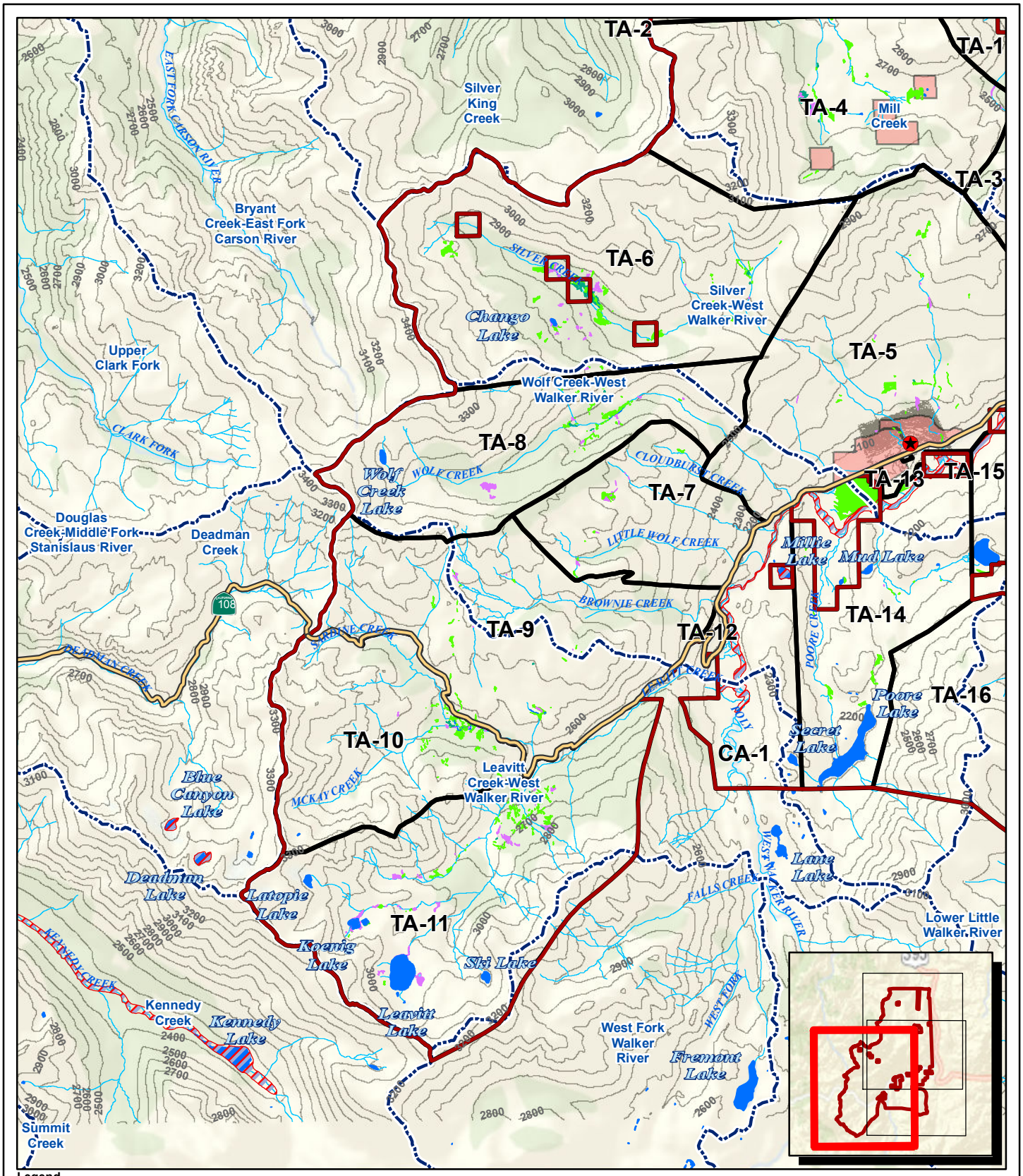
Integrated Natural Resources Management Plan

FIGURE
H-a



Legend

Base Camp
Highway
Stream
Training Areas
Approved Use Boundary
Department of the Navy Administered Parcels
Palustrine Emergent Wetland
Palustrine Forested Wetland
Palustrine Scrub/Shrub Wetland
Palustrine Unconsolidated Bottom
Open Water
Watershed Boundary
FEMA 100-yr Floodplain

1 inch = 1.5 miles
0 0.75 1.5 Miles

N

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FIGURE
H-b

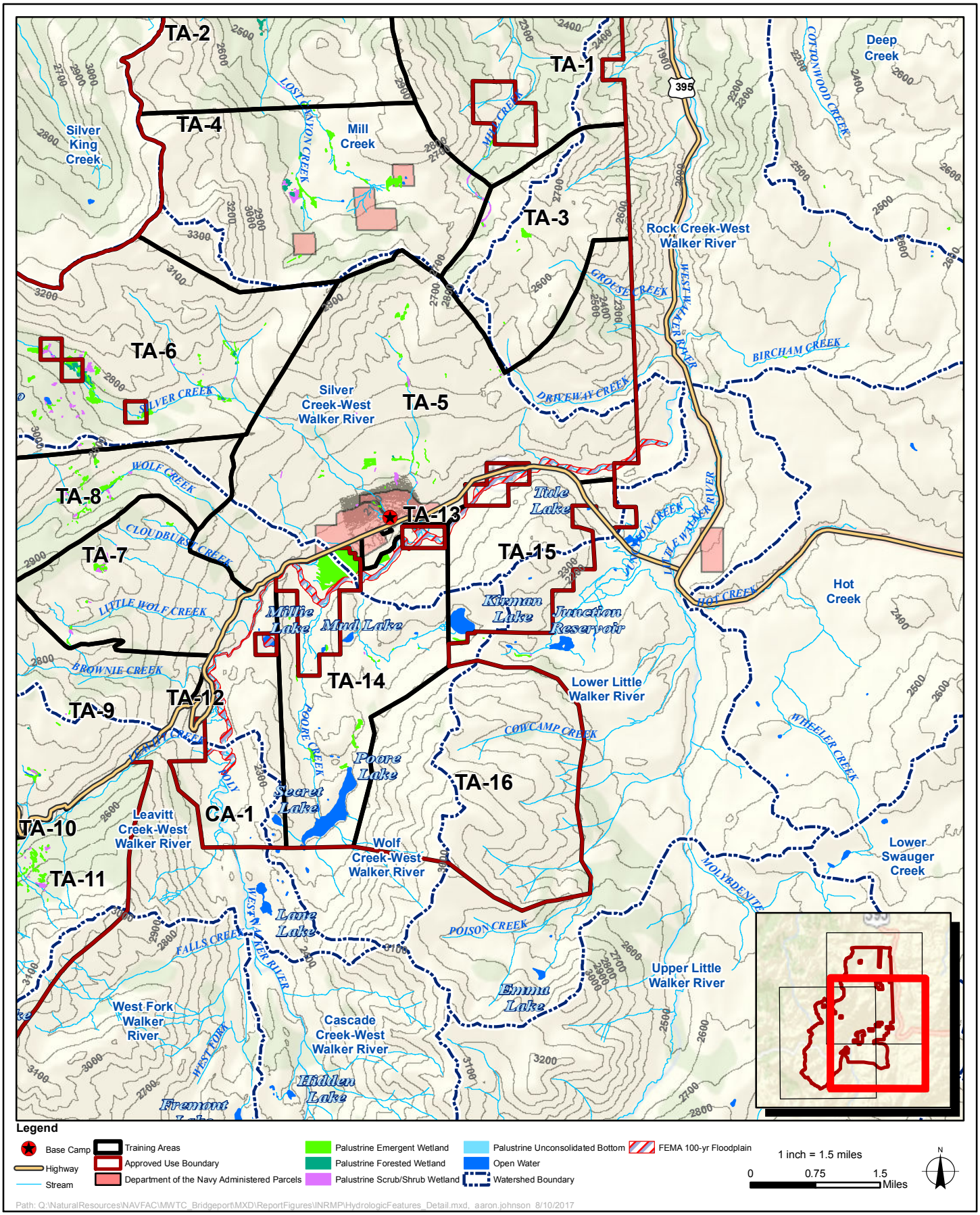

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FIGURE
H-c

APPENDIX I

MCMWTC VEGETATION TYPES

- Table H-1: Vegetation Types in Surveyed Areas **(**Table 3 from Botanical Resources Specialist Field Survey Report, Reynolds and Cardno Tec, Inc. 2012)
- Table H-2: Vegetation Types in Delineated Wetlands (Table 6-1 from Delineation of Wetlands and Other WUS, Cardno Tec, Inc 2012)
- Detailed Figures of Vegetative Communities (From USFS data)

APPENDIX I
MCMWTC BRIDGEPORT VEGETATION TYPES

Table H-1. Vegetation Types in Surveyed Areas (Table 3 from Reynolds and Cardno Tec, Inc. 2012. See Appendix J for scientific names of plants.)

Veg Type Number	Dominant	Dominant	Dominant	Survey Area and Habitat Type	Elevation
1	Mountain sagebrush	Hopsage	Nevada ephedra	Lucky Boy DZ Upland	6860
2	Greasewood	Spiny menodora	Nevada ephedra	Lucky Boy Rd (FS Rd 028/199) Upland	5000
3	Nebraska sedge	Field sedge	Straight-leaf rush	Masonic Rd (FS Road 046) Spring	8005
4	Aspen	Snowberry	Mountain Brome	Masonic Rd (FS Road 046) Upland	8070
5	Low sagebrush	Sandberg bluegrass	Squirreltail grass	Masonic Rd (FS Road 046) Upland	8020
6	Mountain sagebrush	Low sagebrush	Crested wheatgrass	Sweetwater DZ Upland	6860
7	Baltic sedge	Spike rush	Kentucky bluegrass	Masonic Rd (FS Road 046) Wetland	8110
8	Mountain sagebrush	Snowberry	Bitterbrush	Burcham Flat Rd (FS Road 031) Upland	8065
9	Nebraska sedge	Straight-leaf rush	Meadow barley	Burcham Flat Rd (FS Road 031) Meadow	8005
10	Mountain sagebrush	Bitterbrush	Pinyon pine	Burcham Flat Rd (FS Road 031) Upland	7320
11	Silver sagebrush	Thread-leaf sedge	Blue flag iris	Lobdell Lake Rd (FS Road 067) Upland	8400
12	Nebraska sedge	Woolly sedge	Watercress	Lobdell Lake Rd (FS Road 067) Wetland	8395
13	Aspen	Kelloggia	Dugaldia	Lobdell Lake Rd (FS Road 067) Upland	8380
14	Nebraska Sedge	Small wing sedge	Western Jacob's ladder	Lobdell Lake Rd (FS Road 067) Wet Meadow	8345
15	White bark/ Lodgepole pine	Western needlegrass	Ross sedge	Lobdell Lake Rd (FS Road 067) Upland	9525
16	Mountain sagebrush	Silver lupine	Western needlegrass	Lobdell Lake Rd (FS Road 067) Upland	9500
17	Low sagebrush	Silver lupine	Great Basin buckwheat	Lobdell Lake Rd (FS Road 067) Upland	9175
18	Silver sagebrush	Blue flag iris	Letterman needlegrass	Burcham Flat Rd (FS Road 031) Upland	7395

Veg Type Number	Dominant	Dominant	Dominant	Survey Area and Habitat Type	Elevation
19	Mountain sagebrush	Mono Lake Lupine	Threadleaf sedge	Burcham Flat Rd (FS Road 031) Upland	7350
20	Sedge	Woolly sedge	Blue flag iris	Burcham Flat Rd (FS Road 031) Wetland	7325
21	Mountain sagebrush	Bitterbrush	Western needlegrass	Burcham Flat Rd (FS Road 031) Upland	7250
22	Silver sagebrush	Wheeler bluegrass	Blue flag iris	Lobdell Lake Rd (FS Road 067) Upland	8920
23	Mtn & Low sagebrush	Mountain mahogany	White bark pine	Lobdell Lake Rd (FS Road 067) Upland	9055
24	White bark pine	Mountain sagebrush	Mountain Mahogany	Lobdell Lake Rd (FS Road 067) Upland	9065
25	Nebraska sedge	Baltic rush	Lemmon willow	Lobdell Lake Rd (FS Road 067) Wet meadow	8250
26	Mountain sagebrush	Bitterbrush	Green rabbitbrush	Pickel DZ Upland	6755
27	Baltic rush	Arnica	Tufted hairgrass	Pickel DZ Meadow	6755
28	Mountain sagebrush	Great Basin wildrye	Baltic sedge	R500 Upland	7250
29	Mountain sagebrush	Silver lupine	Great Basin wildrye	Mill DZ Upland	6640
30	Baltic rush	Smooth brome	Kentucky bluegrass	Mill DZ Dry meadow	6635
31	White fir	Lodgepole pine	Snowberry	Mill Canyon Rd (FS Road 028 and Trail 042) Upland	7955
32	Tobacco or snow brush	Mountain	Mountain mahogany	Lost Cannon Creek Rd (FS Road 212 and Trail 041) Upland	7605
33	Silver sagebrush	Blue flag iris	Mountain Brome	Kirman Lake Rd (FS Road 137) Upland	7245
34	White bark/ Lodgepole pine	Brewer's lupine	Ross sedge	Wolf Creek Rd (FS Road 062) Upland	9390
35	Mountain sagebrush	Grassland	Great Basin wildrye	Masonic Rd (FS Road 046) Upland	7915
36	Low sagebrush	Snowberry	Pinyon pine	Masonic Rd (FS Road 046) Upland	7960
37	Straight-leaf rush	Small fruit rush	Meadow	Mill Canyon Rd (FS Road 028 and Trail 042) Wet meadow	7890
38	Bitterbrush	Mountain sagebrush	Pinyon pine	Risue Rd (FS Road 050) Upland	7087
39	Mountain sagebrush	Pinyon pine	Bitterbrush	Risue Rd (FS Road 050) Upland	7077

Veg Type Number	Dominant	Dominant	Dominant	Survey Area and Habitat Type	Elevation
40	Mountain sagebrush	Pinyon pine	Sandberg bluegrass	Risue Rd (FS Road 050) Upland	7113
41	Mountain sagebrush	Sulphur buckwheat	Mountain mahogany	R501/502/503 Upland	9010
42A	Mountain mahogany	Western needlegrass	Ross sedge	R600 Upland	9134
42B	Jeffrey Pine	Lomatium	Lodgepole & White bark pine	R600 Upland	9341
42C	Big head goldenbush	Jeffrey pine	Wright buckwheat	R600 Upland	9512
43	Western bistort	Western water Buttercup	Small wing sedge/ fragile sheath sedge	R400 Wet meadow	8766
44	Water clover	Great Basin navarretia	Smooth stem Popcorn Flw	Flaming DZ Vernal Pool	7209
45	Spikerush	Needle spikerush	Water buttercup	Flaming DZ Vernal Pool	7206
46	Sierra willow	Bog blueberry	Mountain sedge	R601 Fen	8954
47	Mountain sedge	Mat muhly	Willow dock	R601 Wet meadow	8918
48	Mount Rose buckwheat	Brickel-bush	Mountain sagebrush	Flaming DZ/ South Trails	7248
49	Mountain sagebrush	Mount Rose buckwheat	Green rabbitbrush	R800/801 Upland	9167
50	Mount Rose buckwheat	Cluster phlox	Mountain sagebrush	R1000 Upland	9820
51	Long leaf arnica	Philonotis fontana - moss	Subalpine monkeyflower	R1100 Wet drainage	9941
52	Bryum sp. – moss	Mountain sedge	Western bistort	R1100 Wet meadow	9377
53	Sierra willow	Western bistort	Dugaldia	R1100 Spring/meadow	9640

Table H-2. Vegetation Types in Delineated Wetlands (Table 6-1 from Cardno Tec, Inc. 2012).

Vegetation Association	*Acres*				
	DZ	*LZ*	*Range*	*Road*	*Grand Total*
Alpine Grasses and Forbs	-	-	1.06	-	**1.06**
Alpine Mixed Scrub	-	-	2.96	-	**2.96**
Annual Grasses and Forbs	29.15	1.07	6.05	1.13	**37.40**
Barren/Rock	0.12	-	2.83	0.12	**3.06**
Big Basin Sagebrush	3.95	-	-	0.40	**4.35**
Bitterbrush-Sagebrush	-	-	1.50	0.68	**2.17**
Curlleaf Mountain Mahogany (shrub)	-	-	-	0.19	**0.19**
Eastside Pine	-	-	0.07	0.08	**0.15**
Great Basin - Mixed Chaparral Transition	-	-	0.15	0.03	**0.17**
Great Basin Mixed Scrub	-	-	12.54	1.88	**14.42**
Lodgepole Pine	-	-	45.74	2.25	**47.99**
Low Sagebrush	-	-	2.60	0.82	**3.42**
Mixed Conifer - Fir	-	-	-	2.10	**2.10**
Montane Mixed Chaparral	-	-	1.20	-	**1.20**
Mountain Sagebrush	1.91	0.52	6.50	10.11	**19.04**
Perennial Grasses and Forbs	0.60	-	9.25	0.67	**10.52**
Quaking Aspen	-	-	10.36	3.80	**14.16**
Rabbitbrush	-	-	0.28	1.74	**2.03**
Singleleaf Pinyon Pine	-	-		1.56	**1.56**
Snowberry	-	-	0.60	1.08	**1.68**
Snowbrush	-	-	0.27	-	**0.27**
Subalpine Conifers	-	-	2.17	0.96	**3.13**
Water	0.45	-	52.30	0.32	**53.07**
Western Juniper	-	-	3.50	0.01	**3.51**
Western White Pine	-	-	0.22	0.03	**0.25**
Wet Meadows	75.77	-	27.40	10.79	**113.97**
White Fir	-	-	-	0.52	**0.52**
Willow (Shrub)	-	-	7.03	0.21	**7.24**
Grand Total	**111.94**	**1.60**	**196.57**	**41.48**	**351.58**

Note: To avoid double-counting, vegetation that occurred in overlapping project areas were assigned in the following order: LZ, DZ, Range, Road.

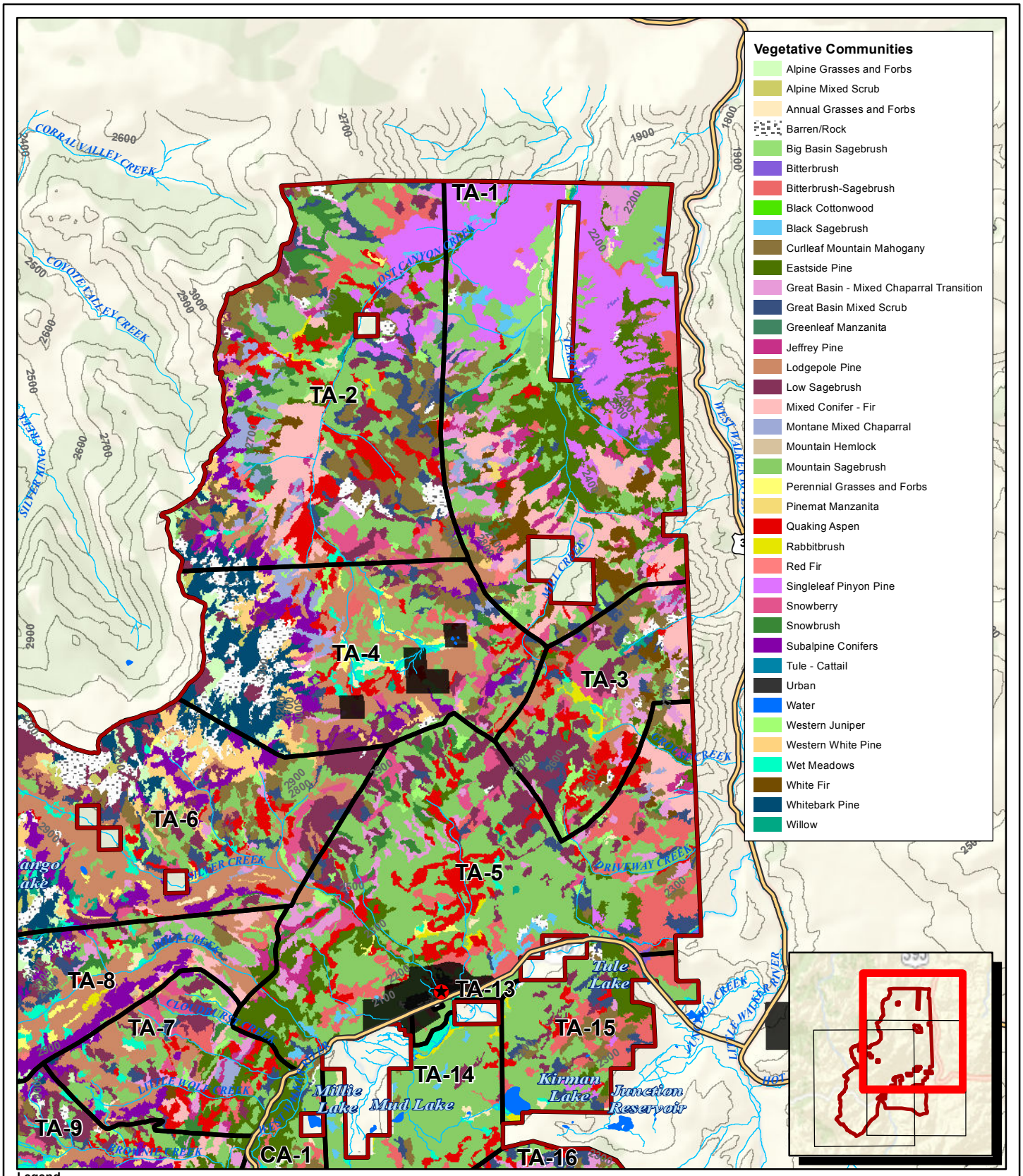

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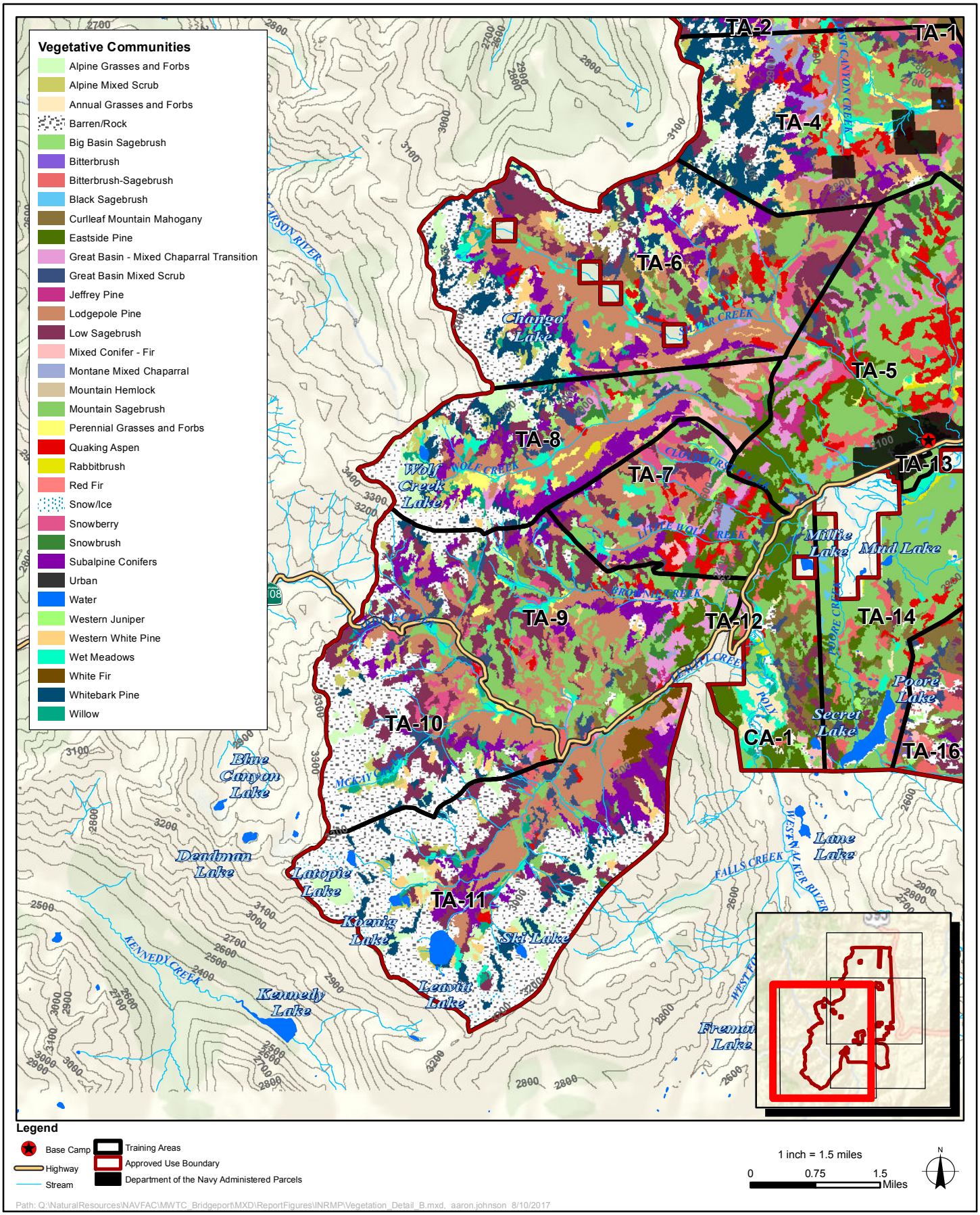
FIGURE
I-a



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Vegetative Communities
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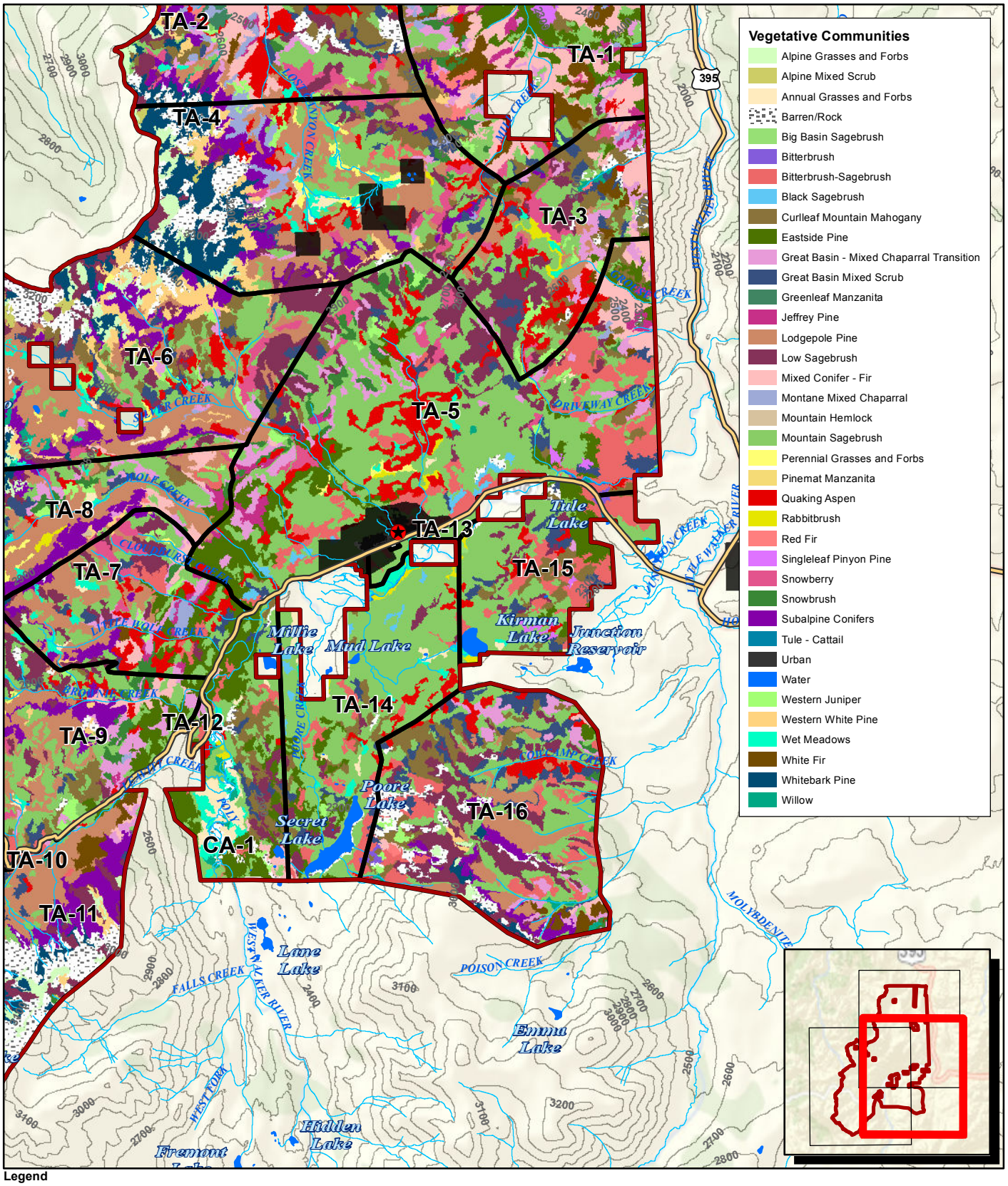
Integrated Natural Resources Management Plan

FIGURE
I-b



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Vegetative Communities
Marine Corps Mountain Warfare Training Center Bridgeport
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FIGURE
I-c

APPENDIX J

MCMWTC FLORA LIST

APPENDIX J
MCMWTC FLORA

Scientific Name	Common Name
Family: Asteraceae	
Achillea millefolium	common yarrow
Ageratina occidentalis	western snakeroot
Agoseris aurantiaca	orange agoseris
Agoseris elata	tall agoseris
Agoseris glauca var. *laciniata*	Smiley false agoseris
Agoseris glauca var. *monticola*	pale agoseris
Agoseris retrorsa	spearleaf agoseris
Ambrosia acanthicarpa	Flatspine bur ragweed
Antennaria corymbosa	Flat-top pussytoes
Antennaria dimorpha	low pussytoes
Antennaria media	Rocky Mountain pussytoes
Antennaria rosea	rosy pussytoes
Arnica chamissonis ssp. f*oliosa*	Chamisso amica
Arnica longifolia	spearleaf amica
Arnica mollis	hairy amica
Arnica nevadensis	Nevada amica
Arnica parryi ssp. *sonnei*	Maguire Sonne's amica
Artemisia arbuscula	little sagebrush
Artemisia cana	silver sagebrush
Artemisia douglasiana	Douglas's sagewort
Artemisia dracunculus	tarragon
Artemisia ludoviciana ssp. *incompta*	white sagebrush
Artemisia ludoviciana ssp. *ludoviciana*	white sagebrush
Artemisia michauxiana	Michaux's wormwood
Artemisia norvegica ssp. *saxatilis*	Boreal sagebrush
Artemisia rothrockii	Timberline sagebrush
Artemisia spiciformis	big sagebrush
Artemisia spinescens	bud sagebrush
Artemisia tridentata ssp. *tridentata*	basin big sagebrush

Scientific Name	Common Name
Artemisia tridentata ssp. *vaseyana*	mountain big sagebrush
Artemisia tridentata ssp. *wyomingensis*	Wyoming big sagebrush
Asclepias cryptoceras	pallid milkweed
Aster alpigenus	tundra aster
Aster breweri	Brewer's aster
Aster integrifolius	thickstem aster
Aster oregonensis	Oregon whitetop aster
Aster peirsonii	Peirson's aster
Aster scopulorum	lava aster
Balsamorhiza hookeri	Hooker's balsamroot
Balsamorhiza sagittata	arrowleave balsamroot
Brickellia oblongifolia var. *linifolia*	narrowleaf brickellbush
Chaenactis douglasii var. *alpina*	alpine dustymaiden
Chaenactis douglasii var. *douglasii*	Douglas' dustymaiden
Chaenactis stevioides	Esteve’s pincushion
Chrysothamnus nauseosus	goldenbush
Chrysothamnus parryi ssp. *asper*	Parry's rabbitbrush
Chrysothamnus parryi ssp. *monocephalus*	Parry's rabbitbrush
Chrysothamnus viscidiflorus ssp. *puberulus*	yellow rabbitbrush
Chrysothamnus viscidiflorus ssp. *viscidiflorus*	yellow rabbitbrush
Cirsium andersonii	rose thistle
Cirsium occidentale var. *candidissimum*	snowy thistle
Cirsium scariosum	meadow thistle
Cirsium subniveum	Jackson Hole thistle
Cirsium vulgare‡	bull thistle
Crepis acuminata	tapertip hawksbeard
Crepis intermedia	limestone hawksbeard
Crepis modocensis	Modoc hawksbeard
Crepis nana	dward alpine hawksbeard
Crepis occidentalis	largeflower hawksbeard
Dugaldia hoopesii	owl's-claws
Ericameria bloomeri	rabbitbush

Scientific Name	Common Name
Ericameria discoidea	whitestem goldenbush
Ericameria suffruticosa	singlehead goldenbush
Erigeron aphanactis	rayless shaggy fleabane
Erigeron breweri var. *breweri*	Brewer's fleabane
Erigeron breweri var. porphyreticus	Brewer's fleabane
Erigeron clokeyi	Clokeky's fleabane
Erigeron compositus	cutleaf daisy
Erigeron coulteri	large mountain fleabane
Erigeron eatonii var. *sonnei*	Eaton's fleabane
Erigeron peregrinus ssp. *callianthemus*	subalpine fleabane
Erigeron pumilus var. *intermedius*	shaggy fleabane
Eriophyllum lanatum var. *integrifolium*	common woolly sunflower
Euthamia occidentalis	western goldentop
Glyptopleura marginata	carveseed
Gnaphalium palustre	western marsh cudweed
Gutierrezia microcephala	threadleaf snakeweed
Hieracium albiflorum	white hawkweed
Hieracium horridum	prickly hawkweed
Hulsea algida	Pacific hulsea
Iva axillaris†	povertyweed
Lactuca serriola†	prickly lettuce
Layia glandulos	whitedaisy tidytips
Machaeranthera canescens var. *canescens*	hoary tansyaster
Madia elegans ssp. *elegans*	common madia
Madia glomerata†	moutain tarweed
Madia gracilis	grassy tarweed
Madia minima	opposite-leaved tarweed
Malacothrix glabrata	smooth desertdandelion
Malacothrix torreyi	Torrey's desertdandelion
Packera streptanthifolia	Rocky Mountain groundsel
Packera subnuda	Buek's groundsel
Packera werneriifolia	hoary groundsel

Scientific Name	Common Name
Pyrrocoma apargioides	alpineflames
Raillardella argentea	silky raillardella
Senecio canus	wooly groundsel
Senecio fremontii var. *occidentalis*	dwarf mountain ragwort
Senecio hydrophilus	water ragwort
Senecio integerrimus var. *exaltatus*	Columbia ragwort
Senecio multilobatus	lobeleaf groundsel
Senecio scorzonella	Sierra ragwort
Senecio serra var. *serra*	tall ragwort
Senecio triangularis	arrowleaf ragwort
Solidago canadensis ssp. *elongata*	rough Canada goldenrod
Solidago multiradiata	Rocky Mountain goldenrod
Stenotus acaulis	stemless mock goldenweed
Stenotus stenophyllus	narrowleaf goldenweed
Stephanomeria exigua ssp. *exigua*	small wirelettuce
Stephanomeria minor var. *minor*	narrowleaf wirelettuce
Stephanomeria spinosa	thorn skeletonweed
Taraxacum officionale†	common dandelion
Tetradymia canescens	spineless horsebrush
Tetradymia glabrata	littleleaf horsebrush
Tetradymia spinosa	shortspine horsebrush
Townsendia scapigera	tufted Townsend daisy
Tragopogon dubius†	yellow salsify
Trimorpha lonchophylla	shortray fleabane
Wyethia mollis	woolly mule-ears
Family: Betulaceae	
Alnus incana ssp. *tenuifolia*	thinleaf alder
Family: Boraginaceae	
Amsinckia tessellata†	bristly fiddleneck
Cryptantha cinerea var. *abortiva*	James' cryptantha
Cryptantha circumscissa	cushion cryptantha
Cryptantha crymophila	subalpine cryptantha

Scientific Name	Common Name
Cryptantha echinella	prickly cryptantha
Cryptantha flavoculata	roughseed cryptantha
Cryptantha gracilis	narrowstem cryptantha
Cryptantha humilis	roundspike cryptantha
Cryptantha intermedia	Clearwater cryptantha
Cryptantha micrantha	redroot cryptantha
Cryptantha nubigena	Sierra cryptantha
Cryptantha pterocarya	wingnut cryptantha
Cryptantha watsonii	Watson's cryptantha
Hackelia micrantha	Jessica sticktight
Hackelia ursina	Chihuahuan stickseed
Lappula occidentalis var. *occidentalis*†	flatspine stickseed
Lithospermum ruderale†	western stoneseed
Mertensia oblongifolia var. *nevadensis*	oblongleaf bluebells
Myosotis micrantha	strict forget-me-not
Pectocarya setosa†	moth combseed
Plagiobothrys hispidulus	sleeping popcornflower
Plagiobothrys hispidus	Cascade popcornflower
Plagiobothrys leptocladus	finebranched popcornflower
Tiquilia nuttallii	Nattall's crinklemat
Arabis beckwithii	Beckwith's rockcress
Arabis bodiensis	Bodie Hills rockcress
Arabis cobrensis	sagebrush rockcress
Arabis fendleri var. *fendleri*	Fendler's rockcress
Arabis hirsuta var. *glabrata*	mountain rockcress
Arabis holboellii var. *retrofracta*	second rockcress
Arabis lemmonii var. *lemmonii*	Lemmon's rockcress
Arabis lyallii	Lyall's rockcress
Arabis platysperma	pioneer rockcres
Arabis puberula	silver rockcress
Arabis pulchra	beautiful rockcress
Arabis rectissima var. *rectissima*	bristlyleaf rockcress

Scientific Name	Common Name
Arabis selbyi	Selby's rockcress
Arabis sparsiflora var. *sparsiflora*	sicklepod roccress
Barbarea orthoceras	american yellowrocket
Boechera holboellii var. *secunda*	second rockcress
Boechera sparsiflora	sicklepod rockcress
Camelina microcarpa†	littlepod false flax
Cardaria pubescens‡	hairy whitetop
Caulanthus pilosus	hairy wild cabbage
Cusickiella quadricostata	Bodie Hills cusickiella
Descurainia californica	Sierra tansymustard
Descurainia incana	mountain tansymustard
Descurainia incisa ssp. *incisa*	mountain tansymustard
Descurainia pinnata ssp. *filipes*	western tansymustard
Descurainia pinnata†	western tansymustard
Draba albertina	slender draba
Draba asterophora var. *asterophora*	Lake Tahoe draba
Draba densifolia	denseleaf draba
Erysimum capitatum var. *capitatum*	sanddune wallflower
Erysimum capitatum var. *perenne*	sanddune wallflower
Erysimum repandum†	spreading wallflower
Hornungia procumbens	prostrate hutchinsia
Lepidium densiflorum var. *macrocarpum*	common pepperweed
Lepidium fremontii	desert pepperweed
Lepidium latifolium‡	broadleaved pepperweed
Lepidium perfoliatum†	clasping pepperweed
Lesquerella kingii spp. *kingii*	King bladderpod
Nasturtium microphyllum	onerow yellowcress
Phoenicaulis cheiranthoides	wallflower phoenicaulis
Rorippa curvisiliqua var. *orientalis*	Oriental yellowcress
Rorippa tenerrima	Modoc yellowcress
Sisymbrium altissimum†	tall tumblemustard
Stanleya pinnata	desert princesplume

Scientific Name	Common Name
Streptanthus oliganthus	Masonic Moutain jewelflower
Subularia aquatica var. *americana*	American waterawlwort
Thelypodium crispum	crisped thelypody
Family: Cactaceae	
Grusonia pulchella	sagebrush cholla
Opuntia erinacea var. *utahense*	Hairspine pricklypear
Family: Campanulaceae	
Porterella carnosula	fleshy porterella
Family: Capparaceae	
Cleomella hillmanii	Hillman's stinkweed
Family: Caprifoliaceae	
Lonicera conjugialis	purpleflower honeysuckle
Lonicera involucrata	twinberry honeysuckle
Sambucus racemosa	red elderberry
Sambucus racemosa var. *melanocarpa*	Rocky Mountain elder
Sambuscus nigra ssp. c*erulea*	blue elderberry
Symphoricarpos oreophilus	mountain snowberry
Symphoricarpos rotundifolius var. *rotundifolius*	roundleaf snowberry
Family: Caryophyllaceae	
Arenaria aculeata	prickly sandwort
Dianthus barbatus†	sweetwilliam
Minuartia obtusiloba	twinflower sandwort
Sagina saginoides	artic pearlwort
Silene bernardina	Palmer's catchfly
Silene sargentii	Sargent's catchfly
Spergularia rubra†	red sandspurry
Stellaria longipes	longstalk starwort
Stellaria media	common chickweed
Family: Chenopodiaceae	
Atriplex confertifolia	Shadscale saltbush
Atriplex patua ssp. *hastata*	triangle orache
Bassia hyssopifolia†	fivehorn smotherweed

Scientific Name	Common Name
Chenopodium album†	lambsquarters
Chenopodium atrovirens	dark green goosefoot
Chenopodium desicatum	aridland goosefoot
Chenopodium foliosum	leafy goosefoot
Chenopodium incanum var. *occidentale*	mealy goosefoot
Chenopodium leptophyllum	narrowleaf goosefoot
Chenopodium nevadense	Nevada goosefoot
Grayia spinosa	spingy hopsage
Halogeton glomeratus†	saltlover
Krascheninnikovia lanata	winterfat
Monolepis nuttalliana	Nuttall's povertyweed
Salsola tragus†	prickly Russian thistle
Sarcobatus vermiculatus	greasewood
Suaeda moquinii	Mojave seablite
Family: Clusiaceae	
Hypericum anagalloides	tinker's penny
Hypericum formosum var. *scouleri*	Scouler's St. Johnswort
Family: Concolculaceae	
Convolvulus arvensis‡	field bindweed
Family: Cornaceae	
Cornus sericea	redosier dogwood
Family: Crassulaceae	
Rhodiola integrifolia ssp. *integrifolia*	ledge stonecrop
Sedum obtusatum ssp. *obtusatum*	Sierra stonecrop
Family: Cupressaceae	
Juniperus occidentalis	western juniper
Juniperus osteosperma	Utah juniper
Family: Cyperaceae	
Carex aquatilis var. *aquatilis*	water sedge
Carex athrostachya	slenderbeak sedge
Carex buxbaumii	Buxbaum's sedge
Carex douglasii	Douglas' sedge

Scientific Name	Common Name
Carex echinata ssp. *echinata*	star sedge
Carex exserta	shorthair sedge
Carex feta	greensheath sedge
Carex filifolia	threadleaf sedge
Carex fissuricola	cleft sedge
Carex fracta	fragile sheath sedge
Carex haydeniana	cloud sedge
Carex heteroneura	different-nerve sedge
Carex hoodii	Hood's sedge
Carex illota	sheep sedge
Carex integra	smoothbeak sedge
Carex jonesii	Jones' sedge
Carex lenticularis	lakeshore sedge
Carex leporinella	Sierra hare sedge
Carex mariposana	Mariposa sedge
Carex microptera	smallwing sedge
Carex multicaulis	manystem sedge
Carex multicostata	manyrib sedge
Carex nebrascensis	Nebraska sedge
Carex nigricans	black alpine sedge
Carex occidentalis	western sedge
Carex pachystachya	chamisso sedge
Carex parryana	Parry's sedge
Carex pellita	woolly sedge
Carex petasata	Liddon sedge
Carex praegracilis	clustered field sedge
Carex preslii	Presl's sedge
Carex rossii	Ross' sedge
Carex scopulorum var. *bracteosa*	mountain sedge
Carex simulata	analogue sedge
Carex specifica	narrowfruit sedge
Carex stipata	awlfruit sedge

Scientific Name	Common Name
Carex straminiformis	Shasta sedge
Carex subfusca	brown sedge
Carex subnigricans	nearlyblack sedge
Carex utriculata	Northwest Territory sedge
Carex vallicola	valley sedge
Carex whitneyi	Whitney's sedge
Eleocharis acicularis	needle spikerush
Eleocharis acicularis var. *bella*	beautiful spikerush
Eleocharis macrostachya	pale spikerush
Eleocharis pauciflora	fewflower spikerush
Eriophorum criniger	fringed cottongrass
Kobresia myosuroides	Bellardi bog sedge
Schoenoplectus acutus	hardstem bulrush
Schoenoplectus pungens var. *pungens*	common threesquare
Scirpus microcarpus	panicled bulrush
Family: Dryopteridaceae	
Cystopteris fragilis	brittle bladderferm
Woodsia oregana	Oregon cliff fern
Family: Elaeagnaceae	
Shepherdia argentea	silver buffaloberry
Family: Ephedraceae	
Ephedra nevadensis	Nevada jointfir
Ephedra viridis	mormon tea
Family: Equisetaceae	
Equisetum arvense	field horsetail
Equisetum laevigatum	smooth horsetail
Family: Ericaceae	
Arctostaphylos nevadensis	pinemat manzanita
Arctostaphylos uva-ursi	Little Sur manzanita
Kalmia microphylla	alpine laurel
Ledum glandulosum	western labrador tea
Phyllodoce breweri	purple mountainheath

Scientific Name	Common Name
Vaccinium uliginosum	bog blueberry
Family: Fabaceae	
Astragalus andersonii	Anderson's milkvetch
Astragalus calycosus var. *calycosus*	Torrey's milkvetch
Astragalus casei	Case's milkvetch
Astragalus iodanthus var. *iodanthus*	Humbold River milkvetch
Astragalus johannis-howellii	Long Valley milkvetch
Astragalus lentiginosus var. *ineptus*	freckled milkvetch
Astragalus lentiginosus var. *lentiginosus*	fleckled milkvetch
Astragalus malacus	shaggy milkvetch
Astragalus newberryi var. *newberryi*	Newberry's milkvetch
Astragalus oophorus var. *lavinii*	Lavin's milkvetch
Astragalus platytropis	broadkeel milkvetch
Astragalus purshii	woollypod milkvetch
Astragalus serenoi	naked milkvetch
Astragalus whitneyi var. *whitneyi*	balloonpod milkvetch
Dalea sp.†	Indigo bush
Lathyrus lanszwertii var. *lanszwertii*	Lanszwert's pea
Lupinus arbustus	longspur lupine
Lupinus argenteus	silvery lupine
Lupinus brevicaulis	shortstem lupine
Lupinus breweri var. *bryoides*	matted lupine
Lupinus caudatus caudatus	tailcup lupine
Lupinus duranii	Mono Lake lupine
Lupinus grayi	Sierra lupine
Lupinus lepidus var. *confertus*	crowded lupine
Lupinus lepidus var. *lobbii*	Donner Lake lupine
Lupinus lepidus var. *ramosus*	crowded lupine
Lupinus lepidus var. *sellulus*	Donner Lake lupine
Lupinus polyphyllus var. *burkei*	largeleaf lupine
Medicago sativa†	alfalfa
Melilotus albus†	sweetclover

Scientific Name	Common Name
Melilotus officinalis†	sweetclover
Robinia pseudoacacia†	black locust
Trifolium andersonii var. *andersonii*	fiveleaf clover
Trifolium cyathiferum	cup clover
Trifolium longipes var. *nevadense*	Hansen's clover
Trifolium microcephalum	smallhead clover
Trifolium monanthum var. *monanthum*	mountain carpet clover
Trifolium repens†	white clover
Vicia americana var. *americana*	American vetch
Family: Gentianaceae	
Gentianopsis simplex	oneflower fringed gentian
Swertia radiata	elkweed
Family: Geraniaceae	
Erodium cicutarium†	redstem stork's bill
Geranium richardsonii	Richardson's geranium
Family: Grossulariaceae	
Ribes aureum var. *aureum*	golden currant
Ribes cereum var. *cereum*	wax currant
Ribes inerme var. *inerme*	whitestem gooseberry
Ribes lacustre	prickly currant
Ribes montigenum	gooseberry currant
Ribes roezlii	Sierra gooseberry
Ribes velutinum	desert gooseberry
Family: Hippuridaceae	
Hippuris vulgaris	common mare's-tail
Family: Hydrophyllaceae	
Hesperochiron californicus	California hesperochiron
Nama aretioides var. *multiflorum*	ground nama
Nemophila spatulata	Sierra baby blue eyes
Phacelia bicolor var. *bicolor*	twocolor phacelia
Phacelia crenulata var. *crenulata*	cleftleaf wildheliotrope
Phacelia hastata ssp. *compacta*	compact phacelia

Scientific Name	Common Name
Phacelia hastata ssp. *hastata*	silverleaf phacelia
Phacelia heterophylla ssp. *virgata*	varileaf phacelia
Phacelia humilis var. *humilis*	low phacelia
Phacelia hydrophylloides	waterleaf phacelia
Phacelia monoensis	Mono phacelia
Phacelia ramosissima	branching phacelia
Family: Iridaceae	
Iris missouriensis	Rocky Mountain iris
Sisyrinchium idahoense var. *occidentale*	Idaho blue-eyed grass
Family: Juncaceae	
Juncus arcticus ssp. *littoralis*	mountain rush
Juncus bufonius var. *bufonius*	toad rush
Juncus bufonius var. *occidentalis*	toad rush
Juncus chlorocephalus	greenhead rush
Juncus confusus	Colorado rush
Juncus covillei var. *obtusatus*	Coville's rush
Juncus drummondii	Drummond's rush
Juncus mertensianus	Mertens' rush
Juncus nevadensis	Sierra rush
Juncus orthophyllus	straightleaf rush
Juncus parryi	Parry's rush
Juncus saximontanus	Rocky Mountain rush
Juncus xiphioides	irisleaf rush
Luzula comosa	Pacific woodrush
Luzula parviflora	smallflowered woodrush
Luzula subcongesta	Donner woodrush
Family: Lamiaceae	
Agastache urticifolia	nettleleaf giant hyssop
Lemna sp.	duckweed
Marrubium vulgare†	horehound
Mentha arvensis	wild mint
Mentha x *piperita*†	peppermint

Scientific Name	Common Name
Monardella odoratissima ssp. *pallida*	moutain monardella
Salvia dorrii	purple sage
Family: Lemnaceae	
Spirodella polyrhiza	common duckmeat
Trichostema oblongum	oblong bluecurls
Family: Lilaceae	
Allium anceps	twinleaf onion
Allium bisceptrum	twincrest onion
Allium lemmonii	Lemmon's onion
Allium validum	Pacific onion
Calochortus buneaunis	Bruneau mariposa lily
Calochortus leichtlinii	smokey mariposa
Fritillaria atropurpurea	spotted fritillary
Lilium parvum	Sierra tiger lily
Maianthemum stellatum	starry false lily of the valley
Triteleia hyacinthina	white brodiaea
Veratrum californicum	California false hellebore
Zigadenus paniculatus	foothill deathcamas
Family: Limnanthaceae	
Floerkea proserpinacoides	false mermaidweed
Family: Linaceae	
Linum lewisii	Lewis flax
Family: Loasaceae	
Mentzelia albicaulis	whitestem blazingstar
Mentzelia congesta	united blazingstar
Mentzelia laevicaulis	smoothstem blazingstar
Family: Malvaceae	
Malva neglecta†	common mallow
Sidalcea glaucescens	waxy checkerbloom
Sidalcea oregana ssp. *spicata*	Oregon checkerbloom
Sphaeralcea ambigua	desert globemallow
Sphaeralcea grossulariifolia	gooseberryleaf globemallow

Scientific Name	Common Name
Family: Marsileaceae	
Marsilea vestita	hairy waterclover
Family: Monotropaceae	
Pterospora andromedea	woodland pinedrops
Sarcodes sanguinea	snowplant
Family: Montiaceae	
Calyptridium monospermum	oneseeded pussypaws
Claytonia nevadensis	Sierra springbeauty
Claytonia parviflora ssp. *parviflora*	Streambank springbeauty
Claytonia rubra	redstemmed springbeauty
Family: Nyctaginaceae	
Abronia turbinata	transmontane sand verbena
Mirabilis bigelovii var. *bigelovii*	wishbone-bush
Family: Oleaceae	
Menodora spinescens	spiny menodora
Family: Onagraceae	
Camissonia claviformis ssp. *integrior*	browneyes
Camissonia nevadensis	Nevada suncup
Camissonia parvula	Lewis River suncup
Camissonia subacaulis	diffuseflower evening primrose
Chamerion angustifolium ssp. *circumvagum*	fireweed
Circeae alpina ssp. *pacifica*	small enchanter's nightshade
Epilobium brachycarpum	tall annual willowherb
Epilobium ciliatum ssp. *ciliatum*	fringed willowherb
Epilobium ciliatum ssp. *glandulosum*	fringed willowherb
Epilobium glaberrimum ssp. *fastigiatum*	glaucus willowherb
Epilobium glaberrimum ssp. *glaberrimum*	glaucus willowherb
Epilobium halleanum	glandular willowherb
Epilobium hornemannii ssp. *hornemannii*	Hornemann's willowherb
Epilobium obcordatum	rockfringe
Epilobium oregonense	Oregon willowherb
Epilobium saximontanum	Rocky Mountain willowherb

Scientific Name	Common Name
Gayophytum decipiens	deceptive groundsmoke
Gayophytum diffusum ssp. *parviflorum*	spreading groundsmoke
Gayophytum humile	drawf groundsmoke
Gayophytum racemosum	blackfoot groundsmoke
Gayophytum ramosissimum	pinyon groundsmoke
Oenothera caespitosa var. *crinita*	tufted evening primrose
Family: Orchidaceae	
Platanthera dilatata var. *leucostachys*	Sierra bog orchid
Family: Orobanchaceae	
Castilleja angustifolia var. *dubia*	northwestern Indian paintbrust
Cordylanthus kingii ssp. *helleri*	Heller's bird's beak
Cordylanthus ramosus	bushy bird's beak
Orobanche corymbosa	flat-top broomrape
Orobanche fasciculata	clustered broomrape
Orthocarpus cuspidatus var. *copelandii*	Copeland's owl's clover
Family: Paeoniaceae	
Paeonia brownii	Brown's peony
Family: Papaveraceae	
Argemone munita	flatbud picklypoppy
Family: Pinaceae	
Abies lowiana	Sierra white fir
Abies magnifica	California red fir
Pinus albicaulis	whitebark pine
Pinus contorta var. *murrayana*	Sierra lodgepole pine
Pinus jeffreyi	Jeffrey pine
Pinus monophylla	singleleaf pinyon
Pinus monticola	western white pine
Pinus ponderosa	ponderosa pine
Tsuga mertensiana	moutain hemlock
Family: Plantaginaceae	
Collinsia parviflora	maiden blued eyed Mary
Plantago major	common plantain

Scientific Name	Common Name
Family: Poaceae	
Achnatherum hymenoides	Indian ricegrass
Achnatherum lemmonii	Lemmon's needlegrass
Achnatherum lettermanii	Letterman's needlegrass
Achnatherum nevadense	Nevada needlegrass
Achnatherum occidentale ssp. *californicum*	California needlegrass
Achnatherum occidentale ssp. o*ccidentale*	western needlegrass
Achnatherum pinetorum	pine needlegrass
Achnatherum speciosum	desert needlegrass
Achnatherum thurberianum	Thurber's needlegrass
Achnatherum webberi	Webber needlegrass
Agropyron cristatum†	crested wheatgrass
Agrostis exarata	spike bentgrass
Agrostis idahoensis	Idaho bentgrass
Agrostis pallens	seashore bentgrass
Agrostis scabra	rough bentgrass
Agrostis tenuis	colonial bentgrass
Agrostis thurberiana	alpine bentgrass
Alopecurus aequalis	shortawn foxtail
Arrhenatherum elatius	tall oatgrass
Bromus anomalus	nodding brome
Bromus carinatus var. *carinatus*	California brome
Bromus ciliatus	fringed brome
Bromus inermis	smooth brome
Bromus mollis	soft brome
Bromus orcuttianus	Orcutt's brome
Bromus suksdorfii	Suksdorf's bromegrass
Bromus tectorum†	cheatgrass
Calamagrostis purpurascens	purple reedgrass
Calamagrostis stricta ssp. *inexpansa*	narrow reedgrass
Deschampsia cespitosa	tufted hairgrass
Deschampsia danthonioides	annual hairgrass

Scientific Name	Common Name
Deschampsia elongata	slender hairgrass
Distichlis spicata	saltgrass
Elymus elymoides	squirreltail
Elymus glaucus	blue wildrye
Elymus scribneri	Scribner's wheatgrass
Elymus sierrae	Sierra wildrye
Elymus trachycaulus ssp. *subsecundus*	slender wheatgrass
Elymus trachycaulus ssp. *trachycaulus*	slender wheatgrass
Elytrigia intermedia ssp. *intermedia*†	intermediate wheatgrass
Festuca kingii	spike fescue
Festuca minutiflora	smallflower fescue
Festuca saximontana var. *purpusiana*	Rocky Mountain fescue
Glyceria elata	fowl mannagrass
Hesperostipa comata	needle and thread
Hierochloe odorata	sweetgrass
Hordeum brachyantherum	meadow barley
Hordeum jubatum	foxtail barley
Koeleria macrantha	prairie junegrass
Leymus cinereus	bain wildrye
Leymus triticoides	beardless wildrye
Melica aristata	bearded melicgrass
Melica bulbosa	oniongrass
Melica stricta	rock melicgrass
Melica subulata	Alaska oniongrass
Muhlenbergia filiformis	pullup muhly
Muhlenbergia richardsonis	mat muhly
Pascopyrum smithii	western wheatgrass
Phleum alpinum	alpine timothy
Phleum pratense†	timothy
Pleuraphis jamesii	James' galleta
Poa bolanderi	Bolander's bluegrass
Poa bulbosa†	bulbous bluegrass

Scientific Name	Common Name
Poa cusickii ssp. *epilis*	Cusick's bluegrass
Poa fendleriana ssp. longiligula	muttongrass
Poa glauca var. *rupicola*	timberline bluegrass
Poa keckii	Keck's bluegrass
Poa leptocoma ssp. *leptocoma*	marsh bluegrass
Poa pratensis	Kentucky bluegrass
Poa pringlei	Pringle's bluegrass
Poa secunda	Sandberg bluegrass
Poa secunda	Sandberg bluegrass
Poa stebbinsii	Stebbin's bluegrass
Poa wheeleri	Wheeler's bluegrass
Puccinellia nuttalliana	Nuttall's alkaligrass
Trisetum spicatum	spike trisetum
Family: Polemoniaceae	
Allophyllum gilliodes	dense false gilyflower
Chorizanthe brevicornu	brittle spineflower
Chorizanthe rigida	devi'l spineflower
Collomia grandiflora	grand collomia
Collomia linearis	tiny trumpet
Collomia tinctoria	staining collomia
Eriastrum sparsiflorum	Great Basin woollystar
Eriogonum baileyi var. *baileyi*	Bailey's buckwheat
Eriogonum caespitosum	matted buckwheat
Eriogonum cernuum var. *cernuum*	nodding buckwheat
Eriogonum deflexum var. *nevadense*	Nevada buckwheat
Eriogonum elatum var. *elatum*	tall wooly buckwheat
Eriogonum fasciculatum var. *polifolium*	Eastern Mojave buckwheat
Eriogonum heermannii	Heermann's buckwheat
Eriogonum incanum	frosted buckwheat
Eriogonum inflatum	desert trumpet
Eriogonum lobbii	Lobb's buckwheat
Eriogonum maculatum	spotted buckwheat

Scientific Name	Common Name
Eriogonum marifolium	marumleaf buckwheat
Eriogonum microthecum var. *alpinum*	alpine slender buckwheat
Eriogonum microthecum var. *laxiflorum*	slender buckwheat
Eriogonum nidularium	birdnest buckwheat
Eriogonum nudum var. *deductum*	naked buckwheat
Eriogonum nudum var. *scapigerum*	naked buckwheat
Eriogonum ovalifolium var. *nivale*	cushion buckwheat
Eriogonum ovalifolium var. *ovalifolium*	cushion buckwheat
Eriogonum ovalifolium var. *purpureum*	cushion buckwheat
Family: Polygonaceae	
Bistorta bistortoides	American bistort
Eriogonum rosense var. *rosense*	rosy buckwheat
Eriogonum spergulinum	spurry buckwheat
Eriogonum umbellatum var. *covillei*	sulphur-flower buckwheat
Eriogonum umbellatum var. *dichrocephalum*	sulphur-flower buckwheat
Eriogonum umbellatum var. *furcosum*	sulphur-flower buckwheat
Eriogonum umbellatum var. *nevadense*	sulphur-flower buckwheat
Eriogonum umbellatum var. *subaridum*	sulphur-flower buckwheat
Eriogonum vimineum	wickerstem buckwheat
Eriogonum watsonii	Watson's buckwheat
Eriogonum wrightii	bastardsage
Gilia capillaris	miniature gilia
Gilia gilioides	dense false gilyflower
Gilia inconspicua	shy gilia
Gilia salticola	salt gilia
Gymnosteris parvula	smallflower gymnosteris
Ipomopsis aggregata ssp. *bridgesii*	scarlet gilia
Ipomopsis congesta ssp. *montana*	ballhead ipomopsis
Ipomopsis tenuituba	slendertube skyrocket
Leptosiphon ciliatus ssp. *ciliatus*	whiskerbrush
Linanthus harknessi	Harkness' flaxflower
Linanthus pungens	granite prickly phlox

Scientific Name	Common Name
Linanthus septentrionalis	northern linanthus
Navarretia breweri	Brewer's navarretia
Navarretia intertexta ssp. *propinqua*	near navarretia
Oxyria digyna	alpine moutainsorrel
Phlox austromontana	mountain phlox
Phlox condensata	dwarf phlox
Phlox gracilis var. *gracilis*	slender phlox
Phlox hoodii	spiny phlox
Phlox pulvinata	cushion phlox
Phlox stansburyi	cold-desert phlox
Polemonium chartaceum	Mason's Jacob's-ladder
Polemonium occidentale	western polemonium
Polygonum amphibium var. *stipulaceum*	water smartweed
Polygonum arenastrum†	oval-leaf knotweed
Polygonum bistortoides	American bistort
Polygonum douglasii ssp. *douglasii*	Douglas' knotweed
Polygonum douglasii ssp. *johnstonii*	Johnston's knotweed
Polygonum polygaloides ssp. *kelloggii*	Kellogg's knotweed
Polygonum shastense	Shasta knotweed
Rumex crispus	curly dock
Rumex paucifolius	alpine sheep sorrel
Rumex salicifolius var. *salicifolius*	willow dock
Family: Portulacaceae	
Cistanthe umbellata var. *umbellata*	Mt. Hood pussypaws
Lewisia glandulosa	Sierra lewisia
Lewisia pygmaea	alpine lewisia
Lewisia rediviva	bitter root
Montia chamissoi	water minerslettuce
Montia fontana	annual water minerslettuce
Family: Primulaceae	
Dodecatheon alpinum	alpine shootingstar
Family: Pteridaceae	

Scientific Name	Common Name
Cheilanthes gracillima	lace lipfern
Cryptogramma acrostichoides	American rockbrake
Cryptogramma cascadensis	Cascade rockbrake
Pellaea breweri	Brewer's cliffbrake
Pentagramma triangularis ssp. *triangularis*	goldback fern
Family: Pyrolaceae	
Pyrola asarifolia ssp. *asarifolia*	liverleaf wintergreen
Pyrola minor	snowline wintergreen
Family: Ranunculaceae	
Aconitum columbianum	Columbian monkshood
Actaea rubra	red baneberry
Anemone drummondii	Drummond's anemone
Aquilegia formosa	western columbine
Caltha leptosepala ssp. *howellii*	Howell's marsh marigold
Delphinium andersonii	Anderson's larkspur
Delphinium glaucum	Sierra larkspur
Delphinium gracilentum	pine forest larkspur
Delphinium nuttallianum	twolobe larklspur
Myosurus apetalus	bristly mousetail
Ranunculus alismifolius var. *alismellus*	plantainleaf buttercup
Ranunculus aquatilis var. *capillaceus*	threadleaf crowfoot
Ranunculus cymbalaria var. *saximontanus*	alkali buttercup
Ranunculus eschscholtzii	Eschscholtz's buttercup
Ranunculus flammula	greater creeping spearwort
Ranunculus occidentalis	western buttercup
Ranunculus testiculatus†	curveseed butterwort
Thalictrum fendleri var. *fendleri*	Fendler's meadow-rue
Family: Rhamnaceae	
Ceanothus velutinus	snowbrush ceanothus
Family: Rosaceae	
Amelanchier alnifolia	saskatoon serviceberry
Amelanchier utahensis	Utah serviceberry

Scientific Name	Common Name
Cercocarpus betuloides	birchleaf moutain mahogany
Cercocarpus ledifolius	littleleaf mountain mahogany
Geum macrophyllum	largeleaf avens
Geum triflorum var. *ciliatum*	old man's whiskers
Holodiscus discolor	oceanspray
Horkelia fusca var. *parviflora*	smallflower horkelia
Ivesia lycopodioides ssp. *scandularis*	clubmoss mousetail
Potentilla biennis	biennial cinquefoil
Potentilla drummondii var. *breweri*	Drummonds cinquefoil
Potentilla flabellifolia	high mountain cinquefoil
Potentilla fruticosa	shrubby cinquefoil
Potentilla glandulosa var. *nevadensis*	Nevada cinquefoil
Potentilla glandulosa var. *reflexa*	sticky cinquefoil
Potentilla gracilis var. *elmeri*	combleaf cinquefoil
Potentilla gracilis var. *fastigiata*	slender cinquefoil
Prunella vulgaris	common selfheal
Prunus andersonii	desert peach
Prunus emarginata	bitter cherry
Purshia tridentata	antelope bitterbrush
Rosa woodsii	Woods' rose
Rumex acetosella	common sheep sorrel
Sanguisorba minor†	small burnet
Sibbaldia procumbens	creeping sibbaldia
Family: Rubiaceae	
Galium aparine	stickywilly
Galium bifolium	twinleaf bedstraw
Galium hypotrichium ssp. *hypotrichium*	alpine bedstraw
Galium hypotrichium var. *subalpinum*	subalpine bedstraw
Galium multiflorum	shrubby bedstraw
Kelloggia galioides	milk kelloggia
Family: Salicaceae	
Populus balsamifera ssp. *trichocarpa*	black cottonwood

Scientific Name	Common Name
Populus tremuloides	quaking aspen
Salix arctica	artic willow
Salix drummondiana	Drummond's willow
Salix eastwoodiae	mountain willow
Salix exigua	narrowleaf willow
Salix geyeriana	Geyer willow
Salix jepsonii	Jepson's willow
Salix lasiolepis	arroyo willow
Salix lemmonii	Lemmon's willow
Salix lucida ssp. *caudata*	greenleaf willow
Salix lutea	yellow willow
Salix orestera	Sierra willow
Salix planifolia ssp. *planifolia*	diamondleaf willow
Salix scouleriana	Scouler's willow
Family: Saxifragaceae	
Heuchera rubescens var. *rydbergiana*	pink alumroot
Lithophragma parviflorum	smallflower woodland-star
Mitella breweri	Brewer's miterwort
Parnassia parviflora	smallflower grass of Parnassus
Saxifraga nidifica	peak saxifrage
Saxifraga odontoloma	brook saxifrage
Saxifraga oregana	Oregon saxifrage
Family: Scrophulariaceae	
Castilleja applegatei var. *pallida*	wavyleaf Indian paintbrush
Castilleja lemmonii	Lemmon's Indian paintbrush
Castilleja linariifolia	Wyoming Indian paintbrush
Castilleja miniata ssp. *miniata*	giant red Indian paintbrush
Castilleja nana	dwarf alpine Indian paintbrush
Castilleja tenuis	hairy Indian paintbrush
Keckiella breviflora	bush berdtongue
Limosella acaulis	Owyhee mudwort
Linaria genistifolia ssp. dalmatica‡	Dalmatian toadflax

Scientific Name	Common Name
Mimulus gutattus	seep monkeyflower
Mimulus leptaleus	slender monkeyflower
Mimulus lewisii	purple monkeyflower
Mimulus mephiticus	foul odor monkeyflower
Mimulus primuloides var. *primuloides*	primrose monkeyflower
Mimulus rubellus	little redstem monkeyflower
Mimulus tilingii	Tiling's monkeyflower
Pedicularis attollens	little elephantshead
Pedicularis groenlandica	elephanthead lousewort
Pedicularis semibarbata	pinewoods lousewort
Penstemon davidsonii var. *davidsonii*	Davidson's penstemon
Penstemon deustus	scabland penstemon
Penstemon heterodoxus var. *cephalophorus*	Sierra beardtongue
Penstemon humilis ssp. *humilis*	low beardtongue
Penstemon newberryi	mountain pride
Penstemon rostriflorus	Bridge penstemon
Penstemon rubicundus	Wassuk Range beardtongue
Penstemon rydbergii var. *oreocharis*	herbaceous penstemon
Penstemon speciosus	royal penstemon
Scrophularia desertorum	desert figwort
Verbascum thapsus†	common mullein
Veronica americana	American speedwell
Veronica peregrina var. *xalapensis*	hairy purslane speedwell
Veronica serpyllifolia var. *humifusa*	brightblue speedwell
Veronica wormskjoldii	American alpine speedwell
Family: Selaginellaceae	
Selaginella watsonii	Watson's spikemoss
Family: Solanaceae	
Chamaesaracha nana	dwarf chamaesarachia
Nicotiana attenuata	coyote tobacco
Family: Urticaceae	
Urtica dioica	stinging nettle

Scientific Name	Common Name
Family: Valeriancaceae	
Valeriana californica	California valerian
Family: Violaceae	
Viola macloskeyi	small white violet
Viola purpurea var. *venosa*	goosefoot violet
Viola sp.	violet

Notes: †Not Native; ‡Noxious Weed

Source: Reynolds and Cardno TEC Inc. 2012

APPENDIX K

MCMWTC FAUNA LIST

APPENDIX K
MCMWTC BRIDGEPORT FAUNA

Scientific Name	Common Name
Fish	
Oncorhynchus clarkii henshawi	Lahontan Cutthroat Trout
Salmo trutta	Brown Trout
Salvelinus fontenalis	Eastern Brook Trout
Oncorhynchus clarkii utah	Bonneville Cutthroat Trout
Oncorhynchus mykiss	Rainbow Trout
Amphibians	
Anaxyrus canorus	Yosemite Toad
Hydromantes platycephalus	Mount Lyell Salamander
Pseudacris regilla	Pacific Tree (Chorus) Frog
Rana sierrae	Sierra Nevada Yellow-Legged Frog
Birds	
Accipiter cooperi	Cooper's Hawk
Accipiter gentilis	Northern Goshawk
Agelaius phoeniceus	Red-Winged Blackbird
Alectoris chukar	Chukar
Amphispiza belli	Sage Sparrow
Anas acuta	Northern Pintail
Anas cyanoptera	Cinnamon Teal
Anas platyrhynchos	Mallard
Aphelocoma californica	Western Scrub-Jay
Aquila chrysaetos	Golden Eagle
Aythya collaris	Ring-Necked Duck
Buteo jamaicensis	Red-Tailed Hawk
Buteo swainsoni	Swainson's Hawk
Callipepla californica	California Quail
Carduelis pinus	Pine Siskin
Carduelis psaltria	Lesser Goldfinch
Carpodacus cassinii	Cassin's Finch
Carpodacus mexicanus	House Finch

Cathartes aura	Turkey Vulture
Catharus guttatus	Hermit Thrush
Catharus ustulatus	Swainson's Thrush
Centrocercus urophasianus	Greater Sage-Grouse
Certhia americana	Brown Creeper
Charadrius vociferus	Killdeer
Chondestes grammacus	Lark Sparrow
Chordeiles minor	Common Nighthawk
Circus cyaneus	Northern Harrier
Cistothorus palustris	Marsh Wren
Colaptes auratus	Northern Flicker
Contopus cooperi	Olive-Sided Flycatcher
Contopus sordidulus	Western Wood-Pewee
Corvus corax	Common Raven
Cyanocitta stelleri	Steller's Jay
Dendragapus fuliginosus	Sooty Grouse
Dendroica coronata	Yellow-Rumped Warbler
Dendroica nigrescens	Black-Throated Gray Warbler
Dendroica occidentalis	Hermit Warbler
Dendroica petechia	Yellow Warbler
Dendroica townsendi	Townsend's Warbler
Dryocopus pileatus	Pileated Woodpecker
Empidonax hammondii	Hammond's Flycatcher
Empidonax oberholseri	Dusky Flycatcher
Empidonax traillii	Willow Flycatcher
Empidonax wrightii	Gray Flycatcher
Eremophila alpestris	Horned Lark
Euphagus cyanocephalus	Brewer's Blackbird
Falco mexicanus	Prairie Falcon
Falco peregrinus	Peregrine Falcon
Falco sparverius	American Kestrel
Fulica americana	American Coot
Gallinago delicata	Wilson's Snipe

Geothlypis trichas	Common Yellowthroat
Glaucidium gnoma	Northern Pygmy-Owl
Gymnorhinus cyanocephalus	Pinyon Jay
Haliaeetus leucocephalus	Bald Eagle
Hirundo rustica	Barn Swallow
Icteria virens	Yellow-Breasted Chat
Junco hyemalis	Dark-Eyed Junco
Lanius ludovicianus	Loggerhead Shrike
Leucosticte tephrocotis	Gray-Crowned Rosy-Finch
Melanerpes lewis	Lewis's Woodpecker
Melospiza lincolnii	Lincoln's Sparrow
Melospiza melodia	Song Sparrow
Mimus polyglottos	Northern Mockingbird
Molothrus ater	Brown-Headed Cowbird
Myadestes townsendi	Townsend's Solitaire
Myiarchus cinerascens	Ash-Throated Flycatcher
Nucifraga columbiana	Clark's Nutcracker
Oporonis tolmiei	Macgillivray's Warbler
Oreortyx pictus	Mountain Quail
Oreoscoptes montanus	Sage Thrasher
Otus flammeolus	Flammulated Owl
Oxyura jamaicensis	Ruddy Duck
Passerella iliaca	Fox Sparrow
Passerina amoena	Lazuli Bunting
Patagioenas fasciata	Band-Tailed Pigeon
Petrochelidon pyrrhonota	Cliff Swallow
Phalaenoptilus nuttallii	Common Poorwill
Pheucticus melanocephalus	Black-Headed Grosbeak
Pica hudsonia	Black-Billed Magpie
Picoides albolarvatus	White-Headed Woodpecker
Picoides arcticus	Black-backed woodpecker
Picoides villosus	Hairy Woodpecker
Pinicola enucleator	Pine Grosbeak

Pipilo chlorurus	Green-Tailed Towhee
Pipilo maculatus	Spotted Towhee
Piranga ludoviciana	Western Tanager
Plegadis chihi	White-Faced Ibis
Poecile gambeli	Mountain Chickadee
Polioptila caerulea	Blue-Gray Gnatcatcher
Pooecetes gramineus	Vesper Sparrow
Psaltriparus minimus	Bushtit
Regulus calendula	Ruby-Crowned Kinglet
Regulus satrapa	Golden-Crowned Kinglet
Riparia riparia	Bank Swallow
Salpinctes obsoletus	Rock Wren
Sayornis saya	Say's Phoebe
Selasphorus platycercus	Broad-Tailed Hummingbird
Sialia currucoides	Mountain Bluebird
Sialia mexicana	Western Bluebird
Sitta canadensis	Red-Breasted Nuthatch
Sitta carolinensis	White-Breasted Nuthatch
Sitta pygmaea	Pygmy Nuthatch
Sphyrapicus nuchalis	Red-Naped Sapsucker
Sphyrapicus ruber	Red-Breasted Sapsucker
Sphyrapicus thyroideus	Williamson's sapsucker
Spizella breweri	Brewer's Sparrow
Spizella passerina	Chipping Sparrow
Stellula calliope	Calliope Hummingbird
Strix nebulosa	Great Gray Owl
Strix occidentalis	Spotted Owl
Sturnella neglecta	Western Meadowlark
Sturnus vulgaris	European Starling
Tachycineta bicolor	Tree Swallow
Tachycineta thalassina	Violet-Green Swallow
Thryomanes bewickii	Bewick's Wren
Troglodytes aedon	House Wren

Turdus migratorius	American Robin
Vermivora celata	Orange-Crowned Warbler
Vireo cassinii	Cassin's Vireo
Vireo gilvus	Warbling Vireo
Vireo plumbeus	Plumbeous Vireo
Wilsonia pusilla	Wilson's Warbler
Xanthocephalus xanthocephalus	Yellow-Headed Blackbird
Zenaida macroura	Mourning Dove
Zonotrichia leucophrys	White-Crowned Sparrow
Mammals	
Antrozous pallidus	Pallid Bat
Canis latrans	Coyote
Corynorhinus townsendii	Townsend's big-eared bat
Eptesicus fuscus	Big Brown Bat
Euderma maculatum	Spotted bat
Felis concolor	Cougar
Lasionycteris noctivagans	Silver-Haired Bat
Lasiurus blossevillii	Western Red Bat
Lepus americanus	Snowshoe Hare
Lepus californicus	Black-Tailed Jackrabbit
Lepus townsendii	White-Tailed Jackrabbit
Lynx rufus	Bobcat
Marmota flaviventris	Yellow-Bellied Marmot
Martes americana	American Marten
Martes americana sierrae	Sierra Marten
Martes pennanti pacifica	Pacific Fisher
Mustela frenata	Long-Tailed Weasel
Myotis californicus	California Myotis
Myotis ciliolabrum	Western Small-Footed Myotis
Myotis evotis	Long-Eared Myotis
Myotis thysanodes	Fringed Myotis
Myotis volans	Long-Legged Myotis
Myotis yumanensis	Yuma Myotis

Neotamias speciosus	Lodgepole Chipmunk
Odocoileus hemionus	Mule Deer
Pipistrellus hesperus	Western Pipistrelle Bat
Puma concolor	Mountain Lion
Spermophilus beecheyi	California Ground Squirrel
Spermophilus lateralis	Golden-Mantled Ground Squirrel
Spilogale gracilis	Spotted Skunk
Spilogale putorius	Eastern Spotted Skunk
Sylvilagus audubonii	Audubon's Cottontail Rabbit
Sylvilagus nuttallii	Mountain Cottontail Rabbit
Tadarida brasiliensis	Brazilian Free-Tailed Bat
Tamiasciurus douglasii	Douglas' Squirrel
Taxidea taxus	American Badger
Urocyon cinereoargenteus	Gray Fox
Ursus americanus	Black Bear
Vulpes vulpes necator	Sierra Nevada Red Fox
Insects	
Abagrotis sp.	-
Abagrotis vittifrons	-
Acmeodera sp.	-
Acossus populi	-
Acronicta sp.	-
Acrosternum hilare	Green Stink Bug
Admetovis similaris	-
Aeshna multicolor	Blue-Eyed Darner
Agapostemon sp.	-
Agriades podarce	Arrowhead Arctic Blue
Agriphila costalipartella	-
Agrotis vetusta	Old Man Dart Moth
Aguilla sp.	-
Ambesialaetella sp.	-
Ammophila sp.	-
Ammophila aberti	-

Ammophila procera	-
Anax junius	Common Green Darner
Ancistrocerus catskill	-
Andropolia aedon	-
Andropolia olga	-
Andropolia theodori	-
Anthidium sp.	-
Anthophora urbana	-
Anthrax irroratus	-
Apamea amputatrix	Yellow-Headed Cutworm Moth
Apamea centralis	-
Apamea cogitata	Thoughtful Apamea Moth
Apamea occidens	Western Apamea Moth
Apamea tahoeensis	-
Apis mellifera	Western Honey Bee
Apotomis sp.	-
Arctophila sp.	-
Argia sp.	-
Arphia pseudonietana	Redwinged Grasshopper
Baccha lemur	-
Basilarchia lorquini	-
Bembix amoena	-
Bombus bifarious	Windswept Bumble Bee
Bombus centralis	Central Bumble Bee
Bombus fervidus	Yellow Bumble Bee
Bombus flavifrons	Yellowhead Bumble Bee
Bombus huntii	-
Bombus vandykei	-
Bombus vosnesenskii	Yellow-Faced Bumble Bee
Brachylomia discolor	-
Calliphora terraenovae	-
Calliphora vomitoria	Bluebottle Fly
Camnula pellucida	Grasshopper

Camponotus modoc	Western Carpenter Ant
Caripeta aequaliaria	Red Girdle Moth
Catocala aholibah	Aholibah Uderwing Moth
Catocala hermia	Hermia Underwing
Catocala relicta	White Underwing Moth
Catocala semirelicta	Semirelict Underwing Moth
Centrodera spurca	Yellow Douglas Fir Borer
Chlorosea margaretaria	-
Chlorosea nevadaria	-
Choristoneura sp.	-
Chrysoperla sp.	-
Clastoptera binotata	-
Clostera apicalis	Apical Prominent Moth
Colias eurytheme	Orange Sulphur
Condylostylus sp.	-
Copablepharon canariana	-
Crambus perlella	Immaculate Grass-Veneer Moth
Danaus plexippus	Monarch Butterfly
Digrammia sp.	-
Dolichopus sp.	-
Drasteria divergens	-
Drepanula trixunicalcararia	-
Eleodes sp.	-
Enallagma sp.	-
Enypia packardata	Packard's Girdle Moth
Eristalis sp.	-
Ethmia discostrigella	Mountain-Mahogany Moth
Eucosma caniceps	-
Eucosma crambitana	-
Eulithis propulsata	-
Eumenes crucifera	Potter Wasp
Eupeodes volucris	Bird Hover Fly
Euros proprius	-

Eurygaster sp.	-
Evergestis subterminalis	-
Evyleus sp.	-
Exoprosopa dorcadion	-
Feltia jaculifera	Dingy Cutworm
Fishia yosemitae	Dark Grey Fishia
Forficula auricularia	Common Earwig
Glaucina sp.	-
Gleniosticta sp.	-
Grammia nevadensis	Nevada Tiger Moth
Gryllus sp.	-
Heliophilus sp.	-
Hemerobius pacificus	-
Hemileuca eglanterina	-
Hemileuca hera	Hera Buckmoth
Hemiluca nuttalli	Nuttall's Sheep Moth
Hemipenthes sinuosa	-
Hesperumia sulphuraria	Sulphur Moth
Hippodamia convergens	Convergent Lady Beetle
Hoplia callipyge	-
Hydraecia obliqua	-
Hydriomena sp.	-
Hydriomena perfracta	Shattered Hydriomena Moth
Hyles lineata	White-Lined Sphinx
Ischnura sp.	-
Judolia instabilis	-
Larra sp.	-
Latrodectus mactans	Southern Black Widow
Leptarctia californiae	-
Leptura sp.	-
Leucania sp.	-
Lophocampa maculata	Spotted Tussock Moth
Lordotus gibbus	-

Lordotus pulcrissimus	-
Loxostege sp.	-
Lycaena helloides	Purplish Copper
Lycaena heteronea	Blue Copper
Lygaeus kalmii	Small Milkweed Bug
Lygephila victoria	-
Lygus sp.	-
Machimus sp.	-
Malacosoma californica	Western Tent Caterpillars
Megachiles sp.	-
Melanoplus sp.	-
Mesogona olivata	-
Metasyrphus sp.	-
Myopa sp.	-
Mythicomyia sp.	-
Neoterpes trianguliferata	Canary Thorn
Nephelodes demaculata	-
Norwickia sp.	-
Nymphalis antiopa	Mourning Cloak
Ochlodes silvanoides	Woodland Skipper
Ogcodes sp.	-
Oligia violacea	-
Ophion sp.	-
Orenaia macneilli	-
Osmia sp.	-
Palmodes californicus	-
Pandemis pyrusana	Apple Pandemis
Pantala flavescens	Globe Skimmer
Pantala hymenaea	Spot-Winged Glider
Panthea virginarius	Cascades Panthea
Papilio rutulus	Western Tiger Swallowtai
Parancistrocerus sp.	-
Parvilla spaldingi	-

Pediasia sp.	-
Peleteria sp.	-
Pembphedine sp.	-
Pepsis sp.	-
Perdita sp.	-
Pero macdunnoughi	-
Pheosia rimosa	Black-Rimmed Prominent Moth
Pherne subpunctata	-
Phormia regina	Black Blow Fly
Plebijus acmon	-
Plebijus saepiolus	-
Podalonia sp.	-
Poecilanthrax alcyon	-
Poecilanthrax autumnalis	-
Pogonomyrmex sp.	-
Polia nugatis sp.	-
Polia olivacea sp.	-
Polistes dorsalis	-
Polites sonora	Sonoran Skipper
Polygonia zephyrus	-
Polyphylla decemlineata	Ten-Lined June Beetle
Polystoechotes punctatus	Giant Lacewing
Pontia protodice	Checkered White
Prionus californica	California Root Borer
Proctacanthus nearno	-
Protitame subalbaria	-
Pseudanarta crocea	-
Pseudanarta flava	-
Pyrausta sp.	-
Pyrausta fodinalis	-
Pyrausta nexalis	Fulvous-Edged Pyrausta Moth
Pyrausta perrubralis	Shasta Pyrausta Moth
Pyrausta semirubralis	-

Pyrausta subsequalis	-
Pyrausta unifascialis	Pussy's Toes Pyrausta Moth
Pyrgus albescens	White Checkered Skipper
Satyrum behrii	Behr's Hairstreak
Satyrum sylvinum	Sylvan Hairstreak
Scellphron caementarium	Black and Yellow Mud Dauber
Schinia acutilinea	-
Secrica sp.	-
Sepedon sp.	-
Sericosema juturnaria	Bordered Fawn Moth
Sesia tibiale	American Hornet Moth
Setagrotis cinereicollis	-
Setagrotis radiola	-
Sicya crocearia	-
Spaelotis unicava	-
Speranza guenearia	-
Speyeria egleis	Great Basin Fritillary
Speyeria nokomis	Apache Fritillary
Sphecodes sp.	-
Sphex ichneumoneus	Great Golden Digger Wasp
Spilomyia interrupta	-
Stamnodes sp.	-
Stamnodes marmorata	-
Steniolia californiensis	-
Sticthippus californicus	-
Strymon melinus	Gray Hairstreak
Sympetrum corruptum	Variegated Meadowhawk
Sympetrum obtrusum	White-Faced Meadowhawk
Sympistis sp.	-
Sympistis pallidior	-
Sympistis polingii	-
Sympistis poliochroa	-
Sympistis regina	-

Syngrapha celsa	Western Conifer Looper
Syrphus sp.	-
Tabanus sp.	-
Tachysphex sp.	-
Tolype sp.	-
Trimerotropis albescens	Mcneill's White Grasshopper
Trimerotropis fontana	Fontana Grasshopper
Udea sp.	-
Udea profundalis	-
Vanessa atalanta	Red Admiral
Vanessa cardui	Painted Lady
Vespula sp.	-
Vespula atropilosa	Prairie Yellowjacket
Villa fulviana	Tawny-Tailed Bee Fly
Villa hypomelas	-
Villa lateralis	-
Xeromelecta californica	-
Zotheca tranquilla	Elder Moth

Notes: Nomenclature follows the February 2014 *Official California Checklist by the California Bird Records Committee*, and the *Complete List of Amphibian, Reptile, Bird and Mammal Species in California*, February 2011 by the California Department of Fish and Wildlife (CDFW).

Sources: Davenport Biological Services and Cardno TEC, Inc. 2012a, 2012b, 2012c, 2012d, 2012e; Fleishman 2014; MultiMAC JV 2015a, 2015b.

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APPENDIX L

MCMWTC INVASIVE PLANTS

APPENDIX L
MCMWTC INVASIVE PLANTS

Scientific Name	Common Name	Presence				Ranking	
		Mono County	Alpine County	MWTC	References	CA State	Cal-IPC
Family: Apiaceae							
Foeniculum vulgare	sweet fennel	Y	-	U	CalFlora 2013	-	High
Conium maculatum	poison hemlock	Y	-	Y	Reynolds and Cardno Tec, Inc. 2012; CalFlora 2013	-	Moderate
Family: Asteraceae							
Centaurea maculosa	spotted knapweed	Y	Y	U	CalFlora 2013	A	High
Centaurea solstitialis	yellow star-thistle	Y	Y	U	CalFlora 2013	C	High
Onopordum acanthium	Scotch cottonthistle	Y	Y	U	CalFlora 2013	A	High
Acroptilon repens	hardheads	Y	Y	U	CalFlora 2013	B	Moderate
Centaurea diffusa	diffuse knapweed	Y	Y	U	CalFlora 2013	A	Moderate
Cirsium arvense	Canada thistle	Y	Y	U	CalFlora 2013	B	Moderate
Cirsium vulgare	bull thistle	Y	Y	Y	Reynolds and Cardno Tec, Inc. 2012; CalFlora 2013	C	Moderate
Leucanthemum vulgare	oxeye daisy	Y	Y	U	CalFlora 2013	-	Moderate
Anthemis cotula	stinking chamomile	Y	-	U	CalFlora 2013	-	-
Iva axillaris	povertyweed	-	-	Y	Reynolds and Cardno Tec, Inc. 2012	C	-
Lactuca serriola	prickly lettuce	Y	Y	Y	Reynolds and Cardno Tec, Inc. 2012; CalFlora 2013	-	-
Madia glomerata	mountain tarweed	-	-	Y	Reynolds and Cardno Tec, Inc. 2012	-	-
Sonchus asper ssp. *asper*	spiny sowthistle	Y	Y	U	CalFlora 2013	-	-
Taraxacum officinale	common dandelion	Y	Y	Y	Reynolds and Cardno Tec, Inc. 2012; CalFlora 2013	-	-
Tragopogon dubius	yellow salsify	Y	Y	Y	Reynolds and Cardno Tec, Inc. 2012; CalFlora 2013	-	-
Family: Boraginaceae							
Amsinckia tessellata	bristly fiddleneck	-	-	Y	Reynolds and Cardno Tec, Inc. 2012	-	-
Lappula occidentalis var. *occidentalis*	flatspine stickseed	-	-	Y	Reynolds and Cardno Tec, Inc. 2012	-	-
Lithospermum ruderale	western stoneseed	-	-	Y	Reynolds and Cardno Tec, Inc. 2012	-	-
Pectocarya setosa	moth combseed	-	-	Y	Reynolds and Cardno Tec, Inc. 2012	-	-
Family: Brassicaceae							
Lepidium latifolium	broadleaved pepperweed	Y	Y	Y	Reynolds and Cardno Tec, Inc. 2012; CalFlora 2013	B	High
Brassica rapa	field mustard	Y	-	U	CalFlora 2013	-	Limited

Scientific Name	Common Name	Presence				Ranking	
		Mono County	Alpine County	MWTC	References	CA State	Cal-IPC
Cardaria chalepensis	lenspod whitetop	Y	-	U	CalFlora 2013	B	Moderate
Cardaria pubescens	hairy whitetop	Y	Y	Y	Reynolds and Cardno Tec, Inc. 2012; CalFlora 2013	B	Limited
Sisymbrium irio	London rocket	Y	-	U	CalFlora 2013	-	Moderate
Camelina microcarpa	littlepod false flax	-	-	Y	Reynolds and Cardno Tec, Inc. 2012	-	-
Chorispora tenella	crossflower	Y	-	U	CalFlora 2013	B	-
Descurainia pinnata	western tansymustard	Y	-	Y	Reynolds and Cardno Tec, Inc. 2012; CalFlora 2013	-	-
Erysimum repandum	spreading wallflower	-	-	Y	Reynolds and Cardno Tec, Inc. 2012	-	-
Lepidium appelianum	hairy whitetop	Y	Y	U	CalFlora 2013	-	Limited
Lepidium draba	whitetop	Y	Y	U	CalFlora 2013	-	Moderate
Lepidium perfoliatum	clasping pepperweed	-	-	Y	Reynolds and Cardno Tec, Inc. 2012	-	-
Sisymbrium altissimum	tall tumblemustard	-	-	Y	Reynolds and Cardno Tec, Inc. 2012	-	-
Family: Caryophyllaceae							
Saponaria officinalis	bouncingbet	Y	Y	U	CalFlora 2013	-	Limited
Dianthus barbatus ssp. *barbatus*	sweetwilliam	-	-	Y	Reynolds and Cardno Tec, Inc. 2012	-	-
Spergularia rubra	red sandspurry	-	-	Y	Reynolds and Cardno Tec, Inc. 2012	-	-
Bassia hyssopifolia	fivehorn smotherweed	Y	Y	Y	Reynolds and Cardno Tec, Inc. 2012; CalFlora 2013	-	Limited
Salsola tragus	prickly Russian thistle	Y	Y	Y	Reynolds and Cardno Tec, Inc. 2012; CalFlora 2013	-	Limited
Halogeton glomeratus	saltlover	Y	-	Y	Reynolds and Cardno Tec, Inc. 2012; CalFlora 2013	A	Moderate
Kochia scoparia	burningbush	Y	-	U	CalFlora 2013	-	Limited
Chenopodium album	lambsquarters	-	-	Y	Reynolds and Cardno Tec, Inc. 2012	-	-
Convolvulus arvensis	field bindweed	Y	-	Y	Reynolds and Cardno Tec, Inc. 2012; CalFlora 2013	C	-
Family: Fabaceae							
Medicago polymorpha	burclover	Y	-	U	CalFlora 2013	-	Limited
Robinia pseudoacacia	black locust	Y	-	Y	Reynolds and Cardno Tec, Inc. 2012; CalFlora 2013	-	Limited
Medicago sativa	alfalfa	-	-	Y	Reynolds and Cardno Tec, Inc. 2012	-	-
Melilotus officinalis	sweetclover	Y	Y	Y	Reynolds and Cardno Tec, Inc. 2012; CalFlora 2013	-	-
Trifolium repens	white clover	-	-	Y	Reynolds and Cardno Tec, Inc. 2012	-	-
Vicia villosa	winter vetch	Y	-	U	CalFlora 2013	-	-
Family: Geraniaceae							

Scientific Name	Common Name	Presence				Ranking	
		Mono County	Alpine County	MWTC	References	CA State	Cal-IPC
Erodium cicutarium	redstem stork's bill	Y	Y	Y	Reynolds and Cardno Tec, Inc. 2012; CalFlora 2013	-	Limited
Family: Hydrocharitaceae							
Egeria densa	Brazilian water weed	Y	-	U	CalFlora 2013	C	High
Family: Lamiaceae							
Marrubium vulgare	horehound	Y	-	U	CalFlora 2013	-	Limited
Family: Lamiaceae							
Mentha x piperita	peppermint	-	-	Y	Reynolds and Cardno Tec, Inc. 2012	-	-
Family: Malvaceae							
Malva neglecta	common mallow	-	-	Y	Reynolds and Cardno Tec, Inc. 2012	-	-
Family: Plantaginaceae							
Linaria dalmatica ssp. *dalmatica*	Dalmatian toadflax	Y	Y	U	CalFlora 2013	-	Moderate
Plantago lanceolata	narrowleaf plantain	Y	-	U	CalFlora 2013	-	Limited
Family: Poaceae							
Bromus madritensis ssp. *rubens*	red brome	Y	-	U	CalFlora 2013	-	High
Bromus tectorum	cheatgrass	Y	Y	Y	Reynolds and Cardno Tec, Inc. 2012; CalFlora 2013	-	High
Agrostis stolonifera	redtop	Y	Y	U	CalFlora 2013	-	Limited
Bromus hordeaceus	soft brome	Y		U	CalFlora 2013	-	Limited
Bromus japonicus	field brome	Y	Y	U	CalFlora 2013	-	Limited
Dactylis glomerata	orchardgrass	Y	Y	U	CalFlora 2013	-	Limited
Poa pratensis	Kentucky bluegrass	Y	Y	U	CalFlora 2013	-	Limited
Polypogon monspeliensis	annual rabbitsfoot grass	Y	Y	U	CalFlora 2013	-	Limited
Cynodon dactylon	Bermudagrass	Y	-	U	CalFlora 2013	-	Moderate
Festuca arundinacea	tall fescue	Y	-	U	CalFlora 2013	-	Moderate
Festuca myuros	annual fescue	Y	Y	U	CalFlora 2013		Moderate
Holcus lanatus	common velvetgrass	Y	Y	U	CalFlora 2013	-	Moderate
Hordeum marinum	seaside barley		Y	U	CalFlora 2013	-	Moderate
Vulpia myuros	annual fescue	Y	Y	U	CalFlora 2013	-	Moderate
Agropyron cristatum	crested wheatgrass	-	-	Y	Reynolds and Cardno Tec, Inc. 2012	-	-
Aira caryophyllea	silver hairgrass	Y	-	U	CalFlora 2013	-	-
Elytrigia intermedia ssp. *intermedia*	intermediate wheatgrass	-	-	Y	Reynolds and Cardno Tec, Inc. 2012	-	-
Phleum pratense	timothy	-	-	Y	Reynolds and Cardno Tec, Inc. 2012	-	-

Scientific Name	Common Name	Presence				Ranking	
		Mono County	Alpine County	MWTC	References	CA State	Cal-IPC
Schismus arabicus	Arabian schismus	Y	-	U	CalFlora 2013	-	Limited
Poa bulbosa	bulbous bluegrass	-	-	Y	Reynolds and Cardno Tec, Inc. 2012	-	-
Family: Polygonaceae							
Rumex crispus	curly dock	Y	-	U	CalFlora 2013	-	Limited
Rumex acetosella	common sheep sorrel	Y	Y	U	CalFlora 2013	-	Moderate
Polygonum arenastrum	oval-leaf knotweed	-	-	Y	Reynolds and Cardno Tec, Inc. 2012	-	-
Family: Ranunculaceae							
Ranunculus testiculatus	curveseed butterwort	-	-	Y	Reynolds and Cardno Tec, Inc. 2012	-	-
Family: Rosaceae							
Sanguisorba minor	small burnet	-	-	Y	Reynolds and Cardno Tec, Inc. 2012	-	-
Family: Scrophulariaceae							
Verbascum thapsus	common mullein	Y	Y	Y	Reynolds and Cardno Tec, Inc. 2012; CalFlora 2013	-	Limited
Linaria genistifolia ssp. *dalmatica*	Dalmatian toadflax	-	Y	Y	Reynolds and Cardno Tec, Inc. 2012; CalFlora 2013	A	Moderate
Family: Solanaceae							
Solanum elaeagnifoliu	silverleaf nightshade	-	Y	U	CalFlora 2013	-	-
Family: Ulmaceae							
Ulmus pumila	Siberian elm	-	Y	U	CalFlora 2013	-	-
Family: Tamaricaceae							
Tamarix spp.	tamarisk	Y	-	U	CalFlora 2013	B	High

Cal-IPC Rankings
High – These species have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment. Most are widely distributed ecologically.
Moderate – These species have substantial and apparent—but generally not severe—ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal, though establishment is generally dependent upon ecological disturbance. Ecological amplitude and distribution may range from limited to widespread.
Limited – These species are invasive but their ecological impacts are minor on a statewide level or there was not enough information to justify a higher score. Their reproductive biology and other attributes result in low to moderate rates of invasiveness. Ecological amplitude and distribution are generally limited, but these species may be locally persistent and problematic.

California State Rankings
A - Weeds are normally limited in distribution throughout the state. Eradication, containment, rejection or other holding action at the state-county level. Quarantine interceptions to be rejected or treated at any point in the state.
B - Weeds are more wide spread. Eradication, containment, control or other holding action at the discretion of the commissioner. State endorsed holding action and eradication only when found in a nursery.
C - Weeds are generally widespread throughout the state. Action to retard spread outside of nurseries at the discretion of the commissioner. Reject only when found in a cropseed for planting or at the discretion of the commissioner.
Q - Species are treated as temporary "A" weeds. Denoting action outside nurseries at the state-county level pending determination of a permanent rating.
D - Weeds are organisms considered to be of little or no economic importance. No action. Anything not rated as a "A", "B", "C" or "Q" weed is given a "D" rating. In other words, the plant has flunked as a weed!

Presence
Y = Present based on referenced documentation, U = Unknown, N = No suitable habitat present

Sources: Cal-IPC 2006; State of California Department of Food and Agriculture 2010; Reynolds and Cardno Tec, Inc. 2012.

APPENDIX M

MCMWTC SPECIAL STATUS SPECIES

- Table M-1: List of Known and Potential Special Status Wildlife Species at MCMWTC
- Table M-2: List of Known and Potential Special Status Plant Species at MCMWTC
- Detailed Figures of Special Status Species Observations and Protected Areas

APPENDIX M
MCMWTC SPECIAL STATUS SPECIES

Table M-1: List of Known and Potential Special Status Wildlife Species at MCMWTC Bridgeport

Scientific Name	Common Name	Special Status									Presence	
		Federal Status	USFS	BLM	USFWS	PIF	California State Status	CDFW	CDF	Nevada State Status	Mono County	MWTC
Birds												
Accipiter gentilis	northern goshawk	-	S, MIS	S	MBTA	Y	-	SSC	S	-	Y	Y
Aquila chrysaetos	golden eagle	BGEPA	-	S	MBTA/BCC	Y	-	FP/WL	S	-	Y	Y
Asio otus	long-eared owl	-	-	-	MBTA	-	-	SSC	-	-	Y	U
Buteo swainsoni	Swainson's hawk	-	-	S	MBTA/BCC	Y	T	-	-	-	Y	Y
Centrocercus urophasianus	greater sage-grouse, Bi-State DPS	-	S, MIS	S	-	-	-	SSC	-	GB	Y	Y
Circus cyaneus	northern harrier	-	-	-	MBTA	-	-	SSC	-	-	Y	Y
Coccyzus americanus occidentalis	western yellow-billed cuckoo	T	S	S	MBTA/BCC	Y	E	SSC	-	-	N	N
Dendroica coronata	yellow-rumped warbler	-	MIS	-	MBTA	-	-	-	-	-	Y	Y
Empidonax traillii extimus	southwestern willow flycatcher	E	S	-	MBTA/BCC	-	E	-	-	-	Y	N
Falco mexicanus	prairie falcon	-	-	-	MBTA/BCC	Y	-	WL	-	-	Y	Y
Falco peregrinus anatum	American peregrine falcon	-	S	-	BCC	-	-	FP	-	-	Y	Y
Gymnogyps californianus	California condor	E	-	-	MBTA	-	E	WL	S	-	Y	U
Haliaeetus leucocephalus	bald eagle	BGEPA	S	S	MBTA/BCC	Y	E	FP	S	-	Y	Y
Larus californicus	California gull	-	-	-	MBTA	-	-	WL	-	-	Y	U
Nycticorax nycticorax	black-crowned night heron	-	-	-	MBTA	-	-	-	-	-	Y	U
Oerortyx pictus	mountain quail	-	S	-	-	-	-	-	-	-	Y	Y
Oreothlypis virginiae	Virginia's warbler	-	-	-	MBTA/BCC	-	-	WL	-	-	Y	U
Otus flammeolus	flammulated owl	-	S	-	MBTA/BCC	-	-	-	-	-	Y	Y
Pandion haliaetus	osprey	-	-	-	MBTA	-	-	WL	S	-	Y	U
Passerella iliaca	fox sparrow	-	-	-	MBTA	-	-	-	-	-	Y	Y
Picoides albolarvatus	white-headed woodpecker	-	S	-	MBTA/BCC	-	-	-	-	-	Y	Y
Picoides arcticus	black-backed woodpecker	-		-	MBTA	-	-	-	-	-	Y	Y
Picoides villosus	hairy woodpecker	-	MIS	-	MBTA	-	-	-	-	-	Y	Y
Riparia riparia	bank swallow	-	-	S	MBTA	-	T	-	-	-	Y	Y
Setophaga petechia	yellow warbler	-	MIS	-	MBTA/BCC	-	-	SSC	-	-	Y	Y
Sphyrapicus thyroideus	Williamson’s sapsucker	-	MIS	-	MBTA	-	-	-	-	-	Y	Y
Spizella breweri	Brewer's sparrow	-	-	-	MBTA/BCC	Y	-	-	-	-	Y	Y

Scientific Name	Common Name	Special Status									Presence	
		Federal Status	USFS	BLM	USFWS	PIF	California State Status	CDFW	CDF	Nevada State Status	Mono County	MWTC
Strix nebulosa	great gray owl	-	S	-	MBTA	-	E	-	S	-	Y	Y
Strix occidentalis occidentalis	California spotted owl	-	S	S	MBTA/BCC	-	-	SSC	-	-	Y	Y
Xanthocephalus xanthocephalus	yellow-headed blackbird	-	-	-	MBTA	-	-	SSC	-	-	Y	Y
Amphibians												
Anaxyrus canorus	Yosemite toad	T, CH	S	-	-	-	-	SSC	-	-	Y	Y
Hydromantes platycephalus	Mount Lyell salamander	-	-	-	-	-	-	SSC	-	-	Y	Y
Lithobates pipiens	northern leopard frog	-	-	-	-	-	-	SSC	-	PA	Y	U
Rana sierrae	Sierra Nevada yellow-legged frog	E, CH	S	-	-	-	T	SSC	-	-	Y	Y
Fish												
Catostomus fumeiventris	Owens sucker	-	-	-	-	-	-	SSC	-	-	Y	U
Cyprinodon nevadensis amargosae	Amargosa pupfish	-	-	S	-	-	-	SSC	-	-	Y	U
Cyprinodon radiosus	Owens pupfish	E	-	-	-	-	E	FP	-	-	Y	U
Oncorhynchus clarkii henshawi	Lahontan cutthroat trout	T	S, MIS	-	-	-	-	-	-	GF	Y	Y
Oncorhynchus clarkii seleniris	Paiute cutthroat trout	T	-	-	-	-	-	-	-	-	Y	U
Rhinichthys osculus ssp. *2*	Owens speckled dace	-	-	-	-	-	-	SSC	-	SF	Y	U
Rhinicthys osculus ssp. *5*	Long Valley speckled dace	-	-	S	-	-	-	-	-	SF	Y	U
Siphateles bicolor snyderi	Owens tui chub	E	-	-	-	-	E	-	-	-	Y	U
Insects												
Danaus plexippus	monarch butterfly	-	-	S	-	-	-	-	-	-	Y	Y
Mammals												
Antrozous pallidus	pallid bat	-		S	-	-	-	SSC	-	-	Y	Y
Aplodontia rufa californica	Sierra Nevada mountain beaver	-	-	-	-	-	-	SSC	-	-	Y	U
Brachylagus idahoensis	pygmy rabbit	-	S	S	-	-	-	SSC	-	-	Y	N
Corynorhinus townsendii	Townsend's big-eared bat	-	S	S	-	-	CT	SSC	-	-	Y	Y
Euderma maculatum	spotted bat	-	S	S	-	-	-	SSC	-	-	Y	U
Eumops perotis californicus	western mastiff bat	-	-	S	-	-	-	SSC	-	-	Y	U
Gulo gulo	North American wolverine	PT	S	-	-	-	T	FP	-	-	N	N
Lasionycteris noctivagans	silver-haired bat	-	-	-	-	-	-	-	-	-	Y	U
Lepus townsendii townsendii	western white-tailed jackrabbit	-	-	-	-	-	-	SSC	-	-	Y	U
Martes americana	American marten	-	MIS	-	-	-	-	-	-	-	Y	Y

Scientific Name	Common Name	Special Status									Presence	
		Federal Status	USFS	BLM	USFWS	PIF	California State Status	CDFW	CDF	Nevada State Status	Mono County	MWTC
Martes pennanti	Pacific fisher	-	S	S	-	-	CT	SSC	-	-	N	N
Microtus californicus vallicola	Owens Valley vole	-	-	S	-	-	-	SSC	-	-	Y	U
Myotis ciliolabrum	western small-footed myotis	-	-	S	-	-	-	-	-	-	Y	U
Myotis evotis	long-eared myotis	-	-	S	-	-	-	-	-	-	Y	Y
Myotis thysanodes	fringed myotis	-		S	-	-	-	-	-	-	Y	Y
Myotis yumanensis	Yuma myotis	-	-	S	-	-	-	-	-	-	Y	Y
Odocoileus hemionus	mule deer	-	MIS	-	-	-	-	-	-	GM	Y	Y
Ovis canadensis nelsoni	desert bighorn sheep	-	S	S	-	-	-	FP	-	GM	Y	U
Ovis canadensis sierrae	Sierra Nevada bighorn sheep	E	S	-	-	-	E	FP	-	-	Y	N
Sorex lyelli	Mount Lyell shrew	-	-	-	-	-	-	SSC	-	-	Y	U
Taxidea taxus	American badger	-	-	-	-	-	-	SSC	-	-	Y	Y
Vulpes vulpes necator	Sierra Nevada red fox	C (Sierra Nevada DPS)	S	-	-	-	T	-	-	-	Y	Y
Mollusks												
Pyrgulopsis owensensis	Owens Valley springsnail	-	S	-	-	-	-	-	-	-	Y	U
Pyrgulopsis wongi	Wong's springsnail	-	S	-	-	-	-	-	-	-	Y	U

Federal Status
T = Threatened, E = Endangered, PT = Proposed Threatened, C = Candidate, DPS = Distinct Population Segment
BGEPA = Bald and Golden Eagle Protection Act, CH = Critical Habitat

USFS
S = Region 4 Sensitive as identified by a Regional Forester
MIS = Humboldt-Toiyabe National Forest Management Indicator Species (Toiyabe Forest Plan)

BLM S = Sensitive as designated by the BLM State Director

USFWS MBTA = Migratory Bird Treaty Act, BBC = Birds of Conservation Concern

PIF Y = Species protected under EO 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds*

California State Status T = Threatened, E = Endangered, CT = Candidate Threatened, PT = Proposed Threatened

CDFW FP = Fully Protected, WL = Watch List, SSC = Species of Special Concern

CDF S = Sensitive

Nevada State Status
GB = Game Bird (NAC 503.045), PA = Protected Amphibian (NAC 503.075.2)
GF = Game Fish (NAC 503.060), SF = Sensitive Fish (NAC 503.067)
GM = Game Mammal (NAC 503.020)

Presence Y = Present based on referenced documentation, U = Unknown, N = No suitable habitat present

Sources: CDFW 2015a, 2015b; Davenport & Cardon TEC, Inc. 2012; DoD PIF 2014; Fleishman 2014; Malengo et al. 2013; MultiMAC JV 2015; NatureServe 2012; NNHP 2015; Osborne and MultiMAC JV 2015; Todd Sloat Biological Consulting, Inc. 2015; USFS 2007; USFWS 2013, 2015.

Table M-2: List of Known and Potential Special Status Plant Species at MCMWTC Bridgeport

Scientific Name	Common Name	Status					California Rankings		Presence		
		Federal Status	USFS	BLM	California State Status	Nevada State Status	State Rank	California Rare Plant Rank	Mono County	MWTC	
Family: Alliaceae											
Allium atrorubens var. *atrorubens*	great basin onion	-	-	-	-	-	S2	2B.3	Y	U	
Family: Asteraceae											
Chaenactis douglasii var. *alpina*	alpine dusty maidens	-	-	-	-	-	S2	2B.3	Y	Y	
Chaetadelpha wheeleri	Wheeler's dune-broom	-	-	-	-	-	S2	2B.2	Y	U	
Chrysothamnus greenei	Greene's rabbitbrush	-	-	-	-	-	S3	2B.3	Y	U	
Crepis runcinata	Hall's meadow hawksbeard	-	-	-	-	-	S1S2	2B.1	Y	U	
Erigeron compactus	compact daisy	-	-	-	-	-	S3	2B.3	Y	U	
Erigeron miser	starved daisy	-	S	-	-	-	S2	1B.3	Y	U	
Hulsea vestita ssp. *inyoensis*	Inyo hulsea	-	-	-	-	-	S1S2	2B.2	Y	U	
Hymenopappus filifolius var. *nanus*	little cutleaf	-	-	-	-	-	S2S3	2B.3	Y	U	
Senecio pattersonensis	Mount Patterson senecio	-	S	-	-	-	S2	1B.3	Y	U	
Sphaeromeria potentilloides var. *nitrophila*	alkali tansy-sage	-	-	-	-	-	S2	2B.2	Y	U	
Taraxacum ceratophorum	horned dandelion	-	-	-	-	-	S1	2B.1	Y	U	
Tetradymia tetrameres	dune horsebrush	-	-	-	-	-	S2	2B.2	Y	U	
Townsendia condensata	cushion townsendia	-	-	-	-	-	S3	2B.3	Y	U	
Townsendia leptotes	slender townsendia	-	-	-	-	-	S2	2B.3	Y	U	
Family: Apiaceae											
Cymopterus globosus	globose cymopterus	-	-	-	-	-	S1	2B.2	Y	Y	
Family: Boraginaceae											
Cryptantha crymophila	subalpine cryptantha	-	-	-	-	-	S3	1B.3	Y	Y	
Cryptantha fendleri	sand dune cryptantha	-	-	-	-	-	S1	2B.2	Y	U	
Mertensia oblongifolia var. *oblongifolia*	sagebrush bluebells	-	-	-	-	-	S2	2B.2	Y	U	
Phacelia gymnoclada	naked-stemmed phacelia	-	-	-	-	-	S2	2B.3	Y	U	
Phacelia inyoensis	Inyo phacelia	-	S	S	-	-	S2	1B.2	Y	U	
Phacelia monoensis	Mono County phacelia	-	S	S	--	-	S2	1B.1	Y	Y	
Plagiobothrys parishii	Parish's popcorn-flower	-	S	-	-	-	S1	1B.1	Y	U	
Family: Brassicaceae											
Boechera bodiensis	Bodie Hills rockcress	-	S	S	-	-	S2	1B.3	Y	Y	

Scientific Name	Common Name	Status					California Rankings		Presence		
		Federal Status	USFS	BLM	California State Status	Nevada State Status	State Rank	California Rare Plant Rank	Mono County	MWTC	
Boechera cobrensis	masonic rockcress	-	-	-	-	-	S2	2B.3	Y	Y	
Boechera dispar	pinyon rockcress	-	-	-	-	-	S3	2B.3	Y	U	
Boechera pendulina	rabbit-ear rockcress	-	-	-	-	-	S1	2B.3	Y	U	
Boechera pinzliae	Pinzl's rockcress	-	S	-	-	-	S1	1B.3	Y	U	
Boechera shockleyi	Shockley's rockcress	-	S	-	-	-	S2	2B.2	Y	U	
Boechera tiehmii	Tiehm's rockcress	-	S	-	-	-	S3	1B.3	Y	U	
Boechera tularensis	Tulare rockcress	-	S	-	-	-	S2	1B.3	Y	U	
Cusickiella quadricostata	Bodie Hills cusickiella	-	-	S	-	-	S2	1B.2	Y	Y	
Draba asterophora var. *macrocarpa*	Cup Lake draba/Tahoe draba	-	S	-	-	-	S1	1B.1	Y	Y	
Draba cana	Canescent draba	-	-	-	-	-	S2	2B.3	Y	U	
Draba incrassata	Sweetwater Mountains draba	-	S	-	-	-	S3	1B.3	Y	U	
Draba lonchocarpa	spear-fruited draba	-	-	-	-	-	S1	2B.2	Y	U	
Draba monoensis	White Mountains draba	-	S	-	-	-	S2	1B.2	Y	U	
Draba praealta	tall draba	-	-	-	-	-	S3	2B.3	Y	U	
Draba sierra	Sierra draba	-	-	-	-	-	S3	2B.3	Y	U	
Physaria ludoviciana	silver bladderpod	-	-	-	-	-	S1	2B.2	Y	U	
Polyctenium williamsiae	Williams' combleaf	-	S	S	-	CE	S1	1B.2	Y	U	
Streptanthus oliganthus	Masonic Mountain jewelflower	-	S	S	-	-	S2	1B.2	Y	Y	
Thelypodium integrifolium ssp. complanatum	foxtail thelypodium	-	-	-	-	-	S2	2B.2	Y	U	
Thelypodium milleflorum	many-flowered thelypodium	-	-	-	-	-	S3?	2B.2	Y	U	
Transberingia bursifolia ssp. virgata	virgate halimolobos	-	-	-	-	-	S1	2B.3	Y	U	
Family: Cactaceae											
Grusonia pulchella	beautiful cholla	-	-	-	-	-	S2	2B.2	Y	Y	
Family: Caryophyllaceae											
Minuartia stricta	bog sandwort	-	-	-	-	-	S2	2B.3	Y	U	
Silene oregana	Oregon campion	-	-	-	-	-	S2	2B.2	Y	U	
Family: Chenopodiaceae											
Atriplex argentea var. *hillmanii*	Hillman's silverscale	-	-	-	-	-	S2	2B.2	Y	U	
Atriplex pusilla	smooth saltbush	-	-	-	-	-	SH	2B.1	Y	U	
Micromonolepis pusilla	dwarf monolepis	-	-	-	-	-	S3?	2B.3	Y	U	
Family: Cyperaceae											

Scientific Name	Common Name	Status					California Rankings		Presence		
		Federal Status	USFS	BLM	California State Status	Nevada State Status	State Rank	California Rare Plant Rank	Mono County	MWTC	
Carex davyi	Davy's sedge	-	-	-	-	-	S2	1B.3	Y	U	
Carex duriuscula	spikerush sedge	-	-	-	-	-	S2?	2B.3	Y	U	
Carex idahoa	Idaho sedge	-	-	-	-	-	S1	2B.3	Y	U	
Carex occidentalis	western sedge	-	-	-	-	-	S3	2B.3	Y	Y	
Carex petasata	Liddon's sedge	-	-	-	-	-	S2	2B.3	Y	Y	
Carex praticola	northern meadow sedge	-	-	-	-	-	S2	2B.2	Y	U	
Carex scirpoidea ssp. *pseudoscirpoidea*	western single-spiked sedge	-	-	-	-	-	S2	2B.2	Y	U	
Carex stevenii	Steven's sedge	-	-	-	-	-	S1	2B.2	Y	U	
Carex tiogana	Tioga Pass sedge	-	S	-	-	-	S1	1B.3	Y	U	
Carex vallicola	western valley sedge	-	-	-	-	-	S2	2B.3	Y	Y	
Fimbristylis thermalis	hot springs fimbristylis	-	-	-	-	-	S2	2B.2	Y	U	
Kobresia myosuroides	seep kobresia	-	-	-	-	-	S1	2B.2	Y	U	
Trichophorum pumilum	little bulrush	-	-	-	-	-	S1	2B.2	Y	U	
Family: Dryopteridaceae											
Dryopteris filix-mas	male fern	-	-	-	-	-	S2	2B.3	Y	U	
Family: Fabaceae											
Astragalus argophyllus var. *argophyllus*	silver-leaved milk-vetch	-	-	S	-	-	S1	2B.2	Y	U	
Astragalus geyeri var. *geyeri*	Geyer's milk-vetch	-	-	-	-	-	S2	2B.2	Y	U	
Astragalus johannis-howellii	Long Valley milk-vetch	-	S	S	R	-	S2	1B.2	Y	Y	
Astragalus kentrophyta var. *ungulatus*	spiny milk-vetch	-	-	-	-	-	S1	2B.2	Y	U	
Astragalus lemmonii	Lemmon's milk-vetch	-	S	S	-	-	S2	1B.2	Y	U	
Astragalus lentiginosus var. *piscinensis*	Fish Slough milk-vetch	T	-	-	-	-	S1	1B.1	Y	U	
Astragalus monoensis	Mono milk-vetch	-	S	S	R	-	S2	1B.2	Y	U	
Astragalus oophorus var. *lavinii*	Lavin's milk-vetch	-	-	S	-	-	S1	1B.2	Y	Y	
Astragalus platytropis	broad-keeled milk-vetch	-	-	-	-	-	S2	2B.2	Y	Y	
Astragalus pseudiodanthus	Tonopah milk-vetch	-	-	S	-	-	S2	1B.2	Y	U	
Astragalus serenoi var. *shockleyi*	Shockley's milk-vetch	-	-	-	-	-	S2	2B.2	Y	U	
Ladeania lanceolata	lance-leaved scurf-pea	-	-	-	-	-	S2	2B.3	Y	U	
Lupinus duranii	Mono Lake lupine	-	S	S	-	-	S2	1B.2	Y	Y	
Lupinus padre-crowleyi	Father Crowley's lupine	-	S	-	R	-	S2	1B.2	Y	Y	

Scientific Name	Common Name	Status					California Rankings		Presence		
		Federal Status	USFS	BLM	California State Status	Nevada State Status	State Rank	California Rare Plant Rank	Mono County	MWTC	
Lupinus pusillus var. *intermontanus*	intermontane lupine	-	-	-	-	-	S2	2B.3	Y	U	
Oxytropis deflexa var. *sericea*	blue pendent-pod oxytrope	-	-	-	-	-	S1	2B.1	Y	U	
Trifolium dedeckerae	DeDecker's clover	-	S	S	-	-	S2	1B.3	Y	U	
Family: Gentianaceae											
Gentiana prostrata	pygmy gentian	-	-	-	-	-	S1	2B.3	Y	U	
Family: Helodiaceae											
Helodium blandowii	Blandow's bog moss	-	S	-	-	-	S1	2B.3	Y	U	
Family: Liliaceae											
Calochortus excavatus	Inyo County star-tulip	-	S	S	-	-	S2	1B.1	Y	U	
Family: Loasaceae											
Mentzelia inyoensis	Inyo blazing star	-	S	S	-	-	S3	1B.3	Y	U	
Mentzelia torreyi	Torrey's blazing star	-	-	-	-	-	S2	2B.2	Y	U	
Family: Malvaceae											
Sidalcea multifida	cut-leaf checkerbloom	-	-	-	-	-	S2	2B.3	Y	U	
Family: Meesiaceae											
Meesia longiseta	long seta hump moss	-	-	-	-	-	S2	2B.3	Y	U	
Family: Montiaceae											
Claytonia megarhiza	fell-fields claytonia	-	-	-	-	-	S2	2B.3	Y	U	
Claytonia umbellata	Great Basin claytonia	-	-	-	-	-	S2	2B.3	Y	U	
Family: Onagraceae											
Eremothera boothii ssp. *boothii*	Booth's evening-primrose	-	-	-	-	-	S2	2B.3	Y	U	
Eremothera boothii ssp. *intermedia*	Booth's hairy evening-primrose	-	-	-	-	-	S3	2B.3	Y	U	
Family: Ophioglossaceae											
Botrychium ascendens	upswept moonwort	-	S	-	-	-	S2	2B.3	Y	Y	
Botrychium crenulatum	scalloped moonwort	-	S	-	-	-	S2	2B.2	Y	Y	
Botrychium lunaria	common moonwort	-	S	-	-	-	S2	2B.3	Y	U	
Botrychium minganense	Mingan moonwort	-	-	-	-	-	S2	2B.2	Y	U	
Family: Orobanchaceae											
Orobanche ludoviciana var. *arenosa*	Suksdorf's broom-rape	-	-	-	-	-	S2	2B.3	Y	U	
Pedicularis crenulata	scalloped-leaved lousewort	-	-	-	-	-	S1	2B.2	Y	U	
Family: Orthotrichaceae											

Scientific Name	Common Name	Status					California Rankings		Presence		
		Federal Status	USFS	BLM	California State Status	Nevada State Status	State Rank	California Rare Plant Rank	Mono County	MWTC	
Orthotrichum spjutii	Spjut's bristle moss	-	-	-	-	-	S1	1B.3	Y	Y	
Family: Parnassiaceae											
Parnassia parviflora	small-flowered grass-of-Parnassus	-	-	-	-	-	S2	2B.2	Y	Y	
Family: Phrymacea											
Erythranthe calcicoloa	limestone monkeyflower	-	-	S	-	-	S2	1B.3	Y	U	
Mimulus glabratus ssp. *utahensis*	Utah monkeyflower	-	-	-	-	-	S1	2B.1	Y	U	
Family: Pinaceae											
Pinus albicaulis	Whitebark pine	C	S	S	-	At Risk	-	-	Y	Y	
Family: Plantaginaceae											
Penstemon barnebyi	Barneby's beardtongue	-	-	-	-	-	S1	2B.1	Y	U	
Family: Polemoniaceae											
Aliciella triodon	coyote gilia	-	-	-	-	-	S2	2B.2	Y	U	
Polemonium chartaceum	Mason’s skypilot	-	S	-	-	-	S2	1B.3	Y	Y	
Family: Poaceae											
Agrostis humilis	mountain bent grass	-	-	-	-	-	S2	2B.3	Y	U	
Blepharidachne kingii	King's eyelash grass	-	-	-	-	-	S2	2B.3	Y	U	
Dedeckera eurekensis	July gold	-	S	S	R	-	S3	1B.3	Y	U	
Elymus scribneri	Scribner's wheat grass	-	-	-	-	-	S1S3	2B.3	Y	Y	
Festuca minutiflora	small-flowered fescue	-	-	-	-	-	S2	2B.3	Y	Y	
Glyceria grandis	American manna grass	-	-	-	-	-	S2	2B.3	Y	U	
Poa abbreviata ssp. *marshii*	Marsh's blue grass	-	-	-	-	-	S1	2B.3	Y	U	
Poa abbreviata ssp. *pattersonii*	Patterson's blue grass	-	-	-	-	-	S1	2B.3	Y	U	
Poa lettermanii	Letterman's blue grass	-	-	-	-	-	S3	2B.3	Y	U	
Sphenopholis obtusata	prairie wedge grass	-	-	-	-	-	S2	2B.2	Y	U	
Stipa arida	Mormon needle grass	-	-	-	-	-	S3?	2B.3	Y	U	
Stipa divaricata	small-flowered rice grass	-	-	-	-	-	S2	2B.3	Y	U	
Family: Polygonaceae											
Eriogonum alexanderae	Alexander's buckwheat	-	-	S	-	-	S1	1B.1	Y	U	
Eriogonum nutans var. *nutans*	Dugway wild buckwheat	-	-	-	-	-	S3	2B.3	Y	U	
Poa abbreviata ssp. *marshii*	Marsh’s blue grass	-	-	-	-	-	S1	2B.3	Y	U	
Polygala intermontana	intermountain milkwort	-	-	-	-	-	S2	2B.1	Y	U	

Scientific Name	Common Name	Status					California Rankings		Presence		
		Federal Status	USFS	BLM	California State Status	Nevada State Status	State Rank	California Rare Plant Rank	Mono County	MWTC	
Polygala subspinosa	spiny milkwort	-	-	-	-	-	S3	2B.2	Y	U	
Family: Potamogetonacea											
Potamogeton robbinsii	Robbins' pondweed	-	-	-	-	-	S3	2B.3	Y	U	
Stuckenia filiformis ssp. *alpina*	slender-leaved pondweed	-	-	-	-	-	S3	2B.2	Y	U	
Family: Ranunculaceae											
Ranunculus hydrocharoides	frog's-bit buttercup	-	-	-	-	-	S1	2B.1	Y	U	
Family: Rosaceae											
Horkelia hispidula	White Mountains horkelia	-	S	-	-	-	S3	1B.3	Y	U	
Ivesia kingii var. *kingii*	alkali ivesia	-	-	S	-	-	S2	2B.2	Y	U	
Ivesia webberi	Webber ivesia	T	S	S	-	CE	S1	1B.1	N	U	
Physocarpus alternans	Nevada ninebark	-	-	-	-	-	S3	2B.3	Y	U	
Potentilla concinna var. *proxima*	early cinquefoil	-	-	-	-	-	S1	2B.3	Y	U	
Potentilla morefieldii	Morefield's cinquefoil	-	S	-	-	-	S2	1B.3	Y	U	
Potentilla pulcherrima	beautiful cinquefoil	-	-	-	-	-	S1	2B.2	Y	U	
Family: Salicaceae											
Salix brachycarpa var. *brachycarpa*	short-fruited willow	-	-	-	-	-	S2	2B.3	Y	U	
Salix nivalis	snow willow	-	-	-	-	-	S2	2B.3	Y	U	
Family: Sarcobataceae											
Sarcobatus baileyi	Bailey's greasewood	-	-	-	-	-	S1	2B.3	Y	Y	
Family: Violaceae											
Viola purpurea ssp. *aurea*	golden violet	-	-	-	-	-	S2	2B.2	Y	U	

Federal ESA Status T = Threatened
USFS S = Sensitive as identified by a Regional Forester
BLM S = Sensitive as designated by the BLM State Director
California State Status R = Rare
Nevada State Status CE = Critically Endangered

State Rank
S1 Critically Imperiled = Critically imperiled in the jurisdiction because of extreme rarity or especially vulnerable to extirpation.
S2 Imperiled = Imperiled in the jurisdiction because of rarity due to very restricted range, very few populations, or other factors.
S3 Vulnerable = Vulnerable in the jurisdiction due to a restricted range, relatively few populations, or other factors.
SH Historical = All California sites are historical.
Note: By adding a ? to the rank (e.g., S2?) This represents more certainty than S2S3, but less certainty than S2.

California Rare Plant Rank
1A = Plants presumed extinct in California
1B.1 = Plants rare in California and elsewhere; seriously threatened in California
1B.2 = Plants rare in California and elsewhere; fairly threatened in California
1B.3 = Plants rare in California and elsewhere; not very threatened in California
2B.1 = Plants rare in California, but more common elsewhere; seriously threatened in California
2B.2 = Plants rare in California, but more common elsewhere; fairly threatened in California
2B.3 = Plants rare in California, but more common elsewhere; not very threatened in California

Presence
Y = Present based on referenced documentation
U = Unknown
N = No suitable habitat present

Sources: CDFW 2015a, 2015c; CNPS 2015; Reynolds and Cardno TEC, Inc. 2012; USFWS 2015.

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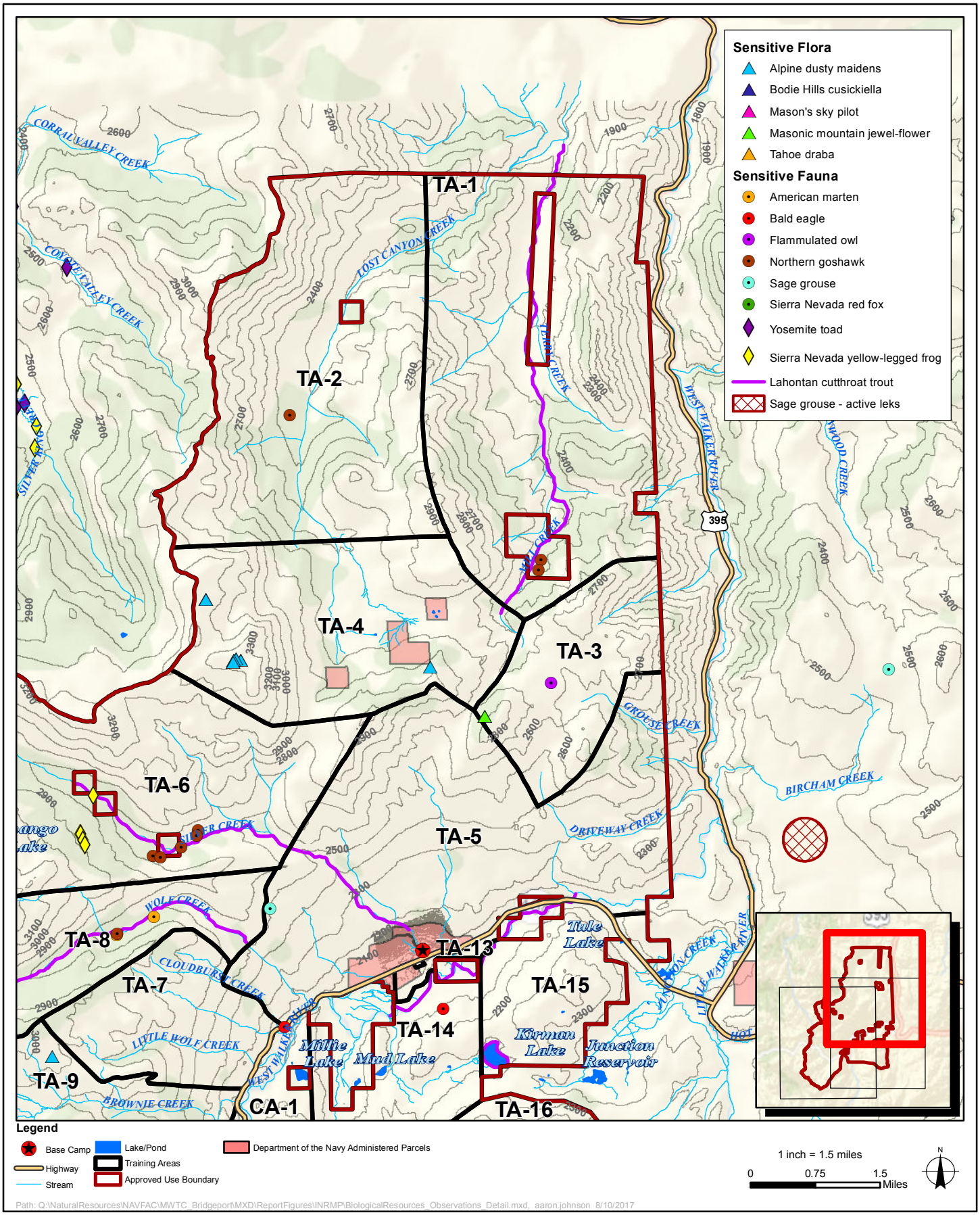

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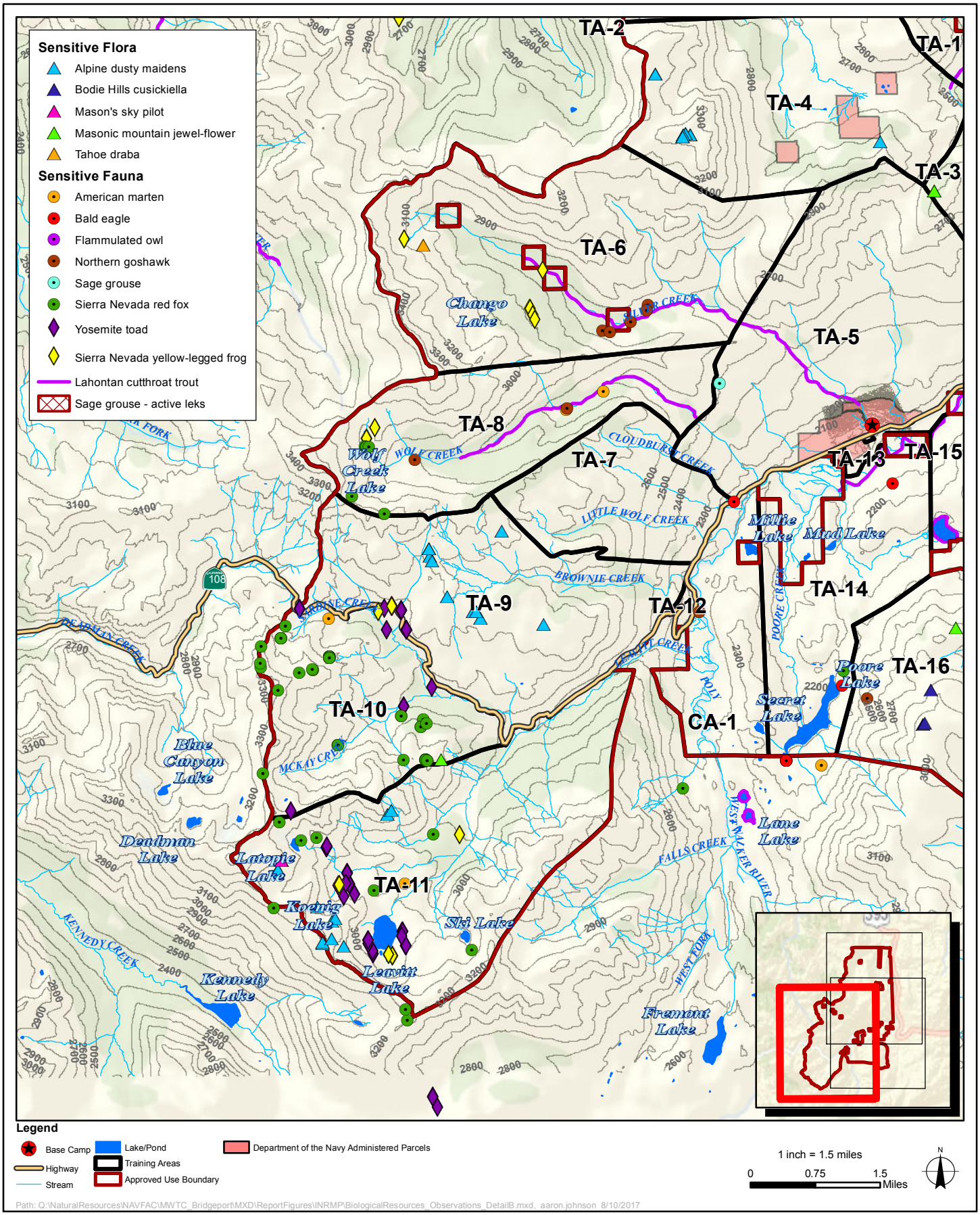
Special Satus Species Observations
Marine Corps Mountain Warfare Training Center Bridgeport
Integrated Natural Resources Management Plan

FIGURE
M1-a



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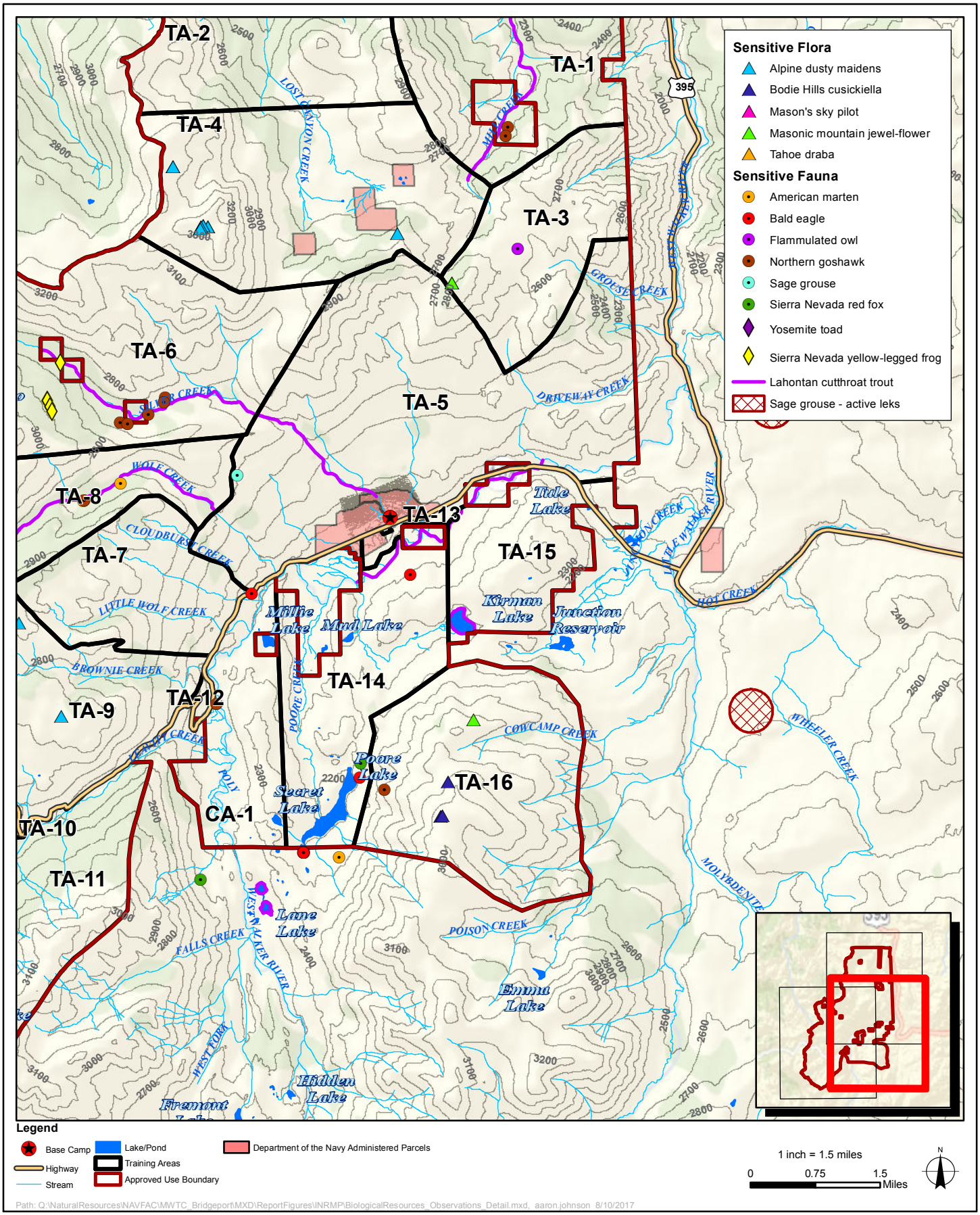
Special Satus Species Observations
Marine Corps Mountain Warfare Training Center Bridgeport
Integrated Natural Resources Management Plan

FIGURE
M1-b



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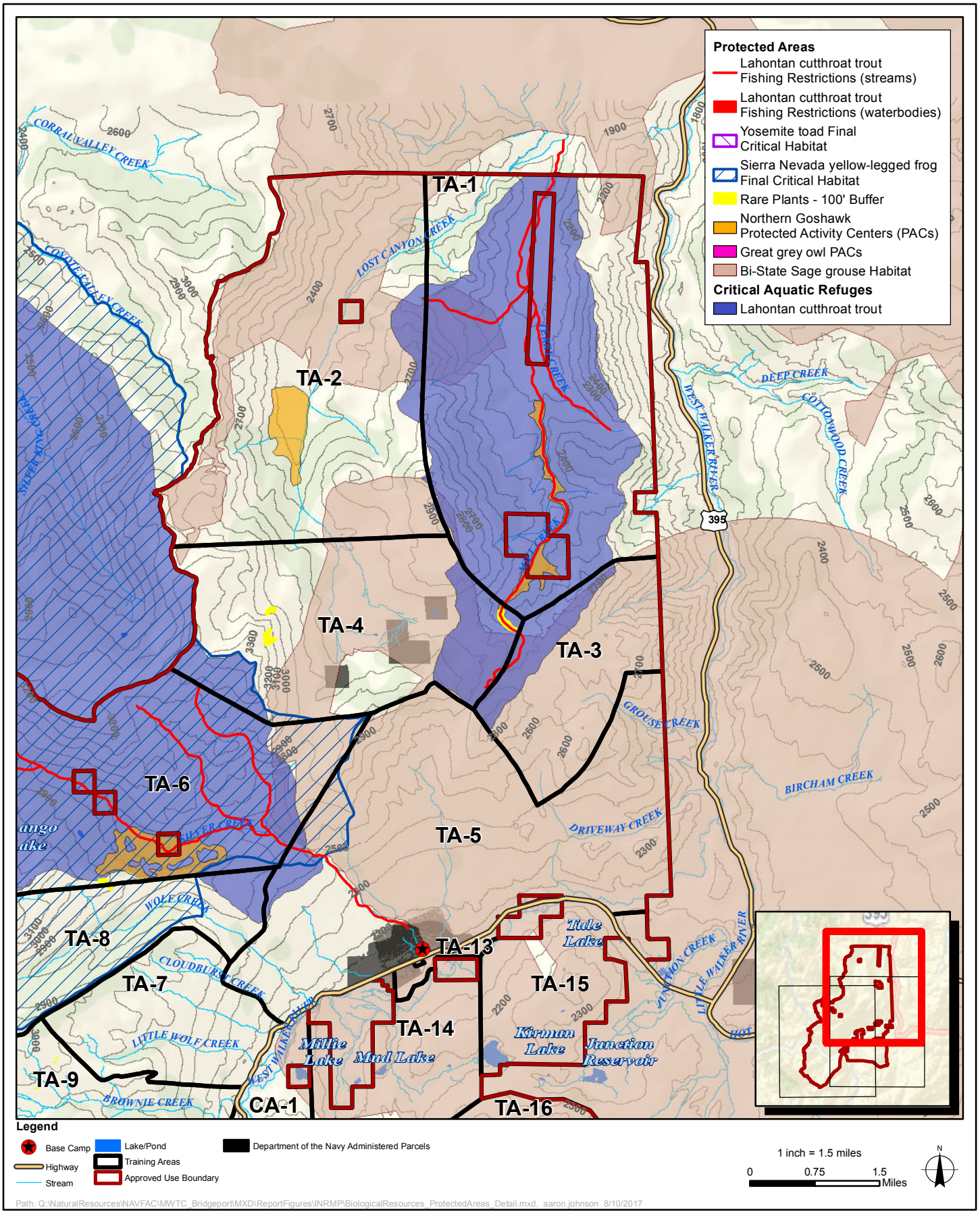
Special Satus Species Observations
Marine Corps Mountain Warfare Training Center Bridgeport
Integrated Natural Resources Management Plan

FIGURE
M1-c



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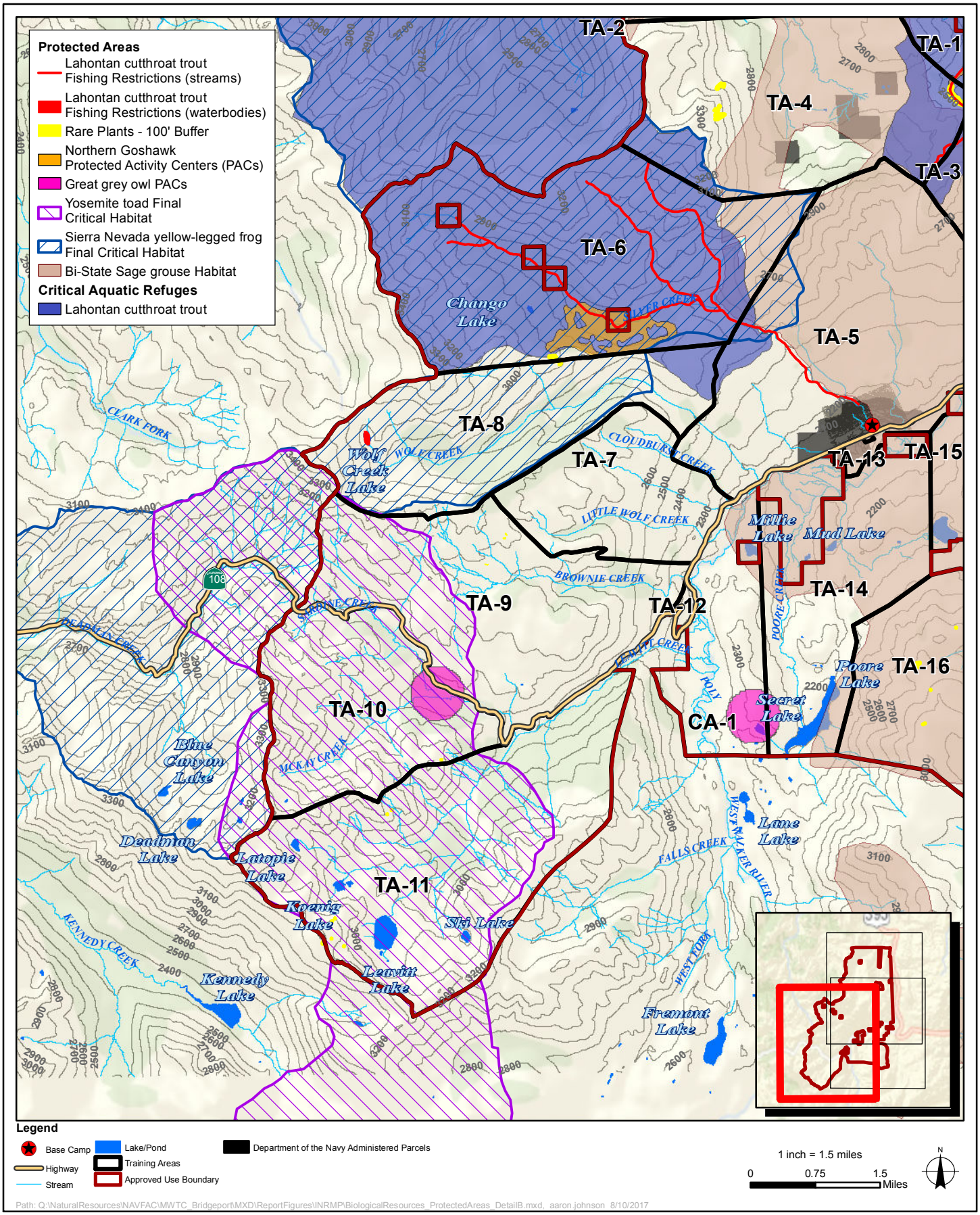
Special Satus Species Observations
Marine Corps Mountain Warfare Training Center Bridgeport
Integrated Natural Resources Management Plan

FIGURE
M2-a



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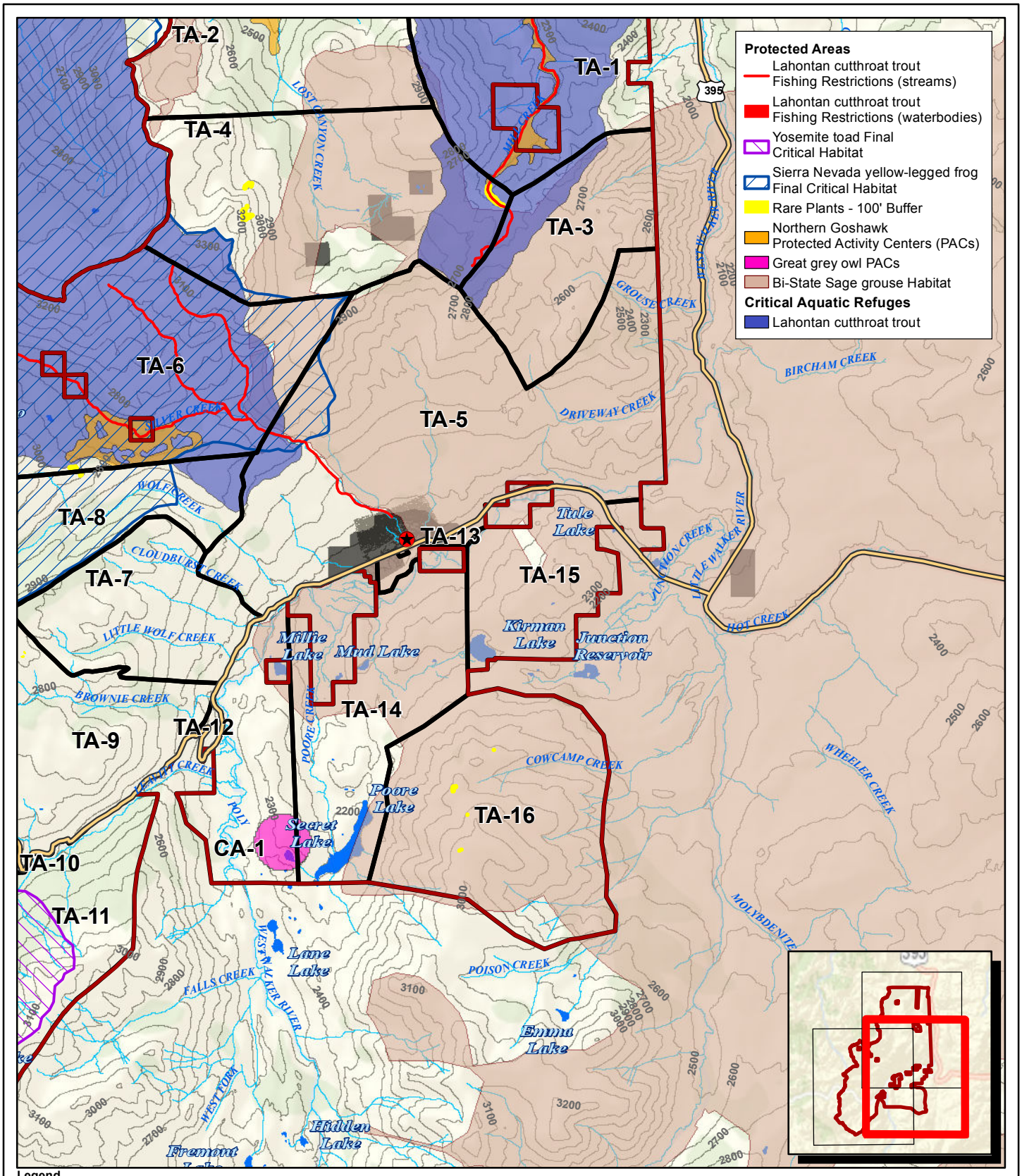
Special Satus Species Observations
Marine Corps Mountain Warfare Training Center Bridgeport
Integrated Natural Resources Management Plan

FIGURE
M2-b



Legend

Base Camp
Highway
Stream
Lake/Pond
Training Areas
Approved Use Boundary
Department of the Navy Administered Parcels

1 inch = 1.5 miles

0 0.75 1.5 Miles

N

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Special Satus Species Observations
Marine Corps Mountain Warfare Training Center Bridgeport
Integrated Natural Resources Management Plan

FIGURE
M2-c

APPENDIX N

FINDING OF NO SIGNIFICANT IMPACT FROM THE ENVIRONMENTAL ASSESSMENT FOR MCMWTC INRMP

DEPARTMENT OF DEFENSE
UNITED STATES MARINE CORPS
FINDING OF NO SIGNIFICANT IMPACT FOR
AN INTEGRATED NATURAL RESOURCES MANAGEMENT PLAN AT
MARINE CORPS MOUNTAIN WARFARE TRAINING CENTER
BRIDGEPORT, CALIFORNIA

Pursuant to the Council on Environmental Quality (CEQ) regulations (40 Code of Federal Regulations [CFR] Parts 1500-1508) implementing procedural provisions of the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S. Code [USC] §§ 4321-4370h); and U.S. Marine Corps (USMC) procedures for implementing NEPA, as described in Marine Corps Order P5090 2A, Change 3, dated 26 August 2013, *Environmental Compliance and Protection Manual,* the USMC gives notice that this Environmental Assessment (EA) has been prepared and an Environmental Impact Statement (EIS) is not required for the proposed implementation of an Integrated Natural Resources Management Plan (INRMP) for Marine Corps Mountain Warfare Training Center (MCMWTC), Bridgeport, California. Based on the analyses completed for this EA, the USMC has determined that the Proposed Action is not a major federal action significantly affecting the quality of the human environment. Therefore, USMC is issuing this Finding of No Significant Impact (FONSI).

Purpose and Need: The proposed INRMP provides a long-term strategy to coordinate all natural resources management activities of USMC at MCMWTC and allows for sustainable multipurpose use of the resources. The INRMP's objectives are to manage natural resources and military use so there is no net loss of the USMC's ability to support its military purposes at MCMWTC in a manner consistent with Department of Defense (DoD) ecosystem management principles and the permit conditions provided by the U.S. Forest Service (USFS) – which owns most of the land that comprises MCMWTC. Further, management prescribed by the INRMP benefits federally listed threatened and endangered species on MCMWTC consistent with federal and state recovery actions for these species under the Endangered Species Act (ESA) of 1973 (16 USC 1531, *et seq.*).

Description of the Proposed Action: The Proposed Action is the implementation of the INRMP and its associated management activities. This plan reflects USMC's commitment to conserve, protect, and enhance the natural resources present on MCMWTC in a manner that supports and enhances realistic military training. The primary objective of the plan is to provide a proactive natural resources management tool that allows MCMWTC Barstow to achieve its resource management goals, mission requirements, and to be in compliance with all applicable environmental regulations and policies.

Alternatives Considered: Three alternatives – the Full Implementation Alternative (Proposed Action), the Partial Implementation Alternative, and the No Action Alternative – were evaluated for their potential direct, indirect, and cumulative impacts on the physical and human environment. The Proposed Action would involve the full implementation of the INRMP, as required by law. This alternative would meet regulatory requirements, and provide information, guidance, and standard operating procedures to MCMWTC's staff, tenant, and transient organizations to ensure the successful management and protection of the natural resources present. The Partial Implementation Alternative would involve only implementation of those elements strictly required for legal compliance (i.e., "must fund" elements). CEQ regulations stipulate that the No-Action Alternative be also analyzed to assess any environmental consequences that may occur if the Proposed Action is not implemented. Under the No Action Alternative, the INRMP for MCMWTC would not be implemented. While this alternative would

meet some regulatory requirements, it would not meet all regulatory requirements and the additional guidance and proposed policies, actions, and project would not be implemented.

Anticipated Environmental Effects: The EA analyzed the environmental impacts that would potentially result from implementation of the three alternatives. An initial impact evaluation found that the extent of potential impacts to the majority of resources was negligible (i.e., not measurable) or clearly less than significant and, therefore, these resources were not addressed in further detail. These resources include: cultural resources; air quality and greenhouse gases; noise; coastal zones and oceans; airspace management; socioeconomics; environmental justice and protection of children; hazardous materials and waste; land use; geology; and topography. The following resources – which had the greatest potential to be impacted by the implementation of the three alternatives – were analyzed in detail within the EA: biological resources; soils; and hydrology, watersheds, and wetlands were analyzed in depth within the EA. Based on information gathered and presented in the EA, it has been determined that implementation of the Proposed Action or the other two alternatives would have no significant direct, indirect, or cumulative adverse impacts on the environment. Adverse impacts associated with implementing the Proposed Action would be minor in context and intensity, and most would be temporary. Long-term, beneficial impacts would be expected as a result of many of the natural resources management activities in the INRMP. Consequently, the overall environmental effect of implementing the Proposed Action is anticipated to be less than significant and beneficial.

Agency Coordination and Public Involvement: The U.S. Fish and Wildlife Service (USFWS) Sacramento Field Office, USFS Bridgeport Ranger District, California Department of Fish and Wildlife (CDFW) Northcentral Region Office, and the Nevada Department of Wildlife (NDOW) Reno Office were notified of MCMWTC's intent to prepare an INRMP. These agencies participated in a meeting with MCMWTC personnel on 28 February 2012 to discuss issues and concerns. The Public Draft INRMP was provided to these agencies, plus tribal governments, California State Office of Historic Preservation (SHPO), Nevada SHPO, and all other potentially interested parties for general review and comment. Copies of the Public Draft INRMP and EA were placed in local public libraries and a Public Notice was placed in the *Mammoth Times* and the *Record Courier* announcing the availability of the Public Draft INRMP and EA for review and comment in local Mono County libraries. The Public Draft INRMP and EA public comment period ended on 15 April 2016. Agency comments were received and addressed for both the INRMP and EA; no public comments were received for either the INRMP or EA.

Findings: Based on the analysis contained in the EA, the implementation of the Proposed Action, the USMC's Preferred Alternative, has been selected and it will have no significant impact on the human environment. This FONSI is based on the attached EA which has been independently evaluated by the USMC and Department of Navy, and determined to adequately and accurately discuss the purpose and need, the alternatives, environmental issues, and impacts of the Proposed Action. Consequently, implementation of the Proposed Action does not require the preparation of an EIS.

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ADRIAN D ARMOLD
Lieutenant Colonel, United States Marine Corps
By Direction of Commanding Officer, Marine Corps Mountain Warfare Training Center

Date