U. S. AIR FORCE INTEGRATED NATURAL RESOURCES MANAGEMENT PLAN

Mountain Home Air Force Base, Small Arms Range,

Saylor Creek Air Force Range, Juniper Butte Range,

And Other Mountain Home Range Complex Sites

(See INRMP signature pages for plan approval date)

ABOUT THIS PLAN

This installation-specific Environmental Management Plan (EMP) is based on the U.S. Air Force's (AF) standardized Integrated Natural Resources Management Plan (INRMP) template. This INRMP has been developed in cooperation with applicable stakeholders, which may include Sikes Act cooperating agencies and/or local equivalents, to document how natural resources will be managed. Non-U.S. territories will comply with applicable Final Governing Standards (FGS). Where applicable, external resources, including Air Force Instructions (AFIs); AF Playbooks; federal, state, local, FGS, biological opinion and permit requirements, are referenced.

Certain sections of this INRMP begin with standardized, AF-wide "common text" language that address AF and Department of Defense (DoD) policy and federal requirements. This common text language is restricted from editing to ensure that it remains standard throughout all plans. Immediately following the AF-wide common text sections are installation sections. The installation sections contain installation-specific content to address local and/or installation-specific requirements. Installation sections are unrestricted and are maintained and updated by AF environmental Installation Support Teams (ISTs) and/or installation personnel.

NOTE: The terms 'Natural Resources Manager', 'NRM' and 'NRM/POC' are used throughout this document to refer to the installation person responsible for the natural resources program, regardless of whether this person meets the qualifications within the definition of a natural resources management professional in DODI 4715.03.

TABLE OF CONTENTS

DOCUMENT CONTROL

Record of Review – The INRMP is updated not less than annually, or as changes to natural resource management and conservation practices occur, including those driven by changes in applicable regulations. In accordance with (IAW) the Sikes Act and AFI 32-7064, *Natural Resources Management*, the INRMP is required to be reviewed for operation and effect not less than every five years. Annual reviews and updates are accomplished by the base Natural Resources Manager (NRM), and/or an Installation Support Team Natural Resources Media Manager. The installation shall establish and maintain regular communications with the appropriate federal and state agencies. At a minimum, the installation NRM (with assistance as appropriate from the NR Media Manager) conducts an annual review of the INRMP in coordination with internal stakeholders and local representatives of the United States Fish and Wildlife Service (USFWS), state fish and wildlife agency, and National Oceanic and Atmospheric Administration (NOAA) Fisheries, where applicable, and accomplishes pertinent updates. Installations will document the findings of the annual review in an Annual INRMP Review Summary. By signature to the Annual INRMP Review Summary, the collaborating agency representative asserts concurrence with the findings. Any agreed updates are then made to the document, at a minimum updating the work plans.

INRMP APPROVAL/SIGNATURE PAGES

Signature Page.docx

INSERT WING COMMANDERS SIGNATURE

INSERT USFWS SIGNATURE

INSERT IDAHO FISH AND GAME SIGNATURE

ANNUAL REVIEW AND COORDINATION PAGE

This page is used to certify the annual review and coordination of the Integrated Natural Resources Management Plan (INRMP) for Mountain Home Air Force Base (MHAFB) and associated properties in Idaho.

By their signatures below, the certifying official acknowledges that the annual review and coordination of the INRMP has occurred for the specified year.

Natural Resources Manager Review:

5/31/2022

X Hodge A Echeverria

Hodge Echeverria
Natural Resources Program Manager
Signed by: ECHEVERRIA.HODGE.ANTHONY.1166067568

Environmental Chief Review:

5/31/2022

X

Sheri L. Robertson
Chief, Environmental Management Branch
Signed by: ROBERTSON.SHERI.L.1152447350

EXECUTIVE SUMMARY

The Integrated Natural Resources Management Plan (INRMP) provides the installation commander and other decision makers a narrative of present natural resources and their status, outlines the management of these resources on Mountain Home Air Force Base (MHAFB) and its satellite facilities (Mountain Home Range Complex (MHRC) which includes; Small Arms Range (SAR), Saylor Creek Range (SCR), Juniper Butte Range (JBR), and Mountain Home Training Range Complex Sites (Emitter sites) and the potential impacts on the base missions. The INRMP provides an adaptive management program to balance natural resources stewardship and military needs. It identifies a number of goals and objectives for specific natural resources and corresponding management strategies at MHAFB. As a component of the MHAFB Installation Development Plan, the INRMP is consistent with other components and related documents such as the Ground Maintenance contract, Bird Aircraft Strike Hazard (BASH) plan, Intergrated Pesticides Management Plan (IPMP), Golf Course Environmental Management plan (GEM), and the Integrated Cultural Resources Management Plan (ICRMP).

The INRMP treats MHAFB, SAR, SCR, JBR, and emitter sites together unless management goals or site specific conditions differ, then additional details are discussed for each area individually.

Natural Resource Management goals are:

- Implement the INRMP through compliance with existing laws while ensuring no net loss in the capability of installation lands to support the military mission.
- Protect and enhance desirable wildlife and plant species and their habitats that provide for current and future missions, including actions to address invasive species and wildland fire through use of adaptive management.
- Protect and enhance threatened and endangered species and their habitats.
- Promote education, awareness, and opportunities for conservation and enjoyment of the natural resources of Air Force lands.

These goals are developed to support and sustain the base mission. None of these goals will have any significant impacts to the base mission through the implementation of the INRMP.

Environmental Impact Analysis Process

The 2001 Environmental Assessment of the INRMP was prepared in accordance with the requirements of the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality (CEQ) regulations implementing NEPA, and Air Force Instruction (AFI) 32-7061 directing all Air Force NEPA efforts.

Description of the Proposed Action and Alternatives

In accordance with NEPA, MHAFB has identified a proposed action and a no-action alternative for evaluation. The proposed action is to implement the INRMP for MHAFB, and the MHRC which includes; SAR, SCR, JBR, and Mountain Home Training Range Complex Sites. This proposal would meet MHAFB's requirement to train personnel in a realistic setting that is in compliance with environmental regulations and policies. The No-Action alternative would be for MHAFB to not implement an INRMP for the management of natural resources on MHAFB and all of its associated facilities. The INRMP and its associated NEPA analysis and documentation have been prepared concurrently.

1.0 OVERVIEW AND SCOPE

This INRMP was developed to provide for effective management and protection of natural resources. It summarizes the natural resources present on the installation and outlines strategies to adequately manage those resources. Natural resources are valuable assets of the United States Air Force; they provide the natural infrastructure needed for testing weapons and technology, as well as for training military personnel for deployment. Sound management of natural resources increases the effectiveness of Air Force adaptability in all environments. The Air Force has stewardship responsibility over the physical lands on which installations are located to ensure all natural resources are properly conserved, protected, and used in sustainable ways. The primary objective of the Air Force natural resources program is to sustain, restore and modernize natural infrastructure to ensure operational capability and no net loss in the capability of AF lands to support the military mission of the installation. The plan outlines and assigns responsibilities for the management of natural resources, discusses related concerns, and provides program management elements that will help to maintain or improve the natural resources within the context of the installation's mission. The INRMP is intended for use by all installation personnel. The Sikes Act is the legal driver for the INRMP.

1.1 Purpose and Scope

The purpose of this INRMP is to serve as the primary information source on which commanders can base their decisions regarding the conservation and management of the natural resources on MHAFB and its properties.

All installation personnel, both civilian and military, will act responsibly in the public interest in managing the land and historic resources that are an integral part of the installation plans, decisions, actions, and programs

This INRMP sets forth a single, unified management philosophy, strategy, and framework for the protection, conservation, use, and management of natural resources at MHAFB. It is intended to fulfill the requirements of DoDI 4715.3, DoDI 4150.07, DoDI 7310.5, AFPD 32-70, Military Handbook (MIL-HDBK)-1028/8A, AFI 32-1053, AFI 32-7064, AFI 32-7065.

This INRMP outlines and assigns responsibilities, identifies concerns, and establishes standard operating procedures for the management of significant natural resources at MHAFB including the SAR, and MHRC which includes SCR, JBR, and associated remote facilities. It assists managers in planning, developing, and implementing a program that is tailored to the specific requirements and missions of MHAFB and associated facilities.

This INRMP provides guidance for sound stewardship to protect natural resources and the necessary processes and procedures for maintaining these resources. This plan:

- Outlines long-term goals, objectives, and implementation strategies
- Provides a tool for decision makers to direct day-to-day activities
- Identifies necessary procedures for the protection and use of natural resources
- Provides a means to assess, monitor, and evaluate the impacts of the range activities on natural resources.

This INRMP is a tool for short-term natural resource management activities and long-range planning for MHAFB's mission needs. This plan (1) identifies potential limitations or constraints upon future activities resulting from their potential adverse impacts on natural resources or ecologically sensitive areas and (2)

provides a management strategy for protecting natural resources while accommodating land uses and activities vital and integral to the mission of the 366th Fighter Wing.

SECURITY INSTRUCTION

1. The long title of this plan is Mountain Home AFB Integrated Natural Resource Management Plan.
   The short title is MHAFB INRMP. Both titles are UNCLASSIFIED.
2. This document is "UNCLASSIFIED."
3. Reproduction of this document, in whole or in part, to assist tasked organizations in development of supporting operating instructions/checklists, is authorized.
4. The provisions of AFI 10-701, *Operations Security*, were considered during the formation of this plan.

1.2 Management Philosophy

Natural resources under control of the installation are managed to support the MHAFB military mission, while practicing the principles of multiple use and sustained yield, using scientific methods and an interdisciplinary approach. The conservation of natural resources and the military mission need not and shall not be mutually exclusive.

The INRMP serves as a key component of the Installation Development Plan, which provides background and rationale for the policies and programming decisions related to land use, resource conservation, facilities and infrastructure development, and operations and maintenance to ensure that they meet current requirements and provide for future growth. The INRMP supports the mission by identifying the natural resources present on the installation, developing management goals for these resources, and integrating these management objectives into the military requirements for mission operations/support and regulatory compliance in order to minimize natural resource constraints.

This INRMP outlines the steps needed to fulfill compliance requirements related to natural resources management and fosters environmental stewardship. It is organized into the following principal sections:

- An overview of the current status and conditions of the natural resources
- Identification of potential impacts to or from natural resources
- The key natural resource management areas addressed
- Management recommendations that incorporate the installation's goals and objectives for natural resource management areas
- Specific work plans for effective implementation of the INRMP

Management issues and concerns, as well as goals and objectives, are developed from analysis of all the gathered information, and are reviewed by MHAFB personnel involved with or responsible for various aspects of natural resources management. The INRMP was developed using an interdisciplinary approach and is based on existing information of the physical and biotic environments, mission activities, and environmental management practices at MHAFB. Information was obtained from a variety of documents, interviews with installation personnel, on-site observations, and communications with both internal and external stakeholders. Coordination and correspondence with these agencies is documented and satisfies a portion of the requirements of 32 Code of Federal Regulations (CFR) 989 – Environmental Impact Analysis Process (EIAP). Goals and objectives require monitoring on a continuous basis and management strategies

are updated whenever there are changes in mission requirements, adverse effects to or from natural resources, or changes in regulations governing management of natural resources.

The INRMP has been approved by the MHAFB natural resources manager, the 366th Fighter Wing Commander and Environmental, Safety, and Occupational Health Council (ESOHC). The INRMP was coordinated with various MHAFB base organizations, Headquarters Air Combat Command (ACC)/A7AN, Headquarters ACC/A3A, and complies with AFI 32-7064.

This plan will be reviewed annually by the installation Civil Engineer for compatibility with Base activities. Detailed Natural Resources Management Prescriptions which identify projects associated with natural resource goals will be revised every two years, and the entire INRMP revised every five years. MHAFB must consider the INRMP's goals and objectives when planning projects and mission changes.

Once internal coordination and review of the INRMP is complete, it is provided to the USFWS and IDFG for review and signature. The signature of these agencies reflects their mutual agreement on those portions of the INRMP within the scope of the agency's authority.

1.2.2 Ecosystem Management

The INRMP is based on an interdisciplinary approach to ecosystem management. This approach ensures that the military mission is successfully accomplished by integrating all aspects of natural resources management with each other and with the rest of MHAFB's mission.

The DoD (1994) has stated an overall goal with regard to ecosystem management: "The goal of ecosystem management is to preserve, improve, and enhance ecosystem integrity. Over the long term, this approach will maintain and improve the sustainability and biological diversity of terrestrial and aquatic ecosystems while supporting sustainable economies and communities."

- Biodiversity conservation is the foundation of sensible military natural resources management. Biodiversity conservation;
- Helps maintain natural landscapes for realistic military training now and in the future;
- Provides for compliance with the Endangered Species Act (ESA), Clean Water Act (CWA), and other state and federal environmental regulations;
- Contributes to national security by helping maintain the natural resources upon which this country's strength depends;
- Involves military, civilian, and tribal partners in the important decision making for lands managed by the DoD;
- Enhances the quality of life for military personnel and the public by maintaining an aesthetically pleasing surroundings; and
- Maintains natural resources for use by the public and tribes.

Principles and guidelines to achieve this goal are to:

- Maintain and improve the sustainability and native diversity of ecosystems
- Support sustainable human activities
- Develop coordinated approaches to work toward ecosystem sustainability
- Rely on the best scientific information available
- Use best management practices
- Use benchmarks to monitor and evaluate outcomes
- Use "adaptive management"

- Implement natural resource conservation through installation plans and programs

Ecosystem management is best accomplished by a process termed adaptive management whereby management activities are carried out simultaneously with data collection. As data and information are found, management decisions and activities are adapted to include this new knowledge.

1.2.3 Adaptive Management

To implement the goals and objectives, the use of adaptive management as a resource management technique is useful for a decision-making approach.

Adaptive management is a strategy used in conservation planning whereby goals for the plan are set, information is collected to evaluate whether the goals are being met, and management is adjusted if necessary to ensure success in achieving the goals. This results in a "feedback loop" that incorporates better scientific understanding into everyday management practices (USFWS and National Marine Fisheries Service 2000).

Figure 1-1 shows the adaptive management "feedback loop." Figure 1-2 shows the adaptive management cyclic process and the linkages relevant to INRMP implementation.

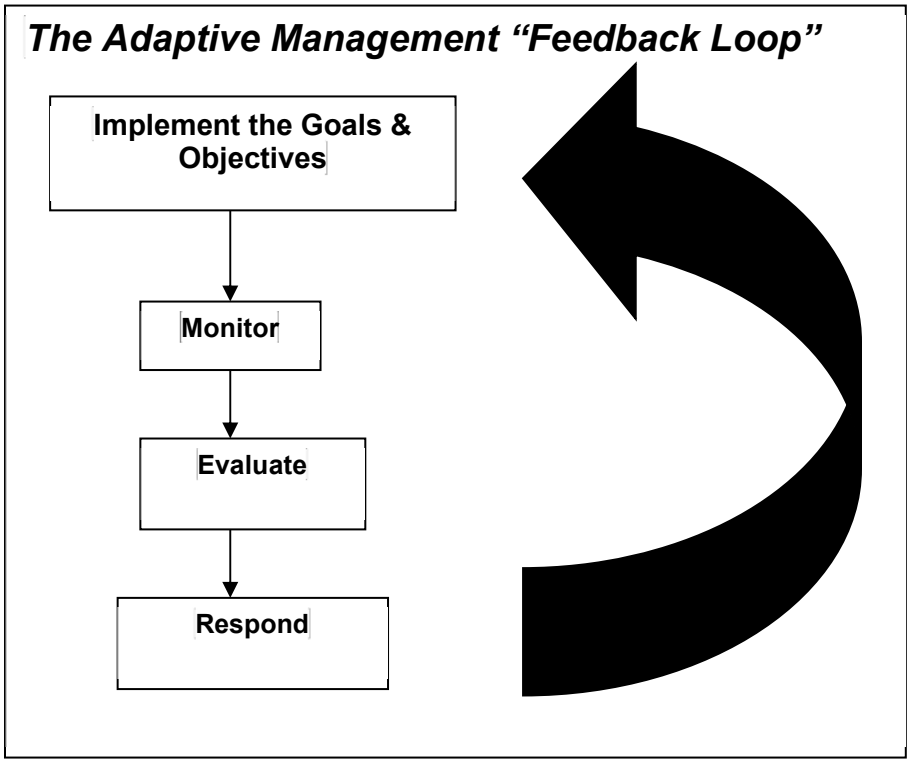


Figure 1-1
Adaptive Management "Feedback Loop"

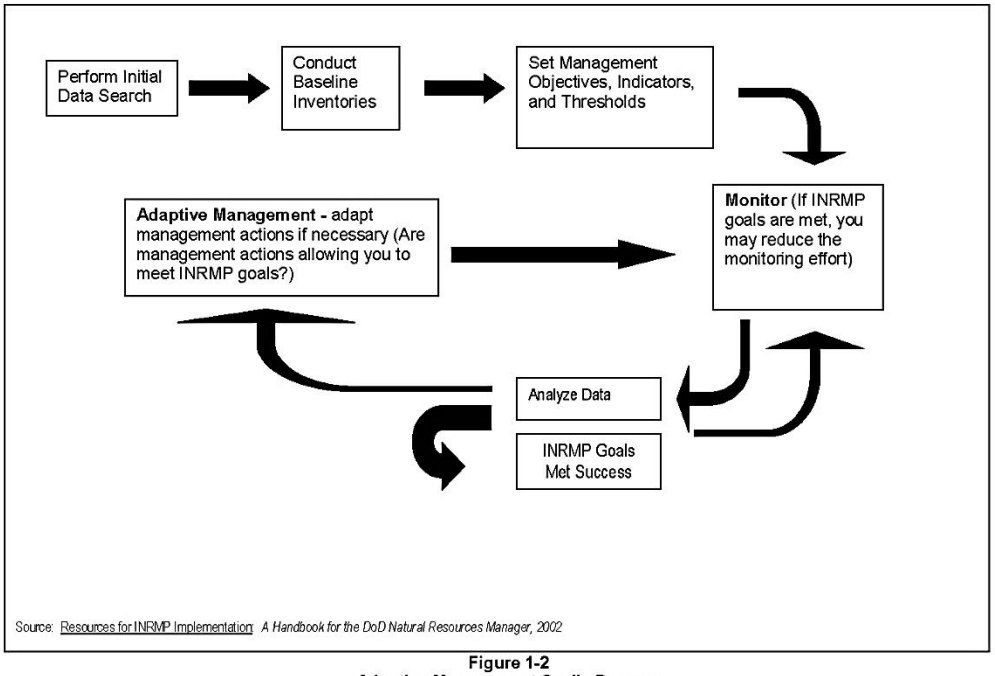


Figure 1-2
Adaptive Management Cyclic Process

The INRMP is a living document that changes as needed through consultation and data sharing with federal agencies, state agencies, civilian groups, and tribal partners. It is also an integral part of the MHAFB comprehensive planning process, since the INRMP's goals and objectives must be given consideration early in the planning process for projects and mission changes on the installation.

It is with this intent that this INRMP seeks to stress the goal of natural resource management and military mission compatibility at MHAFB. "Adaptive management" with regard to natural resource management and the military mission must be continually reviewed and evaluated for impact.

Information and coordination meetings were held on the Base with appropriate personnel and organizations to integrate this natural resource management plan with the mission and the Base comprehensive plan. In addition, all pertinent Base documents were reviewed and, where appropriate, integrated into this INRMP.

1.3 Authority

Laws, regulations, and directives that authorize the development and implementation of this INRMP include:

- The Sikes Act of 1960 (16 U.S. Code [USC] 670 *et. seq*.), as amended, provides for cooperation between the Department of Interior (DOI), department of Defense (DoD), and state agencies in planning, developing, and maintaining natural resources on military reservations.
- The Sikes Act Improvement Amendment, as contained in the Fiscal Year (FY) 1998 National

Defense Authorization Act, specifically calls for the cooperative preparation and implementation of INRMPs on military installations.

- DoD Instruction 4715.03, *Environmental Conservation Program*, implements policy, assigns responsibilities, and prescribes procedures for the integrated management of natural and cultural resources on the property under DoD control.
- DoDD 4715.1E, "Environment, Safety, and Occupational Health (ESOH): Manages and applies the Department of Defense's installation assets to sustain the DoD national defense mission. ESOH evaluates all activities for current and emerging ESOH resource requirements and make prudent investments in initiatives that support mission accomplishment, enhance readiness, reduce future funding needs, prevent pollution, prevent illness and injury, ensure cost-effective compliance, and maximize the existing resource capability and ensures, through a host-tenant agreement or otherwise, that all DoD tenants and non-DoD tenants comply with all applicable laws and DoD policies relating to ESOH requirements
- Air Force Policy Directive (AFPD) 32-70, *Environmental Quality*, requires Air Force installations to conserve natural and cultural resources through effective environmental planning.
- AFI 32-7064, *Integrated Natural Resource Management*, implements the Sikes Act; DoD Instruction 4715.03, AFPD 32-70, and provides guidance in managing natural resources on Air Force installations in accordance with applicable federal, state, and local laws and regulations. AFI 32-7064 establishes the INRMP as the principal tool for managing natural resources on Air Force installations.

Other applicable guidance includes AFI 32-7065, *Cultural Resources Management*

Installation-Specific Policies (including State and/or Local Laws and Regulations)	
Policy	***Specific Measures***
Saylor Creek Range Withdrawal Act	Withdrawal of Saylor Creek Range to the Air Force for military training purposes
Juniper Butte Range Withdrawal Act	Withdrawal of Juniper Butte Range to the Air Force for military training purposes
Settlement Agreement Resolving Claims Over United States Air Force Composite Wing and Proposal for Enhanced Training In Idaho	Settlement agreement to address environmental conservation and natural and cultural resource management issues arising from military operations and facilities development under the proposed Enhanced Training in Idaho
Cooperative Agreement for the Protection, Development and Management of Fish and Wildlife Resources at Saylor Creek Air Force Range	Provides for fish and wildlife management on the Saylor Creek Range

Installation-Specific Policies (including State and/or Local Laws and Regulations)	
Policy	***Specific Measures***
between USAF, USFWS, and IDFG	
Memorandum of Understanding between Owyhee, Elmore, and Twin Falls County Sheriff's Offices and 366th Security Forces Squadron (MHAFB, Idaho) for Response to MHAFB Range Complex	Provides for cooperative law enforcement between local county sheriff offices and MHAFB on the MHAFB Range Complex

1.4 Integration with Other Plans

INRMP revisions and concurrence with the final plan must be coordinated through the installation chain of command, the 366th Fighter Wing Environmental, Safety, and Occupational Health Council (ESOHC), the MHAFB natural resources manager, and the installation Civil Engineer. The Natural Resources Manager must ensure that the INRMP, the CRP, the MHAFB General Plan, the ICRMP, the BASH, the IPMP, WFMP, Grounds Maintenance contract and AICUZ studies, and any other plans that may affect natural resources, are mutually supportive and not in conflict.

The INRMP is a dynamic document that integrates all aspects of natural resource management with each other and with the rest of the installation's mission. Its goals and objectives must be given consideration early in the planning process for projects and mission changes on MHAFB. For the INRMP to be an effective planning document, all appropriate MHAFB staff, offices, flights, and other groups will be made aware of the INRMP and refer to it early in the planning stages of all construction projects and proposed mission changes that could affect natural resource management and the goals and objectives of this plan.

This INRMP was prepared in concert with several other land use and natural resource planning efforts at MHAFB. These documents are referenced throughout the INRMP and include:

- the Comprehensive Range Plan (MHAFB, 201110d)
- the Mountain Home Air Force Base General Plan (MHAFB, 2010f)
- the Integrated Cultural Resources Management Plan (ICRMP) (MHAFB, 2011)
- the Bird-Aircraft Strike Hazard Reduction Plan (MHAFB, 201709a)
- the Installation Pest Management Plan (MHAFB, 2017a)
- the Wildland Fire Management Plan, (MHAFB, 201707g)
- the Air Installation Compatible Use Zone (AICUZ) Study (MHAFB, 1998)
- the Conservation Program Manual (USAF ACC, 2004)
- MHAFBI 32-7003, Range Standard Operating Procedures, (MHAFB, 2010e)

1.4.1 Comprehensive Range Plan

The CRP provides guidance for the planning, operations, management, safety, equipment, facilities, and security of Air Force ranges in accordance with AFI13-212, Range Planning and Operations (USAF 2007b). The INRMP has been coordinated with MHAFB Range functions and the Range Manager, who is

responsible for producing the CRP. CRPs must include management practices and implementation of applicable regulations and policy when they interface with military operations. Range operations must be in compliance with applicable environmental requirements and within the scope of all relevant environmental analyses, including existing management actions or mitigations required. Each INRMP will be written in accordance with AFI32-7064 to support current and future known mission requirements identified in the CRP and will be amended as mission requirements change significantly (USAF, 2007b).

1.4.2 Mountain Home Air Force Base General Plan

The MHAFB General Plan (Base General Plan) identifies the essential characteristics and capabilities of MHAFB and its properties and assesses the potential for future growth and development (MHAFB, 2010f). The Base General Plan was completed in part to help guide future growth at MHAFB. The Base General Plan is intended to facilitate the orderly development of the base as it fulfills its existing and future missions, consistent with physical, environmental, and regulatory constraints.

The plan includes:

- a general vision for development at the installation;
- descriptions of various elements of the installation and the surrounding community;
- an assessment of constraints and opportunities for future development;
- descriptions of various infrastructure, land use, and transportation components; and
- a proposed capital improvement program.

1.4.3 Integrated Cultural Resources Management Plan

The MHAFB ICRMP is a five-year plan to integrate the planning and conduct of MHAFB military mission activities, along with real property and land use decisions, at the base and its ranges, with legal requirements for historic preservation (MHAFB, 2011). The ICRMP addresses compliance with the National Historic Preservation Act and other laws, regulations, and Executive Orders relative to the management of cultural resources while conducting federal and state mission objectives.

1.4.4 Bird/Wildlife Aircraft Strike Hazard Plan

The BASH Plan covers bird/wildlife management activities to minimize potential aircraft strikes, such as habitat management and wildlife relocation. ***See section 7.12 for more information*

1.4.5 Integrated Pest Management Plan

The IPMP plan is designed to provide safe, effective, and economic control of pest problems at MHAFB (MHAFB, 2017). The IPMP is reviewed annually by the ACC Pest Management Professional, and updated requirements are incorporated as necessary.

1.4.6 Wildland Fire Management Plan

The WFMP describes and provides control methods for wildland fires. MHAFB WFMP would be used as a guide to control undesirable species and reduce the risk of uncontrolled wildland fires during fire season and airshows. Wildland fires shape wildlife habitat and may be used to control invasive species; in this way, the objectives of the WFMP can directly support the BASH program and are closely related to the goals of the INRMP. ***See section 7.9 for more information*

1.4.7 Air Installation Compatible Use Zone Study

The AICUZ program is an extensive analysis of the effects of aircraft noise, aircraft accident potential, and land use development upon present and future neighbors of MHAFB. ***See section 2.4.3 for more information*

1.4.8 Conservation Program Manual

The Conservation Program Manual (CPM) is an ACC manual. The CPM is an installation program managers' guide to the conservation program, project management, and execution (USAF ACC, 2004). It specifically addresses the responsibilities of the Program Manager (PM) and is a comprehensive guide that addresses typical duties and situations.

1.4.9 MHAFB Instruction 32-7003, Range Standard Operating Procedure

This MHAFB Instruction 32-7003, Range Standard Operating Procedure document defines the requirements for personnel assigned to or attached to MHAFB and all contractors working on MHAFB to protect the natural and cultural resources of SCR, JBR, emitter and ND sites and associated public lands throughout southern Idaho (MHAFB, 2010e).

1.4.10 Idaho State Wildlife Action Plan (SWAP)

In addition to the Air Force specific plans described above, the MHAFB also considers other landscape-scale plans in the natural resources conservation efforts. The IDFG is in the process of a comprehensive review and revision of the Idaho State Wildlife Action Plan (SWAP) (formerly known as the 2005 Idaho Comprehensive Wildlife Conservation Strategy (ICWCS)). For the 2015 revision, IDFG created plans for each of Idaho's 14 ecological sections. The process used allowed for assessment of status/condition (species or habitats), identifying and prioritizing critical threats, and prioritizing conservation actions—all essential components of the SWAP.

The SWAP allows an opportunity for IDFG to provide effective and visionary leadership in wildlife conservation. The SWAP identifies the measures to be used, the results achieved, and the threats and needs that remain with regard to wildlife and wildlife habitat. It is also an opportunity to address broader issues and programs, including environmental and wildlife-related education, outdoor recreation, and wildlife-related law enforcement. These other areas can constrain, or enhance, wildlife conservation efforts, and funding and public support for wildlife conservation can be enhanced by involving partners that share those interests. A good example of areas enhanced by partners is that of wildlife monitoring (IDFG, 2015).

Wildlife monitoring is intended to determine long–term trends of species and habitats, and evaluate the efficacy of conservation actions to provide information used in an adaptive management framework. Successful monitoring is a huge undertaking that will require coordination among conservation partners, consideration of current monitoring efforts, sound monitoring design, probability statistics, information management systems, and principles of adaptive management. Monitoring efforts must continually be reviewed and updated at MHAFB.

Adherence to the SWAP also supports guidance aimed at federal lands inclusive of Air Force installations. The Sikes Act requires the Secretary of Defense to carry out a program to provide for the conservation and rehabilitation of natural resources on lands used for military mission activities.

In summary, the purpose of the SWAP is to be an effective, long-lasting blueprint for conservation that provides a broad vision and priorities, so a broad array of organizations, including government agencies and nongovernment organizations, can help realize the vision.

1.4.11 Strategic Habitat Conservation in Idaho Plan

The Idaho Fish and Wildlife Office (IFWO) of the USFWS is also engaged in a landscape scale planning effort. The Service strives to apply the best available science in its planning and decision-making processes and as a tool to measure conservation success. This planning effort applies the Service's Strategic Habitat Conservation (SHC) approach to implement a science-based, adaptive process to conservation efforts. The SHC process will employ all of the IFWO's tools to conserve and protect healthy and sustainable ecological processes within the four selected landscapes addressed in the Strategic Habitat Conservation in Idaho (USFWS 2016c).

This plan focuses efforts at landscape scales to successfully address conservation challenges such as changing land use and climate. Limited resources and capacity are focused on smaller areas representing landscapes of compelling conservation concern. In doing so, the IFWO's aim is to target areas of sufficient size to better address ecosystem health; conserve "landscape species" such as greater sage-grouse and salmonids; address the growing landscape-scale threats associated with climate change (e.g., drought, plant invasions, altered fire frequency); and growing and changing resource use: wind, solar, oil, and gas development, urbanization and a growing human population. This approach:

- Is flexible to allow for the consideration and adoption of the priorities of partners;
- Draws from existing conservation and management plans, (e.g., Recovery Plans, State Wildlife Action Plan, and Rapid Ecoregional Assessments, etc.), to identify and prioritize conservation actions;
- Encourages development of strong and supportive collaboration with partners; and
- Facilitates the pooling of resources to accomplish selected actions and monitoring efforts.

One of the four priority landscapes within the Strategic Habitat Conservation in Idaho plan, the Owyhee Uplands Priority Landscape, overlaps with the southern half of the MHRC.

1.4.12 National Seed Strategy for Rehabilitation and Restoration

The 2015 - 2020 National Seed Strategy for Rehabilitation and Restoration is national in scope and engages both Federal and non-Federal partners working together toward habitat restoration on public, tribal, state, municipal, and private lands. The Strategy recognizes the importance of healthy native plant communities as an essential foundation for ecosystem integrity and diversity. It encourages the use of the right seed at the right place at the right time through the use of genetically appropriate seed to restore viable and productive plant communities and sustainable ecosystems.

1.4.13 Value of Partnerships and Collaborative Resource Planning Partnerships

Partnership is defined as a process by which two or more organizations with shared interests act as a team to achieve mutually beneficial goals. MHAFB undertakes management of its lands with a number of federal, state, local, and public partners. Land management issues do not stop at property boundaries, but instead have an encompassing ecosystem dimension. All agencies are tied by policy to an ecosystem

management approach to land management. Cooperative relations among other land management agencies foster regional approaches to dealing with stewardship issues that provide benefits beyond what could be achieved by each agency separately.

Federal Agencies

MHAFB partners with other federal agencies for natural resources management support, including:

- U.S. Department of Interior, U.S. Fish and Wildlife Service – provides information and technical assistance in areas of plant, wildlife and ecosystem management on MHAFB proper and its properties;
- U.S. Department of Interior, Bureau of Land Management –administers application of grazing on SCR and rights-of-way for MHRC components and provides technical assistance for ecosystem and landscape scale management of resources;
- U.S. Geological Survey - an independent fact-finding agency that collects, monitors, analyzes and provides scientific data about natural resource conditions, issues, and problems;
- U.S. Department of Agriculture, Wildlife Services - provides technical assistance regarding BASH and wildlife issues;
- U.S. Department of Agriculture, Natural Resources Conservation Service – provides technical assistance for natural resources and agricultural practices;
- Other DoD agencies furnishing input to MHAFB's natural resources management plans.

Conservation representatives of federal agencies furnishing professional advice and technical assistance under this plan will be allowed access to the installation, in accordance with appropriate arrangements.

Although the development and maintenance of each of the above plans occurs under individual authorities and schedules, the substantive elements of these plans must be integrated into this INRMP and be complementary to INRMP objectives. Each of these plans work hand in hand being mutually supportive, enabling better sustainability of the natural resources occurring on the MHAFB and its Geographically Separate Units (GSUs). Together, these plans enable more agencies and organizations to work together to protect, sustain, and enhance ecosystem integrity through proactive management, conservation, stewardship, and outreach in order to support present and future military missions and readiness at the highest possible level of efficiency. A brief description these plans is provided below.

Public Involvement, Agency Coordination, and Tribal Consultation

The INRMP will reflect the mutual agreement of the US Fish and Wildlife Service (USFWS) and the Idaho Department of Fish and Game (IDFG) concerning the conservation, protection, and management of fish and wildlife resources and federally listed threatened and endangered species. (AFI 32-7064).

2.0 INSTALLATION PROFILE

Office of Primary Responsibility	366 th FW CEIE has overall responsibility for implementing the Natural Resources Management program and is the lead organization for monitoring compliance with applicable federal, state and local regulations
Natural Resources Manager/POC	Name: Hodge A. Echeverria Phone: 208-828-1784 Email: hodge.echeverria@us.af.mil

USFWS MHAFB Liasion	
State and/or local regulatory POCs (For US-bases, include agency name for Sikes Act cooperating agencies)	**US Government** U.S. Fish and Wildlife Service Idaho Fish and Wildlife Office 1387 South Vinnell Way, Room 368 Boise, Idaho 83709 Telephone: (208) 378-5243 Website: https://www.fws.gov/idaho/ Bureau of Land Management Idaho State Office 1387 South Vinnell Way Boise, Idaho 83709 Telephone: (208) 373-4000 Website: http://www.blm.gov/id/st/en.html **State of Idaho** Idaho Department of Fish and Game Headquarters P.O. Box 25 Boise, Idaho 83707 Telephone: (208) 334-3700 Website: http://fishandgame.idaho.gov/
Total acreage managed by installation	MHAFB = 6,844 acres SAR = 4,622 acres Rattlesnake Radar Station = 1 acre Middle Marker = 21 acres CJ Strike Dam Recreation Annex = 3 acres Bald Mountain = 49 acres Blue Butte Communication Site = 7 acres Saylor Creek Range = 109,466 acres Juniper Butte Range = 12,141 acres ND Targets = 921 acres Emitter Sites = 425 acres Grasmere Electric Combat Site = 7 acres TOTAL = 134,507 acres
Total acreage of wetlands	Jurisdictional Wetlands = 0 acres Non-jurisdictional Wetlands = 3 acres
Total acreage of forested land	No forested land acreage
Does installation have any Biological Opinions? (If yes, list title and date, and identify where they are maintained)	"Biological Opinion on the Effects of USAF Ongoing Actions at JBR and in Owyhee County, Idaho on the Slickspot Peppergrass" completed October 2010 and maintained at MHAFB, Idaho and the Idaho Fish and Wildlife Office, USFWS, Boise, Idaho

	USFWS letter acknowledging the adequacy of the October 2010 ongoing MHAFB actions Biological Opinion to also include effects of the 2012 MHAFB INRMP on slickspot peppergrass dated April 20, 2012 and maintained at MHAFB, Idaho and the Idaho Fish and Wildlife Office, USFWS, Boise Idaho
NR Program Applicability (Place a checkmark next to each program that must be implemented at the installation. Document applicability and current management practices in Section 7.0)	☑ Invasive species ☑ Wetlands Protection Program ☑ Grounds Maintenance Contract/SOW ☐ Forest Management Program ☑ Wildland Fire Management Program ☑ Agricultural Outleasing Program ☑ Integrated Pest Management Program ☑ Bird/Wildlife Aircraft Strike Hazard (BASH) Program ☐ Coastal Zones/Marine Resources Management Program ☑ Cultural Resources Management Program

2.1 Installation Overview

2.1.1 Location and Area

Mountain Home Air Force Base (MHAFB)

MHAFB is located approximately 50 miles southeast of Boise, Idaho, and 8 miles southwest of Mountain Home, Idaho. For purposes of this document, MHAFB includes the SAR, as well as Rattlesnake Radar Station, Middle Marker, and C.J. Strike Dam Recreation Annex (C.J. SDRA) (Figure 2-1).

The 6,844 acres of MHAFB includes all of Sections 20, 21, 22, 27, 28, 29, 32, 33, and 34 as well as 10 acres of Section 19 in Township 4 South, Range 5 East. Roughly, 60 acres of the Base extend into Section 19 in Township 5 South, Range 5 East. A chain-link fence defines the perimeter of MHAFB.

Buildings, roads, runways, and facilities cover between 20 and 25 percent of the land (Figure 2-2). The most intensively developed areas are located in the central and northeastern portions of the Base. Landscaped and disturbed areas account for another 25 percent of MHAFB. The remainder of the lands range from open, undeveloped fields to partially disturbed areas separating buildings and facilities. The periphery of the Base contains the least development.

Small Arms Range (SAR)

SAR is located 1 mile north of MHAFB and consists of 4,622 acres; 1,622 acres of land withdrawn from public use and 3,000 acres of land leased from the State of Idaho. In 1962, SAR included a maximum of 6,681 acres. Since that time, the size of the range has been reduced substantially. SAR is located at 3,000 feet above MSL and is gently sloping toward the Snake River. The SAR occupies all of Sections 28, 32,

and 34 in Township 3 South, Range 5 East, and portions of Sections 27, 29, and 34 in Township 3 South, Range 5 East; all of Section 4, and portions of Sections 3, 5, 9, and 10 in Township 4 South, Range 5 East.

The SAR is used for small arms training. The SAR includes predominantly open, undeveloped land (Figure 2-3). Development on the SAR includes a parking area, classroom building, firing line shelter, observation tower, and a set of large earthen berms. This complex is located in the southeastern part of the SAR and affects 8 to 10 acres. An area encompassing approximately 190 acres in the southeast portion of Section 4 has been used for unexploded ordnance (UXO) disposal. Past activities included the use of a proficiency range for the Explosive Ordnance Disposal Flight (EOD), which involved the detonation of unexploded practice ordnance spotting charges. Fences, disked areas, and dirt roads occur in and around the SAR. Many of the fences and roads predate USAF use of the SAR. The USAF acquired the SAR in 1943.

Remote Sites

Remote sites are small offsite locations operated by MHAFB. These sites are Rattlesnake Radar Station, Middle Marker, and C.J. Strike Dam Recreation Annex (C.J. SDRA). These areas have few resources and will only be discussed in the body of this document if a resource category exists or management action is slated for these sites.

Rattlesnake Radar Station

Rattlesnake Radar Station is an electronic control station located in Section 26, Township 2 South, Range 7 East (Figure 2-1). The one-acre chain-link fenced site contains a maintenance facility, concrete pad, and microwave antenna. Prior to construction, the area was leveled and 3 to 10 feet of fill were added.

Middle Marker

The Middle Marker site is located west of the runway at MHAFB in Section 19, Township 4 South, Range 5 East. This 21-acre site contains a road and a fenced area with an Instrument Landing Systems Building, ceilometers (cloud sensors), and antennae supports (Figure 2-1). Large dirt and rubble piles are found in the surrounding area, approximately 20 to 30 yards away.

C.J. Strike Dam Recreation Annex (C.J. SDRA)

C.J. SDRA was established in 1958 and is used as an outdoor recreational facility for MHAFB personnel. Leased from Idaho Power Company, the facility is in the Snake River Canyon located approximately 8 miles southwest of MHAFB in the northern part the C.J. SDRA (Section 34, Township 5 South, Range 4 East). The C.J. SDRA is located in the vicinity of several wildlife management areas, including the Morley Nelson Snake River Birds of Prey National Conservation Area (NCA) (0.5 mile south), the C.J. Strike Wildlife Management Area (0.5 mile west), and the Trueblood Wildlife Management Area (12 miles east). Lands within four miles of the C.J. SDRA are primarily used for agriculture including potatoes, wheat, sugar beets, and livestock production. The C.J. SDRA is approximately 600 feet long by 85 feet wide for a total of 3 acres (Figure 2-1). Aerial photographs from 1982, 1984, and 1989 suggest that this area was cleared of vegetation and probably scraped and filled during construction of facilities in 1982.

Mountain Home Range Complex (MHRC)

MHRC encompasses many properties throughout Owyhee County (with one site in Twin Falls County), including SCR, JBR, ND targets, emitter sites, and Grasmere EC site.

Saylor Creek Range (SCR)

SCR is located in Owyhee County in southwestern Idaho, approximately 20 miles southeast of MHAFB (Figure 2-4). All of SCR is located in Township 7 S, R7 E, Sections 1-36; All of T7 S, R8E, Sec 1-36; T8S, R7 E, Sections 1-5, 8-17, 20-29, and 32-36; T8S, R8E Sections 1-36, T9S, R7E, Sections 1-5, 8-17, and portions of 24, 25, and 36; T9S, R8E, Sections 1-18 and portions of 19, 20, 29, 30, 31, and 32. The public use area of SCR, the 109,466-acre range, is located in the relatively flat upland of the Inside Desert at an average elevation of 3,700 feet MSL.

This area is bordered on the north by the broad Snake River Canyon and on the west by Clover Creek, which flows within the deeply incised East Fork Bruneau Canyon. The Bruneau River flows past SCR to the west. Several low buttes (Pence Butte, Pot Hole Butte, and Saylor Cap) and several intermittent drainages (Pot Hole Creek, West Fork of Brown's Creek, East Fork of Brown's Creek, Loveridge Gulch, and Big Draw) running north provide topographic relief. Low rim-rock and talus slopes can be found in the upper reaches of these drainages. With the exception of the 12,200 acre EUA located in the center of the withdrawn area, livestock grazing is permitted on SCR lands and is under the management of the BLM. The EUA is fenced and has a 100-foot-wide, bare-ground firebreak that is maintained around its perimeter.

Juniper Butte Range (JBR)

JBR is located approximately 25 miles southeast of SCR in Owyhee County, Idaho. JBR occupies portions of Sections 31, 32, and 33 in Township 12 South, Range 10 East; portions of Sections 35 and 36 in Township 12 South, Range 9 East; all of Sections 5, 6, 7, 8, 9, 16, 17, and 18, and portions of Sections 4, 19, 20, and 21 in Township 13 South, Range 10 East; all of Sections 1, 12, and 13, and portions of Sections 2, 11, 14, 23, and 24 in Township 13 South, Range 9 East. The 12,141-acre range is located in gently rolling uplands of the Inside Desert with an elevation that ranges from 4,680 feet MSL to 5,410 feet MSL. The area is bordered to the east by the East Fork Bruneau Canyon in which flows Clover Creek. JBR is bounded on the southern edge by Juniper Butte. Juniper Draw, an ephemeral channel which flows infrequently through the eastern one-third of the range provides topographic relief with low rim-rock borders (Figure 2-5). The southern boundary of JBR is approximately 15 miles from the Nevada State line.

No-Drop Targets (ND targets)

The five fenced ND targets are used for simulated ordnance delivery. No live ordnance is used on any of the ND targets. Four of the ND targets are five acres each, and consist of simulated surface-to-air missiles, simulated early-warning radar, and two small simulated industrial complexes. One ND target is a 640-acre fenced area containing life-size, simulated battle tanks and other vehicles. Township, Range, and Sections for these sites are shown in Table 2-1 and Figures 2-1.

TABLE 2-1 - ND Target Locations

Emitter and Size (Acres)	TRS*	Quad	Elevation (Feet)
ND-1 (640)	T. 9 S., R. 6 E., Sec 21	Broken Wagon Flat and Table Butte	3,740
ND-4 (5)	T. 12 S., R. 4 E., Sec 14	Grasmere	5,290
ND-5 (5)	T. 11 S., R. 4 E., Sec 23	Grasmere	5,180
ND-7 (5)	T 12 S., R. 9 E., Sec 19	Clover Butte South	4,900
ND-9 (5)	T 13 S., R. 4 E., Sec 14	Grasmere Reservoir Quad	5,740

*TRS Town, Range, and Section

Emitter Sites

Electronic emitter sites simulate enemy threats; 29 emitter sites are established in Owyhee County and one in Twin Falls County. Table 2-2 provides the emitter site locations. Twenty sites are 1/4-acre each, consisting of a gravel, unfenced parking area designed to support temporary use. The other 10 sites are one-acre each and contain one 400-square-foot building approximately 15 feet in height. The one-acre emitter sites are fenced and graveled. On average, five to eight emitter sites are used each weekday.

Grasmere Electric Combat (EC) Site

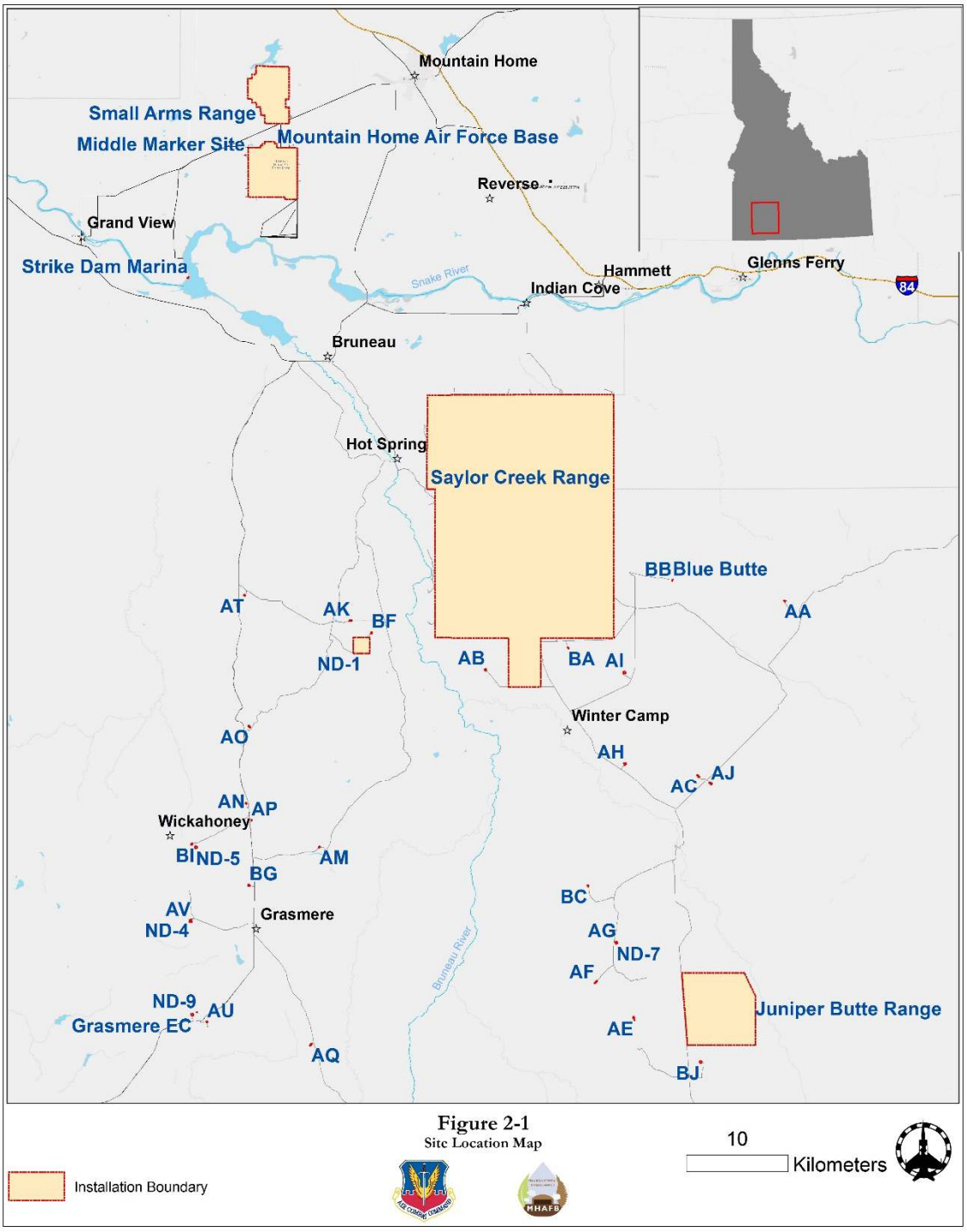
Grasmere EC site, located near Grasmere, Idaho, is approximately 65 miles southwest of MHAFB in Section 14, Township 13 South, Range 4 East. Grasmere EC site is a seven-acre complex that contains six solar panels, five permanent buildings consisting of: watch crew, battery, generator, garage/shop, and pump house facilities, two water tanks, one 5000-gallon fuel tank, one 150-gallon diesel tank, one 250-gallon diesel tank, several concrete pads for different facilities, a graveled road, radio tower, several radar pads, antenna masts, six temporary trailers, communications building, and two sheds.

TABLE 2-2 - Emitter Site Locations

Emitter and Size (acres)	TRS*	Quad	Elevation (feet)
AA (.25)	T.9 S., R. 10 E., Sec 2	Notch Butte	3,960
AB (.25)	T. 9 S., R. 7 E., Sec 26	Winter Camp	3,980
AC (.25)	T. 10 S., R. 9 E., Sec 36	Crows Nest Butte	4,355
AD (.25)	T. 12 S., R. 9 E., Sec 35	Juniper Butte	4,990
AE (.25)	T. 13 S., R. 9 E., Sec 17	Clover Butte South	5,000
AF (.25)	T. 13 S., R. 8 E., Sec 2	Clover Butte South	4,870
AG (.25)	T. 12 S., R. 9 E., Sec 19	Clover Butte South	4,885
AH (.25)	T. 10 S., R. 9 E., Sec 30	Hodge Station	4,315
AI (.25)	T. 9 S., R. 9 E., Sec 31	Hodge Station	4,280
AJ (.25)	T. 10 S., R. 9 E., Sec 36	Crows Nest Butte	4,410
AK (.25)	T. 9 S., R. 6 E., Sec 8	Broken Wagon Flat	3,720
AL (.25)	T. 9 S., R. 6 E., Sec 21	Table Butte	3,770

Emitter and Size (acres)	TRS*	Quad	Elevation (feet)
AM (.25)	T. 11 S., R. 5 E., Sec 24	Blackstone Reservoir	4,928
AN (.25)	T. 11 S., R. 5 E., Sec 8	Grasmere	5,048
AO (.25)	T. 10 S., R. 5 E., Sec 17	Wickahoney Crossing	4,830
AP (.25)	T. 11 S., R. 5 E., Sec 17	Grasmere	5,030
AQ (.25)	T. 13. S., R. 5 E., Sec 25	Buster Butte	5,250
AT (.25)	T. 9 S., R 5 E., Sec 5	Hole in Rock	3,700
AU (.25)	T. 13 S., R. 4 E., Sec 13	Grasmere Reservoir	5,800
AV (.25)	T. 12. S., R. 4 E., Sec 14	Grasmere	5,290
BA (1.0)	T. 9 S., R. 8 E., Sec 22	Pot Hole Butte	4,915
BB (1.0)	T. 8 S., R. 9 E., Sec 34	Black Butte West	4,207
BC (1.0)	T. 12 S., R. 8 E., Sec 2	Clover Butte North	5,080
BD (1.0)	T. 15 S., R. 6 E., Sec 21	Black Leg	5,680
BE (1.0)	T. 14 S., R. 10 E., Sec 29	Mosquito Lake Butte	5,540
BF (1.0)	T. 9 S., R. 6 E., Sec 15	Crowbar Gulch	3,782
BG (1.0)	T. 12 S., R. 5 E., Sec 5	Grasmere	5,160
BI (1.0)	T. 11 S., R. 4 E., Sec 23	Grasmere	5,260
BJ (1.0)	T 13. S., R. 9 E., Sec 36	Juniper Butte	5,460
BK (1.0)	T. 8 S., R. 13 E., Sec 7	Crows Nest NE	3,600

Notes: *TRS Town, Range, and Section


Mountain Home
Small Arms Range
Middle Marker Site
Mountain Home Air Force Base
Reverse
Grand View
Strike Dam Marina
Snake River
Hammett
Indian Cove
Glenns Ferry
84
Bruneau
Hot Spring
Saylor Creek Range
BBBlue Butte
AA
AT
AK
BF
ND-1
AB
BA
AI
Winter Camp
AO
AH
AC
AJ
AN
AP
Wickahoney
BI
ND-5
AM
BG
AV
ND-4
Grasmere
BC
AG
ND-7
AF
Bruneau River
ND-9
AU
Grasmere EC
AQ
AE
Juniper Butte Range
BJ
Figure 2-1
Site Location Map
10
Kilometers
Installation Boundary

This page intentionally left blank

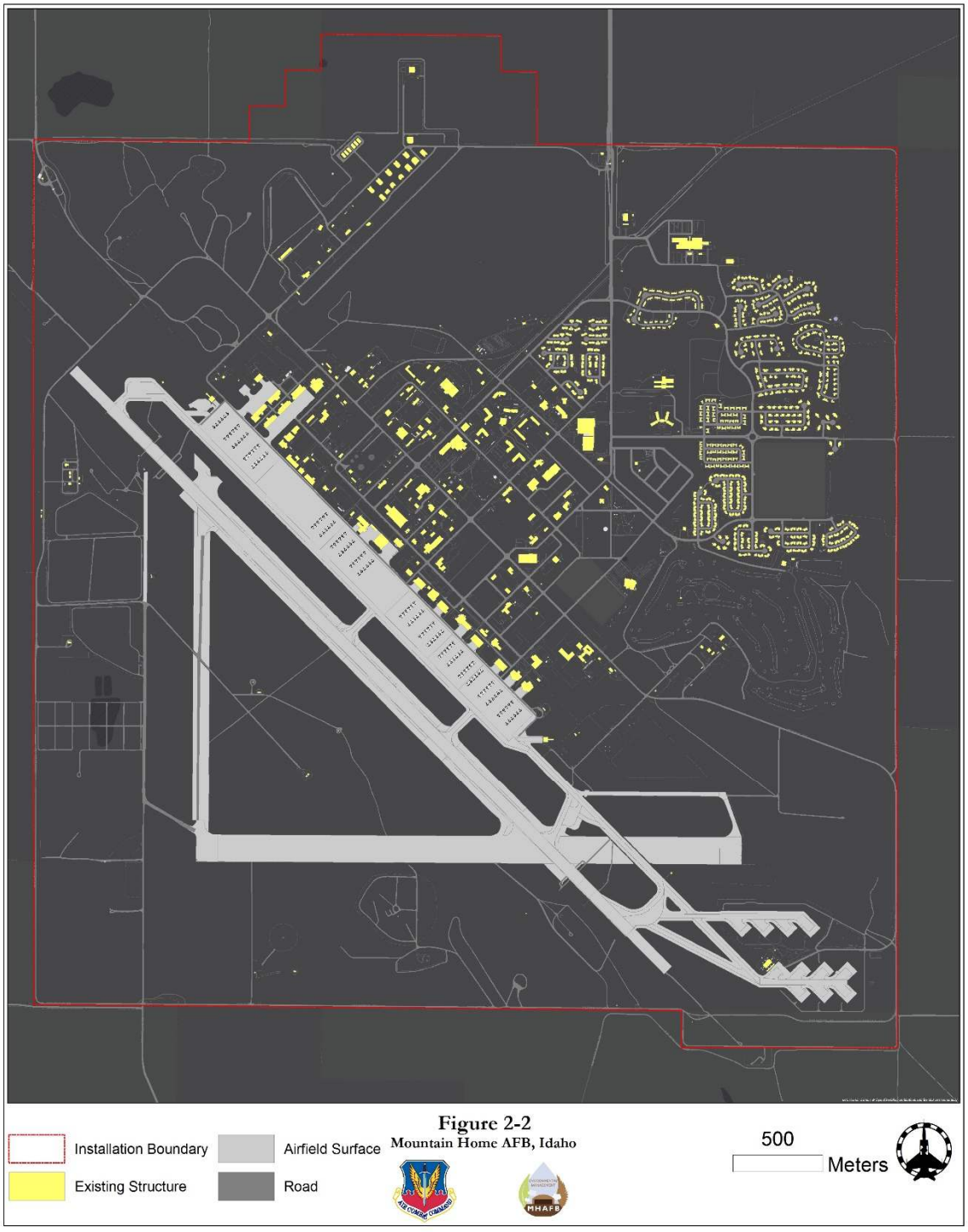


Figure 2-2
Mountain Home AFB, Idaho

This page intentionally left blank

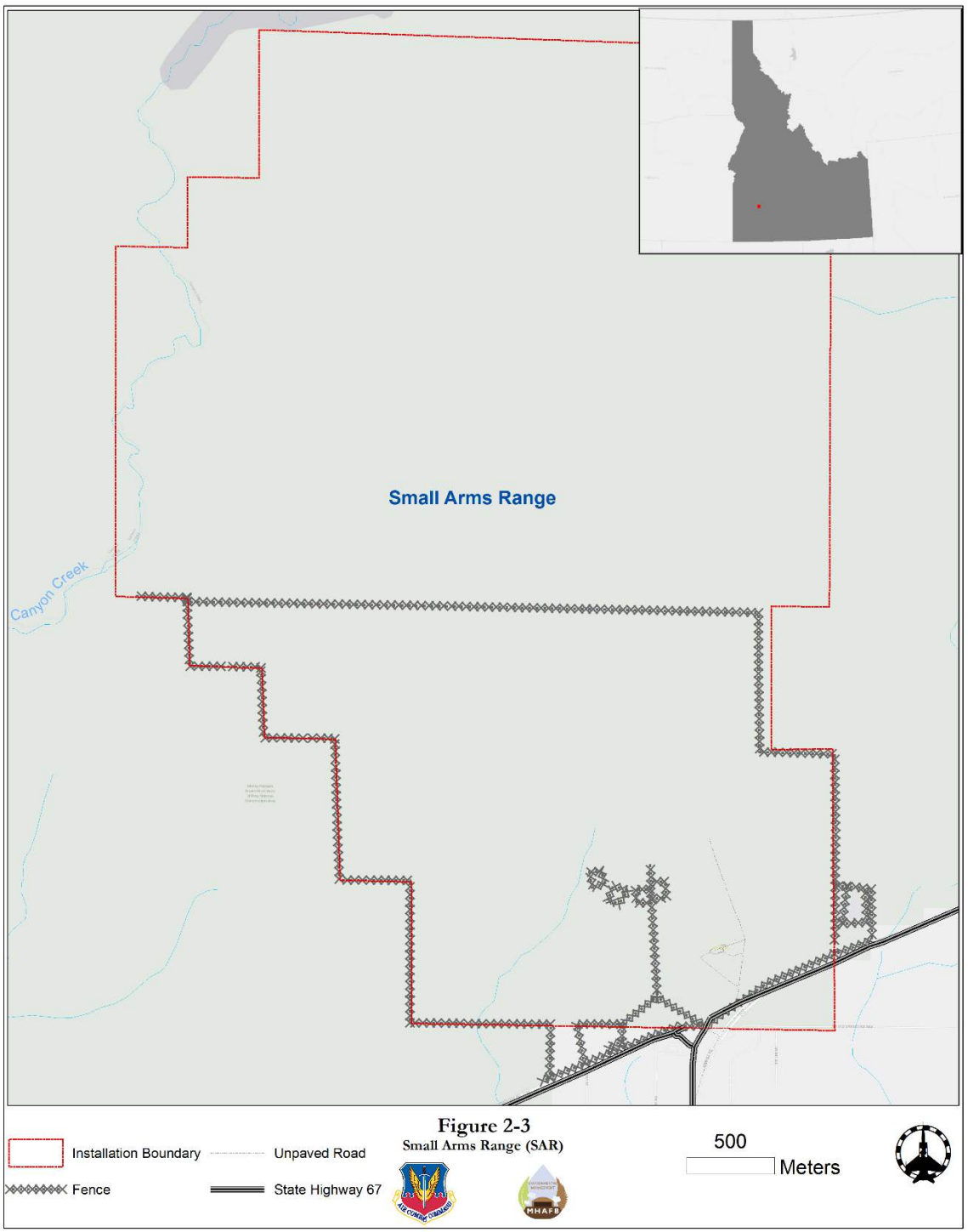


Figure 2-3
Small Arms Range (SAR)

This page intentionally left blank

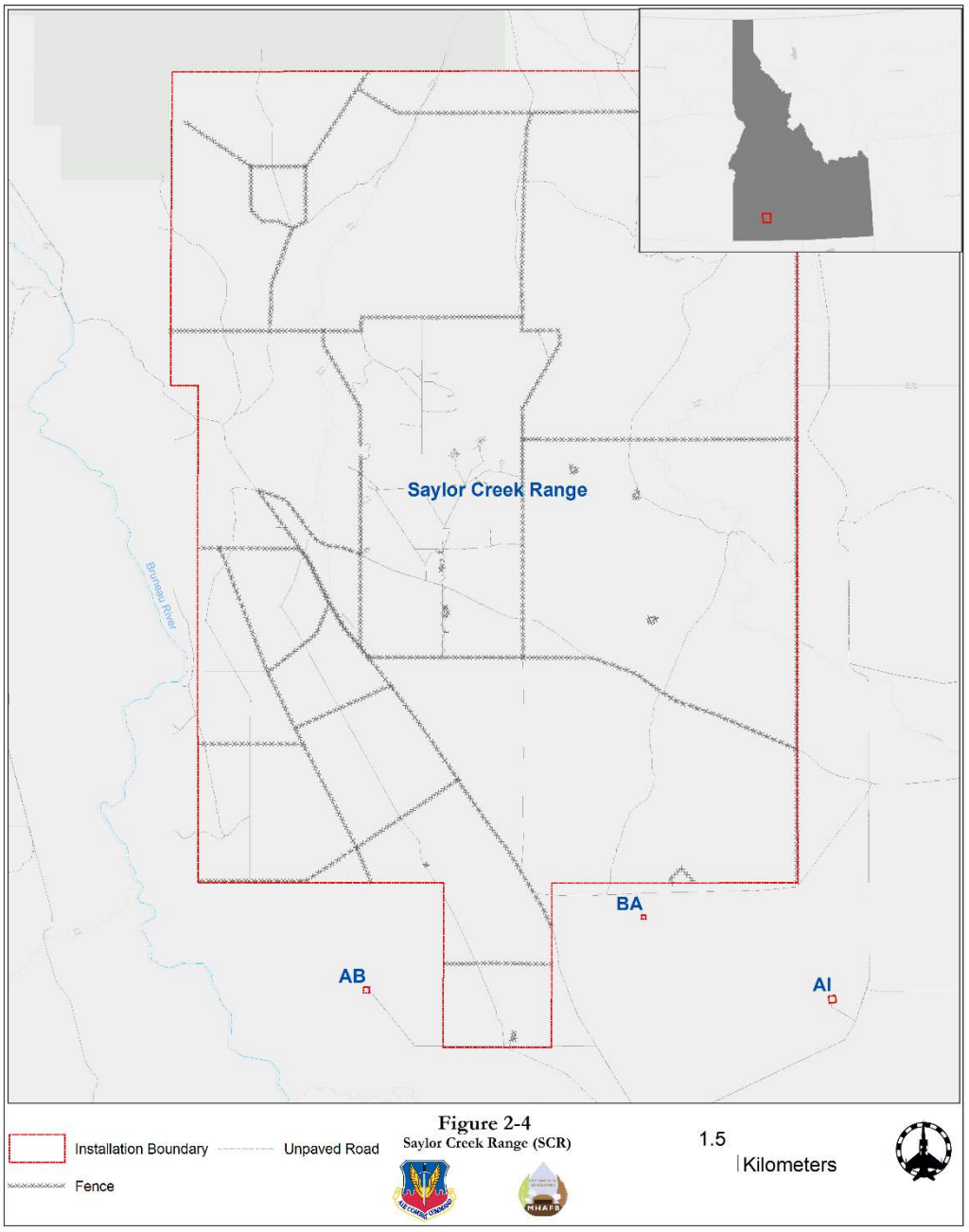


Figure 2-4
Saylor Creek Range (SCR)

This page intentionally left blank

Figure 2-5
Juniper Butte Range (JBR)

Installation/GSU Location and Area Descriptions

Base/GSU Name	Main Use/Mission	Acreage	Addressed in INRMP?	Describe NR Implications
Mountain Home Air Force Base	Military training and housing	6,844	Yes	Fish and Wildlife; T&E and Species of Concern; Land Management; Invasive Species; Wetlands; Recreational and Educational Outreach; BASH
Small Arms Range	Small arms training	4,622	Yes	Fish and Wildlife; Land Management; Invasive Species; Wildland Fires
Rattlesnake Radar Station	Military training	1	Yes	Fish and Wildlife; Land Management; Invasive Species; Wildland Fires
Middle Marker	Military training	21	Yes	Fish and Wildlife; Land Management; Invasive Species; Wildland Fires BASH
C.J. Strike Dam Recreation Annex	Outdoor recreation facility for military families	3	Yes	Fish and Wildlife; T&E and Species of Concern; Land Management; Invasive Species; Wetlands; Recreational and Educational Outreach; Wildland Fires
Saylor Creek Range	Military training	109,466	Yes	Fish and Wildlife; T&E and Species of Concern; Land Management; Wetlands; Invasive Species; Wildland Fires; BASH
Juniper Butte Range	Military training	12,141	Yes	Fish and Wildlife; T&E and Species of Concern; Land Management; Wetlands; Invasive Species; Wildland Fires; BASH
ND Targets	Military ordnance delivery training	921	Yes	Fish and Wildlife; T&E and Species of Concern; Land Management; Invasive Species; Wildland Fires; BASH
Emitter Sites	Military training	425	Yes	Fish and Wildlife; T&E and Species of Concern; Land Management; Invasive Species; Wildland Fires; BASH
Grasmere Site	Military training	7	Yes	Fish and Wildlife; T&E and Species of Concern; Land Management; Invasive Species; Wildland Fires; BASH
Bald Mountain	Military Training	49	Yes	Fish and Wildlife; Land Management; Invasive Species; Wildland Fires
Blue Butte	Military Training	7	Yes	Fish and Wildlife; Land Management; Invasive Species; Wildland Fires

2.1.2 Installation History

MHAFB

The land under MHAFB was undeveloped prior to construction of the Air Force Base. MHAFB was established in 1943 to provide U.S. Army Air Corps bombardment training during World War II. At the end of World War II, the Base was deactivated. Between 1943 and 1992, MHAFB changed missions and commands several times, including two deactivations, from 1945 to 1948 and 1950 to 1951. MHAFB was reactivated as a Strategic Air Command (SAC) installation in 1949. The Tactical Air Command (TAC) assumed control of the Base and SCR in 1966. In 1992, Air Combat Command (ACC) assumed control of both MHAFB and SCR. SCR was initially established as a 420,000-acre site for training bombers and pursuit aircraft for World War II.

The Base Realignment and Closure (BRAC) commission's recommendations became law on 9 November 2005 in accordance with the Defense Base Closure and Realignment Act of 1990 (P.L. 101-510) as amended (USAF ACC, 2006a). The 366 FW at MHAFB received 18 F-15E aircraft and lost 18 F-15C/D and 18 F-16 aircraft to other bases. The 389 FS and 390 FS were inactivated. The Low Altitude Navigation and Targeting Infrared for Night (LANTIRN) intermediate maintenance shop was relocated to Hill AFB, UT. Modifications were made to buildings 205, 273, 277, 278, 840, and 1363. There were 463 manpower positions lost. Use of the MOAs decreased by 30% and the use of chaff decreased 30%.

MHAFB evaluated the effect of a Foreign Military Sales (FMS) squadron within the 366 FW for 5 to 20 years (USAF ACC, 2007a). The beddown of the RSAF included 10 F-15SG aircraft, 179 RSAF personnel, and 128 support personnel. The beddown resulted in an increase in airfield operations and sortie operations in nearby Restricted Areas, MOAs, and military training routes; however, total sorties remained below pre-BRAC levels. A total of 13 construction, modification, or infrastructure improvements projects were completed.

ERP sites OT-16, SD-27, and SS-29 were remediated and declared UU/UE (USAF ACC, 2006b). These sites were remediated by soil excavation and off-site disposal with mechanical separation and off-site disposal of debris and scrap at two sites. The ERP sites were declared UU/UE because they did not pose a risk to future residents and met the criteria for no further action.

At LF-23, coal ash from the central heating plant was disposed of by spreading into the landfill area. Part of LF-23 has been excavated and the material disposed of off base. Additional sampling was conducted to provide a risk assessment on the remaining material and condition of the site. Land, use restrictions have been imposed.

A wastewater reuse permit was obtained from Idaho Department of Environmental Quality in 2003 and renewed in 2009 and 2016 to allow land application of wastewater on 100.8 acres of the Golf Course grounds and 1.34 acres on the Wastewater Treatment Plant grounds.

The MHAFB has been undergoing a phased replacement of military family housing since 1995. The purpose is to bring MHAFB housing up to USAF housing standards and to create a variety of dynamic, livable communities that have a strong sense of neighborhood identity and foster a sense of home. The military family housing units, which were not in compliance with current USAF housing standards and/or that were structurally deteriorated beyond economical repair, were being demolished and replaced. The end state on housing is currently 844 units, most of which are fairly new. A number of military family housing units and dorms have been renovated. A new temporary living facility (TLF) was constructed in 2008/2009.

Most of the housing units that were replaced were demolished and the new housing was built in areas where housing previously existed. Some new housing was constructed in areas previously not developed. These new units are much more energy efficient than the old housing, so the overall resource consumption (water, electricity) by residents on the Base decreased. This new housing also incorporates more low-water use landscapes than were previously utilized on the Base.

TABLE 2-3
Military Family Housing Changes

Year Finished	Phase	Units Built	Units Demo'd
1997	1	56	52
2002	2	60	60
2002	3	46	46
2005	4A	56	50
2005	4	95	100
2007	5	153	186
2008	6	147	272
2009	7	171	158
2009	Renovate Eagle View	12	0
2015	Eagle View	0	60
2019*	Renovate (Privatization) Gunfighter Circle	3	0
2015	Privatization	60	172 + TLF
Total		844	1,381

*estimated completion date (subject to change)

The final housing phase constructed under Privatization, brings military family housing up to current standards. The 172 housing units demolished under Privatization were not in compliance with current USAF housing standards and/were structurally deteriorated beyond economical repair. The 60 housing units constructed under Privatization replaced units constructed from 1959 through 1971. Three of the structures demolished were eligible for the National Register of Historic Places because they were designed by architect Richard J. Neutra. These structures have been mitigated and were demolished under Privatization (MHAFB, 2011).

Other construction and demolition projects on MHAFB since 2004 include:

- Main Gate and Visitor's Center Facilities
- Grand View Gate Facilities
- Replacement Production Well
- Base Operations Building
- Military Working Dog Vet Clinic
- Military Working Dog Kennels
- Indoor Running Track

- 726 ACS Facilities
- Small Engine Shop/Office
- OSI Offices
- FTD Annex
- Combat Arms Simulator
- Red Horse Airborne Readiness Warehouse
- Repair Airfield Taxiways and Ramps
- Update utilities (electrical, water, wastewater, and storm sewer)
- Tank 1A Demolition
- Demolish Horse Stables
- New TLF
- MHRC

The Air Force changed the airspace boundaries of the Military Operations Areas (MOAs) in the MHRC for MHAFB (MHAFB, 2008b). The project resulted in a lateral expansion of the previous Paradise MOA airspace, and a vertical increase by lowering the floor of the airspace in the Paradise MOAs. The lateral area of the MOAs increased by 29%. The floor of the Paradise MOAs were lowered from 14,500 feet above mean sea level (MSL) to 10,000 feet MSL or 3,000 feet above ground level (AGL), whichever is higher. This action added approximately 16,985 cubic nautical miles (NM) of training airspace. The overall change in training airspace volume was an increase of 34% (MHAFB, 2008b).

SCR

In 1942, the Army established Saylor Creek Bombing Range (now SCR). In 1944, principal training was conducted at the Saylor Creek Gunnery Range and four associated Precision Bombing Ranges in southwestern Idaho. The Precision Bombing Ranges were returned to the public domain in 1959 and the 400,000-acre gunnery range was reduced to its present size of approximately 110,000 acres in the early 1960s. After the war, SCR continued to train reconnaissance aircraft, transport wing, and bombers. During the 1960s, changes in tactics and technology permitted the Air Force to return approximately 310,000 acres to the public lands. The remaining approximately 109,466 acres now comprises SCR.

Under a set of public land orders, the land within SCR is withdrawn from all forms of appropriation under public land laws, including mining and mineral leasing laws (Public Land Order (PLO) 1027, 1954; PLO, 3192, 1963; PLO, 4902, 1970). These lands are reserved for the use of the Air Force. Overall management and use of the withdrawn lands are the responsibility of the Air Force, including prevention and suppression of range fires, clean up of ordnance, and land rehabilitation.

The PLOs (see section 14, Appendix E) provide for management of grazing of SCR outside the EUA by the BLM. They also permit the Air Force to enter into agreements with the BLM for fire suppression and reseeding. The BLM or other federal and state employees are permitted to enter the withdrawn lands on official business after obtaining clearance from MHAFB.

SCR has been used since 1954 for training activities including artillery, air-to-air and air-to¬-ground gunnery, napalm delivery, precision bombing, and tactical air-to-ground reconnaissance.

2.75-inch rockets were approved for use on SCR in 2007 to provide effective, efficient, and realistic training for the IDANG (MHAFB, 2007b). 2.75-inch rockets are used during training for the A-10 and AH-64 aircrews to be proficient in the ability to mark targets for striking aircraft, deconflict airspace above target areas, and mark combat search and rescue locations. This provides the opportunity for

combined arms training and joint air attack training with the close air support aircraft in coordinated attacks, which provides real-world training and the experience and coordination to effectively protect ground assets or destroy priority targets. As many as 2,500 rockets could be released each year. Because of its potential to start fires, the M156 White Phosphorus munitions will only be used during low-fire-risk periods (outside of fire season).

The allowed munitions for the 2.75-inch rockets are:

- 500 M156 White Phosphorus munitions
- 300 M257 Illumination and M278 IR Illumination munitions
- 900 MK61 and WTU-1/B training ordnance
- 200 M267 MPSM (Multi-purpose Sub-Munitions training ordnance
- 600 M374 PD (point detonating) Smoke Signature training ordnance.

Construction projects on SCR since 2004 include:

- Close Air Support (CAS) permanent observation points
- Relocate 120 CCD targets
- Relocate 54 Urban CAS Targets
- Construct conventional bombing circle
- Install Airfield Tower Target
- Establish new tank target
- Remove trailers
- Install Simulated Personnel Targets
- Two new buildings at the West gate
- Construct Joint Terminal Attack Controller (JTAC) Building

JBR

Congress established JBR with the Juniper Butte Withdrawal Act (JBWA) in 1998 in order to augment the existing SCR and enhance the 366th Fighter Wing's ability to conduct realistic training close to MHAFB. Ranching and grazing were the primary activities in the JBR area from the late 19th to the late 20th centuries. Ranchers settled in some of the well-watered locations, although population density in this region was, and remains, low. Traditionally, the approximate 12,000 acres of JBR were used by modern ranchers, hunters, primitive recreational users, and Native Americans from the Duck Valley Indian Reservation.

Construction projects on JBR since 2004 include:

- CAS permanent observation points
- Expand emitter site AD
- Extend livestock water pipeline through SW pasture
- Install Simulated Personnel Targets (bucket-heads)
- South SAM site converted to Threat Emitter site
- Livestock water and fire suppression reservoir constructed
- 2 new targets added

ND Target and Emitter Sites

The land use on and near these sites varies, but has included grazing, hunting, recreational use, and gravel pit development. The one 640-acre ND target, four 5-acre ND targets, ten one-acre emitter sites, and eighteen of the twenty 1/4-acre emitter sites are wholly surrounded by BLM or state lands. One ND target site, ND-9, is located on private land surrounded by BLM land. The ND targets, except ND-9, and one-acre emitter sites are withdrawn for Air Force use. The 1/4-acre sites are used by the Air Force through a BLM rights-of-way (ROW) agreement.

Grasmere EC Site

The historical uses for Grasmere EC site prior to Air Force use included grazing, recreation, and hunting. Traditionally, Grasmere EC site was used by modern ranchers, hunters, primitive recreational users, and Native Americans from the Duck Valley Indian Reservation.

Other MHRC Sites

Projects on other MHRC components since 2004 include:

- Datalink Radio Towers for "B" Sites
- Classroom building at SAR
- ND-4 and ND-5 targets were repainted
- A cement pad and communications building were added at “BB” site to support new microwave installation.

2.1.3 Military Missions

MHAFB

The Air Force’s mission is to provide decisive combat power worldwide, on demand. MHAFB is home to the 366th Fighter Wing and is an important element of the Air Force mission. The aircraft assigned to MHAFB are F-15E Strike Eagles. The Gunfighters also have a long-term partnership with the Republic of Singapore Air Force (RSAF). RSAF train their aircrews at MHAFB to operate F-15SG aircraft as the 428th Fighter Squadron. The Idaho Air National Guard’s (IDANG) 266th Range Squadron (RANS) is stationed at MHAFB and operates the electronic combat elements on the MHRC. The 124th Wing of the Idaho Air National Guard (IDANG) use the MHRC for training. The IANG is stationed at Gowen Field, Boise, Idaho. They operate A/OA-10 aircraft. Other squadrons at MHAFB include the 398th Fighter Squadron, the 391st Fighter Squadron, and the 726th Air Control Squadron. The 366th Fighter Wing provides integrated combat air power, responds rapidly to contingency taskings. The logistic components managed by MHAFB produce a well-trained, global force.

MHRC

The MHRC is the crown jewel of the 366th Fighter Wing. The emitter sites, ND targets, and ranges provide a variety of realistic, excellent training scenarios necessary for the highly advanced, state-of-the-art training missions that are essential to promoting superior air power.

SCR

SCR is a day/night multi-use Class A/B/C air-to-ground and electronic combat training range complex located 25 nautical miles (NM) southeast of MHAFB. The range is 109,466 acres with 12,840 acres designated as the impact area. The impact area is a 3 NM x 6 NM area oriented north to south located within Restricted Area R-3202. There are approximately 143 targets with 87 capable of being ground

scored. Target types include simulated vehicles, airfield, aircraft, petroleum tanks, convoys, main battle tanks, urban village targets, surface-to-air missiles (SAM), and anti-personnel targets called "Bucket-heads". Some of the targets can be infrared (IR) heated when requested. Targets can be night lighted using pots or propane mantles. Authorized ordnance is 20MM, 27MM, 30MM, 40MM, 105MM, inert training ordnance (non-explosive) (BDU-33/MK-76), inert heavyweight ordnance (BDU-50/56 &, GBU-10/12/31/32/38) 2.75" Rockets (TP/SSPG/WP) and Laser Guided Training Round (LGTR) (Table 2-4). Additionally, small arms such as 5.56mm/7.62mm are authorized when used in conjunction with Close Air Support training. Inert training ordnance is non-explosive and may or may not contain small spotting charges to facilitate scoring. These are referred to as cold spots and hot spots. Hot spots contain red phosphorus, which ignites with contact with air, producing smoke to mark the location of the ordnance on the target. Cold-spots contain titanium tetrachloride, which reacts with the moisture in the air producing a whitish puff of "smoke." There is no ignition source in a cold spot. Ordnance without a spotting charge is designated as "no-spot." Smoky SAMs and Smoky Guns, which are ground-launched training devices, do not contain spotting charges. SCR has a conventional circle that is night lighted. Chaff/Flare above 700' AGL, and combat lasers are authorized. Smokey SAM and Smokey Gun provide realistic visual training for aircrews. Smokey SAMs mimic a small rocket fired upward and Smokey Guns, aka Anti-Aircraft Artillery (AAA), are similar in effect to a firecracker that produces smoke. SCR has conventional strafe pits and tactical strafe targets that can be scored (MHAFB, 2010e). SCR also has a permitted landfill for non-recoverable and non-hazardous waste.

JBR

JBR is a day/night multi-use Class B/C air-to-ground and EC training range complex located 45 NM southeast of MHAFB. The range is 12,112 acres. Although all 12,112 acres are considered an impact area, targets can only be placed in a 662 acre fenced off area in the center of the range. JBR offers realistic training, in that there is a 360-degree approach angle to any of the targets. The range has 94 targets with 71 capable of being scored. Target types include simulated SAM, weapons/supply storage buildings, petroleum (POL) tanks, railroad cars and battle tanks. Some of the targets are no-drop targets or are limited to one bomb per day, per aircraft. Targets are IR heated by small electrical heaters in the targets. The only authorized ordnance is cold-spot BDU-33. Chaff/flare above 2,000' AGL and combat lasers are authorized. The scoring system at JBR can score the accuracy of laser spots.

Table 2-4

Types of Ordnance Used at SCR

Name of Ordnance	Nickname	Description
5.56 MM / 7.62 MM		Ball Munition, steel round
40 mm	M203 Grenade Launcher	Inert steel round and smoke round
7.62-mm cannon rounds	Sidefire	7.62-mm steel bullets fired from helicopter minigun
20-mm cannon rounds	Strafe	20-mm steel bullets fired from aircraft.
27 mm cannon rounds	Strafe	27-mm steel bullets fired from aircraft
30-mm cannon rounds	Strafe	30-mm steel bullets fired from aircraft.

Name of Ordnance	Nickname	Description
40 mm rounds	AC-130 Sidefire	40-mm steel bullets fired from AC-130
105 mm rounds	AC-130 Sidefire	105-mm inert steel bullet fired from AC-130
2.75 inch rockets		Rocket used for delivery of munitions: M156 White Phosphorus munition M257 Illumination and M278 IR Illumination munition MK61, WTU-1/B training ordnance M267 MPSM training ordnance M274 PD Smoke Signature training ordnance
BDU-33/MK-76	Cold spot	25 lb steel, inert. A spotting charge used for scoring hits on targets, contains titanium tetrachloride, which produces a chemical reaction generating a white puff when exposed to the moisture in air, does not ignite.
BDU-33/MK-76	Hot spot	25 lb steel, inert. A spotting charge that produces smoke and is used for scoring hits on targets, contains red phosphorous that ignites on contact with air.
BDU-50		500 lb steel and concrete, inert
BDU-56		2,000 lb steel and concrete, inert, has a nylon parachute
GBU-12 Inert	Laser Guide Bomb (LGB)	500 lb laser guided, steel and concrete
GBU-10 Inert	LGB	2,000 lb laser guided, steel and concrete
GBU-31 Inert	Joint Direct Attack Munition (JDAM)	2000 lb GPS guided, steel and concrete
GBU-32 Inert	JDAM	1000 lb GPS guided, steel and concrete
GBU-38 Inert	JDAM	500 lb GPS guided, steel and concrete
GTR-18	Smokey SAM	Small rocket fired upward at aircraft to simulate a ground-initiated attack.
PJU-7	Smokey Gun	Similar to a large firecracker, produces a flash and smoke.
Chaff		Metal hairs ejected from a canister that help hide the aircraft from radar.
Flare		Incendiary device dropped from an aircraft that produces heat, bright light, and smoke.

ND Target Sites

There are five ND sites throughout the MHRC used for simulated weapons delivery. ND-4, -5, and -7 are five-acre sites with target types consisting of simulated buildings, petroleum tanks, radar sites and SAM sites. ND-9 is a three-acre site with simulated SAMs only. ND-1 is a 640 acre site with simulated battle tanks, SAMs and ZSU. All ND sites except ND-9 have targets that can be IR heated by propane heaters.

No ordnance is authorized. Only training lasers are authorized. Chaff and flare use is IAW MOA restrictions. ND-4, -5 and -7 have a boundary fence. ND-1 and -9 are not fenced.

Emitter Sites

Electronic emitter sites simulate enemy threats. There are 30 emitter sites established in eastern Owyhee County and one in Twin Falls County. Table 2-2 depicts the emitter sites and locations. Twenty sites cover 1/4-acre each, consisting of a gravel, unfenced parking area designed to support temporary use. The other 10 sites are one-acre each and contain one 400-square-foot building approximately 15 feet in height. The one-acre emitter sites are fenced. On average, five to eight emitter sites are used each weekday. Emitter sites are not continually manned or occupied, but are temporarily manned on a rotational or intermittent basis to support the training mission.

Grasmere EC Site

Grasmere EC provides a 24-hour-a-day capability for electronic combat. The function of Grasmere EC site is to simulate a ground threat to aircraft during training missions. Grasmere EC is utilized as much as the emitter sites are, but is a more permanent, fully manned location

Listing of Tenants and NR Responsibility

Tenant Organization	NR Responsibility
Air Combat Command	Coordinate with the NRM when projects are planned that may impact natural resources (e.g., work orders, AF Form 813s).
366th Fighter Wing 366th Comptroller Squadron Public Affairs Wing Chapel Judge Advocate Inspector General Wing Historican Protocol Equal Opportunity Wing Saftey Command Post	Coordinate with the NRM when projects are planned that may impact natural resources (e.g. work orders, AF Form 813s).

Sexual Assalut prevention and Response Information Protection Plan, Programs, and Inspecitons (XP) 366th Equipment Maintenance Squadron 366th Component Maintenance Squadron 366th Civil Engineer Squadron 366th Communications Squadron 366th Contracting Squadron 366th Force Support Squadron 366th Logistics Readiness Squadron 366th Security Forces Squadron	
389th Fighter Squadron	Coordinate with the NRM when projects are planned that may impact natural resources (e.g. work orders, AF Form 813s).
390th Electronic Combat Squadron	Coordinate with the NRM when projects are planned that may impact natural resources (e.g. work orders, AF Form 813s).
391st Fighter Squadron	Coordinate with the NRM when projects are planned that may impact natural resources (e.g. work orders, AF Form 813s).
428th Fighter Squadron Republic of Singapore	Coordinate with the NRM when projects are planned that may impact natural resources (e.g. work orders, AF Form 813s).
366th Operation Support Squadron 726th Air Control Squadron	Coordinate with the NRM when projects are planned that may impact natural resources (e.g. work orders, AF Form 813s).
266th Range Squadron- Idaho Air National Guard	Coordinate with the NRM when projects are planned that may impact natural resources (e.g. work orders, AF Form 813s).

2.1.4 Surrounding Communities

MHAFB

MHAFB is located approximately 50 miles southeast of Boise, Idaho, and 8 miles southwest of Mountain Home, Idaho. Mountain Home is primarily a rural community with a strong ranching and agri-business economy. Mountain Home is the county seat of Elmore County and had an estimated population of 13,730 as of July 2015 (U.S. Census, 2016). The annual unemployment rate for Elmore County was 5.3 percent in 2014 (Idaho Department of Labor, 2016). MHAFB is the largest single employer in Elmore County, providing employment for approximately 4,500 employees. Mountain Home is close to both mountain and high desert landscapes, with vast areas of open space.

The city of Boise, the capital of Idaho, is located in Ada County and had an estimated population of 218,281 residents in July 2015 (U.S. Census, 2016). Large regional and national companies are headquartered in Boise, including Simplot Corporation, Albertsons, Hewlett-Packard, Micron Technology, and Boise Corporation (formerly Boise Cascade). Boise enjoys a diversified, strong economy. The Ada County annual unemployment rate was 4.1 percent in 2014 (Idaho Department of Labor, 2016). Nestled against the Boise Front Range and flanking the Boise River, outdoor recreation opportunities exist in every season.

Encroachment and Partnering. Encroachment stems from the need to share scarce resources. It is the cumulative impact of pressures placed on military installations and ranges and the surrounding communities and environmental controls resulting from: growing development and urbanization around military facilities; a lack of joint land use planning; increasing requirements/challenges; and competition for air, land, water, energy, radio frequency spectrum, and other resources.

Partnerships with outside agencies and institutions are a beneficial part of good management strategy for encroachment activities on and around MHAFB. Partners can provide technical expertise, volunteer labor, partial funding, and help with outreach activities to the general public. Not only is partnering cost-effective in encroachment strategies, but also promotes a sense of community and understanding between federal installations and the surrounding population when activities are shared and regulated.

Natural resources management at MHAFB can benefit from proper stewardship of resources outside of the installation. Encouraging proper stewardship in neighbors of MHAFB reduces the impacts of public use of natural resources on and around MHAFB. These presentations describe the importance of natural resources and management activities on MHAFB, current partners in natural resources management, and opportunities for the general public to form partnerships with MHAFB for the purpose of natural resources management.

There are no natural resources encroachment issues on MHAFB.

MHRC

The MHRC is mainly located in Owyhee County (with one site located in Twin Falls County), Idaho. Owyhee County is sparsely populated. In July 2015, about 11,310 people were estimated to be living in the 7,666 square miles of Owyhee County (U.S. Census, 2016). This is approximately 1.5 persons per square mile.

2.1.5 Local and Regional Natural Areas

MHAFB and MHRC are located near natural areas of local, regional, and national importance. These natural areas provide opportunities for recreation, as well as supporting habitat for a variety of unique and common flora and fauna. For example, the NCA provides habitat for one of the largest concentration of raptors in North America. Other natural areas, such as C.J. SDRA, provide many recreational activities for local residents, visitors, and Air Force personnel and their families.

MHAFB and Surrounding Area

The lands managed by MHAFB are located near the Snake River, NCA, Bruneau River Scenic Area, and Bruneau Dunes State Park. The Snake River and Snake River Plain are dominant features of southern Idaho. The Snake River is a ribbon of life through this semi-arid environment. It is important for economic reasons (i.e., power generation, water for irrigation), recreation, and cultural resources (i.e., the Oregon Trail, Idaho Centennial Trail). Two ESA-listed snail species, the threatened Bliss Rapids snail and the endangered Snake River physa, occur in cold water non-reservoir habitats of the Snake River. Numerous towns are found along the river and plain. It supports a vast array of natural resources and a portion of this area was designated to protect these resources. C.J. SDRA, located on the Snake River, approximately 16.4 miles south of MHAFB, provides a large reservoir for recreational activities. The C.J. SDRA, located on the north side of the reservoir, is managed by MHAFB for picnicking, boating, and fishing opportunities.

The NCA surrounds MHAFB and the SAR. This designated conservation area was initially established in 1971 with acreage added in 1980. In 1993, Public Law 103-64 was passed by the 103rd Congress establishing the present day NCA. It now contains 600,000 acres of land (485,000 acres public; 65,000 acres private; 39,000 acres state; 1,000 acres military; and 10,000 acres surface water) along the Snake River corridor and adjacent uplands. Currently, 24 raptor species have been identified within the NCA. The NCA was established to:

- Provide for the conservation, protection, and enhancement of raptor populations and habitats.
- Provide for continued and diverse public uses that are consistent with the objectives of protecting raptor populations, conserving and enhancing their habitats, and properly managing other resources and values of the NCA.
- Coordinate research and studies of raptors, raptor prey, and their habitats, demonstrate vegetation and habitat management, as well as enhancement practices and techniques that may be applied elsewhere, and enhance public awareness of, and appreciation for, natural processes and special resources through public education and interpretive programs.

MHRC

SCR

The Bruneau River Canyon is located approximately one mile west of SCR. This scenic canyon was designated as the Bruneau-Jarbidge Rivers Wilderness area in 2009 (Omnibus, 2009). The Bruneau River was designated as a Wild and Scenic River 2009 (Wild and Scenic, 2009). It is used for rafting, fishing, and hiking during the spring and summer. Hunting is also a popular activity in the area. There is a scenic overlook to the steep, narrow canyon located off the Clover Creek Road, which accesses SCR. There are several species with conservation status along the Bruneau River, including the ESA-listed endangered Bruneau hot springsnail. Much of the Bruneau River Canyon is also designated under the ESA as critical habitat for the threatened bull trout. In addition, bald eagles winter along the lower Bruneau River.

Although the bald eagle was removed from the federal list of threatened and endangered species on August 9, 2007, it remains protected under the Bald and Golden Eagle Protection Act of 1940 and by the Migratory Bird Treaty Act (MBTA) of 1918.

To the north of SCR is Bruneau Dunes State Park, containing two small lakes and a landscaped camping area. Hiking, picnicking, fishing, and camping opportunities are provided. This park also protects the Bruneau Dunes tiger beetle (Cieindela arenicola), a BLM Sensitive species. The NCA also borders the north side of SCR (Figure 2-8). BLM Areas of Critical Environmental Concern (ACECs) also occur adjacent to SCR to the west and south of the site (Figures 2-9 through 2-11). The Idaho Centennial Trail crosses through SCR (Figure 2-11).

JBR, ND Targets and Emitter Sites

JBR and associated sites are not located on or adjacent to any local, state, or federally designated natural areas. However, within the BLM's Jarbidge and Bruneau Resource Areas, special use areas include eligible Wild and Scenic Rivers, Wilderness Areas, Special Recreation Management Areas (SRMAs), Wild Horse Herd Management Areas, NCA, and ACECs (Figures 2-9 through 2-11).

In Owyhee County, Wild and Scenic Rivers and Wilderness Areas are found within the Bruneau-Jarbidge River system and Owyhee River system. JBR is located east of the Bruneau-Jarbidge Rivers Wilderness Area and the Bruneau¬-Jarbidge Bighorn Sheep Habitat ACEC (Figures 2-9 and 2-10). The JBR contains slickspot peppergrass, a species listed as threatened under the ESA.

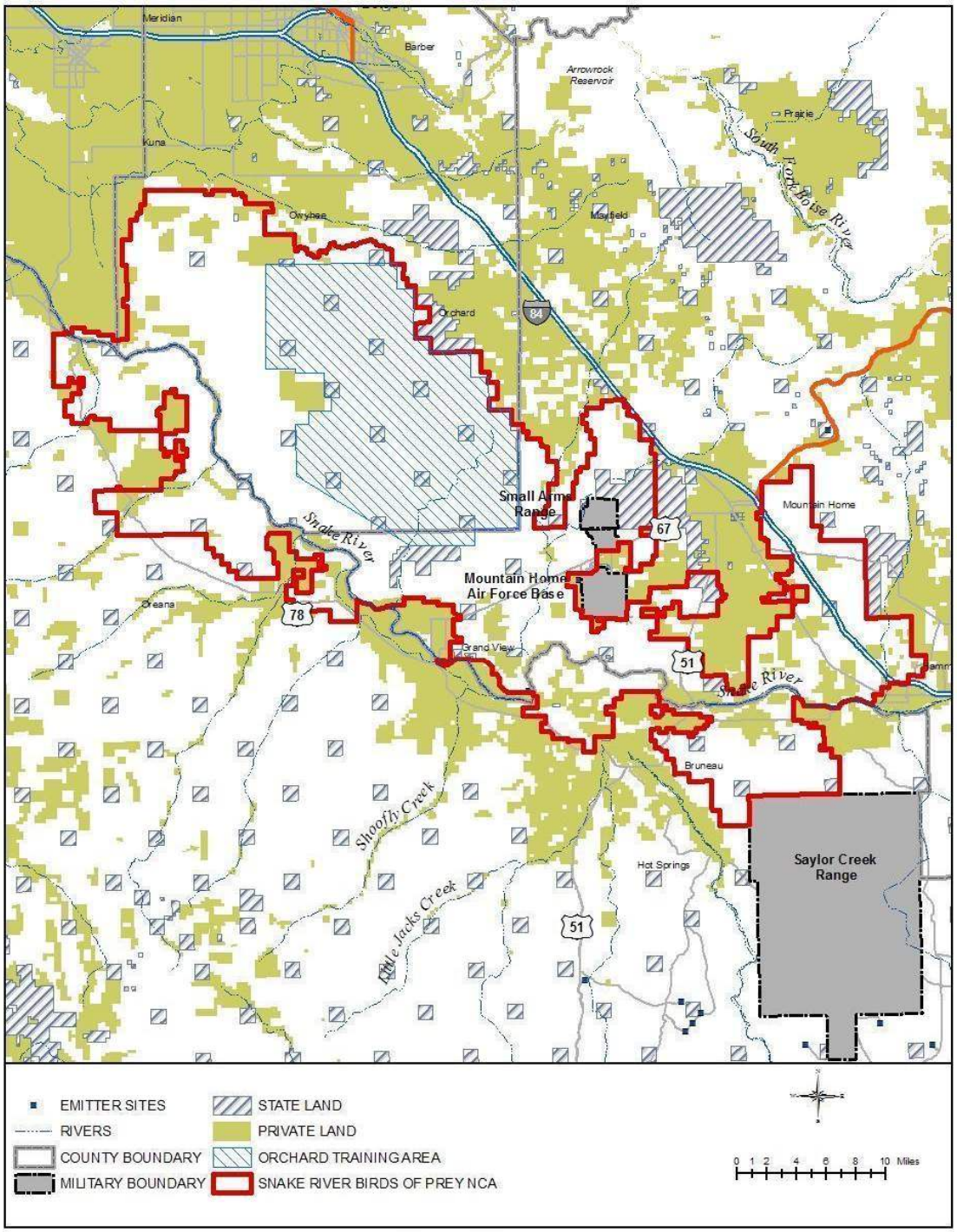


Figure 2-8
Snake River Birds of Prey National Conservation Area

This page intentionally left blank

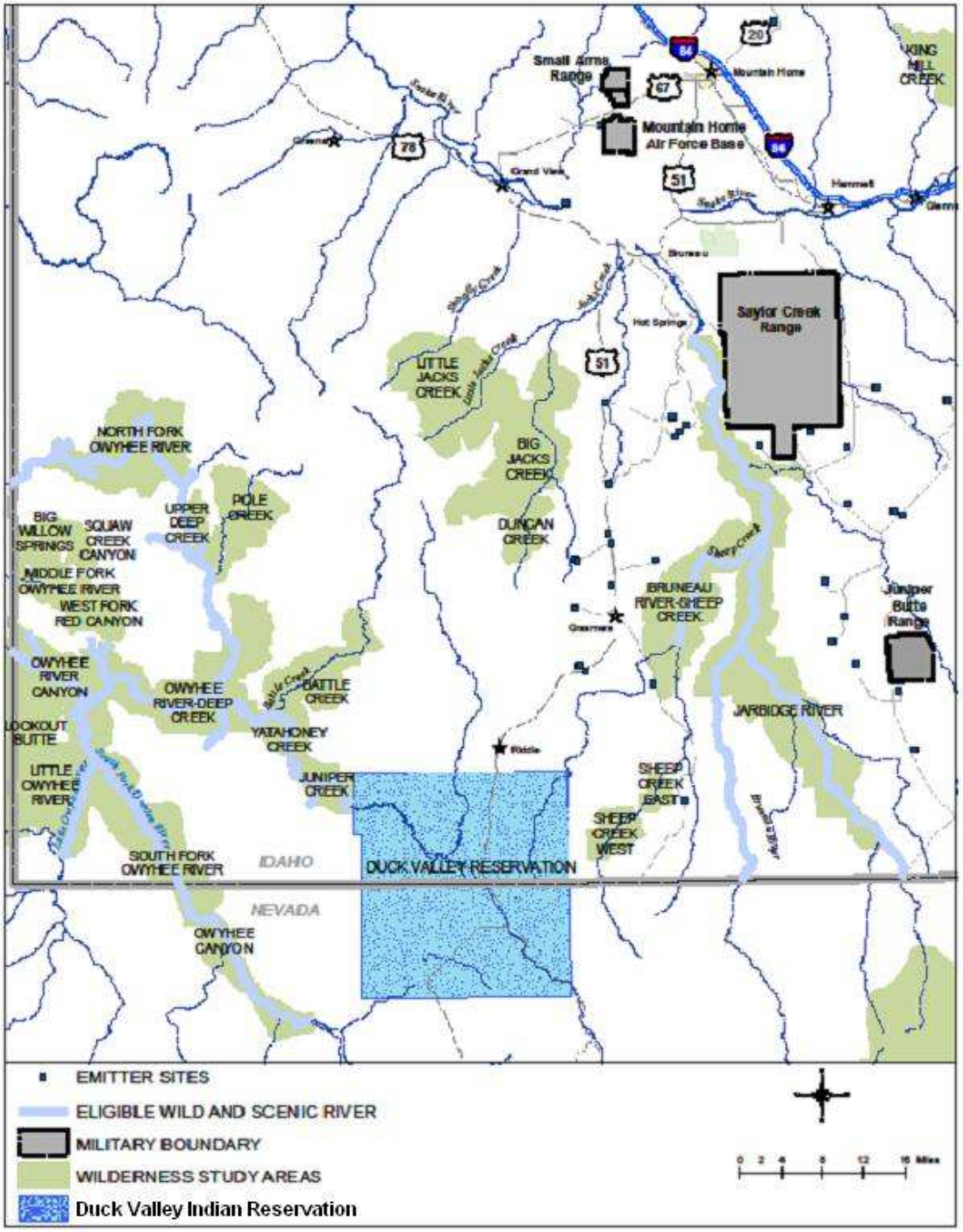


Figure 2-9
Wilderness Study Areas and Wild & Scenic Rivers in the Region

This page intentionally left blank

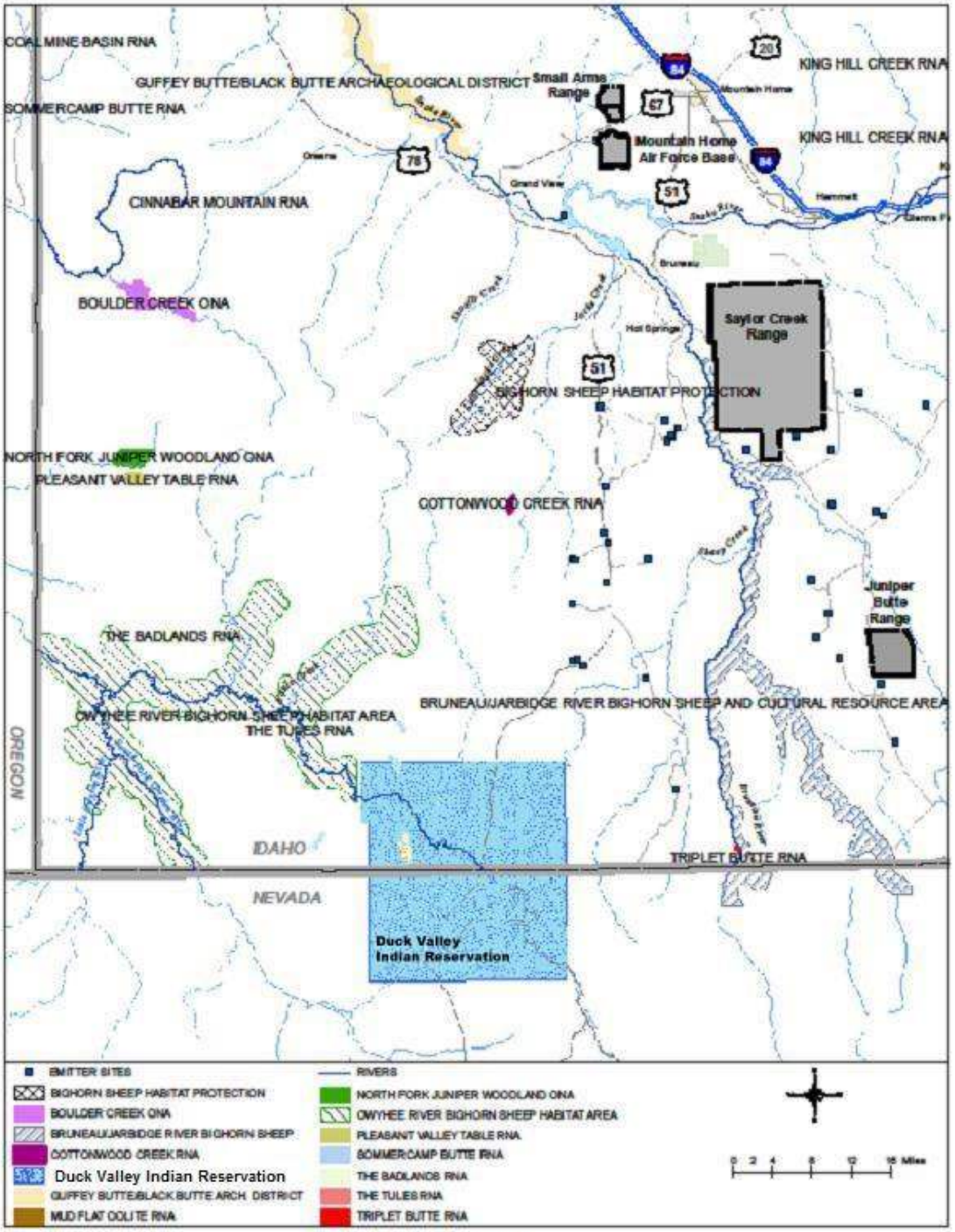


Figure 2-10
Areas of Critical and Environmental Concern and Outstanding Natural Areas in the Region

This page intentionally left blank

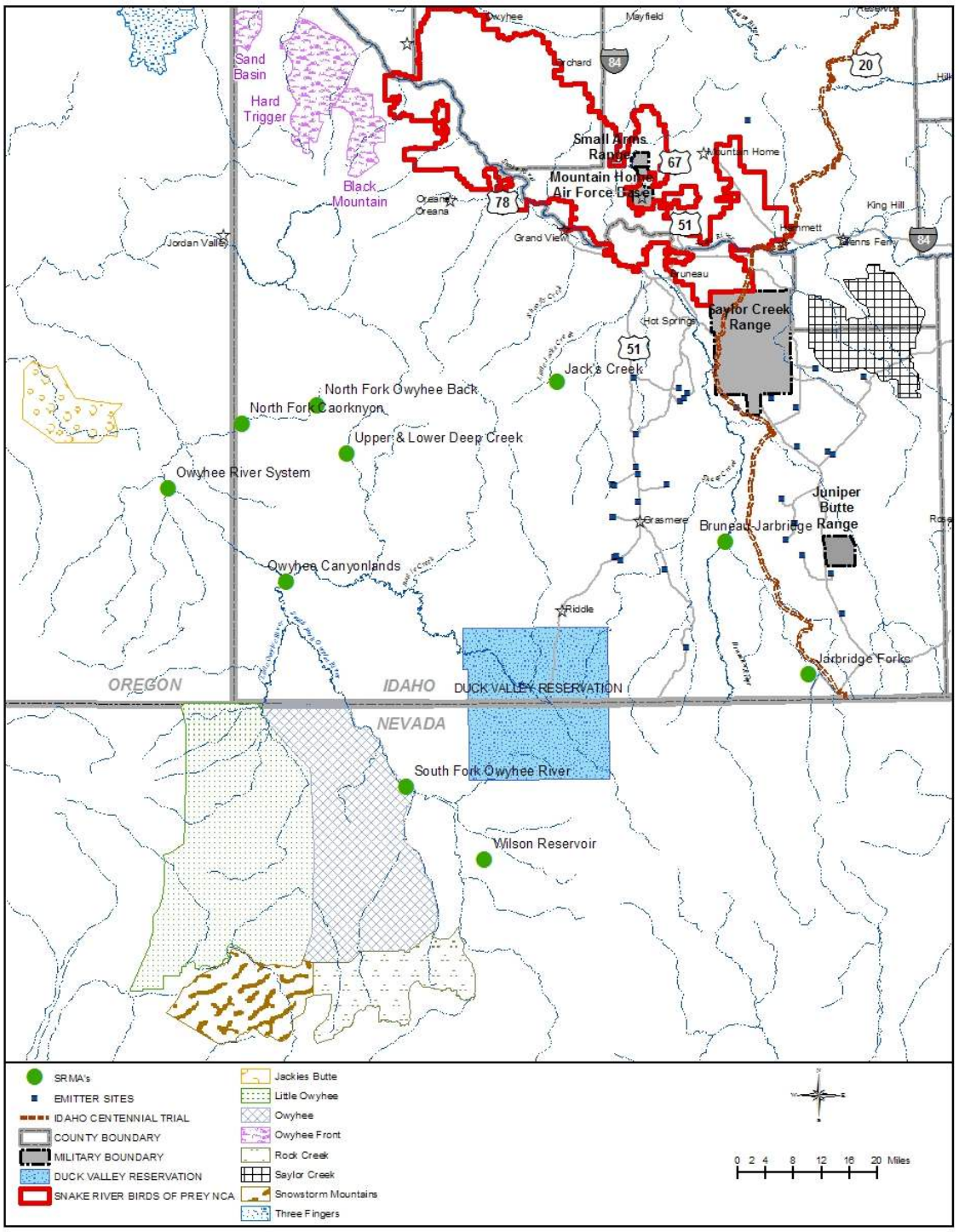


Figure 2-11

Special Recreation Management Areas, Wild Horse Herd Management Areas, Snake River Birds of Prey Natural Conservation Area, and the Idaho Centennial Trail

2.2 Physical Environment

2.2.1 Climate

MHAFB and SAR

The climate in southwestern Idaho is semi-arid. It receives about ten inches of precipitation a year. Most precipitation falls during late fall to early spring. Summers are typically hot and dry with occasional thundershowers. Humidity is low, and winds occur on a regular basis during the day. Winds are predominantly from the northwest, averaging 6 miles per hour (mph) less than 39 percent of the time, and 7 to 15 mph 41 percent of the time.

Day and night temperature fluctuations are large, up to a 35°F difference. During the winter months of December, January, and February, the average temperature is 30° to 35°F with daily minimum and maximum temperatures ranging from 20° to 44°F. The extreme lows reach below zero.

When days become warmer and drier, March through August, average daily temperatures can reach 90°F. However, during August, temperatures may reach as high as 109°F. In the fall, September to November, average temperatures are 50°F during the day and 28°F at night. The growing season usually begins in May when temperatures rise above 40°F and continues through September. The 30-year normal for growing days is 136 (National Oceanic Atmospheric Administration, 1996). Table 2-5 summarizes weather conditions at MHAFB.

Table 2-5

Mountain Home, Idaho (106174) Period of Record Monthly Climate Summary

Period of Record: 02/01/1906 to 06/13/2008

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	37.8	44.4	53.9	63.6	72.8	81.9	92.5	90.6	80.1	67.3	50.1	39.5	64.5
Average Min. Temperature (F)	19.5	23.9	28.5	34.0	41.2	48.2	55.1	52.5	43.5	34.6	26.6	21.1	35.7
Average Total Precipitation (in.)	1.27	0.95	1.03	0.88	0.93	0.72	0.31	0.23	0.49	0.76	1.17	1.24	9.97
Average Total Snowfall (in.)	5.4	3.3	1.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	1.2	3.2	14.5
Average Snow Depth (in.)	1	0	0	0	0	0	0	0	0	0	0	1	0

Notes: F = Fahrenheit, in. = inches.

Percent of possible observations for period of record.

Max. Temp.: 95.4% Min. Temp.: 95.5% Precipitation: 96.2% Snowfall: 90.5% Snow Depth: 86%. Check Station Metadata or Metadata graphics for more detail about data completeness. Source: Western Regional Climate Center, http://www.wrcc.dri.edu.

MHRC

SCR

Precipitation at SCR is similar to the precipitation pattern and amount for MHAFB and for the nearby town of Bruneau, Idaho.

Summers are hot and dry, with precipitation falling predominantly in the late fall, winter, and early spring months. Winds typically blow daily in a bi-modal fashion, blowing either from the southeast or from the northwest. Table 2-6 summarizes weather conditions at Bruneau, which is near SCR.

Table 2 -6.

Bruneau, Idaho (101195) Period of Record Monthly Climate Summary

Period of Record: 12/1/1937 to 7/31/2012

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	40.9	48.6	58.2	66.4	75.54	83.9	93.5	91.9	81.8	68.5	51.8	41.3	66.9
Average Min. Temperature (F)	23.4	26.7	31.2	36.6	44.2	51.1	57.0	54.8	45.8	37.1	29.2	23.1	38.3
Average Total Precipitation (in.)	0.87	0.57	0.74	0.84	0.85	0.84	0.18	0.23	0.42	0.54	0.87	0.74	7.69
Average Total Snowfall (in.)	1.7	0.7	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	1.1	4.2
Average Snow Depth (in.)	0	0	0	0	0	0	0	0	0	0	0	0	0

Notes: F = Fahrenheit, in. = inches.

Percent of possible observations for period of record.

Max. Temp.: 97% Min. Temp.: 95.8% Precipitation: 96.2% Snowfall: 92.5% Snow Depth: 88.2%. Check Station Metadata or Metadata graphics for more detail about data completeness. Source: Western Regional Climate Center, http://www.wrcc.dri.edu.

JBR

Precipitation around JBR may vary from about 8 to 14 inches in any given year. The last ten-year average at the Three Creek Well Weather Station, just south of JBR, shows the majority of the annual precipitation occurs during late fall and spring, with the heaviest rains generally in May. However, 30-year data for the Mountain Home area show the heaviest precipitation falls during the winter months (November to January). Based on field observations, the 30-year data may be more representative of normal rainfall patterns at JBR. The summers are typically hot and dry, with occasional thundershowers. Humidity is low, and winds occur on a regular basis during the day. Winds are predominantly from the west to northwest, and average 6 to 15 mph. Table 2-7 shows climate data representative of JBR.

Table 2-7

Three Creek, Idaho (109119) Period of Record Monthly Climate Summary

Period of Record: 7/1/1940 to 8/31/1987

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	39.2	43.1	46.7	56.0	64.9	73.9	86.2	85.0	75.6	62.7	49.2	41.3	60.3
Average Min. Temperature (F)	11.5	17.0	20.1	25.5	32.0	37.5	42.1	39.6	33.1	25.9	19.8	14.4	26.6
Average Total Precipitation (in.)	0.98	0.83	1.06	1.33	1.83	1.76	0.52	0.55	0.85	1.22	1.00	1.01	12.93
Average Total Snowfall (in.)	14.3	11.1	12.7	7.9	3.7	0.2	0.0	0.0	0.2	3.1	6.9	13.0	73.1
Average Snow Depth (in.)	4	3	2	0	0	0	0	0	0	0	1	3	1

Notes: F = Fahrenheit, in. = inches.

Percent of possible observations for period of record.

Max. Temp.: 87.1% Min. Temp.: 88.2% Precipitation: 92.6% Snowfall: 92.3% Snow Depth: 77.6%. Check Station Metadata or Metadata graphics for more detail about data completeness. Source: Western Regional Climate Center, http://www.wrcc.dri.edu.

Variations up to 40°F occur between day and nighttime temperatures. The average daytime high temperature is approximately 85°F in July and August. Maximum highs reach over 100°F. During the winter, average daily temperatures range between 10°F and 20°F with lows falling to 0°F. The growing season begins in April or May, when temperatures rise above 40°F, and continues through September.

2.2.2 Landforms

MHAFB

MHAFB and SAR are located on the Snake River Plain, which consists of flat to gently rolling hills and plateaus. The elevation of MHAFB and SAR averages 2,900 to 3,100 feet. Approximately 2.5 miles south of MHAFB, the Snake River has developed a 400-foot-deep canyon, which is defined by rimrock in many areas.

MHRC

SCR

SCR is located on a broad, gently sloping plateau, dotted with small, isolated volcanic cones. Elevation ranges between 3,500 feet in the north to 4,200 feet in the south. Pence Butte, near the center of the range, reaches approximately 300 feet above the surface of the plateau. Near the western border, a deep, steep-

walled canyon has been cut by the Bruneau River through many basalt and rhyolite layers. The canyon is approximately 800 feet deep at the scenic overlook.

JBR

JBR is located on a broad, gently rolling plateau, dotted with small, isolated volcanic cones and pressure ridges. Topographic features on the range are dominated by the rise of the volcanic shield of Juniper Butte to the south and the shallow drainage of Juniper Draw along the eastern quarter of the range. Elevations range between 4,800 feet at the bottom of Juniper Draw to 5,300 feet at the base of Juniper Butte. Juniper Draw runs north from the base of Juniper Butte, and connects into the East Fork of the Bruneau River (Clover Creek) Canyon System. It is edged by short basalt cliffs and gently sloping ridges gradually getting steeper and more sharply defined, to the north, along the draw. The bottom of the draw is a wide, flat, rocky streambed. The remainder of the range is dominated by slightly rolling hills dissected by shallow ephemeral drainages.

Other MHRC Components

ND targets and emitter sites are located on a broad, gently rolling plateau, dotted with small isolated volcanic cones and pressure ridges. Emitter sites are generally located on the tops of small ridges or hills, surrounded by slightly lower lands.

2.2.3 Geology and Soils

MHAFB

Much of southern Idaho is characterized by a crescent-shaped, relatively flat, broad swath of the Snake River Plain (Figure 2-12). While the plain has little relief, geologically, it contains distinctive eastern and western parts that differ in structure and geology. MHAFB, including the SAR, lie within the western Snake River Plain. The western Snake River Plain is a northwest-trending structural basin bounded on both the southwest and northeast by high-angle faults (Malde, 1991).

The western Snake River Plain is thought to be an area of crustal rifting that started about 16 million years ago and grew southeasterly until approximately 3 million years ago (Malde, 1991). Early volcanism resulted in thick deposits of rhyolites and basalts.

Approximately eight million years ago, a Lake Ontario-sized body of water, often referred to as “Lake Idaho,” formed in the western Snake River Plain stretching from roughly the present-day Baker, Oregon, to Hagerman, Idaho. This resulted in thick sedimentary deposits of ash, clays, silts, sands, and gravels (Gillerman and Bonnichsen, 1990). It is thought that the lake drained about 2 million years ago near Hells Canyon, linking the Snake River with the Columbia. Subsequently, basalt flows of the Bruneau Formation and Snake River Group (2 to 0.5 million years ago), have done much to shape the current landscape. The remains of several shield volcanoes, cones, and vents can be found near MHAFB (USAF ACC, 1996).

The Snake River Canyon, just south of MHAFB, has taken much of its present-day form since the western Snake River Plain was inundated under Lake Idaho. Basalt flows from the Bruneau Formation and Snake River Groups have altered the course of the river several times by filling the canyon. The present course of the river lies at the southern margin of the flows from the Snake River Group. The Bonneville Flood, a name given to the catastrophic flood from the outflow of Pleistocene Lake Bonneville about 15,000 years ago, scoured the canyon and deposited the large basalt boulders known as melon

gravel. Although there are no outcrops on MHAFB, basalts of the Snake River Group can easily be found in the vicinity (Gillerman and Bonnichsen, 1990).

Soil types on MHAFB and the SAR are shown in detail in Figures 2-13 and 2-14, respectively. Within MHAFB and the SAR, 11 different soil types have been identified. Detailed soil descriptions are included in table format in section 14, Appendix L.

The soils are typical of semi-arid regions, characterized by poor drainage and lack of organic matter. The soils vary in thickness, depending on the location of bedrock and hardpans, but may reach 60 inches in depth. These soil types have a moderate potential for wind and water erosion. The original soils underlying MHAFB have been physically altered (i.e., cut, excavated, or covered) to create large, level areas with high load support capabilities designed to accommodate aircraft and support operations (USAF ACC, 1996).

MHRC

SCR

Soil types on SCR are shown in detail in Figure 2-15.

SCR lies within the western Snake River Plain. Soils on SCR vary widely, with 35 types occurring, but the soil designation of the area is the aridisol order. Soils on the northern portion of SCR, closer to the Snake River, are composed of lake and stream deposits. Much of the range has been covered with recent wind-laid deposits with deep alluvial deposits in depressed areas.

These soils have a low to moderate potential for erosion; while soils in the flat-lying EUA have low erosion potential (USAF ACC, 1996). The EUA is dominated by one soil type, Purdam Silt Loam. Lacustrine sediments from Lake Idaho and old river gravels, often interbedded with basalts and rhyolites, can be found on SCR (Gillerman and Bonnichsen, 1990).

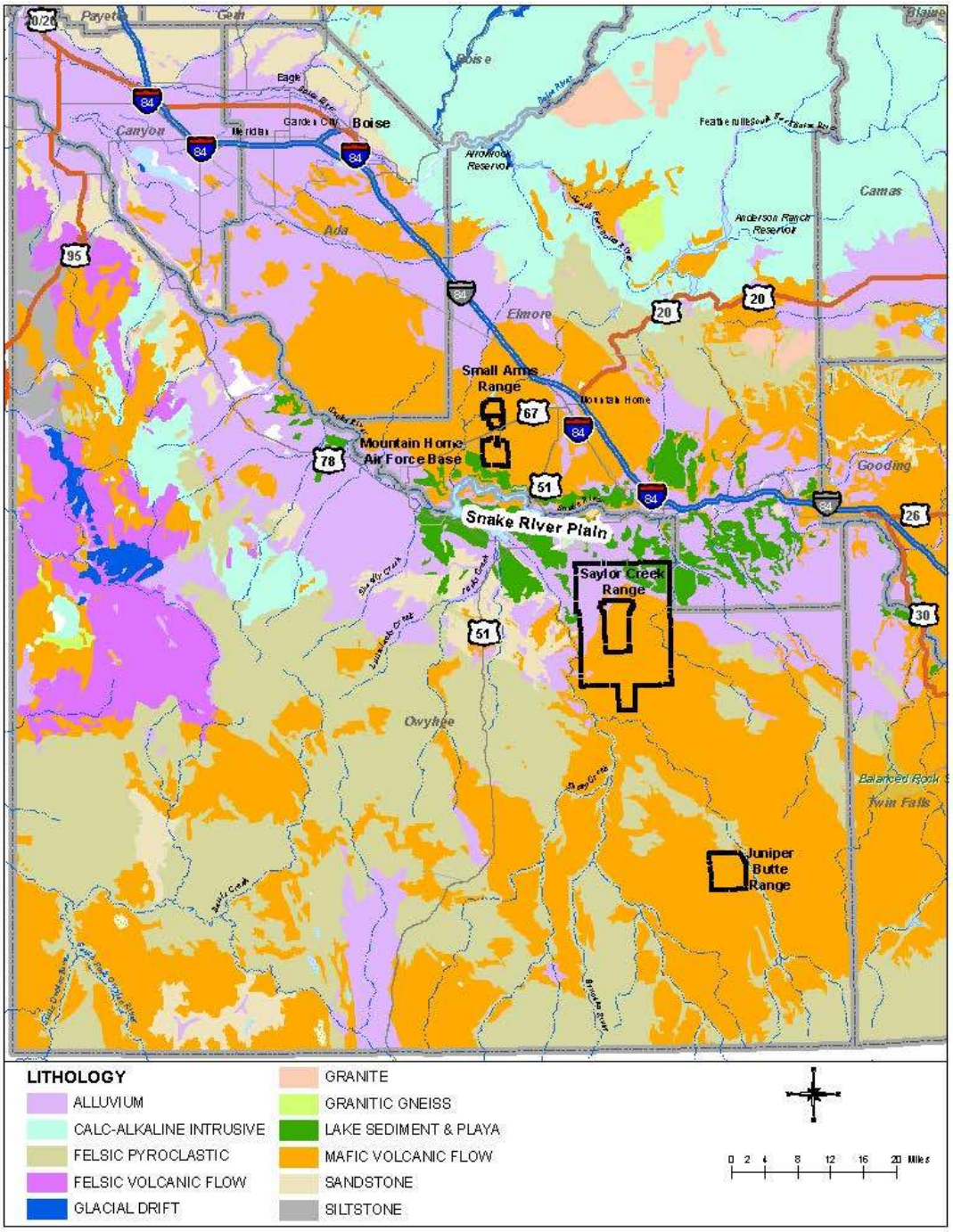


Figure 2-12
Geologic Map of Southern Idaho

This page intentionally left blank

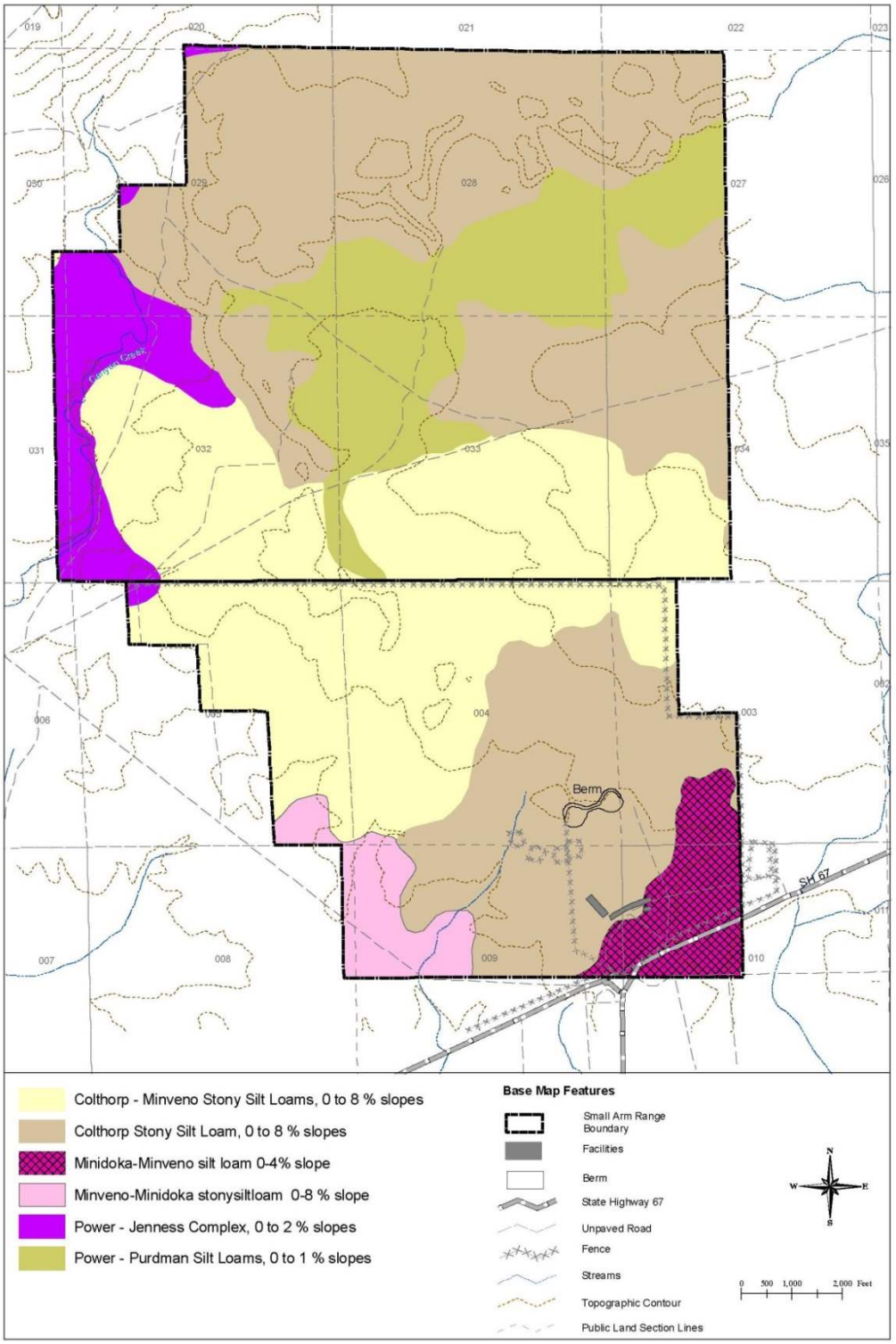


Figure 2-14
Soil Types Located on SAR

This page intentionally left blank

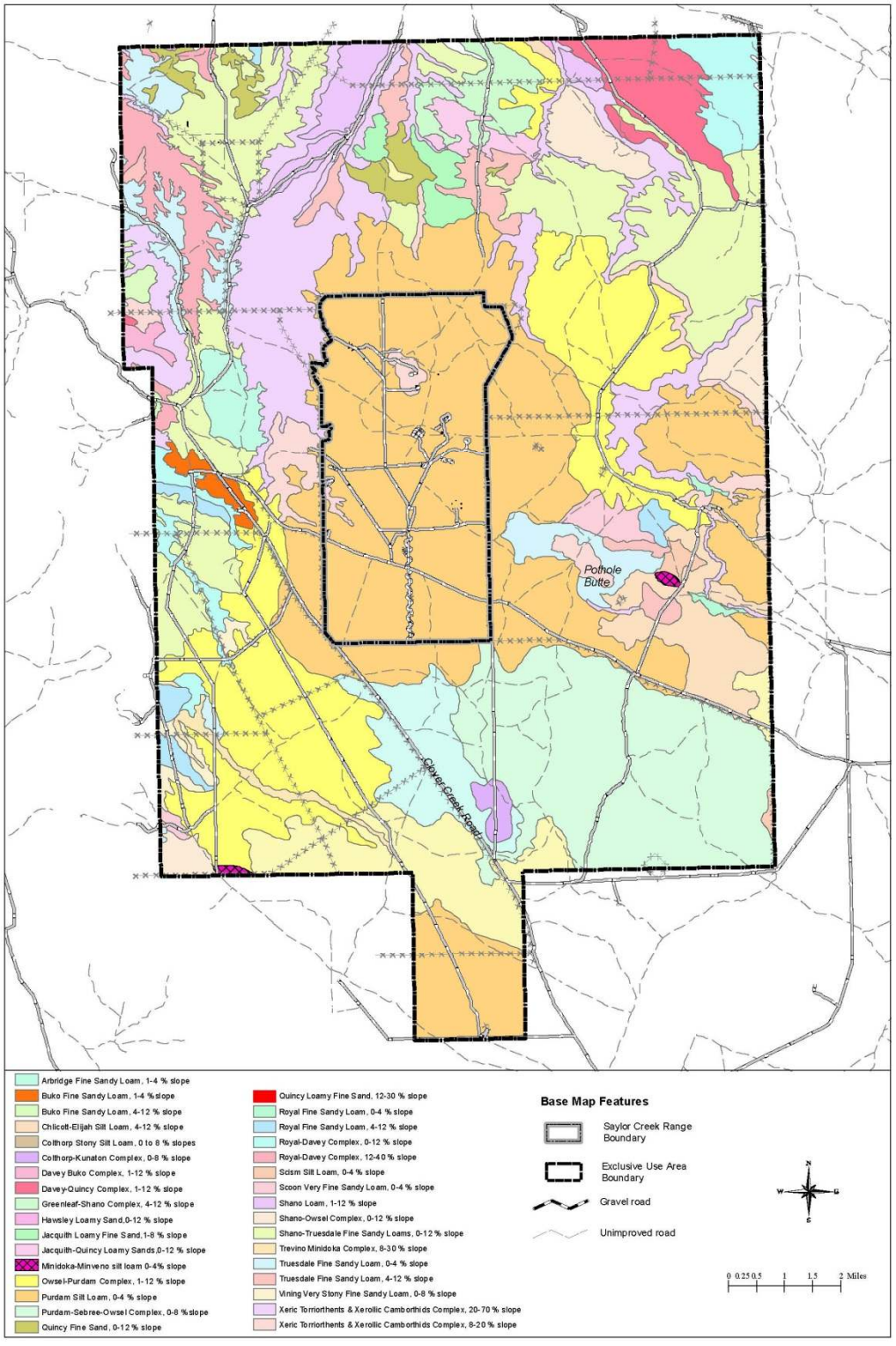


Figure 2-15
Soils Type Located on SCR

JBR

JBR is located on undifferentiated basalt at the base of Juniper Butte, which is the largest shield volcano in the area. The range is underlain with basalt flows from both Juniper Butte and a small, unnamed subsidiary volcano in the northwest corner of the range. Basalt flows exposed on the eastern edge of the range probably originated from one of the volcanoes to the south of the range. Flows exposed in Juniper Draw in the northeastern corner of the range may be from volcanoes east of Clover Creek or south of Juniper Butte.

Section 14, Appendix L lists soils found in specific map units on JBR and associated emitter and ND target sites. In many cases, soil descriptions for a particular location vary widely because they consist of more than one soil map unit. Soil map units are not shown separately on a soil map for any of the following reasons: they may exhibit similar geographic characteristics, the characteristics are intricately mixed, or the area may be small in size. When this occurs, soils are described as associations and complexes. Figure 2-16 depicts the soil types found at JBR. Maps are not provided for the other sites because they are either too small, or are described by two or less map units, associations, or complexes.

The northern portion of JBR is classified as loamy soil with precipitation rates ranging from seven to ten inches. The vegetation production ranges from 400 to 900 pounds (lbs)/acre (dry weight) with an average of 650 lbs/acre (dry weight) of aboveground biomass. Of all JBR soils, the potential for frost action is greatest in this area. However, it is still rated as low to moderate. Frost action may contribute to seedling or other plant damage, particularly in new rangeland seeding, due to freezing and thawing of soil moisture at shallow root-zone depths.

Soils in swales and draws provide the most vegetation-productive sites at JBR, due to greater soil depths and moisture levels. On the most productive of these areas, which are classified as loamy bottom with precipitation rates ranging from 12 to 16 inches, vegetation productivity potential ranges from 800 to 1,600 lbs/acre (dry weight), with an average of 1,200 lbs/acre (dry weight). The swales in the lower slopes of the butte have very slow to slow run-off rates, while the upper slopes and top of Juniper Butte have slow to rapid run-off rates, depending on the degree of slope.

Other MHRC Components

The ND targets and emitter sites are widespread throughout Owyhee County, with one site (BK) located in Twin Falls County. Soil types are described in section 14, Appendix L. The soils of the ND targets and emitter sites vary widely. Approximately one-half of the 1/4-acre emitter sites are underlain by shallow soils, and one-half are underlain by deep to very deep soils. All sites are well drained. Run-off rates are generally slow to medium on shallow soils and very slow to slow on deep soils. Three emitter sites (AN, AO, and AP) have rapid run-off rates. Soils of the one-acre emitter sites are shallow to moderately deep, with a hardpan base in several cases. These sites are well drained and generally have slow to medium run-off rates, except in deeper soils. One site (BD) has a low to high rating for water erosion hazard because it was mapped as a soil complex, with two soils of extreme differences with respect to water erosion. All of the one-acre emitter sites have low to moderate ratings for wind erosion. The shrink-swell potentials are generally low to moderate with the exception of site BI, which has a moderate to high rating.

The ND targets have a wide range of soil depths, ranging from shallow to moderately deep. One site (ND-5) is underlain by areas of very deep soil. All ND targets have well-drained soils. Run-off rates vary from slow to rapid. Water and wind erosion hazards are low to moderate. Several sites (ND-1, ND-4, ND-5, and ND-8) have shrink-swell potential ratings of moderate to high. ND-1 is the largest of the ND target areas (640 acres). Soils at this site have low vegetation production potentials (ranging from 250 and 700

lbs/acre depending on precipitation levels each year). The greatest limiting factors are low moisture conditions and shallow soils. This area is classified predominantly as a calcareous loam, seven to ten inches precipitation range site (Soil Conservation Service [SCS], 1991), with a smaller area classified as a loamy eight- to ten-inches precipitation range site. Consequently, vegetation production potential is low.

2.2.4 Hydrology

WATERSHEDS

A watershed (or catchment area) is defined by natural drainage relationships on a landscape. Watershed protection includes preventing aquifer pollution and soil erosion, and promoting recharge potential.

MHAFB and SAR

Status of Inventory and Current Conditions. MHAFB relies on a regional, unconfined aquifer for water that is shared with the city of Mountain Home and surrounding areas. From 1999 to 2003, the 5-year annual average usage by MHAFB was 793 million gallons (CH2M Hill, 2003a). In 2007, annual usage was 545 million gallons or approximately 1.49 million gallons per day. The 2007 water usage was a 31% reduction in water use compared to the 1999-2003 average. However, some of the reduced consumption is attributable to approximately 30% of housing units being unoccupied during construction (Kendall, 2009). In 2007, the city of Mountain Home pumped an average of 4.15 million gallons a day (Sheppard, 2009). Although the annual average is presented, it should be understood that usage varies seasonally, with greater consumption occurring during the summer months, primarily as a result of outdoor irrigation.

Currently, this rate of pumping exceeds the rate of recharge and the water table is dropping. A review of hydrograph data at two representative wells show the water table dropping at an average rate of 1.57 feet per year and 2.07 feet per year for the city of Mountain Home and MHAFB, respectively. There is no evidence that the rates are nearing equilibrium (Bendixsen, 1994). An effort made, in conjunction with the Elmore County Recharge program, to pump or inject surface run-off back into the aquifer was cancelled due to insufficient recharge occurring.

To provide landscaping alternatives that would use significantly less water, a xeriscape exhibit was established in front of Building 1297 during 1998. This exhibit provides examples of aesthetically pleasing xeriscaping for Base personnel to adapt for Base housing and administrative facilities. The landscape uses significantly less water and is very robust. Water usage since 2000 has been limited to 1 hour per week.

In order to conserve potable water resources, the base utilizes 10 – 12 million gallons of treated effluent from the Wastewater Treatment Plant (WWTP) to irrigate 100.8 acres of the Golf Course and 1.34 acres of the WWTP grounds each year.

Located within the C.J. SDRA Watershed (Figure 2-17), MHAFB and the SAR are situated in a small, very shallow basin with approximately 55 square miles of drainage area. Surface water tends to flow from northeast to southwest into Canyon Creek, which ultimately drains into the Snake River.

Erosion hazard from water run-off is low due to gentle topography (low gradient slopes) and favorable soil textures (porous). The primary cause of soil erosion is wind, since large areas of weeds provide little soil cover or protection. Wind erosion increases significantly after wildfires, and annual grasses increase fire frequency.

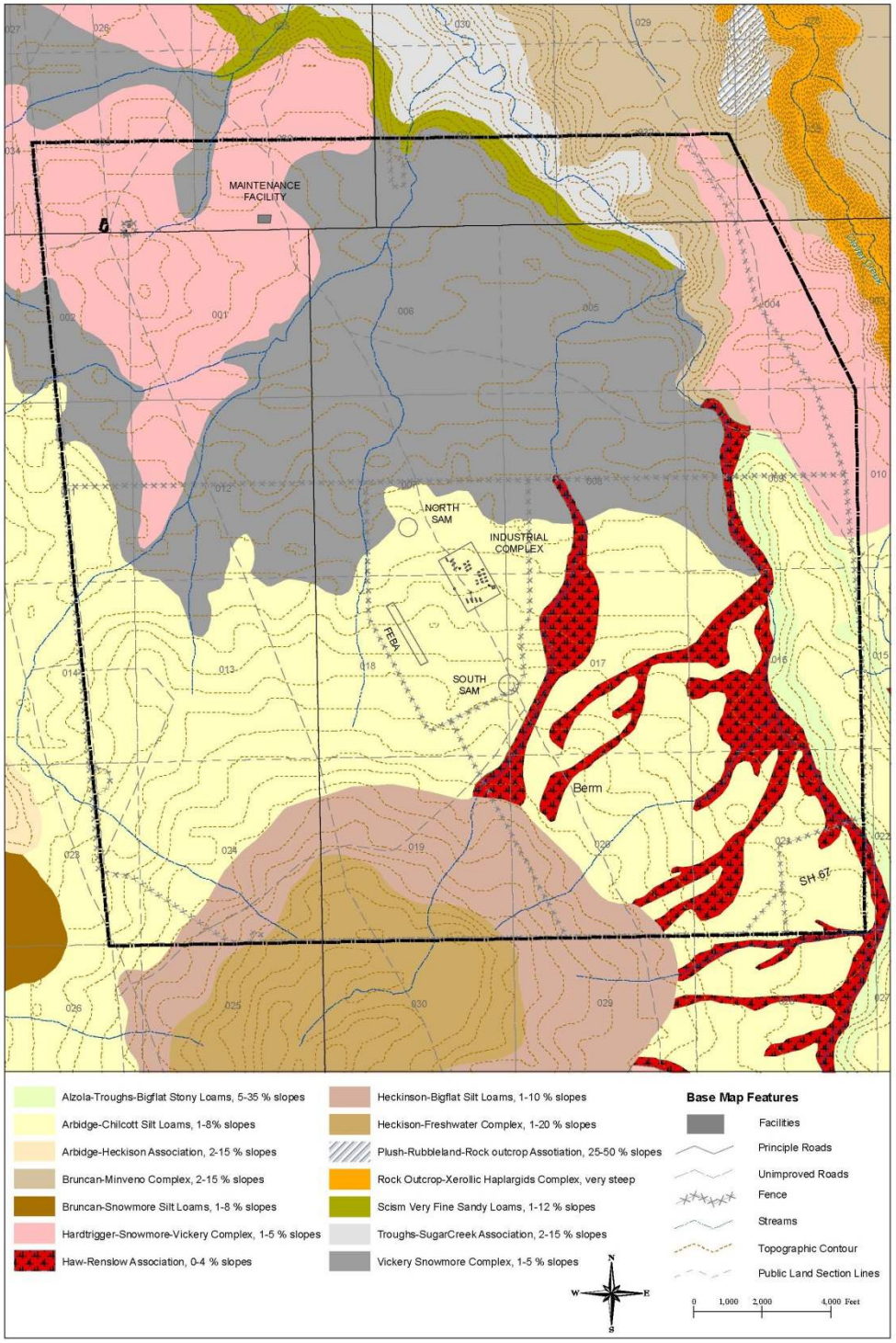


Figure 2-16
Soil Types Located on JBR

MHRC

Status of Inventory and Current Conditions. Water needs on SCR are low and are met using water trailers or tank trucks filled at a nearby town. Water is stored in aboveground tanks. There are no underground fuel storage tanks on the MHRC and all aboveground fuel tanks have secondary containment structures that are maintained as needed. Fuel spill prevention measures are implemented to avoid contamination of the aquifer. Erosion hazard from water runoff is low due to gentle topography (low gradient slopes) and favorable soil textures (porous). The primary cause of soil erosion is wind, since large areas of weeds provide little soil cover or protection. Wind erosion increases significantly after wildfires, and annual grasses increase fire frequency.

SCR is located within two watersheds (Figure 2-17), the C.J. Strike and Bruneau River watersheds. The Bruneau River watershed is characterized by high elevations and great topographical relief. Precipitation is drained through deeply cut canyons of the major perennial rivers. Major tributaries within the Bruneau River watershed include the Bruneau and Jarbidge Rivers, Big Jacks Creek, Clover Creek, and Sheep Creek. Many other minor and intermittent streams are found in the area. Water collected within these watersheds flows in a northerly direction into the Bruneau River and eventually into the Snake River at C. J. Strike Reservoir. Water collected within the C.J. Strike watershed flows into the Snake River. The Bruneau Watershed runs from the northwest corner to the middle of the southern SCR boundary. Water collected within this watershed flows west into the Bruneau River and eventually into the Snake River.

JBR lies within the Bruneau River watershed. Thus, any precipitation not lost to plant uptake, evaporation, or other losses, eventually flows into the Bruneau River or the local aquifer. Alteration or loss of vegetation and soil through wildfire or other disturbances may directly or indirectly affect water quality and water yield from a watershed. Native vegetation and seeded perennial grasses reduce erosional forces, as well as maintain watershed surface and aquifer recharge values. JBR and associated sites are covered by native and disturbed rangeland vegetation types and soils of volcanic parent materials. Where protective ground cover is sparse, wind-caused soil erosion is of primary concern. Erosion hazard from water runoff is generally low due to gentle slopes and favorable soil textures, with the exception of long slopes where annual plants (including most weeds) offer poor soil stabilization qualities. Deposition of eroded materials onto sensitive sites, such as slickspots, may occur by either wind action or water action. Clover Creek is on the State 303d list for sediments; site-specific storm water best management practices are in place.

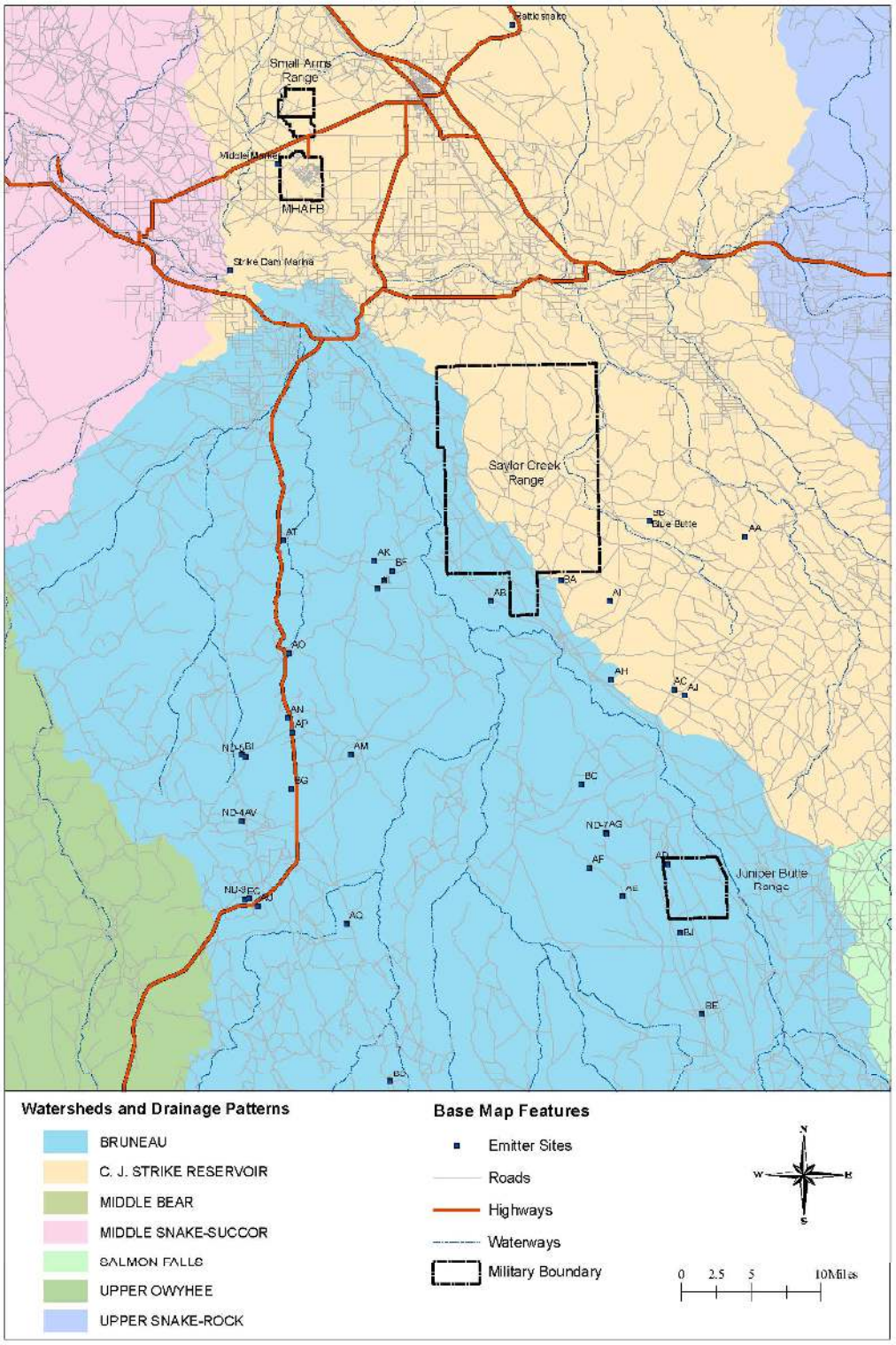


Figure 2-17
Watershed and Drainage Paterns on MHAFB, SCR, SAR, JBR, and Emitter Sites

Biological soil crusts are complex assemblages of lichens, liverworts, mosses, cyanobacteria, and algae that occur in the first few millimeters of the soil surface. These crusts are important on SCR and JBR because they stabilize the soil surface, thus, protecting it from wind erosion. Cyanobacteria and microfungi within these crusts expel polysaccharides, which bind soil particles together, creating larger soil aggregates. These larger soil aggregates require a greater wind velocity to be moved. Therefore, soils with the most developed biological crusts experience the greatest resistance to wind erosion.

Water needs on JBR, other than livestock water, are met using off-site sources, hauled in water trailers, or tank trucks. Water for firefighting is held in a non-potable water storage tank at the Maintenance Complex, or is available via an agreement under the livestock grazing lease and is available in the livestock water reservoir in the southwest corner of JBR. This water is available to fire crews from a gravity fed hydrant. The water is the property of the livestock lessee and must be purchased by the USAF. No water is removed from the local aquifer for range operations. Livestock water needs are satisfied by a pipeline distribution system owned by the livestock lessee.

Fuel spill prevention measures are mandatory for all operations in the MHRC. These measures are necessary to avoid contamination of aquifers and water sheds and are addressed in the Hazardous Materials and Hazardous Waste Management sub-Section of Section 2.

The ND targets and emitter sites are located within the Bruneau River and C.J. Strike watersheds.

The C.J. Strike watershed is a much drier watershed, being drained by smaller, intermittent tributaries such as West Fork Brown's Creek, Saylor Creek, Deadman Creek, and Pothole Creek, which drain north into the Snake River (USAF, 1998).

DRAINAGE PATTERNS

MHAFB and SAR

No significant drainages or natural impoundments occur. Topography is level and drainages are not well defined. At MHAFB, surface water runoff from thunderstorms and snowmelt tends to collect in small depressions. At the SAR, surface water runoff from thunderstorms and snowmelt tends to collect in small depressions, or playas. During spring snowmelt and rainfall, the small amount of surface water on MHAFB flows either into two ephemeral stream channels or into the four manufactured drainage ditches. No significant natural drainages cross MHAFB. Rain and snowfall on the SAR reach Canyon Creek from subsurface sources rather than surface channels. There are no 100-year floodplains on the SAR or MHAFB (Federal Emergency Management Agency, 1988).

SCR

SCR contains no perennial drainages, but three intermittent streams develop within the range boundaries: West Fork Brown's Creek, Brown's Creek, and Pothole Creek. Pothole Reservoir is a Civilian Conservation Corps constructed earthen dam, which impounds runoff from the Pothole Creek watershed. It can hold significant amounts of water during wet seasons; however, the water generally evaporates or infiltrates quickly. Otherwise, surface water runoff from thunderstorms and snowmelt tends to collect in small depressions and intermittent streams or ephemeral channels. Because of the lack of significant drainages, there are no floodplains associated with SCR. There are no intermittent streams on the EUA, but several ephemeral channels link to West Fork Brown's Creek.

JBR

JBR contains no perennial drainages. However, within the range boundaries, one intermittent draw (Juniper Draw) collects some water during the spring. Additional surface water runoff from thunderstorms and snowmelt collects in small depressions or slickspots and runs along ephemeral streams fanning outward from the base of Juniper Butte at the southern area of the range (USAF, 1998). One notable feature located in JBR is a natural rock pool present along the northern boundary that can hold several thousand gallons of water for significant periods of time. This natural pool is Wetland 7 as discussed in section 2.3.2 of this document.

Drainage patterns trend primarily from southwest to northeast. All drainages trend toward Juniper Draw. Juniper Draw intersects Clover Creek and the East Fork Bruneau Canyon north of JBR. Figure 2-18 depicts the location of the intermittent/ephemeral drainages. No floodplains are associated with JBR.

Other MHRC Components

No perennial drainages are associated with emitter and ND target sites. However, some sites are situated within 3,000 feet of small, intermittent drainages. No floodplains are associated with emitter sites or ND targets due to the lack of significant drainages.

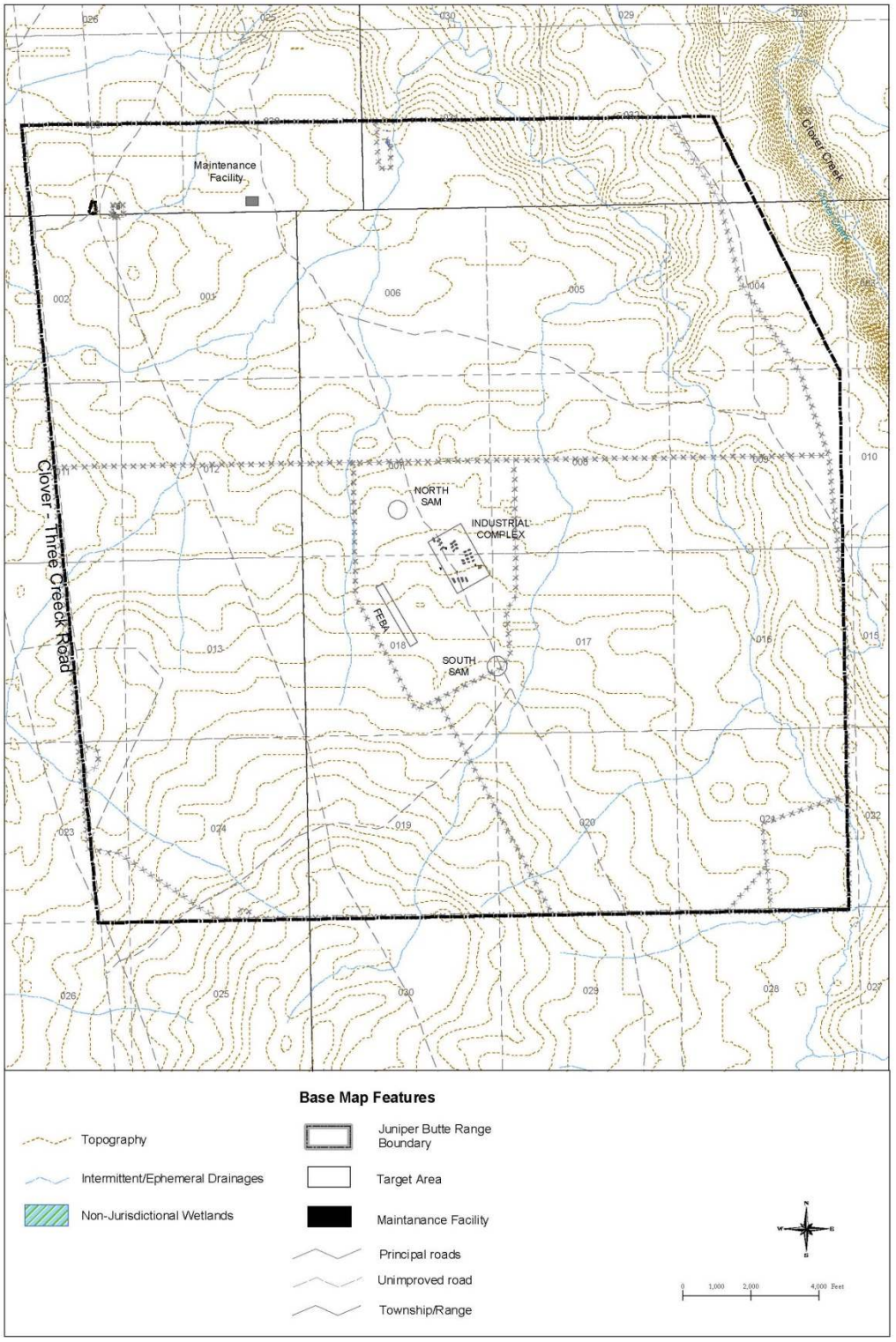


Figure 2-18
Drainages & Wetlands at Juniper Butte Range

2.3 Ecosystems and the Biotic Environment

2.3.1 Ecosystem Classification

MHAFB and MHRC lie within the regional landform and vegetation classification known as the Intermountain Sagebrush Province/Sagebrush Steppe Ecosystem (Bailey & Kuckler, 1996), which is widespread over much of southern Idaho, eastern Oregon, eastern Washington, and portions of northern Nevada, California, and Utah. This ecosystem contains a large diversity of landforms and vegetation types, ranging from vast expanses of flat sagebrush-covered plateaus to rugged mountains blanketed with juniper woodlands and grasslands. MHAFB is bounded within Bird Conservation Region (BCR) 9, or the Great Basin BCR (http://nabci-us.org/resources/bird-conservation-regions-map/).

2.3.2 Vegetation

2.3.2.1 Historic Vegetative Cover

MHAFB and SAR

Historically, MHAFB and SAR were predominantly covered with Wyoming big sagebrush communities with an understory of native forbs and grasses. Rabbitbrush (*Chrysothamnus* sp.) were once a minor component of mature sagebrush stands or major component of plant communities that had undergone fires that removed the sagebrush component. Often forming within the Wyoming big sagebrush were mosaics of salt desert shrub communities such as shadscale (*Atriplex confertifolia*), greasewood (*Sarcobatus vermiculatus*), and four-wing saltbush (*Atriplex canescens*), especially in drier, more saline, lower elevation sites. Scientific names of plants and animals located in the following sections may be found in section 14, Appendix H.

Several common grasses are associated with sagebrush communities:

- Snake River Wheatgrass (*Elymus wawawaiensis*), a tall grass that is found in the more mesic, or wetter desert areas
- Sandbergs bluegrass (*Poa secunda*), a low-growing bunchgrass is common in the drier portions of the steppe
- Bottlebrush squirreltail (*Elymus elymoides*) is an early-seral bunchgrass common in drier sagebrush steppe and salt desert communities
- Indian ricegrass (*Achnatherum hymennoides*) is a highly palatable and occasional community member in sandier soils
- Great Basin wildrye (*Elymus cinereus*) was once a more common grass, now found primarily in areas with more water such as draws and ephemeral stream channels
- Thurber's needlegrass (*Achnatherum thurberiana*) and needle-and-thread grass (*Stipa comata*), two highly palatable grasses found in drier sites that once were common but now have become almost entirely eliminated by fire and grazing.

MHRC

SCR

Historic vegetation cover is the same as described above for MHAFB and the SAR.

JBR, ND Targets, and Emitter Sites

Historically, the most abundant vegetation type was shrub-steppe in the JBR and the associated ND targets and emitter sites. Vast stretches of Wyoming big sagebrush once covered the uplands in association with other native shrub-steppe species, such as bluebunch wheatgrass, Sandbergs bluegrass, bottlebrush squirreltail, phlox (*Phlox* sp.), Lupine (*Lupinus* sp.), and Indian paintbrush (*Castilleja* sp.). Low sagebrush (*Artemisia arbuscula*) was a dominant shrub in the higher elevations and along the gravelly ridges in the western part of the region. Rabbitbrush was commonly found in swales and disturbed areas. Common and scientific names of plants found on JBR are shown in section 14, Appendix H.

2.3.2.2 Current Vegetative Cover

MHAFB

Status of Inventory and Current Conditions. Trees are an important part of MHAFB. MHAFB has been an Arbor Day Foundation "Tree City USA" since 1997. MHAFB maintains a GIS database of 14,558 trees. This database includes 8,182 trees in the housing and industrial areas and 6,376 incorporated into windbreaks. Many of the trees planted in the 1940's and 1950's are still alive. Thousands of trees were donated to MHAFB by civic groups in Boise and surrounding communities in the early years of the base. Depending on the species, trees in this area can grow and thrive for 40-100 years.

Protecting the trees on base, particularly mature trees, improves the quality of life for base residents. These large, mature trees are key to maintaining an urban forest on the base. The trees in the housing and industrial areas coupled with the trees and shrubs in the windbreaks help decrease local windspeeds, remove dust, and remove pollution from the air. The urban forest also helps lower utility costs for the base. Trees provide shade in the summer, and hold in heat near the ground (conifers) or allow sunlight to pass through to warm houses (deciduous) in winter.

Preserving trees on base is a priority for MHAFB. Energy savings and aesthetic impacts are only realized if trees are allowed to mature and are maintained over the long-term. Trees planted, removed and replanted every 1, 5, or 10 years are a waste of taxpayer dollars and the economic benefits are never realized. Tree plantings should be carefully planned and maintained into maturity.

The current condition of the other vegetation communities in the undeveloped areas on MHAFB is fair to poor. Vegetation at MHAFB was identified and mapped as part of the 1996 Ecosystem Survey (see section 14, Appendix B). Most of MHAFB is occupied by buildings, residences, training-related facilities, runways, streets, sewage ponds, landfills, and rubble piles. Most open areas are dominated by exotic annual weed species. Much of the open space on MHAFB used to be covered with sagebrush. Significant declines in the amount and quality of sagebrush habitat have occurred over the last 15 years. A few remnant patches of sagebrush still exist and most have a weedy understory. These remnant patches have been greatly degraded by OHV activity, exercise use, and weed invasion.

Most open space on the Base is covered by a mix of weedy annual grasses, invasive species such as annual kochia (*Bassia scoparia*), Russian thistle (*Salsola kali*), and bur buttercup (*Ranunculus testiculatus*). This mix forms a blanket of fine fuels over large areas of open spaces on the Base. Seedings and weed control treatments on MHAFB have improved some areas by establishing perennial grasses and removing cheatgrass and annual weeds. Treatments in MOAB, on the EOD pro-range, and the landfill caps have improved these areas.

Three large fields (~3 to 10 acres) of seeded forage kochia (*Bassia prostrata*), a perennial sub-shrub related to the weedy annual kochia, have been planted on the Base and are doing very well. Forage kochia

helps displace and control the proliferation of tumbleweeds. These forage kochia patches are mowed once a year in late fall. Wyoming big sagebrush covers about 450 acres on MHAFB (Figure 2-19). Wyoming big sagebrush communities lie along the northern and eastern boundaries in eight separate locations. Sagebrush cover varies greatly, from very sparse and scattered to more dense coverage. Most stands are highly disturbed with high understory densities of weeds due in part to past fires (Figure 2-20). The herbaceous understory is dominated by cheatgrass (*Bromus tectorum*), tumble mustard (*Sisymbrium altissimum*), and other weeds, which have displaced native grasses and forbs.

A dense stand of tumble mustard, Russian thistle, and annual kochia, dominates an area southwest of the runway. A few native shrubs, including rabbitbrush and Wyoming big sagebrush, sporadically occur in these areas. Other unimproved or semi-improved areas on MHAFB are dominated by exotic weed species, such as cheatgrass, Russian thistle, kochia, bur buttercup, and tumble mustard, or are covered by rubble piles. Idaho listed noxious weed species on MHAFB include rush skeletonweed (*Chondrilla juncea*), with small, incidental infestations of field bindweed (*Convolvulus arvensis*), buffalobur (*Solanum rostratum*), black henbane (*Hyoscyamus niger*), puncturevine (*Tribulus terrestris*), perennial sowthistle (*Sonchus arvensis*), perennial pepperweed (*Lepidium latifolium*), whitetop (*Cardaria draba*), and Canada thistle (*Circium arvense*). Noxious weeds are those species as defined by the State of Idaho as having the potential to cause injury to public health, crops, livestock, land, or other property (Idaho Code, 1997). Landowners are required by Idaho law to control noxious weeds on their lands. A complete listing of Idaho's noxious weeds is found in section 14, Appendix I.

SAR

Status of Inventory and Current Conditions. No vegetation classification and delineation surveys have been performed at the SAR; however, general vegetation types were noted during the Davis' peppergrass monitoring studies. The current condition of the vegetation on the SAR is poor. Annual grasses dominate the plant community with very small remnant patches of sagebrush around one playa. The SAR is subject to OHV use. The playas are fenced to deter OHV users from accessing the playas. Many of the playas contain Davis' peppergrass. The fences are in disrepair and OHV tracks are evident.

The vegetation community on the SAR is the result of wildfires, which have removed the native ecosystem (Figure 2-20). The entire SAR burned in 1996, which caused an increase in invasive species. Cheatgrass, Russian thistle, kochia, halogeton, bur buttercup, clasping leaf peppergrass (*Lepidium perfoliatum*), and tumble mustard dominate this site. Annual grasses and invasive weeds, especially tumbleweeds, have proliferated. The area is at high risk for fires. Tumbleweed buildup on fence lines greatly increases fire risk and smothers wide corridors along fencelines, preventing vegetation from growing. hen the tumbleweeds are burned off during controlled burns, the resulting vegetation is usually more tumbleweeds.

This area has burned repeatedly resulting in exotic annual grasslands with remnant native plants, primarily bottlebrush squirreltail and Sandberg's bluegrass. Vegetation treatments to control cheatgrass and seedings to establish perennial grasses have been partially successful in converting 100 acres of the SAR to a less fire-prone plant community. The 100 acres receiving multiple treatments surrounds the facilities and extends to the backstop berm, where wildfire is more likely due to increased human activity.

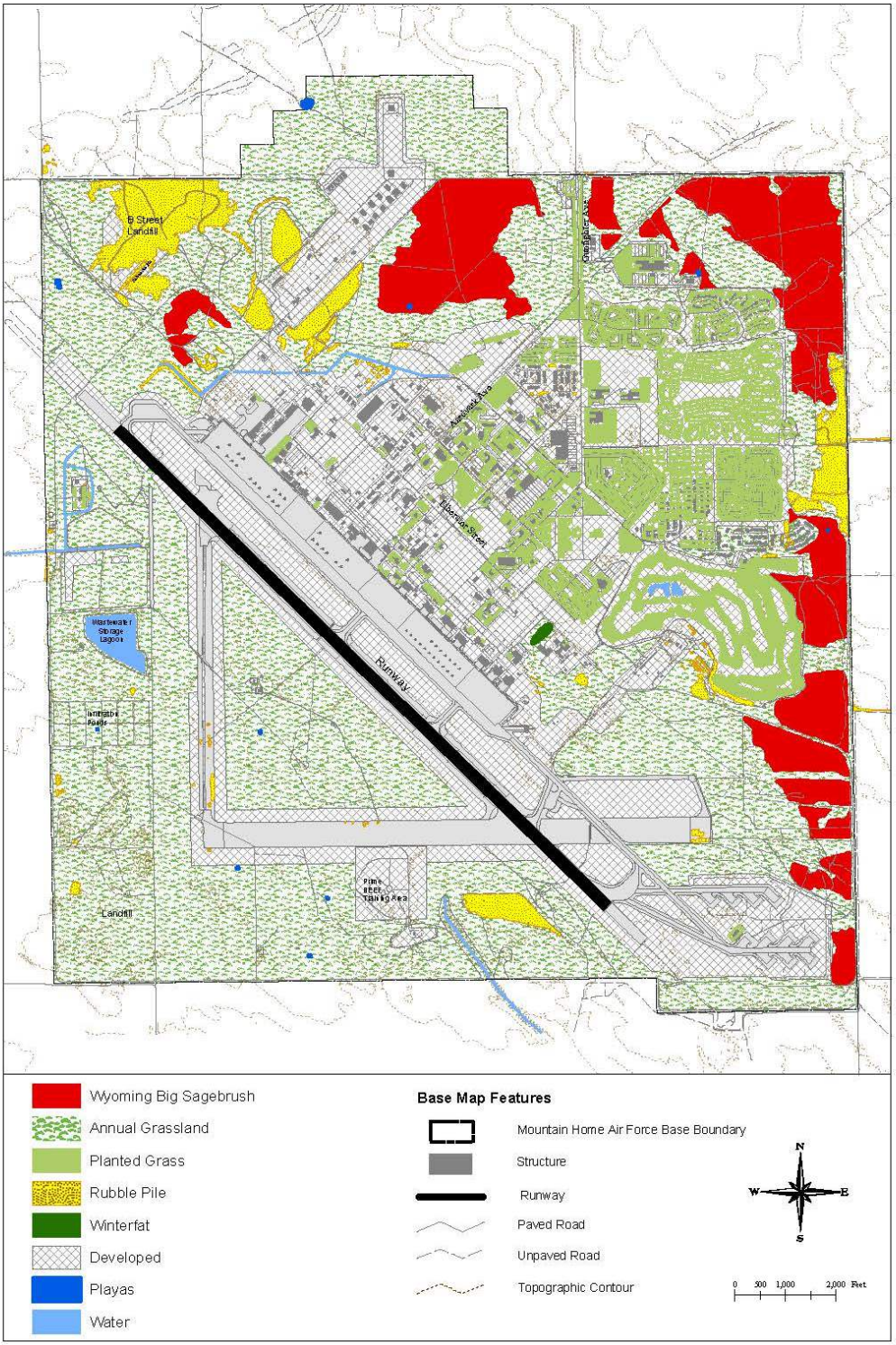


Figure 2-19
Vegetation on MHAFB

This page intentionally left blank

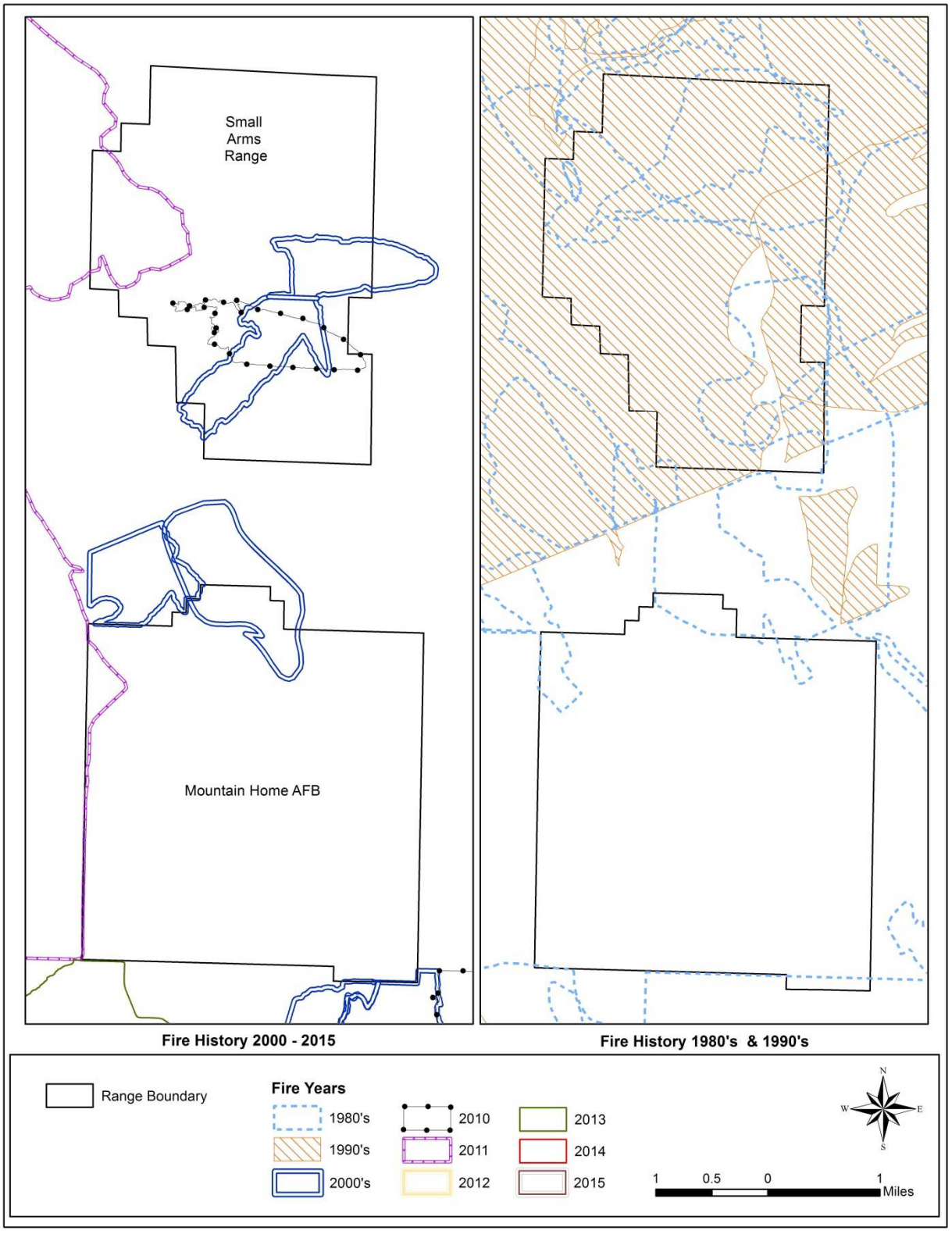


Figure 2-20
Fire History of MHAFB and SAR

Rattlesnake Radar Station

Native vegetation at Rattlesnake Radar Station has been removed through site construction. Most of the area is graveled; however, areas not graveled are dominated by exotic weed species, such as cheatgrass, tumble mustard, and knapweed (*Centaurea biebersteinii*). Several species of knapweed are listed on the Idaho noxious weed list (section 14, Appendix I), and must be removed according to Idaho law. No turf or landscaped areas are found at Rattlesnake Radar Station, as all grounds are unimproved or part of the facility.

Middle Marker

Presently, few plants are found within the fenced area, due to weed maintenance at the site. The area immediately surrounding the site is dominated by cheatgrass, bare ground, and scattered bunchgrasses.

No turf or landscaped areas are found at the site; grounds are unimproved or part of the facilities.

C.J. Strike Dam Recreation Annex

This area is currently a mix of turf and landscaped areas, and an undeveloped area dominated by weedy species such as cheatgrass and tumble mustard. Pavement separates the landscaped and undeveloped areas. Although the C.J. SDRA is at the edge of the reservoir, no wetland vegetation is present.

MHRC

SCR

Status of Inventory and Current Conditions. No rare plants were found during rare plant surveys conducted on SCR in 1996 and again as part of the Ecosystem Survey. Although some potential habitat exists for Davis' peppergrass, this species was not found (Figure 2-22). Slickspot microsites do occur within the EUA and outside the EUA in the public use areas; however, no slickspot peppergrass has been observed to date on SCR.

Plant communities were classified and mapped on SCR in the 1996 Ecosystem Survey (section 14, Appendix B). Field data collection for 129 plots was completed between June 2 and July 24, 1994. Within each plot, information was collected on percent canopy cover for each of the following variables: canopy cover of each plant species, bare ground, litter, wood, and rock. Canopy cover is defined as the percentage of ground surface included in the vertical projections of a polygon drawn about the extremities of the undisturbed foliage of the plant (Daubenmire, 1970). Multivariate analysis was used to classify the vegetation. The vegetation plots were grouped according to co-occurrence and similarity in cover of dominant species. These groups were assigned names reflecting the dominant or co-dominant species.

Vegetation on SCR varies according to historic and current land use. Areas inside the EUA have been subject to fires, reseeding, weed encroachment, disturbance activities from training, prescribed fires, plowing firebreaks, and road maintenance. Areas that have been converted from shrub-steppe through these practices are relatively weedy, with dominant vegetation in the form of annuals with a perennial, early seral component. Sandberg's bluegrass and bottlebrush squirreltail are native remnants in these cheatgrass/annual kochia/Russian thistle-dominated communities. Areas not subject to repeat disturbance, but where sagebrush has been removed, may also contain phlox, sego lily (*Calochortus nuttallii*), larkspur (*Delphinium bicolor*), needle-and-thread grass, Indian ricegrass, and, in wetter draws, Great Basin wildrye.

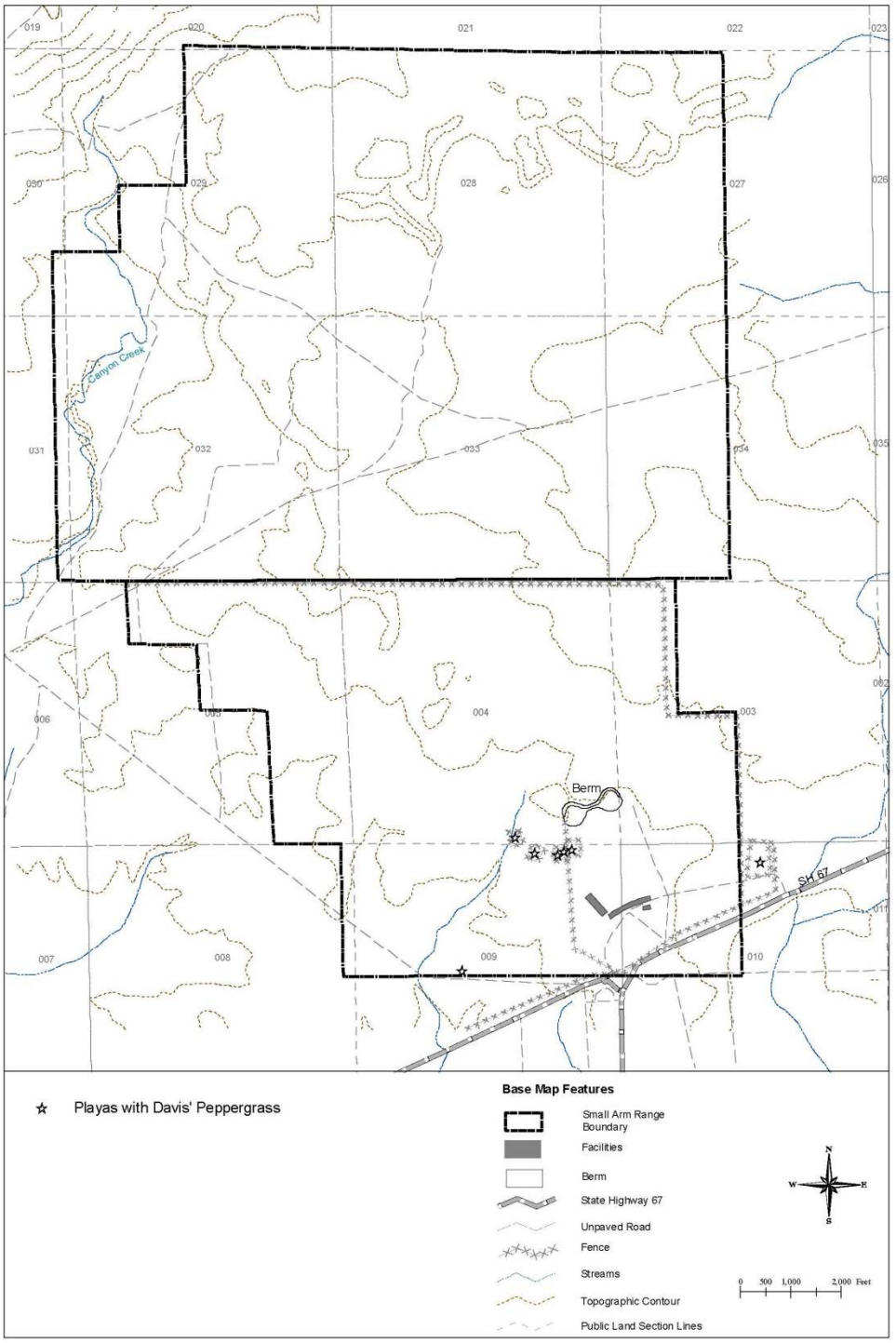


Figure 2-21
Sensitive Areas for SAR

This page intentionally left blank

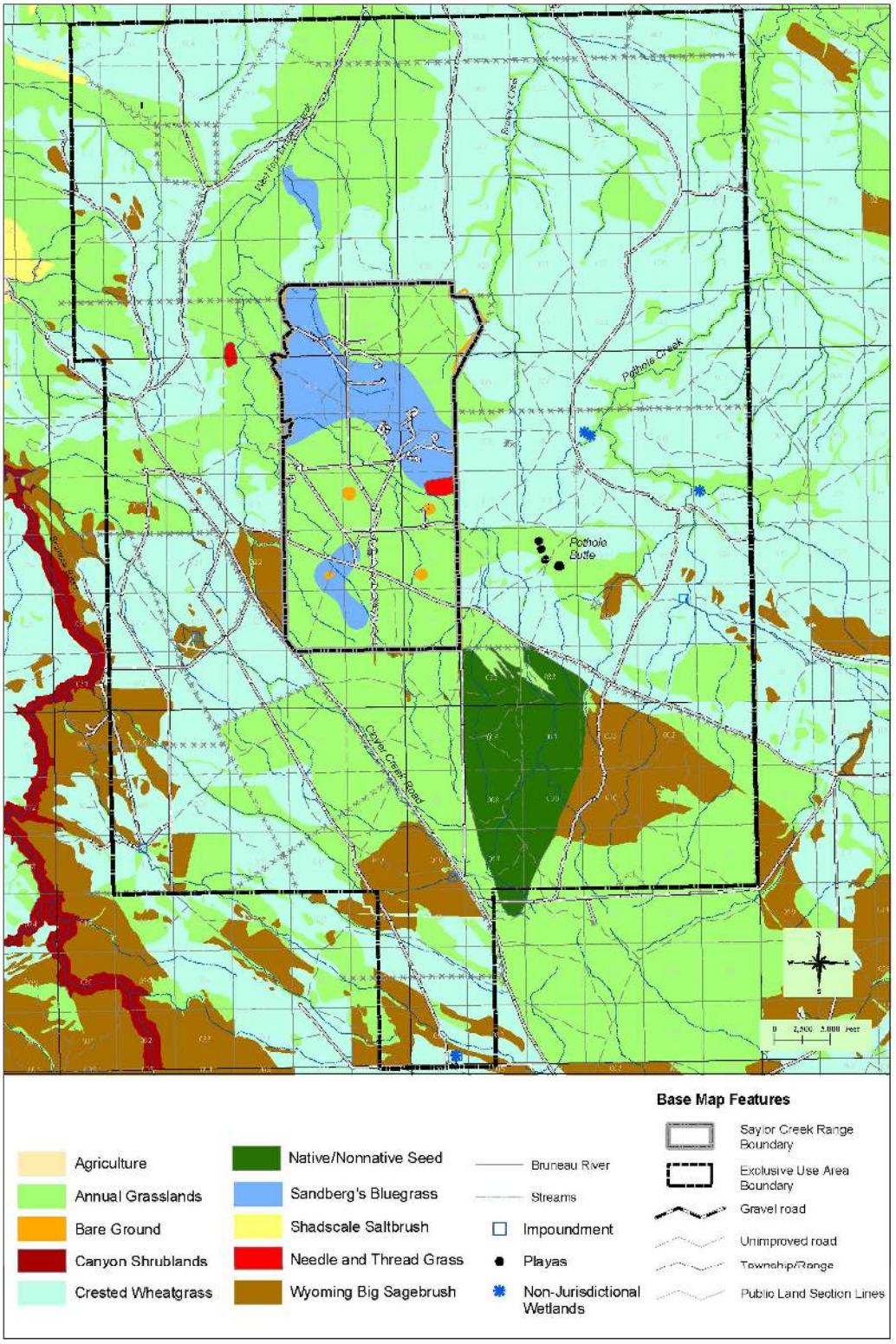


Figure 2-22
Vegetation on SCR

Areas outside the EUA that have been burned have a variety of seeded species. Seeded species common on SCR outside the EUA include crested wheatgrass, rangeland alfalfa (*Medicago sativa*), four-wing saltbush, forage kochia, Russian wildrye (*Psathyrostachys juncea*), Lewis flax (*Linum perenne* var. *lewissii*) and other hardy perennials used for cattle forage.

Large, disconnected remnant stands of sagebrush occur in various densities and seral stages. Mature sagebrush stands that have not been subject to fires are usually invaded by cheatgrass to some degree, and perennial grasses are greatly reduced by the competition with sagebrush. Rabbitbrush occurs at low densities throughout SCR.

Within SCR, historic Wyoming big sagebrush-grassland communities of approximately 6,200 acres dominated the western and southern parts of the range. 53,888 acres have burned at least once on SCR outside the EUA since 2000 affecting all habitat types (Figure 2-23). Only 9,374 acres of SCR vegetation has not burned since 1939 (BLM, 2008c). Most of the areas that have burned now consist of crested wheatgrass or cheatgrass/Sandberg bluegrass communities. Wyoming big sagebrush has reestablished in some areas (Figure 2-22). Neither crested wheatgrass nor cheatgrass are native; the former was intentionally seeded and the latter opportunistically invaded disturbed lands. The non-native dominated areas are usually low in plant species diversity and provide little habitat for native wildlife species. This has a negative impact on native wildlife adapted to sagebrush-grassland communities.

In November 2000, 1,450 acres in the retired simulated nuclear target area were sprayed with Oust™ herbicide to control cheatgrass. A seeding was done in fall 2001 in this area. Great Basin wildrye, Sandberg's bluegrass, bottlebrush squirreltail, Lewis flax, rabbitbrush, Indian ricegrass, and forage kochia were planted. Another 4,000-acre Oust™ project was completed in the EUA in fall 2001. The block was seeded in fall 2002 with Russian wildrye, Siberian wheatgrass (*Agropyron fragile*), Lewis flax, dryland alfalfa, and forage kochia. To date, of the 5,450 acres sprayed, 3,200 acres have been seeded. However, success following Oust™ treatment was poor to fair due to drought that occurred from 2000 to 2002.

In 2005, a large fire (Clover Fire) burned a significant amount of Wyoming big sagebrush in the southern portion of SCR. Since this fire, the vegetation has recovered and is healthy. From 2005 to 2007, grazing was restricted on this portion of SCR. In addition, approximately 4,000 acres were replanted with a mixture of Lewis' flax, rangeland alfalfa, Russian wildrye, bluebunch wheatgrass, Sandberg's bluegrass, Indian ricegrass, Great Basin wildrye, Wyoming big sagebrush, and endo-mycorrhizae. In 2006, 2007, 2009, and 2010, Plateau herbicide was sprayed over 3,200 acres (5 square miles) each year, in different locations of SCR, to remove cheatgrass.

Four areas of wetland vegetation occur on SCR. None of these are located in the EUA. Three of the wetlands at SCR are very small and naturally occurring while one is a 1.14 acre pond developed for livestock use under the management of the BLM. The ponds hydrology is artificially permanently maintained by piping water from irrigation diversion. Wetland vegetation associated with the artificial pond includes Coyote willow (*Salix exigua*), Bebb's willow (*Salix bebbiana*), tamarisk (*Tamarix* sp.), spikerushes (*Eleocharis* sp.) and three-square bulrush (*Scirpus* sp.).

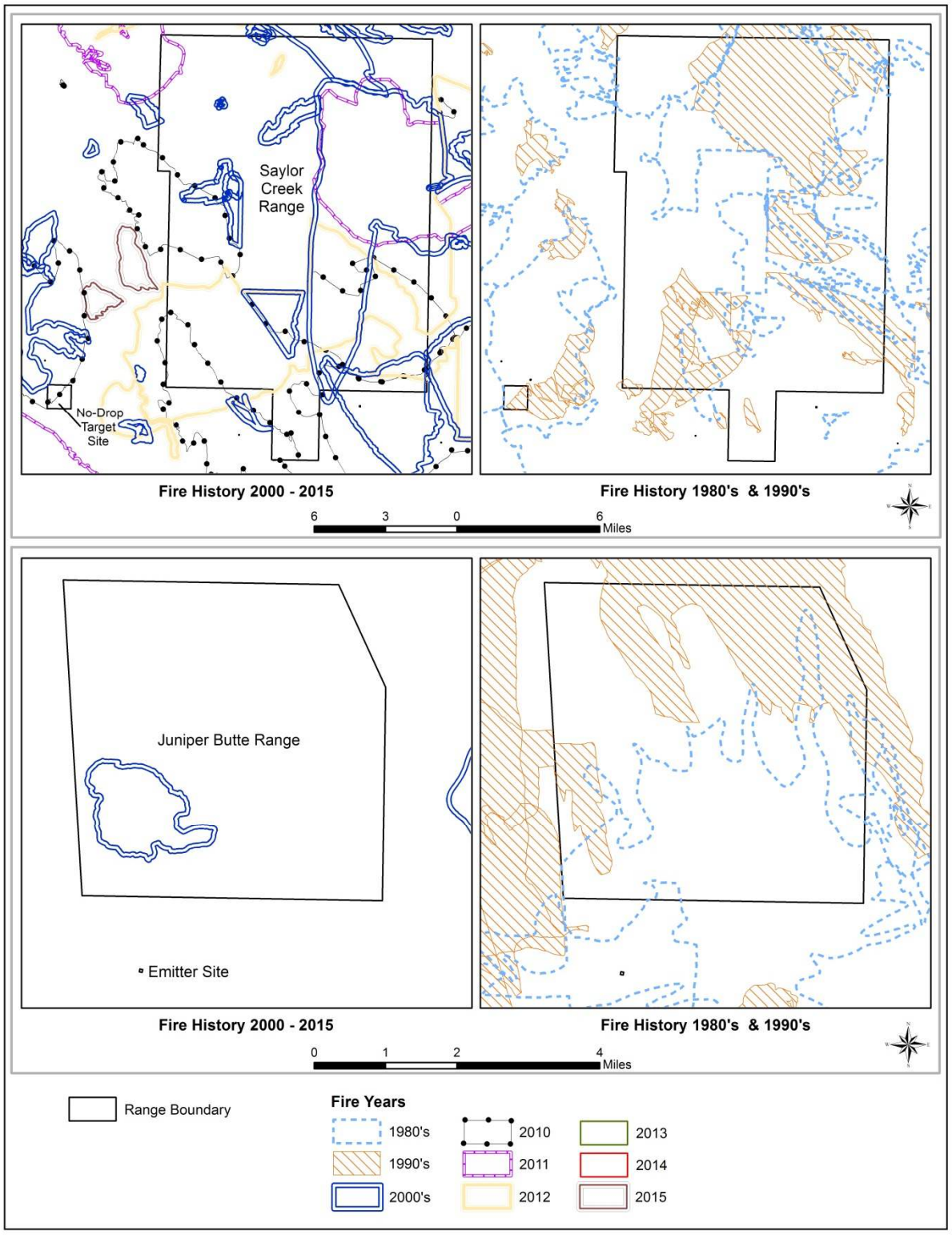


Figure 2-23
Fire History of SCR and JBR

JBR

Status of Inventory and Current Conditions. At present, the upland vegetation is altered by livestock grazing, fire, and range reseeding efforts. The landscape is currently a mosaic of shrub-steppe and non-native plant communities. The Jarbidge Resource Area experienced numerous fires, resulting in a conversion from sagebrush native perennial grasslands to other grasslands (Figure 2-23). The resulting grasslands are now dominated by crested wheatgrass and intermediate wheatgrass, which were seeded following fire. Exotic annual grasses are dominant where seedings failed or did not occur. Cheatgrass also occurs in the interspaces between crested wheatgrass plants and will grow in any disturbed ground.

Juniper Butte burned on several occasions and was seeded with non-native grasses and forbs. Much of the range is now dominated by rabbitbrush shrubland and seeded grass species (see Figure 2-24). There are remnant pockets of widely dispersed bluebunch wheatgrass and sagebrush. Common herbaceous species found throughout the range include clasping peppergrass, long-leaf phlox (*Phlox longifolia*), Hood's phlox (*Phlox hoodii*), low pussytoes (*Antennaria dimorpha*), Sandbergs bluegrass, lupine (*Lupinus arbustus*), and bottlebrush squirreltail. he northern portion of the range is dominated by crested wheatgrass seedings and the southern portion by intermediate wheatgrass (*Thinopyrum intermedium*) seedings. Mixed stands of sagebrush and rabbitbrush occur throughout the range. Western junipers (*Juniperus occidentalis*) are found in low densities in Juniper Draw on the eastern portion of the range. Native perennial grasses, such as Idaho fescue (*Festuca idahoensis*), are also found in association with western junipers in the draw (USAF, 1998). Juniper Draw is rocky and contains slightly more mesic conditions than the rest of the range. These conditions have promoted a highly diverse component of native forbs and grasses in this area.

The vegetation at the JBR and the associated emitters and ND target areas reflect many of the regional vegetation changes.

Other MHRC Components

The vegetation at the emitters and ND target areas ranges from shrub-steppe vegetation to introduced annual grasslands (section 14, Appendix M). However, most of the sites have experienced prior disturbances and are now composed of weedy vegetation, such as tumble mustard and cheatgrass, or seeded species, such as crested wheatgrass.

The seven-acre Grasmere EC site has been graveled, and all vegetation within the site is controlled by herbiciding and hand-pulling.

Rare plant surveys were performed on emitter and ND target sites during 1996 and 1999. No species of concern or potential rare plant habitat were reported from these surveys. In 2001 and 2002, rights-of-ways (ROWs) were resurveyed for slickspots and LEPA. ROWs with slickspots are AA, AC, AE, AF, AG, AH, AJ, AK, AM, AQ, AT, BA, BB, BC, BE, BI, and BJ. LEPA was found in ROW AE in 2002 and 2003. Davis' peppergrass occurs in a playa next to the ROW to AM.

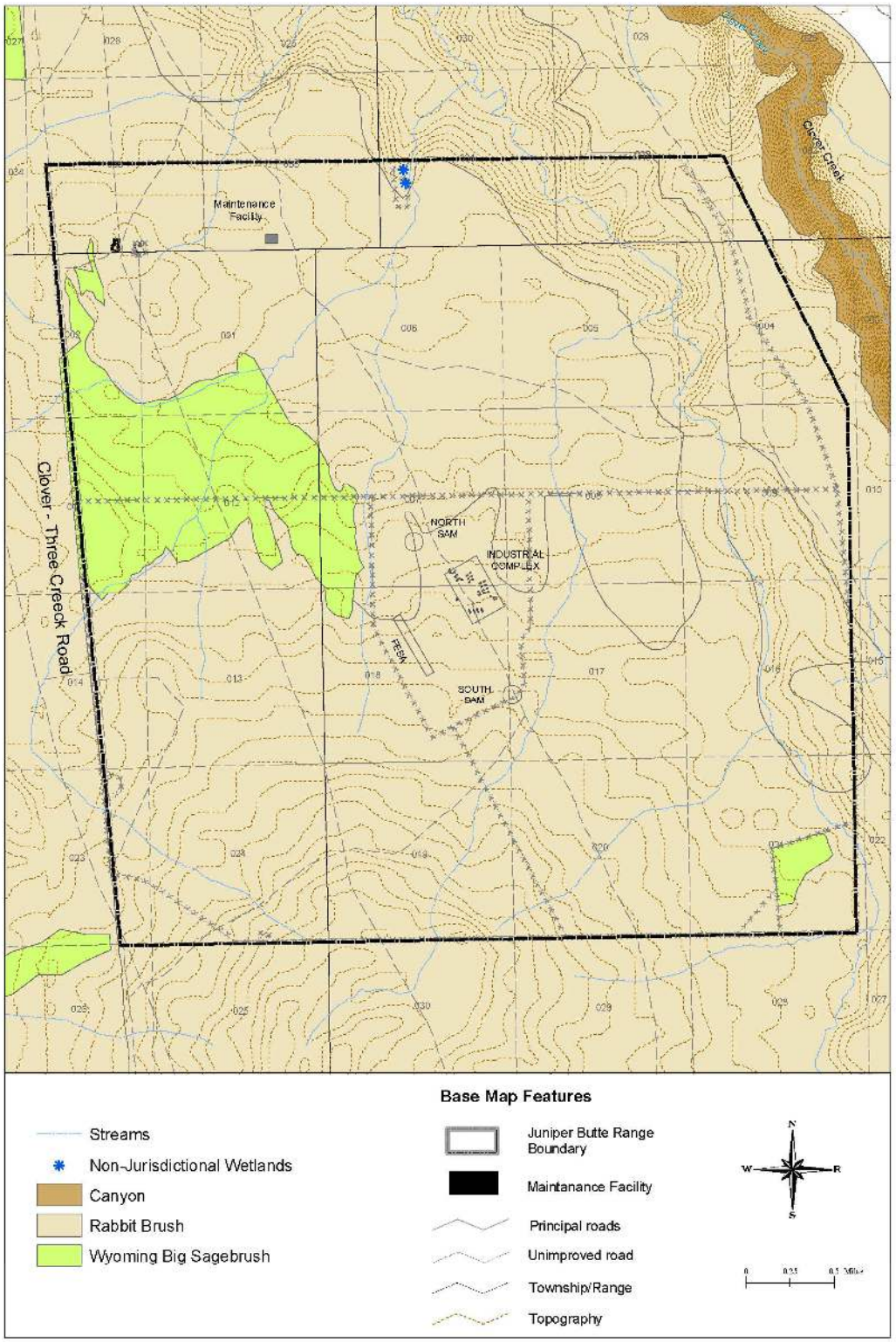


Figure 2-24
Course Scale Vegetation Types at Juniper Butte Range

Natural Resources Management Units

Natural resource management units are defined as areas that require more intense management to provide specific resource protection. They are the areas associated with the natural resources concerns, goals, and objectives. These management units occur mostly in the unimproved areas but sometimes occur in the semi-improved areas within the lands managed by MHAFB. There are no mineral leases on MHAFB, SAR or MHRC.

MHAFB

The following land management units were identified on MHAFB: native species habitats, Davis' peppergrass habitat, burrowing owl habitat, annual grasslands, weed control areas, rubble sites, and firebreaks.

SAR

The following land management units were identified on the SAR: Davis' peppergrass habitat, annual grasslands, and weed control areas (Figure 2-34).

MHRC

SCR

The following land management units were identified on SCR: wetlands, facilities and targets, firebreaks, sagebrush/greater sage-grouse habitat, annual grasslands, and perennial grasslands.

JBR

The following land management units were identified on JBR: facilities and targets, LEPA habitat, sagebrush/greater sage-grouse habitat, ferruginous hawk habitat, and Juniper Draw.

2.3.2.3 Turf and Landscaped Areas

MHAFB

The grasses present on MHAFB in the turf and landscaped areas include Kentucky bluegrass (*Poa pratensis* L.), creeping red fescue (*Festuca rubra*), and Italian ryegrass (*Lolium multiforum*). In addition, white dutch clover (*Trifolium repens*) is also used. The majority of lawns and parks are seeded with Kentucky bluegrass. Kentucky bluegrass alternatives, such as turf-type tall fescue (*Festuca arundinacea*), should be used more extensively on MHAFB to reduce water needs. Emphasis on drought-tolerant or native species needs to be a priority in landscape design. A mix of deciduous and evergreen trees and shrubs have been planted on MHAFB (section 14, Appendix H) to enhance aesthetics, for shade, and as wind breaks. In the mid-1990's a cooperative effort between the NRCS, Aberdeen Plant Materials Center and MHAFB tested a variety of trees for longevity and vigor as wind breaks. Section 14, Appendix H lists species commonly planted as a result of the trial.

To provide landscaping alternatives that would use significantly less water, a xeriscape exhibit was established in front of Building 1297 during 1998. This exhibit provides examples of aesthetically pleasing xeriscaping for Base personnel to adapt for Base housing and administrative facilities. The landscape uses significantly less water and is very robust. Water usage since 2000 has been limited to 1 hour per week.

In order to ensure the survival of the landscape plants at MHAFB, it has been necessary to replace the soil to ensure the survival of the plants areas that were heavily sterilized in the past to control vegetation.

MHRC

No turf or landscaped areas exist within the MHRC.

2.3.3 Fish and Wildlife

MHAFB actively manages wildlife on Air Force lands and cooperates with IDFG, USFWS, and the BLM. Wildlife habitat is maintained or removed through vegetation manipulation and ground disturbance, and is largely managed through post-fire rehabilitation and grazing practices. Quality wildlife habitat includes a diverse mixture of forbs, grasses, shrubs, and available water sources. These features form the basis of community structure.

157 different species of wildlife have been identified on MHAFB and MHRC. This includes 60 species on MHAFB, 71 species on SCR, 60 species on JBR, and 76 species on the emitter sites.

Wildlife Surveys

From 1994 to 1995, an Ecosystem Survey was conducted on MHAFB, SCR, and Restricted Airspace R-3202A. This survey was composed of nine component studies, including: (1) plant communities, (2) jurisdictional wetlands, (3) rare plants, (4) nesting and wintering raptors, (5) sage-grouse, (6) pronghorn antelope, (7) Idaho Dunes tiger beetles, (8) kit fox, and (9) reptiles and amphibians (see section 14, Appendix J).

In spring 1995, habitat mapping and raptor nesting surveys were performed as a part of the Ecosystem Survey on SCR and MHAFB. No federally listed threatened or endangered species were found and limited foraging habitat is available for these species on MHAFB. The three storage lagoons provided habitat for waterfowl and shorebirds when they were not frozen. Species most often found in these lagoons were mallard ducks (*Anas platyrhynchos*), spotted sandpipers (*Actitis macularia*), Wilson's phalaropes (*Phalaropus tricolor*), barn swallows (*Hirundo rustica*), and bank swallows (*Riparia riparia*). Waterfowl are a potential prey for bald eagles (*Haliaeetus leucocephalus*). However, since bald eagles only winter along the Snake River, when the waterfowl numbers are markedly reduced at the lagoons, the potential for bald eagles to forage on MHAFB is low. Peregrine falcons (*Falco peregrinus*) nest along the Snake River; however, use of MHAFB for foraging would be low because of the low availability of prey and the distance from the canyon. The three storage lagoons are now retired and have been capped. However, in 1996, a seven million gallon treated effluent lagoon was built near the original three lagoons. This new lagoon serves as a wildlife attractant and the wildlife species noted above are still of concern on the base.

In 1996, an Enhanced Training in Idaho (ETI) Survey was conducted on small mammals. ETI components and SCR are now referred to as the MHRC. Science Applications International Corporation, Inc. (SAIC) trapped these mammals using live Sherman traps. Following this survey, the ETI sites were referred to as Remote Training Sites (RTS) or, more accurately, Emitter Sites.

JBR was surveyed for animal species in 1996 and 1999 as part of the Environmental Impact Statement (EIS) for the Enhanced Training in Idaho Complex. Several times through the 1990's surveys were performed by various persons and agencies on MHRC for animal species. Many reports were cited in the EIS. The Biological Surveys noted therein are too numerous to list here.

A mitigation measure from the ETI EIS Record of Decision requires a biologist to inspect emitter sites for greater sage-grouse (*Centrocercus urophasianus*) and raptor activities. Beginning in 2000, annual surveys have been conducted for greater sage-grouse and raptors at emitter sites known to be used during critical periods of the year (during wintering, breeding, and/or nesting season).

From 2004 to 2006, the Air Force conducted general wildlife surveys to develop baseline information for MHAFB, SCR, and JBR. These surveys provided information on species distribution, relative numbers, habitat use, and behavior. Survey methods include Pedestrian Wildlife Surveys (Area Search), Low Velocity Driving Transects, and Point Counts.

In 2007, an owl pellet study was conducted on MHAFB, SCR, JBR, and Emitter Site AF. This study included the collection of owl pellets for over a year to determine the presence or absence of various small mammals. Owl pellets are a convenient and accurate way to determine what small mammals are present because mammal skulls remain relatively intact in pellets. In addition, skulls are diagnostic for every mammal species. For the results of the evaluation of these owl pellets, see the Technical Memorandum in section 14, Appendix B.

In 2008, the following wildlife surveys took place on MHAFB and MHRC:

- Greater sage-grouse lek surveys, use surveys, and breeding bird surveys on emitter sites, JBR, and on SCR;
- Low velocity driving surveys (LVDS) for raptors along emitter site roadways, and on the Overlook Road on SCR;
- Raptor nesting surveys on JBR along Juniper Draw;
- Greater sage-grouse nesting surveys for portions of JBR and SCR;
- ANABAT surveys for bats on MHAFB & SCR;
- Loggerhead shrike (*Lanius ludovicianus*) trapping surveys; and
- Fairy Shrimp (*Branchinecta* spp.) surveys

For a detailed report of these surveys, see section 14, Appendix B.

MHAFB

Wildlife species found on MHAFB primarily consist of species that easily habituate to noise and human presence. There are four dominant wildlife habitat types as defined by topography and vegetation:

- landscaped areas around residential and Base facilities;
- isolated sagebrush flats;
- flat areas dominated by exotic annual weed species; and
- rubble piles dominated by exotic annual weed species.

Other notable areas are the rapid infiltration basins (RIBs) and the treated effluent storage lagoon that attracts waterfowl.

Status of Inventories and Current Conditions. One wildlife survey performed on MHAFB was the nesting raptor survey performed during the 1995 Ecosystem Survey. However, wildlife was also recorded during the rare plant and plant community elements of the Ecosystem Survey. An Avian Observational Survey was performed in March 2005 and another was performed in June 2005. These surveys were performed at several locations throughout MHAFB. The purpose of the surveys was to document the diversity and relative abundance of avian species that occur on MHAFB. Observations consisted of visual sightings, auditory calls, and avian signs. In addition, multiple wildlife surveys have taken place on MHAFB

(section 14, Appendix B). These wildlife surveys document the various species of wildlife that can be found within MHAFB.

During the vegetation surveys of MHAFB, only small, isolated stands of native habitat were located. The majority of MHAFB and the surrounding lands have been converted to non-native species by fires, agriculture, and development. This limited habitat and small patch size cannot support wide-ranging species, such as mule deer *(Odocoileus hemionus*), pronghorn antelope (*Antilocapra americana*), and greater sage-grouse. However, many smaller mammals, reptiles, and birds have adapted to urban areas and human disturbance.

Mammals

Numerous small mammals are known to occur throughout MHAFB in all habitats. Piute ground squirrels (*Spermophilus mollis*) are especially abundant around the golf course and landscaped areas. Ground squirrels are periodically controlled on the golf course to reduce damage to the facility (Pest Management Plan; section 15, Tab 5). Burrows are carefully assessed to eliminate the target species and avoid impacts to burrowing owls.

Several rodent species are present within MHAFB but tend to be strongly cyclical, responding to environmental factors such as disease, increase in predators, or food shortages. This naturally controls populations during most years. However, during high population years, additional control measures may be required.

Bats have been observed in the evenings and may roost in buildings and trees and forage around lights. Bats on MHAFB are generally associated with buildings, the urban forest, and the golf course. The species identified on MHAFB are the silver-haired bat (*Lasionycteris noctivagans*), big brown bat (*Eptesicu fuscus*), long-eared myotis, and Yuma myotis.

Badgers and coyotes are classified in Idaho as fur-bearing and predatory wildlife, respectively, and are common on MHAFB in all habitats. They are of concern in or near occupied areas and near the flightline (section 15, Tab 2). Badgers may be aggressive, and have been known to cause damage to the golf course. Live traps have been used to relocate the few problem badgers. Coyotes are generally left alone, but may be killed and removed by Wing Safety or Security Forces if base occupants feel threatened or they cross the airfield, posing a BASH hazard. Further information on pest management is included in the MHAFB Pest Management Plan (section 15, Tab 5).

Black-tailed jackrabbits (*Lepus californicus*) are classified in Idaho as predatory wildlife and are common in undeveloped natural areas around the perimeter of MHAFB. These areas are dominated by sagebrush, with an understory of cheatgrass.

Birds

Although birds may become a problem for BASH, MHAFB has a very low incident of bird-aircraft strikes, and removing individuals or eliminating habitat is seldom necessary. BASH is evaluated daily by Flight Safety to determine the level of risk each morning and evening by identifying bird locations and counting the number of birds. Frequently, scare tactics (e.g., making loud noise) are used to reduce the numbers of birds around the flightline. To avoid attracting birds to the area, vegetation, such as high grass and shrubs, are strictly controlled, reducing any potential habitat. If the birds do not leave and all other methods have been exhausted, then flight safety is authorized by the State of Idaho and USFWS to kill a minimal number of birds. Approximate numbers killed during a year range from 80 to 150 birds. Species include horned larks (*Eremophila alpestris*), ravens, sea gulls, and waterfowl. The MHAFB Bird and

Wildlife Strike Hazard Safety Plan contains further information on tactics to prevent strike hazards (section 15, Tab 2). A birding checklist for MHAFB is available on the DoD Partners in Flight website (https://www.denix.osd.mil/dodpif/home/).

Raptors. Although these large birds can create a BASH problem, protocols have been successful in avoiding incidents. There is no need to reduce or increase the populations of these birds on MHAFB. Many raptors have been observed on the Base: great-horned owl (*Buteo virginianus*), barn owl (*Tyto alba*), short-eared owl (*Asio flammeus*), golden eagle (*Aquila chrysaetos*), red-tailed hawk (*Buteo jamaicensis*), Swainson's hawk (*Buteo swainsoni*), rough-legged hawk (*Buteo lagopus*), northern harrier (*Circus cyaneus*), American kestrel (*Falco sparverius*), prairie falcon (*Falco mexicanus*), and turkey vulture (*Cathartes aura*).

Prairie falcons are known to nest in the Snake River Canyon to the south of MHAFB, but suitable nesting substrate does not occur on MHAFB. Great-horned owl, red-tailed hawk, Swainson's hawk, and American kestrel are frequently found nesting in trees within the golf course. Rough-legged hawks, northern harriers, American kestrels and prairie falcons are commonly found foraging in undeveloped natural areas along the perimeter of the Base. Red-tailed hawks have been seen hunting over cheatgrass habitat within Fam Camp and Trap and Skeet Range. Golden eagles are infrequent visitors to the base. The last sighting in 2010 was near the golf course.

An American kestrel nest box was installed on Building 1817, the new golf course maintenance building, to provide natural rodent control.

Rough-legged hawks are present only during the winter. Short-eared owls, Swainson's hawks, and turkey vultures are summer residents. Great-horned owls, barn owls, golden eagles, red-tailed hawks, northern harriers, American kestrels, and prairie falcons are year-round residents.

Waterfowl. The treated effluent storage lagoon and golf course ponds provide open water for mallards, other ducks, and geese. Spotted sandpipers and Wilson's phalarope are also common in these areas. A great number of birds migrate through the area during the spring and fall, but some birds are found year round. Because the storage lagoon supports waterfowl, bald eagles may forage here during the winter, but they have never been reported. MHAFB has an active program to discourage waterfowl use of the treated effluent lagoon for BASH prevention.

In a Wildlife Survey performed in 2007 (section 14, Appendix B), various waterfowl were observed in the wastewater storage lagoon. At least 100 mallard ducks were counted. Other waterfowl observed in the lagoon were American widgeon (*Anas americana*), northern pintail (*Anas acuta*), lesser scaup (*Aythya affinis*), common goldeneye (*Bucephala clangula*), bufflehead (*Bucephala albeola*), and Canada goose (*Branta canadensis*). This was the first time that lesser scaups had been identified on MHAFB.

Other Birds. Birds commonly found within MHAFB include: black-chinned hummingbird (*Archilochus alexandri*), American robin (*Turdis migratorius*) European starling (*Sturnus vulgaris*), California quail (*Callipepla californica*), house finch (*Carpodacus mexicanus*), house sparrow (*Passer domesticus*), black-billed magpie (*Pica hudsonia*), dark-eyed junco (*Junco hyemalis*), mourning dove (*Zenaida macroura*), common raven (*Corvus corax*), western meadowlark (*Sturnella neglecta*), barn swallow, bank swallow, horned lark, and killdeer (*Charadrius vociferus*).

A master bird bander resided at MHAFB from August 2001 to May 2005. During this time, he banded birds in base housing with the knowledge and permission of the Base, and under permit from the IDFG and USFWS. Through this effort, the first ruby-throated hummingbird (*Archilochus colubris*) identified in

Idaho was caught and banded. The rufous hummingbird and black-chinned hummingbird (*Archilochus alexandri*) were the most frequently banded birds.

In the middle of MHAFB are runways, maintained turf, mature trees, tree windbreaks, and improved and unimproved parking lots and roads. The windbreaks were designed by the Natural Resources Conservation Service (NRCS) and implemented by MHAFB. They were designed to, and are very effective at, providing wildlife habitat. In these areas, the following birds are most commonly seen: American robins, Western tanagers (*Piranga ludoviciana*), European starlings, California quail, house finches, and house sparrows.

Surrounding the turf of the golf course are annual grasslands. In these areas, black-billed magpies, American robins, and European starlings are most often seen. California quail are also seen in these areas.

The Fam Camp and Trap and Skeet Range contain turf, mature trees, tree windbreaks, a tree farm, and a large unpaved parking lot. Surrounding this area is annual grasslands. California quail, American robins, black-billed magpies, dark-eyed juncos, white-crowned sparrow (*Zonotrichia leucophrys*) and mourning doves are the most common bird species in this area. California quail have been observed in coveys of over 80 individuals. The windbreak in this area reduces wind, dust, and provides an aesthetic buffer (including bird watching) between the munitions depot and the Fam Camp. In 2007, American robins and dark-eyed juncos were the most prevalent animals within Fam Camp and Skeet Range. California quail and white-crowned sparrow were also common in these areas. Two lark sparrows (*Chondestes grammacus*) and a chipping sparrow (*Spizella passerina*) were observed within Fam Camp. This is the first time that these two bird species were recorded on MHAFB. Other bird species found in this area include American goldfinches (*Carduelis tristis*), western tanagers, and a yellow warbler (*Dendroica petechia*).

Along the perimeter of MHAFB are undeveloped natural areas that are dominated by cheatgrass and sagebrush. European starlings, common ravens, western meadowlarks, and mourning doves are common in these areas.

Various birds are seen within the Silver Sage Golf Course. Black-billed magpies, American robins, and European starlings are the most common species on the golf course. California quail is also commonly seen. Western kingbirds (*Tyrannus verticalis*) are commonly seen foraging on the golf course. In 2007, a male Bullock's oriole (*Icterus bullockii*) was observed perched in a tree and a yellow warbler was heard.

The two main water bodies within MHAFB are the treated effluent storage lagoon and the golf course ponds. Barn swallows and bank swallows are often seen in these areas. Barn swallows and bank swallows are commonly seen foraging on insects flying over the treated effluent storage lagoon.

Eleven rapid infiltration basins exist on the western boundary of the Base adjacent to the treated effluent lagoon. These basins contain little or no water during the majority of the year and consist mainly of bare soil with puddles of water. Horned larks and killdeer are the most frequent residents of the basins. Brewer's blackbirds (*Euphagus cyanocephalus*) have been seen in bull rushes and cattails within the basins. Barn swallows and bank swallows forage over the basins. A rock wren (*Salpinctes obsoletus*) was seen in 2007 perched on a rock pile near the basins. Ducks will occasionally visit any ponded water in the basins.

In March and May 2007, Wildlife Surveys (section 14, Appendix B) were conducted to identify wildlife within MHAFB. During this time, common ravens and house sparrows were the most commonly seen bird species near the Base Landfill (now closed and capped). Horned larks were frequently seen in the

fields north of the Training Area. California quail were the most abundant species seen near the Gunfighters Club. Dark-eyed juncos were also common near this area. A vesper sparrow (*Pooecetes gramineus*) was seen in the bushes next to a building and a western wood pewee (*Contopus sordidulus*) was identified in a tree near this building. This was the first time a western wood pewee was recorded on MHAFB. Ten chipping sparrows were seen foraging in the trees and on the ground in bark chips. Two yellow warblers were heard singing, and one Bullock's oriole was calling in a tree. In addition, two Brewer's blackbirds were seen foraging within the grass.

Reptiles and Amphibians

Because aquatic and sagebrush habitat is limited, no amphibians and few reptiles occur on MHAFB. All native amphibians and reptiles in Idaho are classified by IDFG as Protected Nongame Species. Few reptile observations have been made during any wildlife survey. Desert horned lizards (*Phrynosoma platyrhinos*), Western fence lizards (*Selophorus occidentalis*), sagebrush lizards (*Sceloporus graciosus*), Great Basin Gopher snakes (*Pituophis catenifer deserticola*), common gartersnakes (*Thamnophis sirtalis*), and Western rattlesnakes (*Crotalus viridus*) are occasionally found on MHAFB. Pigmy short–horned lizards (*Phrynosoma douglasii*) and several other reptile species may also be present.

SAR

The habitat on SAR is in poor condition due to repeated fires and invasive species. Although no wildlife surveys have been conducted at SAR, species should be the same as those using the undeveloped portions of MHAFB. Common species in this area are expected to include several raptors, badger, Piute ground squirrel, coyote, horned lark, various sparrows, and some reptile species. Waterfowl do not use the area because there is no habitat available. Shorebirds could potentially use the seven shallow vernal pools during wet springs. Pronghorn antelope may use the area, but population numbers have not been investigated.

Fairy shrimp have been found in the large playa adjacent to the SAR. The specific species has not been determined. Fairy shrimp are arthropods related to crustaceans (crabs, lobsters, shrimp, etc.). Fairy shrimp persist in playas by laying impervious eggs called "cysts." The cysts can survive harsh environmental conditions for long periods of time (decades or perhaps centuries) such as freezing, high heat, and dehydration. When water enters the playas from storm events and the right conditions are present the cysts hatch. Fairy shrimp reach maturity in about six weeks, breed, and die. They disappear when the playa freezes or dries out (Eriksen & Denton, 1999).

SCR

Status of Inventories and Current Conditions. On SCR, the State of Idaho, the BLM, and MHAFB all participate in managing habitat. Wildlife habitat is maintained or removed through vegetation manipulation. On SCR, outside the EUA, vegetation is largely managed through post fire rehabilitation and grazing practices. Permits administered by the BLM per public land order (section 14, Appendix E) administer grazing. Although the BLM provides administrative support and grazing permits, MHAFB is still responsible for managing wildlife habitat and biological diversity on SCR through ecosystem management. The protection of biodiversity is directed under AFI 32-7064. MHAFB has performed ecosystem surveys to provide information to assist in management decisions. Study results may indicate a need to modify current vegetation management strategies (adaptive management) to meet AFI ecosystem management requirements and objectives to protect biodiversity.

During the Ecosystem Survey project, seasonal surveys were performed for pronghorn antelope, sage-grouse, raptors, reptiles, and amphibians. Data was also recorded as incidental observations during the plant community and rare plant surveys.

Mammals

Mammals recorded on SCR include pronghorn antelope, mountain cottontail (*Sylvilagus nuttallii*), Ord's kangaroo rat, coyote, American badger, mule deer, black-tailed jackrabbit, Piute ground squirrel, northern pocket gopher (*Thomomys talpoides*), and elk (*Cervus canadensis*). Pronghorn antelope use SCR year-round, including the EUA. Range staff has reported suspending operations temporarily to move pronghorn antelope away from the targets. Range personnel report herds of mule deer and pronghorn antelope up to 200 individuals in the winter. During the surveys, pronghorn antelope were found in higher numbers in the spring (150 animals) than in the winter (25 animals in 1994 and 77 animals in 1995). In the winter, pronghorn antelope appear to concentrate in habitats with a shrub component and they tend to gather in larger herds. Winter use of SCR depends in part on the severity of the winter. The southern portion of SCR is more frequently used because of the higher component of sagebrush. During very severe (high snow cover) winters, animals congregate in the more snow-free areas near the Bruneau River Canyon.

Mule deer use SCR year-round. Areas with mature sagebrush are particularly important during the winter for forage and cover. Few specifics are known about how mule deer use SCR.

In 2005, a substantial fire occurred on the southeastern portion of SCR, referred to as the Clover Fire. This fire removed a significant amount of Wyoming big sagebrush from the area. Pronghorn antelope and mule deer now rely on the remaining stands of sagebrush during the winter. The majority of this area has been replanted, and wildlife has since used the flax heavily as well as the rangeland alfalfa and bottlebrush-squirrel tail.

There are no low sagebrush communities near SCR. Densities of pronghorn antelope in the crested wheatgrass and Wyoming big sagebrush communities around SCR appear to be fairly even and both are lower than for the low sagebrush types. Although crested wheatgrass would not be expected to provide quality habitat for pronghorn antelope, they have been observed in this area, including very small fawns suggesting this area is used for fawning or fawn rearing. Because less research has been done on population numbers and habitats near and on SCR, few inferences can be made as to their relative regional importance.

Coyotes are also known to use SCR year-round. They are especially abundant in big sagebrush habitats. Badgers have also been recorded within SCR year-round. Elk have been seen during the spring.

Two species of rabbit are known to occur within SCR. Black-tailed jackrabbits and mountain cottontail occur in this area. Black-tailed jackrabbits are frequently seen in big-sagebrush habitats. Mountain cottontails are most often seen near rock outcrops and around buildings.

A bat survey was performed on SCR at a livestock water reservoir in July of 2008 using ANABAT equipment. Western pipistrelle echolocation calls dominated the recordings. Several long-eared myotis calls and a Western small-footed were recorded. Several possible Yuma myotis were recorded. A call suggestive of a Townsend's big-eared bat was recorded, but was not definitive. Western small-footed bats and Yuma myotis were recorded at the same location at the end of August in 2009. It is likely that bats concentrate foraging efforts around the livestock tanks and reservoirs located on SCR. Bats are also present in the Bruneau River Canyon and will likely forage outside the canyon on SCR.

In October 2006, two bushy-tailed woodrat (*Neotoma cinerea*) nests were seen along Clover Three-Creek Road. One of these nests was in a cattle guard and the other was in a rock-jack, which supported a wire gate. Woodrats are also commonly observed near Pot Hole Reservoir and Pot Hole Canyon. Distribution of this species as well as desert woodrats (*Neotoma deserticola*) on SCR needs to be more closely evaluated.

Ord's kangaroo rats are seen in almost every habitat type on SCR. These rats are very commonly observed in Brown's Gulch and Pot Hole Canyon. In addition, Piute ground squirrels and northern pocket gophers are also frequently seen in Brown's Gulch.

No small mammal trapping surveys have been performed on SCR. However, an evaluation of owl pellets revealed the presence of sagebrush voles (*Lemmiscus curtatus*), Ord's kangaroo rats, Northern pocket gophers, and Great Basin pocket mouse (*Perognathus parvus*).

Birds

Raptors

Sixteen species of raptors were recorded on SCR during the various Ecosystem Survey studies. No raptor territories or nests are located on the EUA except for those of American kestrels.

Cliff-nesting raptor habitat is found along the Bruneau River to the west of SCR. Many raptors utilize the high cliffs and canyons for nesting. Although some low rimrock occurs on SCR, few cliffs provide adequate habitat for cliff-nesting raptors.

Northern harriers and short-eared owls (*Asio flammeus*) are seen in almost every habitat type on SCR. Northern harriers are very common in big sagebrush habitats or in areas with crested wheatgrass. These birds, as well as golden eagles, are known to forage over burned areas. Northern harriers have also been reported in Brown's Gulch and Pot Hole Canyon on SCR. Rough-legged hawks have been observed within Brown's Gulch as well.

Raptors that have been observed near the Clover Three-Creek Road include the northern harrier, red-tailed hawk, American kestrel, short-eared owl, rough-legged hawk, prairie falcon, and common nighthawk (*Chordeiles minor*). Within Pot Hole Canyon, the northern harrier, Swainson's hawk, golden eagle, short-eared owl, and common nighthawk have been seen. Common nighthawks also can be found at Pot Hole Reservoir, commonly foraging above the water. Other species seen at Pot Hole Reservoir include the northern harrier and the golden eagle. Along the road to AB, northern harriers, Swainson's hawks, short-eared owls, and common nighthawks have been observed. In addition, northern harriers, prairie falcons, American kestrels, short-eared owls, and common nighthawks have been spotted near the South Central Reservoir. Northern harrier, red-tailed hawk, short-eared owl, and common nighthawk have also been observed in the south-central portion of SCR, while northern harrier, sharp-skinned hawk (*Accipiter striatus*), golden eagle, rough-legged hawk, and short-eared owl have been observed in the southwest SCR plantings.

Two American kestrel nest boxes have been installed on SCR in the EUA. One has been effective in preventing the birds from nesting on the Range Control Officer (RCO) tower. The other is intended to prevent common ravens from using the observation tower on Pence Butte. This is a new approach to pest prevention and will continue to be evaluated in the future.

Upland Game Birds

Gray partridge and California quail have been seen on SCR. These species are not found in large numbers. They probably access SCR, intermittently, from nearby agricultural areas.

Waterfowl

No year-round concentrations of waterfowl are found within SCR or its overlying restricted airspace because appropriate habitat and bodies of water do not occur. Waterfowl concentrate along the Snake River just north of SCR and may be present year-round. Densities are significantly smaller than many other sites in the region but large numbers of birds migrate through the area during spring and fall. Canada geese, mallards, wood ducks, buffleheads, goldeneyes, coots, loons, grebes, avocets, swans, and cormorants (*Phalacrocorax auritus*) occur in the Snake River Flyway. These waterfowl use temporarily flooded areas (e.g., playas) and manufactured livestock ponds on SCR. Pot Hole Reservoir can have large numbers of waterfowl seasonally. Pot Hole Reservoir holds water for significant periods of time after storm events. It typically holds water from October through June. Waterfowl use this area when it is inundated and not frozen. Fairy shrimp may provide food for waterfowl in the early spring. The small livestock water reservoir in the southern part of SCR generally contains water year-round. This reservoir is used by waterfowl when it is not frozen.

Other Birds

Other birds that have been observed on SCR include the horned lark, black-billed magpie, common raven, western meadowlark, grasshopper sparrow (*Ammodramus savannarum*), mourning dove, white-crowned sparrow, cliff swallow (*Petrochelidon pyrrhonota*), vesper sparrow, lark sparrow, rock wren, killdeer, northern flicker (*Colaptes auratus*), western kingbird, Brewer's blackbird, spotted towhee *(Pipilo maculates*), marsh wren (*Cistothorus palustris*), mountain chickadee (*Poecile gambeli*), American robin, and mountain bluebird (*Sialia currucoides*).

Horned larks, common ravens, and western meadowlarks can be seen in almost every habitat type of SCR. Horned larks and western meadowlarks have been seen in sagebrush habitats, Sandberg's bluegrass habitats, and in crested wheatgrass dominated habitats. In addition, these two birds are also very common in Brown's Gulch and Pot Hole Canyon.

Mountain bluebirds have been seen foraging for flying insects in burned areas. Cliff swallows are commonly observed foraging above water features. Table 9 in the "Wildlife Data Summary, October 2006" report (section 14, Appendix B; MHAFB, 2006) lists all species that were seen within SCR in 2006.

Reptiles and Amphibians

The only SCR habitat for amphibians includes springs and stock tanks. No amphibians were found during the surveys. The EUA has no known or potential habitat for amphibians.

Eight species of reptiles were located during surveys: desert horned lizard, long-nosed leopard lizard (*Gambelia wislizenii*), Western fence lizard, sagebrush lizard, Western whiptail (*Aspidoscelis tigris*), Great Basin gopher snake, Western rattlesnake, and common garter snake. In addition, a striped whipsnake was seen near SCR at the Bruneau Canyon Overlook. Reptiles are found in lower densities in this area than other parts of the state. Reptile activity is highest in the early summer because all reptiles in the area hibernate during the winter. All reptile species were found in the upland locations. Most were observed in or near areas with a distinct shrub cover (i.e., stands of sagebrush or rabbitbrush several

hundred meters in diameter to widely scattered shrubs within a crested wheatgrass seeding). Only the desert horned lizard was commonly encountered within stands of crested wheatgrass. The Western whiptail is seen in the northern half of SCR where the soils are sandy. Range personnel commonly report observing rattlesnakes at SCR. Several other species of reptile are likely, including the pigmy short-horned lizard.

JBR

Status of Inventory and Current Conditions. Inventories for wildlife were conducted in 1996 and 1999 to support the EIS for the ETI Complex. Per the Settlement Agreement, Record of Decision (ROD), and Supplemental Record of Decision (SROD), monitoring occurs for ferruginous hawks and greater sage-grouse on JBR. Wildlife observations are also noted during the course of LEPA and grazing monitoring.

Since 2003, greater sage-grouse lek surveys and concurrent raptor surveys were completed on selected emitter sites in the Juniper Butte and Grasmere areas. In September 2004, a Pedestrian Wildlife Survey was performed in Juniper Draw. The purpose of the survey was to document all wildlife species observed in Juniper Draw and on adjacent canyon slopes and exposed cliff habitats. In 2005, 2006, and 2007, wildlife surveys were conducted in JBR. In addition, raptor and greater sage-grouse surveys have been taking place at JBR since 2007.

The dominant physical feature on JBR is Juniper Draw, which provides a wildlife access point to Clover Creek and serves as a wildlife movement corridor for both seasonal and daily movements. Access to Clover Creek from the uplands is limited because it is incised in a deep canyon, East Fork Bruneau Canyon, which is lined with basalt cliffs. The draw not only increases connectivity between desert upland and riparian canyon habitats, but also provides a series of quality habitat patches. A 1,000-acre patch of sagebrush, with a Sandberg's bluegrass understory, still provides high quality, climax vegetation for some wildlife species on JBR.

Species found on JBR include pronghorn antelope, birds, reptiles, small mammals, coyotes, and mule deer. Most raptor species observed within JBR are canyon-nesting species and may nest in the East Fork Bruneau Canyon, just east of the range.

JBR has a recent history of fire, ground disturbance, and habitat conversion. JBR does not have perennial streams. Juniper Draw is ephemeral and runs water about every three to five years for less than a week. The only permanent water source on JBR is the 50,000-gallon capacity water impoundment on the southwestern boundary. The fenced impoundment was built, and is filled and operated, by the grazing lessee. The landscape of the JBR is a setting of mixed habitats of grass and shrublands, juniper stands, rocky to silty soils, and varied topographic relief.

Mammals

Mammal communities at JBR are dominated by an assortment of small mammals, including deer mice, jackrabbits (black-tailed and white-tailed), least chipmunks (*Eutamias minimus*), Great Basin pocket mice, bushy-tailed woodrats, Ord's kangaroo rats, and mountain cottontails. Mountain cottontails and coyote are found in nearly every habitat type within JBR. Mountain cottontails have been commonly seen near the target areas. Coyotes are frequently found near water features. Mule deer use the higher relief of the draw and the junipers as cover. Pronghorn antelope are found year-round throughout JBR and use sagebrush habitat in the southern part of JBR during winter. Coyotes and badgers also occur on JBR.

In October 2006, a Wildlife Survey occurred within various portions of JBR. During this survey, coyotes were heard calling on the JBR Reservoir and within the areas of the JBR Targets. One least chipmunk

was seen foraging on the JBR Reservoir berm. Near the JBR Targets, one Ord's kangaroo rat and five mountain cottontail were observed in the heated target buildings.

In January 2007, areas within JBR were again surveyed. Coyote tracks were observed in the JBR Reservoir, near the JBR Targets, and in the southern portion of Juniper Draw. Seven mountain cottontails were observed within the JBR Targets and tracks and scat from this cottontail were seen in the southern portion of Juniper Draw. A set of bobcat tracks were observed in the snow within the northern portion of Juniper Draw.

A bat survey was performed on JBR in Juniper Draw and in the Target Area at the end of August/beginning of September 2009 using ANABAT equipment. A Western pipistrelle and a little brown bat echolocation call were recorded in the Target Area. A little brown bat and a Western small-footed myotis were recorded in Juniper Draw. It is likely that bats concentrate foraging efforts around the livestock tanks and reservoirs located on JBR. Bats are also present in the Bruneau River Canyon and will likely forage outside the canyon on JBR.

In December 20015, elk were spotted by the range contractors on JBR.

Birds

Raptors

Most raptor species observed within JBR are canyon/cliff-nesting species that may nest in the Clover Creek Canyon outside the eastern margin of the range. Swainson's hawks and ferruginous hawks have been observed using the juniper trees in Juniper Draw as nest sites (section 14, Appendix B; CH2M HILL, 2008b). Upland raptorial species, including ferruginous hawks and burrowing owls, have been observed at JBR. Other raptor species observed over JBR include golden eagle, red-tailed hawk, short-eared owl, Swainson's hawk, prairie falcon, American kestrel, and great-horned owl. Raptors use the utility poles along the western perimeter of JBR for perching. The short-eared owl can be found in nearly every habitat type within JBR, including areas of bare soil. This owl is commonly seen within sagebrush/rabbitbrush habitats. Swainson's hawks, red-tailed hawks, and prairie falcons are frequently observed soaring over canyons. Several raptor species use rock features that line the ridges along Juniper Draw. At the bottom of Juniper Draw are stands of juniper trees. Ferruginous hawk, Swainson's hawk, American kestrel, and great-horned owl are often seen nesting in these juniper trees.

In October 2006, one prairie falcon was seen foraging in the SW water impoundment. Also at this time, one red-tailed hawk was seen in the southern portion of juniper draw. Northern harriers, red-tailed hawks, and an American kestrel were seen in the northern portion of Juniper Draw. The American kestrel was seen chasing one of the northern harriers away from its territory.

In January 2007, a short-eared owl was flushed from the berm in the SW water impoundment during a wildlife survey. One of these owls was also flushed from juniper trees from the northern portion of Juniper Draw and two owls were seen foraging in the southern portion. One rough-legged hawk was also seen perched on a rock outcrop within Juniper Draw.

An American kestrel nest box has been installed on the southwest observation tower to prevent common ravens from using the tower. This is a new approach to pest prevention and will continue to be evaluated in the future.

Upland Game Birds

The chukar, a medium-sized introduced partridge, occupies areas within the East Fork of Bruneau Canyon with appropriate rocky escape habitat. These birds probably range onto the eastern areas of JBR and Juniper Draw when foraging. Sage-grouse and mourning doves can also be found on JBR.

Other Birds

Other birds that occur on JBR include western meadowlark, rock wren, savanna sparrow, vesper sparrow, horned lark, black-billed magpie, European starling, and cliff swallow. The vesper sparrow, horned lark, and western meadowlark and found in most habitats within the range. Within the target area of JBR, western meadowlark, horned lark, European starling, and cliff swallow are frequently seen. The horned lark is also observed near water features. A gray flycatcher (*Empidonax wrightii*) was recorded within the northern portion of Juniper Draw. This was the first record of this species within JBR.

Reptiles and Amphibians

Water troughs and the rock pool on JBR may provide limited amphibian habitat but none have been observed.

Typical reptiles include desert horned lizard, side-blotched lizard (*Uta stansburiana*), sagebrush lizard, gopher snake, and western rattlesnake. Western rattlesnakes occur usually near rocky areas associated with canyons, lava flows, and pressure ridges but are also frequently observed in the industrial target complex buildings.

OTHER MHAFB COMPONENTS

There are 20 quarter-acre emitter sites, 10 one-acre emitter sites, 5 ND Target Sites, Blue Butte communication site, the 7-acre Grasmere EC site, and Rattlesnake Radar Station. In addition, the USAF leases an 80-acre training site on Bald Mountain. Animals typical of disturbed shrub-steppe and grassland habitats form the dominant wildlife communities in these areas.

The one-acre emitter sites generally contain one building, are entirely graveled, and fenced with a seven-foot chain-link fence. The 1/4-acre sites are fully graveled and unfenced. Overall, these sites provide little wildlife habitat. Equipment and structures will intermittently support small numbers of disturbance-tolerant small mammals such as deer mice. The emitter sites, by design, should have little impact to wildlife use in adjacent habitats.

American kestrel nest boxes have been installed on BB, BF, and ND-7. The intention is to prevent common ravens from pecking equipment and nesting on communications towers and ND targets, causing maintenance problems. This is a new approach to pest prevention and will continue to be evaluated in the future.

ND targets are largely left intact with only the smallest required area disturbed. The 640-acre ND target and 5-acre ND targets were designed to leave the maximum amount of habitat intact, and use by wildlife continues at these sites.

Mammals that have been seen on or near emitter and ND sites include wild horses, white-tailed jackrabbit, black-tailed jackrabbit, and the bobcat (*Lynx rufus*). Birds that have been on or near these sites are golden eagle, northern harrier, rough-legged hawk, American kestrel, short-eared owl, western screech owl (*Megascops kennicottii*), prairie falcon, chukar, tundra swan (*Cygnus columbianus*), merlin (*Falco columbarius*), and great-horned owl. In 2008, 2009 and 2010, the Air Force participated with the

IDFG in a multi-agency project to evaluate and identify autumn raptor migration corridors across the Snake River Plain (Haak & Oelrich, 2009).

Except where greater sage-grouse issues are identified, (see greater sage-grouse section below) these sites are not primary use areas for wildlife. However, they do interact with surrounding habitats, so potentially have indirect and long-term effects on wildlife habitat as discussed in the vegetation section. Actions of field personnel at these sites are more important to consider than the sites themselves. Appropriate use of sites is taught to MHRC users in Natural/Cultural Resource Awareness Training, which is a requirement for all range personnel. Further, MHAFBI 32-7003 contains standard range operating procedures and informs range users what activities are standard on ranges.

C.J. STRIKE DAM RECREATION ANNEX

The C.J. Strike Dam Recreation Annex is leased from Idaho Power to provide recreation opportunities for MHAFB personnel. The site consists of a parking lot, a few buildings, and a boat dock. The leased property has no significant wildlife resources.

2.3.4 Threatened and Endangered Species and Species of Concern

Threatened and Endangered Species: Slickspot Peppergrass

There is one species listed as threatened under the ESA on Air Force land in Idaho. Effective December 7, 2009, slickspot peppergrass was listed as threatened under the Act (74 FR 52014–52064, October 8, 2009, p. 52014). However, on August 8, 2012, the United States District Court for the District of Idaho ordered that the final rule listing slickspot peppergrass as a threatened species under the ESA, be vacated and remanded for further consideration consistent with the court's decision. On February 12, 2014, the Service published a Federal Register Notice which addressed the Court's request that a specific definition of foreseeable future for slickspot peppergrass be provided, and proposed that threatened status be reinstated for slickspot peppergrass. The Service's decision to reinstate threatened status to slickspot peppergrass was published August 17, 2016 (81 FR 55058-55084, August 17, 2016). To date, critical habitat has been proposed but not designated for this species. USFWS recovery efforts will focus on methods to reduce the two primary threats to the species (increased frequency and intensity of wildfire and invasive nonnative plants). Slickspot peppergrass has been documented on JBR and the emitter site AE ROW.

Species Biology and Threats

The following information on distribution, habitat requirements, and biology is summarized from Moseley (1994) and Mancuso and Moseley (1998). Slickspot peppergrass is a small annual or biennial species with small white flowers. When slickspot peppergrass grows as a biennial, it does not produce flowers the first year but remains a small round rosette of green leaves. Habitat is restricted to semiarid sagebrush-steppe ecosystems. Slickspot peppergrass grows primarily within slickspots. These unique microenvironments consist of bare areas that temporarily pool water and contain soils that are significantly higher in sodium and clay content. Slickspots are typically less than 100 square meters in size and usually occur in complexes or groups of three to more than 20 individual slickspots. They are often interspersed among other vegetation. Slickspots are generally unvegetated or sparsely vegetated. Disturbed slickspots may have a high- to low-percent cover of weedy species such as clasping leaf peppergrass, cheatgrass, and bur buttercup (*Ceratocephala testiculata*). Slickspot peppergrass is occasionally found outside of slickspots, usually in openings very close to slickspots. The known range for slickspot peppergrass is Idaho's western Snake River Plain and neighboring foothills in Owyhee,

Payette, Gem, Canyon, Ada, and Elmore Counties. The population located on JBR is associated with the population found in the Owyhee Plateau physiographic region that is disjunct from the Snake River Plain and associated foothills.

Undiscovered populations are likely to occur within the species' known range. This is because populations of aboveground plants may fluctuate considerably from year to year, depending on environmental conditions. Sites with thousands of plants one year may not have any plants the following year; the reverse can also occur. Only about 10 to 15 percent of the seeds germinate annually, leaving viable seed stock in the site for up to 12 years (Idaho Army National Guard [IDARNG], 1998). Therefore, a single-year survey for slickspot peppergrass may not provide an accurate representation of a population's viability or success.

Slickspot peppergrass occurs in slickspot habitat microsites scattered within the greater semiarid sagebrush-steppe ecosystem of southwestern Idaho. A 2002 census of a 11,070-acres within the JBR recorded approximately 56,500 slickspots (Air Force 2003 in litt., p. 15), of which approximately 2,450 (about 4.0 percent) contained above ground slickspot peppergrass plants (Bashore, pers. comm. 2003, p. 1). Of the approximately 11,300 slickspot peppergrass plants documented during the survey effort, only 11 plants were documented outside of slickspots (Air Force 2002, summary attachment, p. 1).

The primary factors threatening the slickspot peppergrass include changes in wildfire regime (i.e., increased wildfire frequency and intensity) and invasive nonnative plants, especially cheatgrass (*Bromus tectorum*). The USFWS recovery efforts for slickspot peppergrass will focus on these two primary threats. Additional factors threatening the species include land conversion associated with urban and agricultural development (a moderate risk factor); seed predation by harvester ants (an emerging threat); habitat fragmentation and isolation of small populations; and climate change. Livestock use, wildfire management and post-fire rehabilitation, military training, and recreation are not considered to pose a significant threat to the species rangewide, although localized adverse effects to individual plants or habitat may occur related to these factors. Refer to the 2009 final listing rule for more details on these factors (74 FR 52027–52048, October 8, 2009).

Status of the Species on MHAFB and MHRC

An element occurrence (EO) is defined as an area of land and/or water where a species or natural community is, or was, present and has practical conservation value (NatureServe, 2009). Eighty (80) extant element occurrences of slickspot peppergrass were known to exist at the time of the original listing (USFWS 2009). At that time, 98 percent of slickspot peppergrass, excluding those with high spatial uncertainty, occurs on federal lands, with private and state lands comprise 0.4% and 1.6% of LEPA element occurrences respectively (Colket, Cooke and Mancuso, 2006). The IDFG has recently conducted an assessment of EO rankings for the species, and currently there are 109 extant EOs comprising a total of 15,823 acres ranked from A to D rangewide (IDGF 2016, Table 3, p. 58). Currently, 87% of EO acreage (13,728 acres) is located on federal lands, 9% (1,502 acres) is located on state lands, and 4% (593 acres) is located on private lands. This land ownership information is representative of the total acreage of the element occurrences, not the percentage of occupied habitat or the percentage of slickspot peppergrass genets.

Assessing habitat quality of both the slickspots and the surrounding vegetation may provide a long-term monitoring tool for slickspot peppergrass. The ISDD followed range-wide monitoring of slickspot peppergrass occurrences using Habitat Integrity Index protocol specifically designed to monitor long-term habitat trends from 1998 – 2002 (Mancuso and Moseley, 1998). Since 2004, range-wide monitoring since then has been completed using the Habitat Integrity and Population protocol (USFWS, 2009).

LEPA is only known to occur on AF lands on the JBR. The initial 1996 rare plant survey of the 660-acre Juniper Butte primary impact area found a population of slickspot peppergrass as well as additional potential habitat or slickspots (USAF, 1999b). These data were consistent with known occurrence records maintained by resource management agencies. During range development and siting, further surveys were warranted in 1998. Because of the appropriate habitat and known populations, these surveys concentrated on slickspot peppergrass. A partial resurvey of the primary impact area was included to identify potential habitat and 1998 population occurrences. Slickspot peppergrass and habitats proved more extensive than previously known. Based on the results of this survey, targets were realigned to minimize impacts to known and potential habitat.

JBR contains a portion of Element Occurrence (EO) 16 (Figure 2-25). EO 16 is composed of multiple subEO's including subEO 704. JBR contains approximately 2,021 acres or 91 percent of subEO 704 (USFWS 2010a). Management Area (MA) 12 encompasses that part of EO 16 within the boundaries of JBR.

Status of Inventory and Monitoring

Results of the 1998 survey show slickspots and slickspot peppergrass plants distributed throughout the entire JBR with the exception of the bluffs, slopes, and streambed of Juniper Draw (USAF, 1998). A total of 597 slickspots or complexes of varying sizes were located on the range site, amounting to almost 2.2 acres of potential habitat, excluding the primary ordnance impact area. Nearly 1,000 LEPA plants inhabited 181 slickspots, or about 1.3 acres (USAF, 1999b). In 1999, an informal survey was conducted to relocate some of the largest recorded populations from the 1998 survey. The results of the 1999 survey found significantly fewer plants.

In 2001 and 2002, resurveys were conducted. Surveys of the target area (partial surveys in 2001 and 2002) and the rest of the JBR (complete survey in 2002) resulted in the mapping of 62,010 slickspots. Plant counts were estimated (range wide survey) or actual (target survey). An occupancy rate for slickspots on the JBR was about four percent (CH2M Hill, 2002c). Approximately 11,500 slickspot peppergrass plants were found in 2,531 slickspots. The total amount of potential slickspot peppergrass habitat (slickspots) was determined to be roughly 110 acres. Areas to the east of Juniper Draw and on top of Juniper Butte contained the fewest slickspots and slickspot peppergrass plants. The southeast corner of the range contained the highest density of plants at the time of these surveys.

Since environmental conditions heavily influence yearly populations, simple aboveground plant counts may underestimate the potential population of slickspot peppergrass or occupied slickspots. This is why long-term monitoring goals are so important. Slickspot peppergrass habitat locations on JBR are depicted in Figure 2-26.

Five permanent slickspot monitoring transects were established in 2003, two more were added in 2004, and 9 more were added in 2005 for a total of 16 permanent monitoring transects. All 16 were resurveyed annually from 2007 through 2016. Excerpts from the survey reports are included below. The slickspot peppergrass monitoring reports can be found in their entirety in section 14, Appendix B.

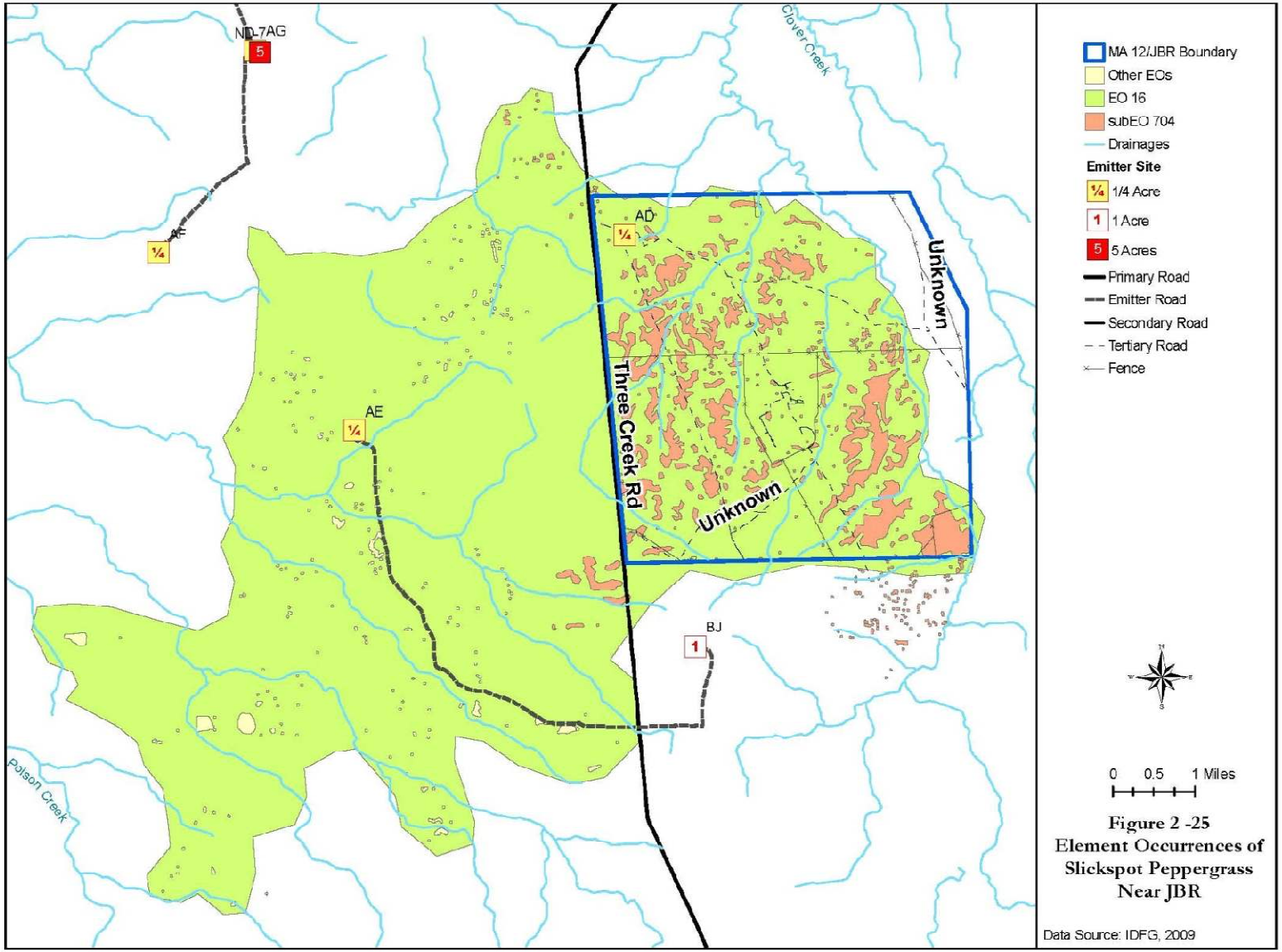


Figure 2 -25
Element Occurrences of Slickspot Peppergrass Near JBR

This page intentionally left blank

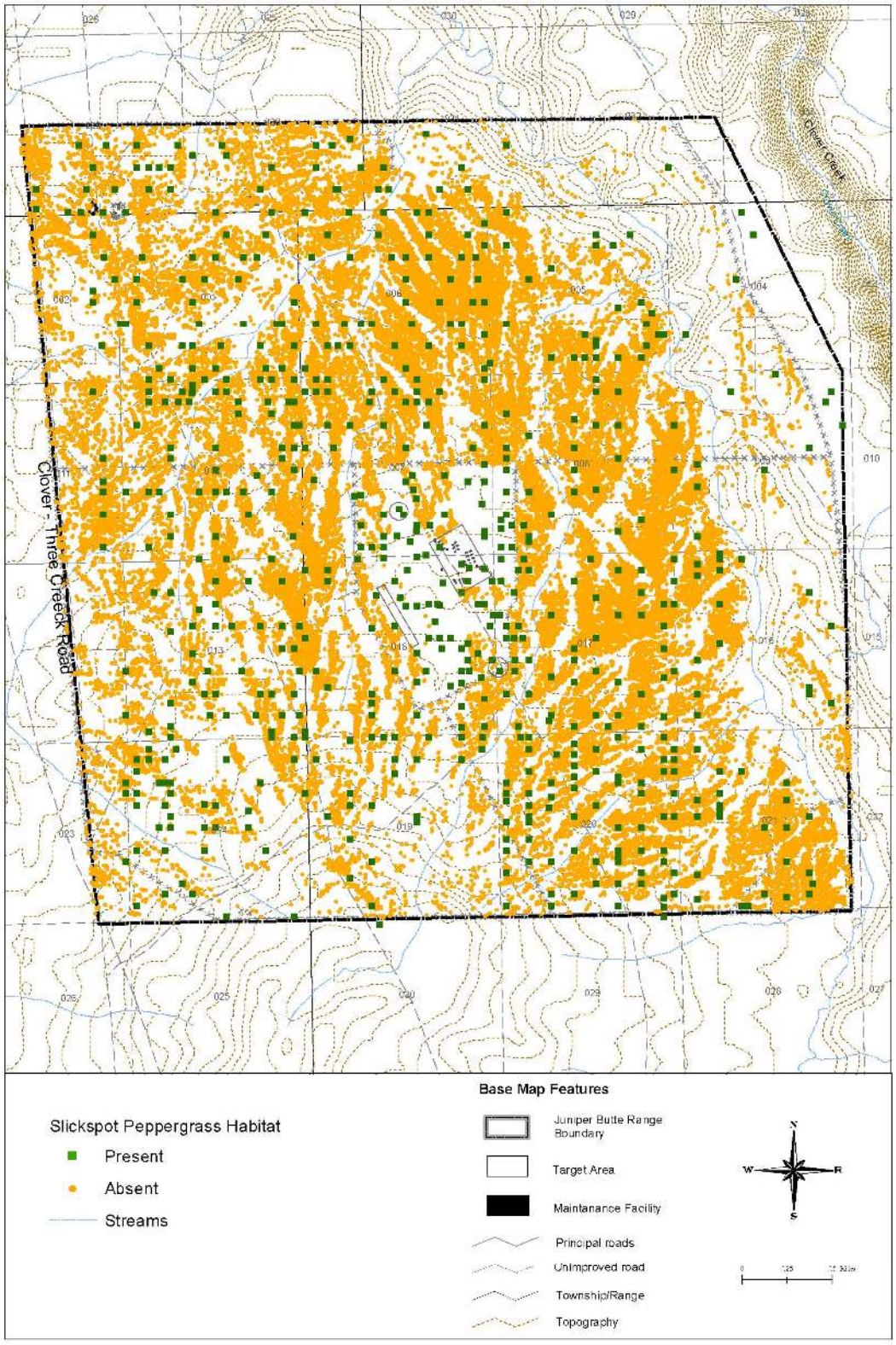


Figure 2-26
Slickspot Peppergrass Habitat at Juniper Butte Range

Surveys conducted in 2003 found that populations at two locations (FEBA site and Enclosure site) on the JBR were doing as well or better than they were in 2002 based on the number of plants per slickspot and the number of slickspots with plants. However, there were still many slickspots with no plants. The report also concluded that the difference in survey results between 2001, 2002 and 2003 indicated that there is a need to continue surveys for several years before assuming populations present or absent (CH2M Hill, 2003b).

The 2004 survey on the JBR found that bare ground estimates were higher and biotic crust estimates were lower on the grazed sites, which have fewer slickspot peppergrass plants. These areas have fewer slickspot peppergrass than the previous year although both the FEBA and exclosure transects had a higher average of slickspot peppergrass plants per slickspot than the previous year. Since it is unknown what the seedbank contains in the way of slickspot peppergrass seeds, it is unknown whether these factors are the reason for smaller average number of slickspot peppergrass plants on grazed sites or whether weather patterns or lack of seeds in the bank are the reason for fewer on grazed monitoring sites. A weather station was established on the JBR to assist in determining the implications of precipitation timing and amounts on slickspot peppergrass population fluctuations (CH2M Hill, 2004).

Average shrub canopy has changed very little between 2004 and 2016, but primarily in areas that get more frequent disturbance such as the Target Area and Pastures. In the Exclosure, which lacks disturbance, sagebrush cover is the primary shrub component increasing. More noticeable, however, is the increasing total shrub height. This indicates the shrub community in the Exclosure is progressing toward a mature shrub population that contains more sagebrush and taller shrubs, whereas the other two remain fairly stable. Bare ground estimates continued to be higher and biotic crust estimates lower in all years in the grazed sites.

Intermediate wheatgrass is the most common non-native seeded species within slickspots (n=27) and has occupied almost every slickspot within the Exclosure. Presence of intermediate wheatgrass in the Exclosure and Target area sites may be an obstacle to natural recruitment by native species in these areas (CH2M Hill 2005, 2006, 2007; Blake 2015; Conley 2017). The 2014 survey report stated that crested wheatgrass occurred less commonly (n=22), typically had higher cover, and was most prevalent within Pastures. Clasping leaf pepperweed (n=43) and buttercup (n= 40) were the most common non-native unseeded species within slickspots in 2014. Cheatgrass (n=11) occurred less frequently and occurred almost exclusively in slickspots of the North Pasture (Blake 2015).

Analysis of all 16 transects across 12 years show no clear trend in LEPA numbers but rather large peaks and troughs in certain years and patchy distribution. 2015-16 were peak years with 515 and 423 individuals respectively. Other peaks were in 2008 and 2005. Overall lows were in 2006, and 2009-13. Greatest numbers have occurred in the exclosure since the beginning of monitoring (2008 is an exception). LEPA trends differ by transect and by individual slickspot. Only transects 7 and 11 in the exclosure, and transect 10 in the north pasture trend toward increase and each of these increases stem from one strong slickspot. Generally, LEPA occur primarily in slickspots where they have occurred at some point in the past though some have gone years without plants only to have them suddenly reappear and disappear again. This patchy spatial distribution was true in 2015-16 in the Target area where preliminary numbers from a 2016 LEPA census found just 5% of slickspots occupied, roughly 0.7 plants per slickspot, and only 3 slickspots with >100 individuals (report in preparation). A census of the exclosure in 2004 found 12% occupancy and roughly 2 plants per slickspot. A new survey of the exclosure is warranted to update LEPA status there. Monitoring has documented that Exclosure transects typically contain the highest numbers of slickspot peppergrass plants and the highest average number of

slickspot peppergrass per slickspot. However, the Exclosure area was originally fenced due to the presence of higher plant numbers relative to other areas of JBR.

The number of slickspots monitored has changed through time because of new transect development, new slickspot development, and the loss of others through time. Ten (53%) of the 19 slickspots monitored in the Exclosure have had no peppergrass plants since their monitoring began. One slickspot in this land use area has had at least one slickspot peppergrass plant every year. Fourteen (74%) of the 19 slickspots monitored in the Target Area have had no slickspot peppergrass plants since their monitoring began. Seventeen (40%) of the 42 slickspots monitored in the Pastures area have had no slickspot peppergrass since their monitoring began.

The BLM has conducted and continues to conduct formal surveys for this species in the areas surrounding JBR. Occurrences of the plant are known on the south side of Juniper Butte and west of the range near Three Creek Well and several other areas (Figure 2-25). These occurrences, combined with the existence of the species within the 12,000 acres, indicate that the potential is high for slickspot peppergrass to occur in adjoining, previously unsurveyed areas. A slickspot habitat and slickspot peppergrass survey was conducted in May and July of 2007 in four square miles of land south of JBR on behalf of the USFWS. This report is available in section 14, Appendix B (ERO, 2008).

Starting in 2014, monitoring of the JBR transects followed IDFG's Habitat Integrity and Population (HIP) monitoring protocol that has been used rangewide on BLM and State lands since 2004. Monitoring methods on JBR from 2004 through 2013 followed the protocol described in Slickspot Peppergrass Monitoring of Permanent Plots (see section 14, Appendix B). Four monitoring transects are located near targets. Transects 2 and 16 are 57 meters from a target, Transect 6 is 20 meters from a target and Transect 15 is 70 meters from a target. Since 2004, the four transects in the Target Area show a positive trend in vegetative basal cover and biotic crusts. In addition, these transects show a downward trend in litter, bare ground, and weedy species (cheatgrass, claspingleaf peppergrass, bur buttercup, tumble mustard, and halogeton).

Disturbance in the absence of wildfire on JBR remains light, with only seasonal limited ground activities and a lightly stocked rotational grazing program. With continued careful management JBR can successfully steward and protect its LEPA population.

Special Status Species: Greater Sage-grouse

Greater sage-grouse (*Centrocercus urophasianus*) can be found across the MHRC (Figure 2-27). In 2010, the USFWS completed a 12-month finding for the greater sage-grouse and found that listing the species was warranted, but precluded (USFWS, 2010b); thus, the species became a candidate for listing in 2010. Following this decision, unprecedented conservation partnerships across the western United States reduced threats to the species across much of its range. Additionally, greater sage-grouse remains relatively abundant and well-distributed across the species' 173-million acre range and does not face the risk of extinction now or in the foreseeable future. Therefore, on October 2, 2015, the USFWS determined that protection for the greater sage-grouse under the ESA was no longer warranted and withdrew the species from the candidate species list. The greater sage-grouse currently has no status under the ESA in Idaho, including areas managed by the MHAFB through this INRMP.

The Air Force provides protection to candidate species as if they were listed "when practical" (AFI32-7064, Sec 7.1.1). While the greater sage-grouse is no longer a Candidate Species under the ESA, it remains as a species of concern. Greater sage-grouse is a BLM Type 2 Sensitive Species and an Idaho Game Species of Concern (ISDD, 2018) Type 2 Sensitive Species under the BLM are globally imperiled

species. This includes species that are experiencing significant declines throughout their range with a high likelihood of being listed in the near future due to their rarity and/or significant endangerment factors.

Species Biology and Threats The greater sage-grouse is a sagebrush obligate species that requires large expanses of sagebrush-grasslands or sagebrush-steppe dominated by mature sagebrush stands, often 30 or more years old, and usually with a dense understory of native perennial bunchgrasses and native forbs. The IDFG, BLM, and local working groups maintain a habitat planning map. This dataset is updated each year to reflect current conditions (BLM, 2009b).

Greater sage-grouse are almost entirely dependent on sagebrush habitats for food and cover. A substantial forb component is important during the breeding season. During the breeding season, approximately March 15 until May 1, greater sage-grouse form loose mixed-sex breeding associations called leks. At these sites, males vie for breeding opportunities with females by strutting and performing elaborate courtship dances. Greater sage-grouse exhibit a degree of fidelity to leks, which occur in open areas in sagebrush habitat. Following the breeding period, nesting season occurs. The nesting period is from approximately April 15 until June 7.

Greater sage-grouse may be sensitive to human disturbance during critical times of the year (nesting and early brood rearing). During the winter, sage-grouse may be flushed or driven off winter habitat and placed in energetic stress, thereby reducing winter survival. The population effects of these types of disturbance have not been well studied but are considered potential issues. MHAFB is currently partnering with University of Montana to examine the potential effects of overflight noise on greater sage-grouse nesting success and behavior. A report documenting the conclusions of this study is expected by the end of 2017.

The IDFG considers wildfire, infrastructure development, annual grasslands, livestock impacts, and human disturbance to be among the top threats to greater sage-grouse in Idaho (Idaho Sage-Grouse Advisory Committee, 2006). The Jarbidge Sage-Grouse Local Working Group (JSGLWG) and Owyhee County Sage-Grouse Local Working Group (OCSGLWG) areas each contain portions of the MHRC (Figure 2-28). The JSGLWG ranks wildfire as the top threat in their working group area (JSGLWG, 2007). The OCSGLWG ranks juniper invasion as their top impact (OCSGLWG, 2004). Juniper invasion is not an issue on Air Force lands; however wildfire, conversion to annual grassland, and noxious weeds are threats present on the MHRC.

Status of the Species on MHAFB and MHRC Greater sage-grouse are not known to currently occur on MHAFB or SAR, and no greater sage-grouse habitat occurs in these areas (Figure 2-27).

According to IDFG data from 2010, SCR contains five greater sage-grouse leks (areas used for mating displays and breeding). The IDFG considers two of the leks as active because birds have used them within the last seven years. The other three are either historic lek locations or the data has not been gathered recently. Neither the current nor the historic leks are located in the EUA.

All remaining large expanses of sagebrush on SCR are potential greater sage-grouse habitat or transit areas. Greater sage-grouse have been seen in most sagebrush-covered areas. This species will also occasionally use crested wheatgrass dominated habitats seasonally. The greater sage-grouse has been observed near water. Use patterns on SCR are not well known at this time.

Greater sage-grouse are found in sagebrush habitats within the JBR. Sage-grouse are frequently observed on the JBR during all seasons but little is known about the seasonal movements and habitat use of sage-grouse in the area. Several sage-grouse leks are near the JBR and some nearby emitter site locations.

However, no active sage-grouse leks are known to occur on the JBR (IDFG, 2010a). In cooperation with the Air Force, IDFG is conducting sage-grouse capture, collaring, and telemetric tracking projects to collect more data on greater sage-grouse movement and habitat use from 2009-2011 (Lowe & Commons-Kemner, 2009; section 14, Appendix B).

Active greater sage-grouse leks also occur near some emitter sites. Some of the emitter sites are located near or within greater sage-grouse habitat. Active greater sage-grouse leks have been documented near emitter sites AQ, AF, AG-ND7, AH, AU, AV-ND4, Grasmere EC-ND9, BB, and BD. For the results of Air Force surveys, see section 14, Appendix B.

Little is known about the seasonal movements and habitat use of greater sage-grouse near the emitter sites. Individuals or groups may transit the sites. The Air Force, in partnership with IDFG, has investigated all the associated sites for greater sage-grouse season and type of use. In addition, the Air Force and IDFG are conducting greater sage-grouse capture, collaring, and telemetric tracking to collect more data on greater sage-grouse movement and habitat use in 2009-2011.

Wintering Season

(*Approximately December 15 to February 15*). IDFG investigated all emitter sites for wintering habitat and use by greater sage-grouse. Greater sage-grouse have been observed during winter (December 15 through February 15) at AU, AV/ND-4, AG/ND-7, AI, and BC (Trent, 2000; Wik, 2002). Sagebrush was burned around AI in 2010. Greater sage-grouse use of AI is unknown at this time.

Winter use on SCR and JBR has been documented from scat, personnel observations, and radio telemetry locations. More information is needed to determine which areas and what resources are most important to greater sage-grouse during the winter. It is assumed that patches of mature Wyoming sagebrush are important for forage and thermal cover and that windswept ridges with little or no snow are important for foraging.

Breeding Season

(*Approximately March 15 to May 1*). Greater sage-grouse courtship displays and breeding occur in the early morning. Breeding grouse congregate on or near the leks in the late evening and begin courtship and breeding in the early morning. Breeding activity is generally complete by 9:00 to 10:00 a.m.

Greater sage-grouse leks and birds occur on areas near JBR and some nearby emitter site locations. However, no active greater sage-grouse leks are known to occur on JBR.

Active greater sage-grouse leks have been documented near emitter sites AQ, AF, AG/ND-7, AH, AU, AV/ND-4, Grasmere EC, ND-9, BB, and BD (IDFG, 2010a). For the results of Air Force surveys, see section 14, Appendix B.

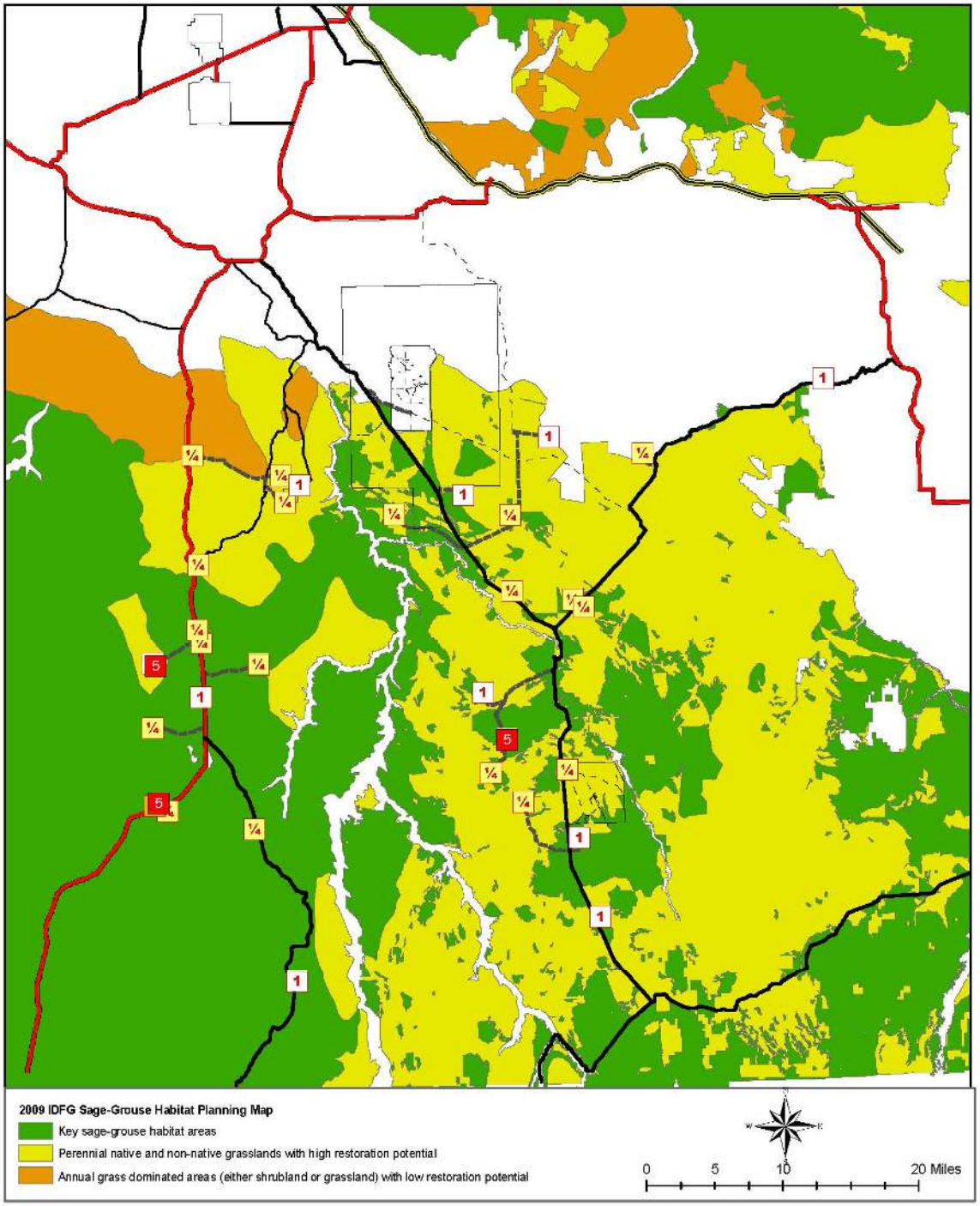


Figure 2-27
Sage Grouse Habitat

Data Source: BLM, 2009

This page intentionally left blank

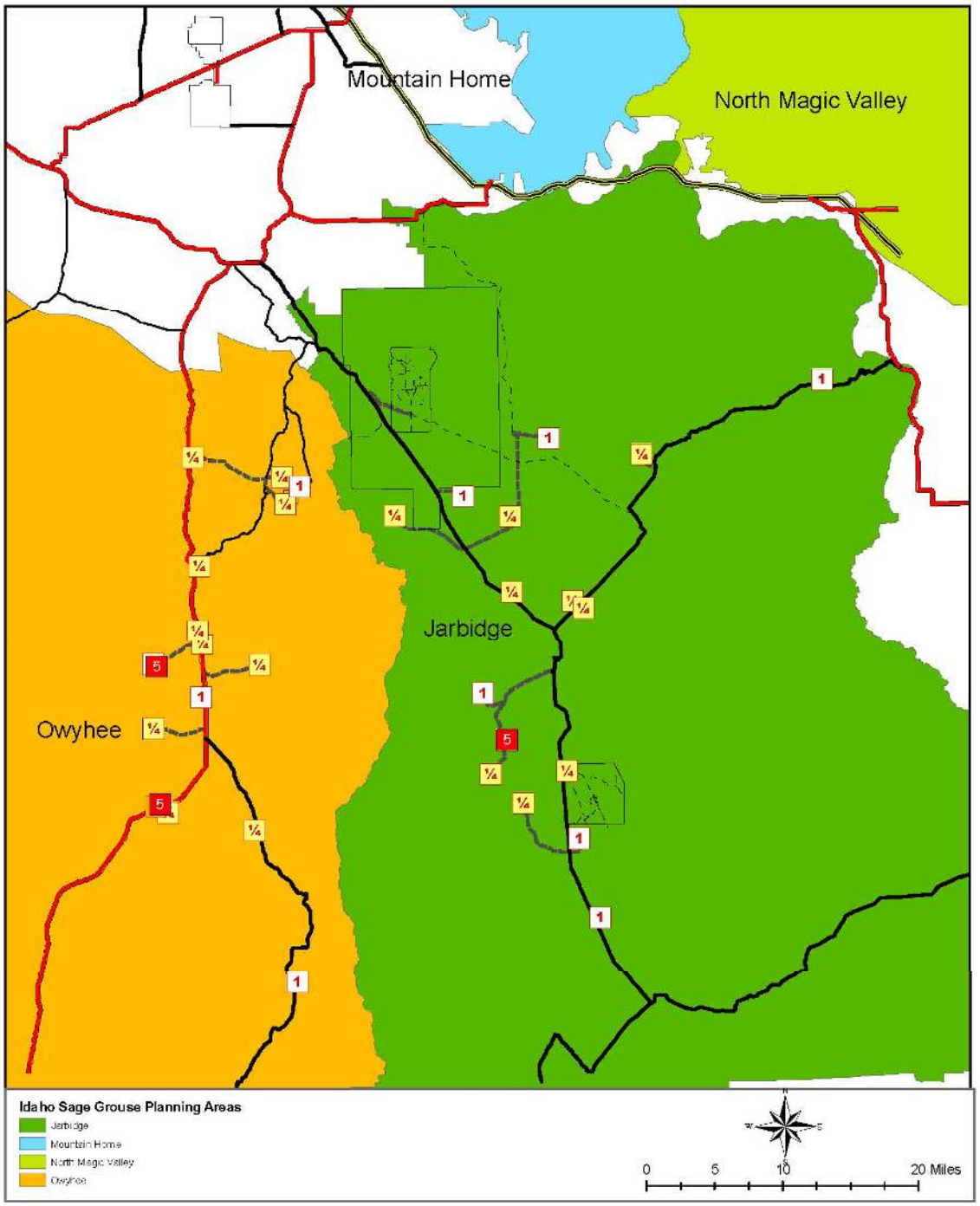


Figure 2-28
Sage Grouse Planning Areas

Data Source: IDFG, 2010

Nesting Season

(*Approximately April 15 to June 7*). Schroeder, Young, and Braun (1999) point out that egg laying and incubation peak timing can occur from late March through mid-June and re-nesting can occur into early July. Additionally the initiation of incubation usually occurs 3-4 weeks after the height of female presence on leks (Connelly, Knick, Schroeder & Stiver, 2004 p. 3-10).

Nests have been located within 1/2-mile of emitter sites AU, AV, and ND-4 (Wik, 2002). Nests have also been located on SCR. Nesting may occur on JBR. However, nesting has not been documented on JBR to date.

Special Status Species: Davis' Peppergrass

Davis' peppergrass is a small perennial herbaceous forb. The species is categorized as a BLM Sensitive species, a species of special concern by the USFWS and a category G3 S3 plant by the Idaho Native Plant Society. A category G3 plant is vulnerable globally, either because it is very rare and local throughout its range, or because of other factors making it vulnerable to extinction or elimination (typically 21 to 100 occurrences). Similarly, a category S3 plant is also vulnerable within the State of Idaho (Idaho Native Plant Society, 2016).

This plant is a regional endemic, known to be extant (still present) at 293 sites and extirpated (eliminated) from at least two others (Moseley, 1995). Populations are scattered throughout an area of southwestern and south-central Idaho, north-central Nevada, and southeastern Oregon from an area that is approximately 180 miles long by 90 miles wide. Populations occur in six distinct clusters or distribution centers: Mountain Home Desert (Idaho), Inside Desert (Idaho), Salmon Falls Creek (Idaho), South Fork Owyhee River (Idaho, Oregon, and Nevada), Alvord Desert (Oregon), and Barren Valley (Oregon). Its habitat is a unique type of wetland: vernal lakes or playas. These areas fill with water in the spring and can become dry and hardened as concrete in the summer.

MHAFB

Davis' peppergrass was located northeast of the Base hospital. Nearly half of this playa has been damaged by firebreak construction. In 1997, a sign was posted to reduce the potential for any additional damage and a habitat restoration effort was undertaken to protect this population. To aid in protection, a population monitoring study was implemented in 1997, 1998, and 1999. In 1999, a 40-person volunteer effort cleared halogeton and Russian thistle from this playa. A broadcast seeding of grasses was done adjacent to this playa in fall 1999 and fall 2000. In 2005, the area around the playa was again seeded with range grasses.

SAR

A rare plant survey of the SAR in 1991 located three populations of Davis' peppergrass. These populations are located in the southern edge of the range in playas (Figure 2-21). An additional three populations were located in 1996. Six of the seven playas on the SAR contain Davis' peppergrass. The perimeter of the largest playa is surrounded by a small population of sagebrush.

The population demographics of Davis' peppergrass were studied to provide information on extinction probability. The populations have shown a decrease in plant size and plant numbers over time and the probability that the populations will be lost is high. However, during the course of the study, the weather has been drier than normal. Attempts to prevent and remove weeds, establish native grasses and

sagebrush, introduce water into the playas to compensate for below average precipitation years, and decreased sedimentation are ongoing and provide a means to protect and enhance this species.

In fall 1999, five kinds of native bunchgrasses were seeded around six playas using a rangeland drill. Surveys of the seedings in 2000 determined the seedings were unsuccessful. Surveys in spring 2001 found no additional germination of grass plants from the initial seeding, probably because of drought conditions. In addition, the areas around the playas were seeded in 2005, 2006, and 2007.

SCR

Although some potential habitat exists for Davis' peppergrass, this species has not been observed during rare plant surveys of SCR (Figure 2-22).

JBR

Davis' peppergrass has not been observed on JBR.

Emitter and ND Target Sites

Rare plant surveys were performed on emitter and ND target sites during 1996 and 1999. No species of concern or potential rare plant habitat were reported from these surveys. Davis' peppergrass occurs in a playa next to the ROW to AM,

Species of Concern

Native fauna includes terrestrial and aquatic vertebrates and invertebrates. Terrestrial vertebrates include species groups such as large and small mammals, birds, amphibians, and reptiles. Wildlife is under the jurisdiction of the IDFG. The IDFG categorizes species as state threatened or endangered, game, protected nongame, and predatory wildlife. All other species are unprotected under state law. The IDFG also designates exotic species and species with special status such as species of greatest conservation need (ISDD, 2018). Species of concern are addressed by the location in which they occur. Table 2-8 shows species of concern found on lands managed by MHAFB.

Species of concern generally include those federally listed as threatened or endangered (section 14, Appendix C), those listed as species of greatest conservation need in Idaho by the IDFG, DoD Partners in Flight (DoD PIF) birds of conservation concern, USFWS Birds of Conservation Concern, BLM Sensitive species, etc. (section 14, Appendix H; section 14, Appendix J; DoD PIF, 2010; USFWS 2008, ISDD, 2018). Laws protecting wildlife include, but are not limited to, the Bald and Golden Eagle Protection Act of 1940, which protects eagles, the MBTA of 1918, which protects 1027 species of birds native to the United States—this does not include upland gamebirds (ie. Grouse, quail, praire-chickens, ptarmigan, etc.)-and the ESA. Upland gamebird management is the responsibility of the states.

Species with special status found on Air Force lands are listed in Table 2-8 below.

Table 2-8
Species of Concern that Occur on Air Force Lands

Common Name	Scientific Name	Location
Mammals		
Townsend's big-eared bat	*Corynorhinus townsendii*	Possibly SCR
Western pipistrelle	*Pipistrellus Hesperus*	SCR, JBR

Common Name	Scientific Name	Location
Western small-footed myotis	*Myotis ciliolabrum*	SCR, JBR
Long-eared myotis	*Myotis evotis*	MHAFB, SCR
Yuma myotis	*Myotis yumanensis*	MHAFB, SCR
Kit fox	*Vulpes macrotis*	Emitter Sites, JBR
Birds		
Greater sage-grouse	*Centrocercus urophasianus*	Emitter Sites, SCR, JBR
American white pelican	*Pelecanus erythrorhynchos*	MHAFB
White-faced ibis	*Plegadis chihi*	MHAFB
Bald Eagle	*Haliaeetus leucocephalus*	MHAFB
Ferruginous hawk	*Buteo regalis*	Emitter Sites, SCR, JBR
Golden Eagle	*Aquila chrysaetos*	Emitter Sites, MHAFB, JBR, SAR, SCR
Long-billed curlew	*Numenius americanus*	MHAFB, SCR
California gull	*Larus californicus*	MHAFB
Western burrowing owl	*Athene cunicularia*	Emitter Sites, MHAFB, JBR, SCR
Calliope hummingbird	*Stellula calliope*	MHAFB
Loggerhead shrike	*Lanius ludovicianus*	Emitter Sites, MHAFB, JBR, SCR
Sage thrasher	*Oreoscoptes montanus*	Emitter Sites, MHAFB, JBR, SCR
Brewer's sparrow	*Spizella breweri*	Emitter Sites, MHAFB, JBR, SCR
Sagebrush sparrow	*Artemisiospiza nevadensis*	Emitter Sites, MHAFB, JBR, SCR

Source: Idaho Fish and Game; ISDD 2018.

Sagebrush sparrow is a bird that prefers semi-open habitats with evenly spaced shrubs that are approximately one to two meters tall (Chase and Carlson, 2002). This species is commonly found in hot, dry areas with mature sagebrush stands. These sparrows seem to prefer sites with sparse shrub cover, arranged in patches, with bare ground in between (Martin & Carlson, 1998).

Sagebrush sparrows are a USFWS BCC in BCR 9, DoD PIF Priority Species, and a Special Status Species in Owyhee County, Idaho (DoD PIF, 2010; ISDD, 2018; USFWS 2008). They are found on MHAFB, SCR, JBR, and RTS (MHAFB, 2006, Page 108). This species can be seen in the spring, summer, and fall. They have been recorded at four emitter sites. They are seldom seen in habitats without sagebrush.

The sagebrush sparrow has a dark spot in the middle of its clear, white breast and streaked, buff sides. The upperparts of this species are a grayish-brown color and there are no streaks on the back and only light streaks on the wings. The tail of the sage sparrow is long, narrow, black, and with thin white edges.

The head is gray with a white cheek stripe and black throat stripe below. The eye has a white eye-ring and there is a white spot above and in front of the eye.

Black-throated sparrow is a small sparrow that is found primarily in the southwestern United States and Mexico. This bird uses a variety of dry, open, grassy, or shrubby habitats, including areas containing sagebrush.

Black-throated sparrows are a Special Status Species in Owyhee and Elmore Counties, Idaho (ISDD, 2009). This bird has been observed in the spring at emitter site AI in sagebrush/Sandberg's bluegrass habitat (MHAFB, 2006, Page 107). The breeding season of these birds, vary depending on rainfall and available food. Prior to mating, the male will sing to defend his nesting territory and to attract a female. Once a female is interested, they will become a monogamous pair. Nests of black-throated sparrows are located in low shrub areas that are well hidden and close to or on the ground. The nest is constructed of grass, small twigs, and other plant fibers. The female incubates her eggs for approximately 12 to 15 days until they are ready to hatch. Upon hatching, both parents participate in feeding the young. After 10 to 11 days, they will abandon their nest (Johnson, Van Riper, & Pearson, 2002).

Golden eagles are large raptors that are typically found in open country, in prairies, arctic and alpine tundra, open wooded country, and barren areas, especially in hilly or mountainous regions.

Golden eagles are a USFWS BCC in BRC 9 and a DOD PIF Priority Species (DoD PIF; USFWS 2008). They have been observed on MHAFB, SAR, SCR, JBR, and most emitter sites as a year-round resident. Most typically, they are found in association with open sagebrush plains.

This eagle feeds primarily on small mammals, with its main prey species in the area being the black-tailed jackrabbit. Nesting generally occurs on cliff faces.

Western burrowing owl inhabits dry, open grasslands, sometimes in areas of high human density, such as in cities, golf courses, airports, and similar areas. This owl nests in burrows excavated by mammals, usually badger (*Taxidea taxus*), ground squirrel, or coyote (*Canis latrans*).

Burrowing owls are a USFWS BCC in BCR 9, a BLM Type 5 Sensitive Species, DoD PIF Priority Species, and an Idaho Protected Nongame Species (DoD PIF, 2010; ISDD, 2018; USFWS 2008). Type 5 Sensitive Species under the BLM are species that are currently on the watch list. Watch list species include species that may be added to the sensitive species list depending on new information concerning threats, species' biology, or statewide trends. The watch list includes species with insufficient data on population or habitat trends or the threats are poorly understood.

Burrowing owls pose a small potential for BASH because they fly at low levels during foraging. This owl can hunt at all times of the day and night; however, most prey is captured at dawn and dusk. They frequently hover a short distance above ground, foraging for insects, amphibians, small mammals, and birds. Burrowing owls acquire abandoned badger or rodent burrows within their habitat for nesting and roosting, and prefer to nest in open grassland areas without shrubs.

Ferruginous hawk is a migratory raptor that breeds in open habitats, such as grasslands, sagebrush-steppe, deserts, saltbush-greasewood shrub lands, and the outer edges of pinyon-pine and other forests.

Ferruginous hawks are a USFWS BCC in BCR 9, a BLM Type 3 Sensitive Species, IDFG Special Status species in Elmore and Owyhee Counties, and an Idaho Protected Nongame Species (ISDD, 2018; USFWS 2008). Type 3 Sensitive Species under the BLM are state imperiled species. This includes species that are experiencing significant declines in population or habitat and are in danger of regional or

local extinctions in Idaho in the near future, if factors contributing to their decline continue. Ferruginous hawks typically roost in trees and high brush and exhibit a high degree of nest site fidelity. They are migratory in Idaho and generally arrive from their winter grounds in March, departing by mid-October. The birds can nest from February 15 through July 15 (personal communication, Lehman, 2000).

Greater sage-grouse (see Greater Sage-grouse section above).

Townsend's big-eared bats are a BLM Type 3 Sensitive Species, IDFG Special Status species in Owyhee County, and an Idaho Protected Nongame Species (ISDD, 2018). They are known for their large ears. Townsend's big-eared bats are a species which use caves and mines for winter hibernation. They are sensitive to disturbance during hibernation. They likely use crevices in the canyon walls of the Bruneau River system for night roosts and forage in the nearby desert and riparian areas. A call suggestive of a Townsend's big-eared bat was recorded on SCR in 2008.

Bald eagles winter in deciduous and coniferous trees or other sheltered sites. Winter roost sites vary in their proximity to food resources. Wintering areas are commonly associated with open water, though in some areas these eagles use habitats with little or no open water if other food resources are readily available.

The bald eagle is a USFWS BCC in BCR 9 that was observed in March 2010 on the golf course at MHAFB, presumably hunting ground squirrels (USFWS 2008). This is the first time this species has been observed on MHAFB. Bald eagles are opportunistic feeders that prey on fishes, various mammals, and carrion. They hunt live prey, scavenge, and pirate food from other birds.

Loggerhead shrike is a robin-sized bird that prefers habitats consisting of grasslands and open, agricultural areas characterized by short vegetation and scattered trees, shrubs, or hedgerows (Bent, 1950; Evers, 1994). Habitats of this type provide for nesting cover as well as for hunting and lookout perches. Loggerhead shrike is commonly found in pastures, old fields, orchards, roadside fencerows, and within native prairies and grasslands (Bent, 1950; Evers, 1994). In addition, this species will utilize riparian areas and open woodlands (Yosef, 1996) as well as agricultural fields with row crops (Bent 1950), mowed roadsides, parks, cemeteries, and golf courses (Little, 1991).

Loggerhead shrikes are a USFWS BCC in BCR 9, DoD PIF Priority Species, and a Special Status Species in Owyhee and Elmore Counties, Idaho (DoD PIF, 2010; ISDD, 2018; USFWS 2008). They are found on MHAFB, and MHRC (Appendix 4; MHAFB, 2006, Page 109). This species has been recorded in the spring and summer. They have been recorded at five emitter sites. They are seldom seen in habitats without sagebrush and are most visible when perched on fences. They are infrequently observed on MHAFB and JBR.

The loggerhead shrike has a characteristic shrike-hooked bill. The black mask starts at the nape and extends to and just above the bill, surrounding the eye. Loggerhead shrikes are short-distance migrants. In Idaho shrub-steppe habitat, loggerhead shrikes nest in big sagebrush, antelope bitterbrush (*Purshia tridentate*), and greasewood (*Sacrobatus vermiculatus*). Nest sites have greater shrub canopy, taller shrubs, and less annual grass cover than unoccupied sites. Preferred nest sites are in big sagebrush and bitterbrush, while spiny hopsage (*Grayia spinosa*), rabbitbrush, and green rabbitbrush (*Chrysothamus viscidiflorus*) are avoided (Poole, 1992).

California gull is an inland breeding bird that inhabits lakes, farms, and marshes during its breeding season. This bird forages along lakes, bogs, farm fields, lawns, pastures, sagebrush, garbage dumps, feedlots, parking lots, ocean beaches, and in the open ocean.

The California gull is an Idaho Protected Nongame Species (ISDD, 2018). This is a medium-sized gull that has a small yellow bill with a black ring, yellow legs, brown eyes, and a round head. The gull is primarily white, with a gray colored back and wings. This species breeds in lakes and marshes in interior western North America. They nest in colonies, occasionally with other birds. These birds are migratory and move to the Pacific coast during the winter. They will forage in flight or pick up objects while swimming, walking, or wading. They eat mainly insects, fish, and eggs.

Western small-footed myotis are Special Status Species in both Elmore and Owyhee Counties, Idaho (ISDD, 2018). This species hibernates in caves and forages in a wide variety of habitats. It was recorded on SCR in 2008 and 2009 and on JBR in 2009.

Long-eared myotis is a Special Status Species in Owyhee County, Idaho (ISDD, 2018). The long-eared myotis is a bat that is found in a wide range of habitats, often associated with forests. This species may roost in buildings and trees within the base and is likely to forage around lights. A long-eared myotis was found in building 1100 behind some equipment during the winter of 2008. Long-eared myotis were calls recorded on SCR near a livestock water reservoir in 2008.

This species inhabits coniferous forests and woodlands, including areas containing ponderosa pine, juniper, and spruce-fir (Manning & Jones, 1989). The long-eared myotis can be found under exfoliating bark, in cavities, in trees, and in stumps resulting from logging (Bonnell, 1967). In addition, this bat can be found in shrub communities within crevices in cliffs and rocks, in lava-tube caves, and abandoned mines. It has also been found occasionally in buildings and under bridges (Bonnell, 1967).

The upper fur of the long-eared myotis is brownish at the tips and dark at the base. This bat has dark, blackish, glossy, rounded ears that extend past its nostrils and can exceed three-quarters of an inch (Bonnell, 1967). In an Idaho study, all roosts of this species were located near water (Bonnell, 1967).

The long-eared myotis begins swarming and mating in the fall, prior to hibernation. Fertilization ensues when ovulation occurs in the spring. A single pup is born, as late as mid-July in Idaho.

Yuma myotis is a pale brown bat whose tail membrane consists of dorsal and ventral hair that slightly extends beyond a line joining the knees. The ears of this species are rounded and extend to just past the muzzle. The skull has an abrupt increase in height above the forehead (Keller, 1987).

Yuma myotis are Special Status Species in both Elmore and Owyhee Counties, Idaho (ISDD, 2018). A desiccated Yuma myotis carcass was found in Building 1296 on MHAFB (MHAFB, 2006, Page 111 Map 15). Yuma myotis calls were recorded on SCR in 2009.

This species occurs in a variety of western lowland habitats in areas of abundant water. In these areas, the bat forages for insects just above the surface of slack water. Yuma myotis is an important riparian species that roosts within crevices in cliffs, old buildings, mines, caves, bridges, and abandoned cliff swallow nests. In Idaho, no large winter concentrations of this species have been observed (Keller, 1987). Mating in these bats occurs during the fall, with ovulation and implantation taking place in spring. In female-only maternity colonies, only a single pup will be produced (Betts, 1997).

Long-billed curlew inhabits prairies, open shrub-steppe, and grassy wet meadows. The long-billed curlew is a large “shorebird” with a very long, curved bill. It is cinnamon brown on top and buff colored on its underside. In Idaho, this species prefers open, recently grazed grasslands containing short vegetation for nesting.

Long-billed curlew is a USFWS BCC in BCR 9, a BLM Type 5 Sensitive Species, DoD PIF Priority Species, and an Idaho Protected Non-Game species (DoD PIF, 2010; ISDD, 2018; USFWS 2008). These birds breed on the dry, native grasslands of the arid West, where they use their long, curved bills to feed on grasshoppers, beetles, and caterpillars. They are often found in farm fields and grasslands during migration and winter. They also winter in coastal marshes and mudflats where they feed on large marine invertebrates. Spring migrants appear from late March through early April during most years.

Sage thrasher is a medium-sized passerine bird that highly depends on healthy shrub-steppe communities comprised of tall, dense sagebrush (Rich, 1980). In Idaho, sage thrashers use sites that are characterized with high sagebrush cover within large blocks of shrub-steppe (Knick & Rotenberry, 1995). Shrub-steppe describes a plant community consisting of one or more layers of grasses with a discontinuous overstory of shrub cover (Daubenmire, 1988).

Sage thrashers are a USFWS BCC in BCR 9, DoD PIF Priority Species, and a Special Status Species in Owyhee County, Idaho (DoD PIF, 2010; ISDD, 2018; USFWS 2008). These birds are found on MHAFB, SCR, the JBR, and RTS (Appendix 4; MHAFB, 2006, Page 110). This species can be seen in the spring and summer. They have been recorded at three emitter sites. They are generally seen in association with sagebrush, but have also been recorded in a variety of habitats.

Sage thrashers are light colored and streaked, with long, strong legs, long tails, and pale eyes. The upperparts of this bird are a light grayish-brown color, while the underparts are a buff to white color. Streaking is heavy on their underparts and they show white corners on their tails when in flight. Sage thrashers nest in stands of sagebrush, placing their nests in or beneath shrubs that are typically 22 to 36 inches tall (Reynolds & Rich, 1978). Nests are bulky and located in large bushes containing thick branches for support (Ryser, 1985).

American white pelican nest on isolated islands in lakes and rivers. They feed in shallow lakes, rivers, and marshes. During the winter, they are usually found in warm, coastal marine habitats such as protected bays and estuaries. In Idaho, this species is found on large inland reservoirs and island nests.

The American white pelican is a Type 2 BLM Sensitive Species, and an Idaho Protected Nongame Species (ISDD, 2018). The American white pelican is a large, white bird that has black wing tips and a long, wide, orange bill. The wingspan of this species is up to 110 inches and they typically weigh approximately 15 pounds. White pelicans nest in colonies of several hundred pairs on islands in remote brackish and freshwater lakes of inland North America. They feed while they swim, eating primarily carp, chubs, shiners, yellow perch, catfish, and jackfish.

White-faced ibis is a wading bird that breeds colonially in marshes, usually nesting in bushes or low trees (Sibley, 2000). This bird is highly gregarious and often found in marshes and wetlands. However, the white-faced ibis is semi-nomadic and will quickly find new habitat in cases of excessive rainfall or temporary flooding (Bent, 1926).

The white-faced ibis is a Type 4 BLM Sensitive Species, and an Idaho Protected Nongame Species (ISDD, 2018). Type 4 Sensitive Species under the BLM are peripheral species. This includes species that are generally rare in Idaho, with the majority of their breeding range outside the state. In May 2007, four white-faced ibis (Plegadis chichi) landed near the golf course pond, but immediately left due to the presence of golfers. This was the first time this species was recorded on MHAFB. White-faced ibis are not typical for the habitat present on MHAFB. This sighting demonstrates how important MHAFB can be for migrating birds. Breeding adults of this bird have a pink face bordered with white, a grey bill, and red legs. Adults have red eyes year round (Bent, 1926).

Brewer's sparrow breeds primarily in shrub-steppe habitats. They sometimes inhabit high desert scrub (greasewood) habitats, particularly if these habitats are adjacent to shrub-steppe, and large sagebrush openings in pinyon-juniper habitat or coniferous forests.

Brewer's sparrow is a USFWS BCC in BCR 9, a Type 3 BLM Sensitive Species, DoD PIF Priority Species, and an Idaho Protected Nongame Species (DoD PIF, 2010; ISDD, 2018; USFWS 2008). Brewer's sparrows are small and slender with a long, notched tail, plain gray breasts, and a finely streaked brown crown without an obvious central stripe, a dull gray eye line, and a thin but distinct pale eye ring. The Brewer's sparrow is relatively plain in appearance, but its song is considered one of the most beautiful and complex in the North American shrub-grasslands.

Brewer's sparrows are closely associated with sagebrush habitat (Peterson & Best, 1985). They prefer stands with a substantial grass understory (Ferguson, 2001). Adults return to the same breeding sites each year. The breeding season starts in mid-April and continues for several months. Breeding pairs can be found in high densities. The nest is placed on or near the ground, and the male often helps with incubation. In the winter, they favor low, dry vegetation, where they can be found in large, noisy flocks. They forage on or close to the ground (Rotenberry, Patten, & Preston, 1999).

Once considered the most abundant bird species in sagebrush-grasslands, Brewer's sparrows have been in a long-term decline (Paige & Ritter, 1999; Saab & Rich, 1997). Fragmentation and loss of sagebrush habitat is believed to be the major contributing factor to the decline of this once common sparrow. Wildfire is the major cause of sagebrush loss on Air Force lands.

Kit fox (*Vulpes macrotis*) is a canine that is found in sparsely vegetated flat areas in the desert. This species prefers communities with low-growing shrubs, because these areas provide excellent cover (Burt & Grosenheider, 1964).

Kit foxes are Type 4 BLM Sensitive Species and an Idaho Protected Nongame Species (ISDD, 2018). They have been recorded by calls, scat, and tracks at four emitter sites and visually identified once at site AF (MHAFB, 2006, Page 112). This species can be seen in the winter and early spring. This fox is the smallest member of the canid family. Mature adults measure approximately 15 to 20 inches in length, with a 9 to 12 inch long tail. They stand approximately 11 to 12 inches high at the shoulder and weigh approximately 3 to 4 pounds. The kit fox is a pale gray color, with a tan or slightly darker back. The throat, belly, and inner ears of this fox are cream-colored. A black or brown patch is located on each side of the muzzle and the tail has a dark tip (Chapman & Feldhamer, 1982).

Kit foxes live in dens dug in the soil. This species has a particular preference to where they build their den. They tend to select sites in barren areas with silty-clay soil that is higher than the surrounding terrain.

These sites offer them increased visibility of the area immediately around the den (Murie, 1974). Regular use of these dens is an important adaptation for thermal regulation and water conservation in these foxes (Golightly, 1981).

The kit fox is a nocturnal mammal that will emerge from its den at sundown to hunt. This species moves in an irregular pattern and hunts in thick vegetation, such as fencerows. Kit foxes are primarily carnivorous, consuming black-tailed jackrabbits, rodents, insects, reptiles, birds, bird eggs, and vegetation (Orloff et al., 1986).

MHAFB

The ISDD tracks rare animals in Idaho (ISDD, 2018). No habitat for federally listed threatened or endangered species is present on MHAFB.

Birds

Raptors

Waterfowl may provide potential prey for bald eagles. However, foraging by bald eagles on MHAFB is not known to occur.

Burrowing owls are known to occur on MHAFB immediately adjacent (within 20 feet) to the flightline, in the northern portion near the Environmental Flight Building, the southwestern areas adjacent to MHAFB exercise area (MOAB), the retired EOD proficiency range, the golf course, and in an undeveloped lot in the center of the Base. Human and aircraft activities do not seem to disturb these owls. Remains left at the entrance to burrows indicate that the owls on MHAFB forage heavily on Ord's kangaroo rats (*Dipodomys ordii*), grasshoppers, and beetles.

During the summer of 2007, MHAFB participated in a 30-base study titled "Migratory Linkages of Burrowing Owls (*Athene cunicularia*) on DoD Installations." The DoD Legacy Funds Program funded this study (http://www.dodlegacy.org). In addition, the University of Arizona led the project. From April to July of 2007 and 2008, burrowing owl banding activities took place on MHAFB. In 2007, 99 burrowing owls were banded: 51 adult owls and 48 juvenile owls; and in 2008, 40 burrowing owls were banded: 12 adults and 28 juveniles. In addition, four of the birds banded in 2007 were recaptured in 2008. Each owl was marked with a distinctly numbered band from the US Geographic Survey (USGS) Patuxent Wildlife Research Center, Bird Banding Laboratory. The Bird Banding Laboratory tracks all of these banded owls. In addition, feather samples were taken from each bird to test for unique combinations of isotopes. Evaluation of these isotopes can be used to determine where each bird spent the winter. Blood samples were also taken from each owl for genetic purposes in determining population linkages between different regions in the United States. In addition, plumage photos were taken to study sex, age, and population differences of the owls. For more information on this study, see http://www.cals.arizona.edu/research/azfwru/migratory_linkages_of_burrowing_owls

Waterfowl and Shorebirds

Long-billed curlews are commonly seen resting or foraging in cheatgrass dominated habitats on MHAFB. California gulls are commonly seen foraging at the landfill, but are less often observed on MHAFB due to the landfill closure. American white pelicans are rarely observed on MHAFB. They will infrequently use the treated effluent storage lagoon and the golf course ponds.

Other Birds

Brewer's sparrows have been observed in the fields bordering the Base Golf Course, within the fields north of MOAB, and north of the runway.

Loggerhead shrikes are uncommon on MHAFB. Little high quality nesting habitat remains on MHAFB.

SAR

No surveys have been conducted at SAR for federally listed threatened or endangered species or other species with a conservation status; however, none are expected to be present. Burrowing owls and long-billed curlews may use this area based on the habitat type available. Prairie falcons and other raptors may forage on the SAR.

MHRC

SCR

The ISDD tracks rare animals in Idaho (ISDD, 2018). No federally listed threatened or endangered species have been found on SCR.

Mammals

Bats

IDFG Special Status species recorded on SCR include Western small-footed myotis, long-eared myotis, Yuma myotis, Western pipistrelle, and a possible Townsend's big-eared bat. A spotted bat and two Yuma myotis were recorded at Roberson Ford. In addition, a spotted bat was recorded at Winter Camp and another was recorded at the Bruneau Canyon Overlook (Doering and Keller, 1998). Spotted bats have an echolocation call that can be heard by humans.

Birds

Raptors

A ferruginous hawk has been recorded on SCR. The bald eagle is known to winter west of SCR in the lower Bruneau River Canyon and north along the Snake River Canyon. Bald eagles may forage in the area in winter. Burrowing owls are known to occur on SCR on almost every habitat type. This owl is usually seen in cheatgrass habitats. Burrowing owls are most often seen in Brown's Gulch and Pot Hole Canyon. In addition, within SCR is a 14-mile stretch of the Clover Three-Creek Road. Along this stretch, annual sunflowers bloom along the roadside drawing large numbers of rodents from the surrounding rangeland. Western burrowing owls and short-eared owls are frequently seen in this area. 61 short-eared owls and 9 burrowing owls were counted in a 14-mile stretch of Clover Three-Creek Road one night when the sunflowers were blooming.

Shore Birds

Long-billed curlews have been found on the northern half of SCR in annual grasslands. No nests have been recorded. This species has also been recorded in crested wheatgrass dominated habitat and in or near Pot Hole Canyon.

Other Birds

Brewer's sparrows, sage sparrows, and sage thrashers are all sagebrush obligate species that are found on SCR within sagebrush habitat. In addition, loggerhead shrikes are commonly recorded in sagebrush habitat, and are often seen perched on fences and large sagebrush bushes. Brewer's sparrows, sage thrashers, and loggerhead shrikes have been recorded close to water features. The sage sparrow has been recorded in cheatgrass habitats and within Brown's Gulch. Loggerhead shrikes have been observed hunting along the borders of sagebrush and cheatgrass habitats.

JBR

Mammals

A kit fox was recorded on JBR. Western small-footed bat echolocation calls were recorded in Juniper Draw and Western pipistrelles were recorded in the Target Area.

Birds

Raptors

Ferruginous hawks have been seen in a variety of habitats within JBR (section 14, Appendix B; MHAFB, 2006, Page 104). On JBR is a target area that contains two mock SAM sites and a mock industrial complex. This area provides shelter and perch sites for wildlife. The vegetation surrounding this area is primarily a mixture of rabbitbrush and intermediate wheatgrass. Ferruginous hawks have been observed in this area. In addition, these hawks have been seen nesting in juniper trees at the bottom of Juniper Draw, in rabbitbrush/Sandberg's bluegrass habitats, along rock features that line the ridges of Juniper Draw, and close to water features. A pair of ferruginous hawks successfully fledged three juveniles in 2006. For results of the 2008 raptor and loggerhead shrike surveys, refer to the "Technical Memorandum: 2008 Sage-grouse, Raptor, Breeding Bird Survey Results for MHAFB Facilities" within section 14, Appendix B.

Western burrowing owls have been observed within the target area on JBR and within intermediate wheatgrass dominated habitats.

Other Birds

Brewer's sparrow is a sagebrush obligate species that is found near habitats of sagebrush within JBR. In addition, this bird has been found associated with rabbitbrush/bluebunch wheatgrass, rabbitbrush/ cheatgrass, and rabbitbrush/Sandberg's bluegrass habitats. Once considered the most abundant bird species in sagebrush-grasslands, Brewer's sparrow have been in a long-term decline (Paige & Ritter, 1999; Saab & Rich, 1997. Fragmentation and loss of sagebrush habitat is believed to be the major contributing factor to the decline of this once common sparrow. Wildfire is the major cause of sagebrush loss on Air Force lands.

Sage thrashers are commonly seen in habitats of rabbitbrush/Sandberg's bluegrass and sagebrush/rabbitbrush within JBR. Sage thrashers were observed during fieldwork in the southeast corner of JBR in June 2003.

Sage sparrows can be found in a variety of habitats in JBR including rabbitbrush/bluebunch wheatgrass habitat, rabbitbrush/crested wheatgrass habitat, and rabbitbrush/Sandberg's bluegrass habitat. In addition, this species is also seen near rock outcrops that lie along the ridges of Juniper Draw and within the target area of JBR.

Other MHRC Components

Except where greater sage-grouse issues are identified (see Greater Sage-grouse section above), these sites are not primary use areas for wildlife, including special status species.

2.3.5 Wetlands and Floodplains

Wetlands are defined as "those areas that are inundated or saturated by surface or groundwater 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" (USACE, 1987). In order to be considered a jurisdictional wetland, three specific criteria must be met; hydric vegetation, soils and hydrology. Areas that are periodically wet but do not meet all three criteria are not jurisdictional wetlands subject to Section 404 of the CWA and Section 10 of the Rivers and Harbors Act.

On January 9, 2001, the U.S. Supreme Court ruled on isolated wetlands in a wetland jurisdiction case commonly known as the SWANCC (Solid Waste Agency of Northern Cook County) Decision (531 U.S. 159 (2001)). The USACE had considered "Waters of the United States" to include among other things, intrastate waters:

- That are or would be used as habitat by birds protected by migratory bird treaties; or
- That are or would be used as habitat by other migratory birds that cross state lines; or
- That are or would be used as habitat for endangered species; or
- That are or would be used to irrigate crops sold in interstate commerce

This was known as the "Migratory Bird Rule." The Court ruled that the "Migratory Bird Rule" could not be solely used by the USACE under Section 404 to assert federal power over isolated non-navigable intrastate waters that are not "tributary" to or "adjacent" to navigable waters or tributaries.

Status of Wetlands on MHAFB and MHRC. There are few wetlands on lands managed by MHAFB, as would be expected in the arid environment of the Great Basin of southwestern Idaho. Nonetheless, these wetlands provide important habitat for plants and animals. Figure 2-29 shows procedures for any actions with the potential to affect wetlands.

A Wetland Delineation and Request for Jurisdictional Determination report was completed in December 2007 (MHAFB, 2007f). The surveys occurred in May and October 2007 and included MHAFB, SCR and JBR as the study areas. Nine wetlands and two playas were identified. None of the identified wetlands are characterized as jurisdictional.

The study used the Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (USACE, 2006). This supplement was implemented by the Army Corps of Engineers in February 2007 as part of a national effort to address regional wetland characteristics and improve the accuracy and efficiency of wetland delineation procedures. The Arid West Region supplement identifies three sub-regions that differ sufficiently from each other in climate, landforms, biography, and/or wetland characteristics to warrant separate consideration of wetland indicators and delineation guidance (USACE, 2006). The MHAFB project study area is identified as being part of the Columbia /Snake River Plateau sub-region.

Playas are defined as difficult wetland situations in the Arid West Supplement (USACE, 2006). They typically have sparse, patchy, or no vegetation. Playas should be included in the delineation if they are a part of a mosaic with vegetated wetlands and other waters (USACE, 2006). Two playas are specifically identified and described in the 2007 MHAFB Wetland Delineation; however, there are several more very small playas present on MHAFB, SAR, and SCR. Figures 2-24 (see vegetation discussion above), 2-30, and 2-31 show the location of all wetlands and playas located on MHAFB and MHRC. Table 2-9 lists the wetland resources identified in the 2007 MHAFB Delineation. The information that follows was derived wholly from the 2007 MHAFB Wetland Delineation and request for Jurisdictional Determination report (MHAFB, 2007f).

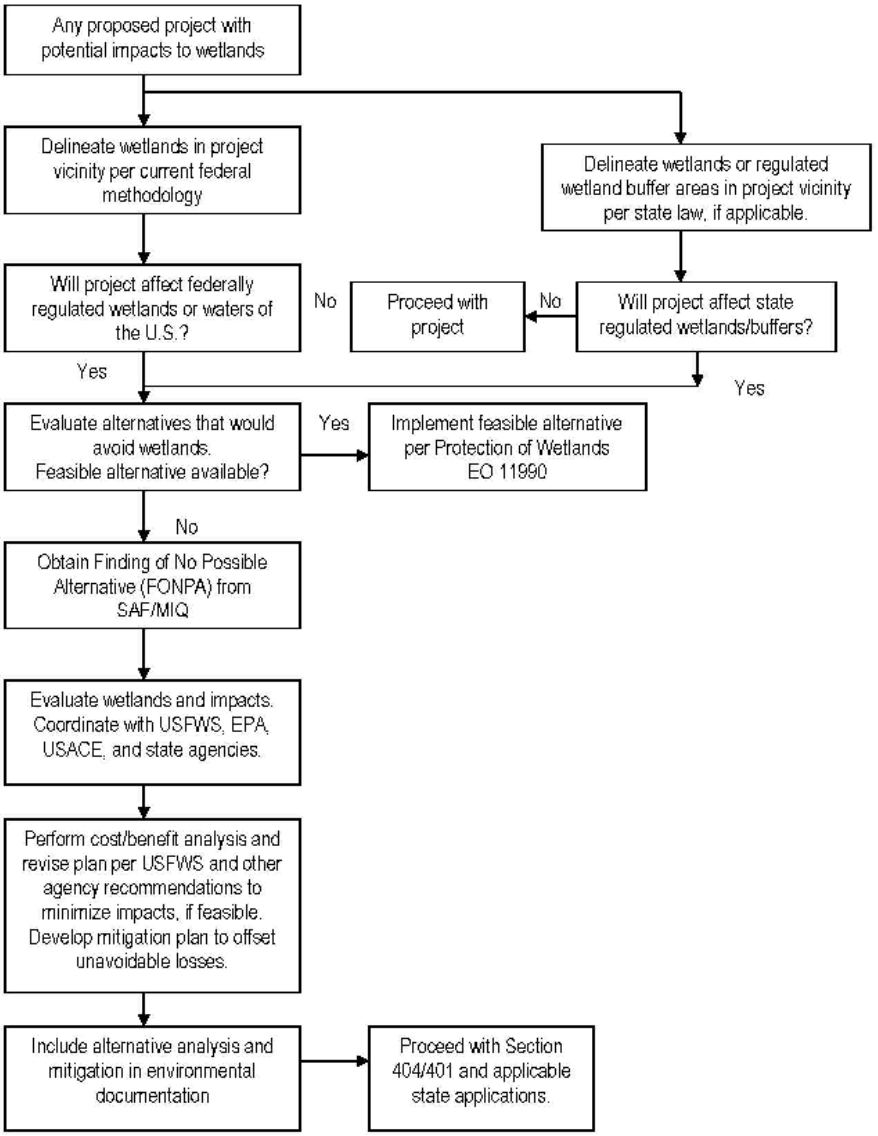


Figure 2-29.
Wetland Permitting Flowchart According to AFI 32-7064

TABLE 2-9
Wetland Resources Identified within MHAFB Management Areas

Wetland Identification	Total Acres	Cowardin Classification*	Jurisdictional
MHAFB			
Wetland 1	0.18	PEM	No
Wetland 2	0.04	PEM	No
Wetland 3 #	1.44	PEM	No
SCR			
Wetland 4	<0.001	PEM	No
Wetland 5	0.03	PEM	No
Wetland 6	<.001	PEM	No
Wetland 7	1.14	PEM/PSS/pond	No
JBR			
Wetland 8	0.02	Pool - PEM	No
Wetland 9	0.14	PEM	No
MHAFB Playas			
Playa 1 (SAR)	2.62	Playa (not wetland)	No
Playa 2 (RIB)	0.01	Playa (not wetland)	No
TOTAL PEM/PSS/Pond/Pool	**2.99**		

* Cowardin et al., 1979. PEM=Palustrine Emergent Marsh; PSS=Palustrine Shrub Scrub; PFO=Palustrine Forested. # See description for Wetland 3 below. No longer characterized as wetland.

MHAFB

Status of Inventories and Current Conditions

Three wetland resources were located on MHAFB. All three were classified as Palustrine Emergent Marsh. One playa was identified and described. There are eleven additional very small playas on MHAFB as shown in Figure 2-30.

Wetland 1 occurs in a portion of the McCalley Ditch along the northern part of MHAFB. The majority of this long ditch does not have wetland vegetation, soils, or hydrology. Wetland 1 is the only portion of the ditch where a small 0.18-acre wetland has developed. Wetland vegetation in Wetland 1 includes bulrush (*Scirpus* sp.) and cattails (*Typha latifolia*). This wetland does not meet jurisdictional wetland criteria because hydrology is a result of upland overland flow from stormwater drainage and other artificial runoff. It is confined to a blind ditch with no significant nexus from Wetland 1 to any Waters of the U.S. waterway.

Wetland 2 is a 0.04-acre wetland located on the east end of the Burn Ditch. It is dominated by bulrush and cattails. The dark color of the soils likely result somewhat from the drain's use as a burn ditch. However, the soils are considered hydric based on low chroma in the upper layers. Hydrological influences are met by three inches of surface inundation from stormwater and other runoff sources. It appears to be relatively permanent because it was inundated in October of the study year. This wetland does not meet jurisdictional wetland criteria because hydrology results from upland overland flow from stormwater sources and other artificial runoff. It is confined to a blind ditch with no significant nexus to any Waters of the U.S. waterway.

Wetland 3 was identified along the bottom of the Hush House Ditch and did not meet jurisdictional wetland criteria. Its establishment was the result of upland overland flow from stormwater sources and surface

runoff. However, the ditch was lower than the ditch outlet. The area has since been redesigned to facilitate movement of water through the outlet. Vegetation was removed during the redesign. The area no longer meets the definition of a wetland.

Playa 2 is located near the RIB ponds along the western side of MHAFB and is less than 0.01 acres in size. Less than three percent of the playa was vegetated, none of which included wetland species. The playa was dry when investigated. Hydrology is indicated for this playa by the surface soil cracks that were present.

SAR

Status of Inventories and Current Conditions

Playa 1 was identified and described for the SAR. Although the playa located near SAR is neither a wetland nor jurisdictional Water of the U.S., it is a rather large (2.62-acre) unique natural water-collecting basin that may provide habitat to rare species. It is located near the SAR along the northern outer perimeter of MHAFB. This playa and six additional very small playas are shown in Figure 2-30.

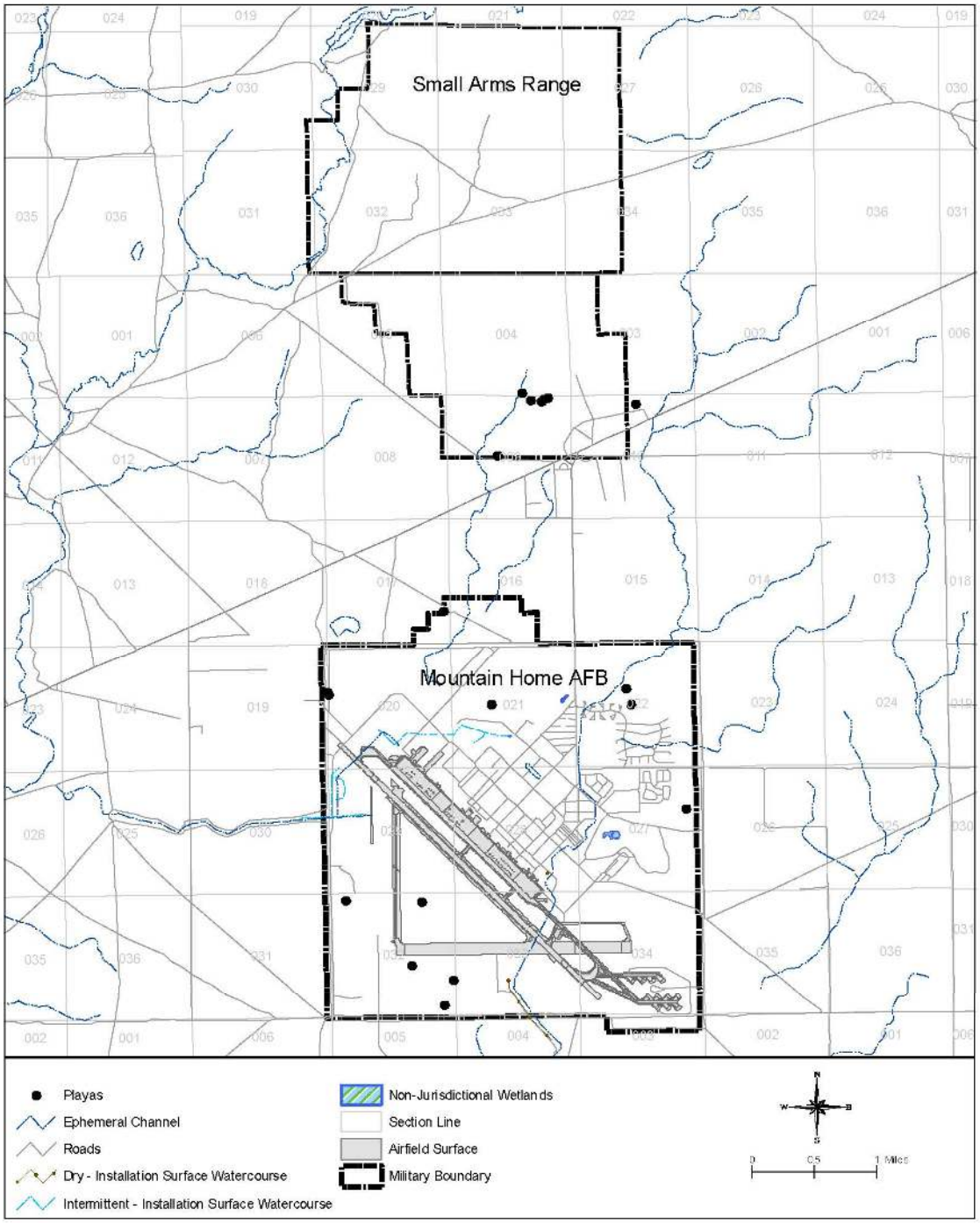


Figure 2-30
Wetland, Streams, and
Impoundments on MHAFB and SAR.

This page intentionally left blank.

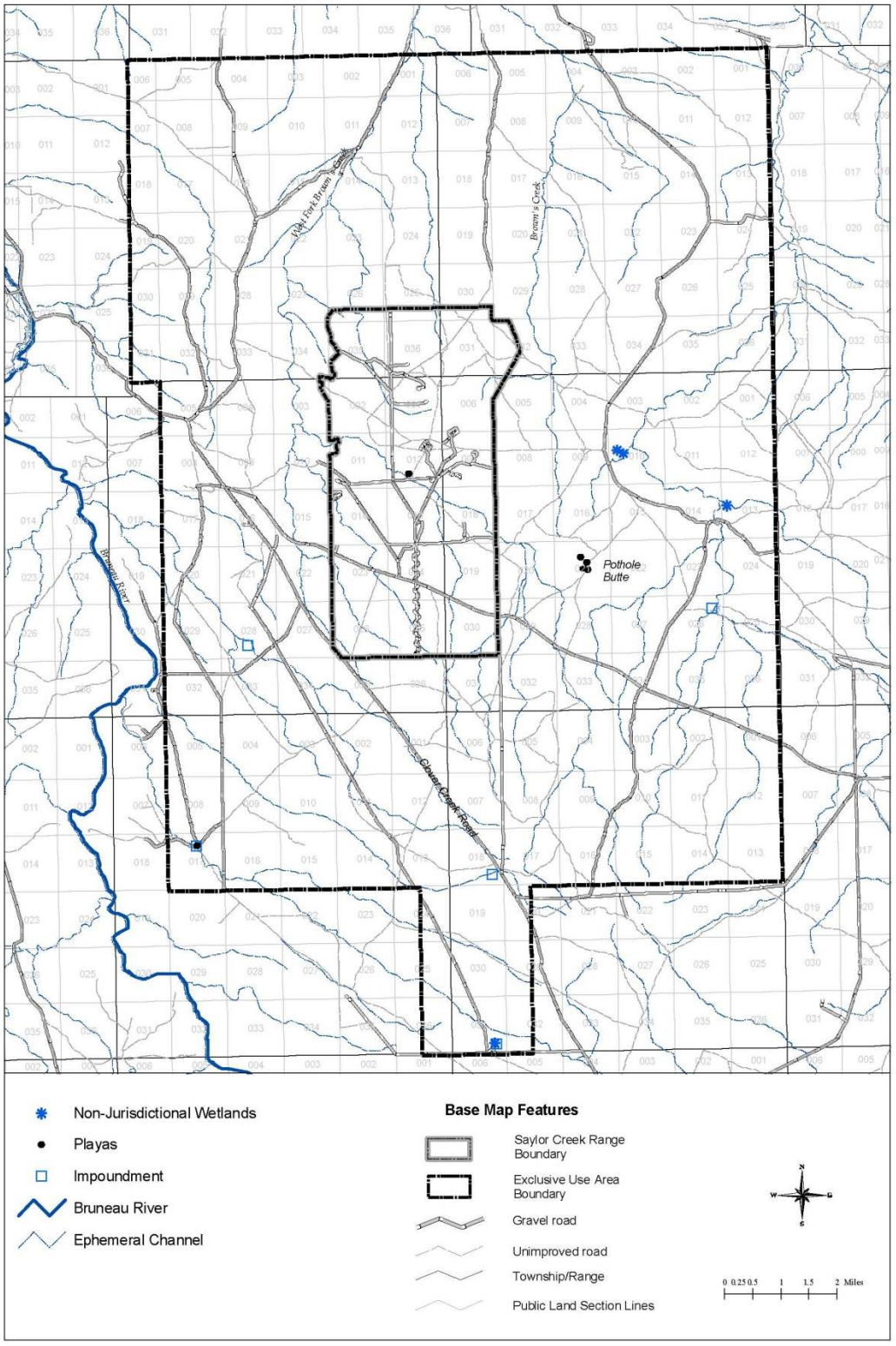


Figure 2-31.
Wetlands, Streams, and Impoundments on SCR

MHRC

SCR

Status of Inventories and Current Conditions

SCR was identified as having four wetlands as determined by the 2007 delineation. Six very small previously identified playas are also on SCR (Figure 2-31). Natural drainage channels were evaluated for wetland vegetation in several areas of the outer perimeter of SCR. These primarily focused on Pothole Canyon on the west side of SCR, Brown's Canyon on the north, and other unnamed draws on the west and south. Hydrology, vegetation, and hydric soils were rarely encountered in spite of two separate trips. Wetland areas that did meet wetland criteria are described below.

Wetland 4 is a small Palustrine Emergent Marsh wetland located within a side canyon that connects with Pothole Canyon. Vegetative cover was dominated by toad rush (*Juncus bufonius*) and water buttercup (*Mimulus guttatus*). Soils had a low chroma (4/1) in the rooting zone and the hydrology appeared to be the result of a small ephemeral seep. Because this wetland was restricted to a small area in a side canyon, there were no indications that it flowed any further than the immediate area and no indication of wetlands or active channels for Waters of the U.S. down slope. Therefore, this wetland does not meet jurisdictional wetland criteria.

Wetland 5 is a small area (0.03 acres) of emergent wetland in the bottom of Pothole Canyon that supports a small amount of wetland emergent vegetation consisting of monkeyflower (*Mimulus guttatus*), velvetgrass (*Holcus lanatus*) and toad rush. Soils were low chroma (3/1) in the rooting zone. Wet hydrological indicators were not observed in the field, as the channel was dry. However, it had biotic crust, which was composed of tall moss and an alga mat, which is considered a hydrological indicator. This wetland is restricted to a small area in a side canyon that links to Pothole Canyon, but there were no indications that it flowed any further than the immediate area. There were no indications of wetlands or active channel for Waters of the U.S. down slope. Therefore, this wetland does not meet jurisdictional wetland criteria because it is isolated and hydrology is confined to an isolated area with no significant hydrological nexus to any Waters of the U.S. waterway.

Wetland 6 is a very small (less than 0.001 acre) area of wetland in the bottom of a wide canyon. The wetland supports one emergent vegetation layer dominated by soft rush (*Juncus effuses*) and sedge (*Carex* sp.). Water marks on rocks in a nonriverine setting were apparent and are a primary indicator of wetland hydrology. This isolated, very small wetland patch that results from overland flow has no significant nexus with Waters of the U.S. and is not jurisdictional.

Wetland 7 is an artificial 1.14-acre pond on the south end of SCR that supports a fringe of wetland vegetation. This wetland has important functional value for wildlife (migratory birds) because of the presence of two vegetation strata, emergent and shrub, and the presence of permanent open water. The vegetative cover is dominated by Coyote willow (*Salix exiqua*), Bebb's willow (*Salix bebbiana*), and tamarisk (*Tamarix*) in the shrub component. Tamarisk is an invasive species. The emergent class species in the wetland included spikerushes (*Eleocharis rostella* and *Eleocharis quinqueflora*) and three-square bulrush (*Schoenoplectus pungens*). The soil had low chroma in the rooting zone. Wet hydrology indicators were high water table by observation of free water at eight inches in the soil pit and saturation to the surface. This hydrology is artificially permanently maintained by piping water from irrigation

diversion on Clover Creek. As such, this is an isolated constructed pond with aboveground connection to Waters of the U.S. and is not jurisdictional.

JBR

Status of Inventories and Current Conditions

JBR was determined to have two wetlands during the 2007 delineation. Natural drainage channels were evaluated for wetland vegetation all along Juniper Draw on the east side of JBR. Juniper Draw is a significant feature, not because it is a wetland, but because it gets just enough additional moisture in the spring to have developed a complex community of plants that do not exist elsewhere. For this reason, this area should be protected from impacts.

Wetlands 8 and 9 are considered together because one leads into the other. The pool (Wetland 8) is a very small (0.02 acre) drop area for a small patch of wildrye-dominated wetland (Wetland 9) on the upper cliff. This cliff prevents any livestock from accessing the pool. The small patch of emergent vegetation is approximately 0.14 acre. Hydrologic indicators were met for Wetland 8 by the presence of surface water. Watermarks on rocks in a non-riverine setting were the hydrological indicator for Wetland 9. These isolated very small wetland areas result from overland flow. Neither has significant nexus with Waters of the U.S. They are not jurisdictional and can be seen in the northernmost central area of JBR in Figure 2-24.

In addition, the range boundary fence prevents livestock from accessing the Wetland 8 pool from the surrounding the BLM allotments. Since this rock pool already precludes livestock use, no additional conservation measures for the pool are needed.

Two impoundments exist on JBR. These areas are small diked or excavated reservoirs, developed and maintained as a water source for livestock, and are not considered jurisdictional wetlands.

A recently constructed .95 acre, aboveground reservoir referred to as Bracket Pond is located in the southwest section of JBR. This reservoir contains approximately 50,000 gallons of water. The remaining site is less than 1/4-acre and is dry most of the year. However, these sites are not considered wetlands or waters of the U.S.

2.3.6 Other Natural Resource Information

None noted.

2.4 Mission Impacts on Natural Resources

2.4.1 Natural Resource Constraints to Mission and Mission Planning

The Air Force considers natural resource stewardship vital to the military mission. Common natural resource constraints include:

- disturbance to native wildlife and plant habitats,
- wetlands, populations of sensitive species, and research areas.

The Air Force seeks to develop a program that facilitates interagency collaboration and enhances interagency resource stewardship while allowing test and training activities to occur, now and in the future. Sustainable ranges and airspace are vital to the national defense of our country. The Air Force further seeks to conserve significant natural resources for use by tribes for their subsistence and spiritual needs. In several areas, the adjoining lands are managed by federal, state, and tribal agencies. By working together on an ecoregional scale, the Air Force and its neighbors can practice collaborative ecosystem management, conserve biodiversity, and sustain the long-term mission of each agency. The Air Force will seek to provide funding proportional to the resources it manages and encourage other agencies to do the same, subject to the availability of funds.

MHAFB practices integrated planning. Integrated planning is the foundation for an ecosystem approach to infrastructure development, as well as for any ecosystem-based mitigation agreements. It allows for the formation of open dialogue and mutual objectives. Achieving joint goals requires planning that recognizes agencies' respective missions and considers stakeholders' needs.

Integrated planning provides a method for the collection, sharing, analysis, and presentation of data contained in agencies' plans. Through the collaborative efforts of field-level experts, partners, and the public, one framework outlining locally appropriate strategies have been devised. MHAFB routinely conducts integrated planning in their proposed actions for accomplishing various base missions.

MHAFB's collaboration with the USFWS, BLM, the IDFG, local tribes, and other agencies has been the key to overcoming challenges to providing sound stewardship of the natural resources.

Those factors, which present or may present impediments to future training and development at MHAFB are summarized in Table 2-10 below.

TABLE 2-10
Summary of Natural Resource Management Issues and Concerns

Resource	MHAFB	SCR	JBR	SAR
Vegetation	• Loss of Davis' peppergrass (*Lepidium davisii*) habitat • Loss of sagebrush • Exotic/noxious weed invasion • Inappropriate landscaping	• Loss of sagebrush (*Artemisia tridentata* var. *wyomingensis*) habitats • Exotic/ noxious weed invasion • Maintaining vegetation quality • Disturbance to special status species and their habitats	• Impacts to slickspot peppergrass (*Lepidium papilliferum*, abbreviated as LEPA) habitat and populations • Loss of sagebrush habitats • Exotic/ noxious weed invasion	• Loss of Davis' peppergrass habitat • Loss of sagebrush • Exotic/ noxious weed invasion
Wetlands	• Impacts to vernal pools	• Impacts to wetlands	• Impacts to wetlands	• Impacts to playas

Resource	MHAFB	SCR	JBR	SAR
Watershed Protection	• Appropriate water use • Sludge disposal • Storm water run-off	• Erosion • Fire risk	• Erosion	• Erosion
Fish and Wildlife Management	• Exotic/noxious weed invasion • BASH hazards • Waterfowl use of storage lagoons • Controlling pests • Disturbance to special status species and their habitats • Migratory bird issues	• Exotic/ noxious weed invasion • Impacts to wetlands • Disturbance to special status species and their habitats • BASH hazards • Migratory bird issues	• Exotic/ noxious weed invasion • Disturbance to special status species and their habitats • Migratory bird issues	• Exotic/ noxious weed invasion • Impacts to playas • Migratory bird issues
Grounds Maintenance\ Pest Control	• Appropriate use of pesticides • Exotic/noxious weed invasion • Inappropriate landscaping	• Exotic/noxious weed invasion	• Exotic/ noxious weed invasion • Impacts to LEPA	• Exotic/ noxious weed invasion
Outdoor Recreation	• Education of personnel • Impacts to special status species	• Education of personnel		
Grazing Outleasing		• Cooperation of management activity with BLM • Impacts to wetlands and other sensitive areas • Biodiversity and ecosystem health • Exotic/noxious weed invasion	• Integrating grazing with training requirements, fire prevention, and LEPA habitat	• Cooperation of management activity with BLM • Grazing issues

2.4.2 Land Use

MHAFB

Within the lands managed by MHAFB there are three grounds maintenance categories: improved, semi-improved, and unimproved (Figure 2-32).

Land use categories designate function and are derived from the specific type of grounds categories: improved, semi-improved, and unimproved.

Improved Grounds: Those areas where personnel annually plan and perform intensive maintenance activities. These are developed areas that have lawns and landscaped plantings requiring continual maintenance.

Semi-Improved Grounds: Grounds where personnel perform periodic maintenance primarily for operational and aesthetic reasons (such as erosion and dust control, weed control, bird control, and visual clear zones).

Unimproved Grounds: Areas not classified as improved or semi-improved and usually not requiring maintenance more than once a year, if maintenance occurs at all.

The land use categories for improved grounds at MHAFB include housing, community, medical, administration, industrial, aircraft operation and maintenance, and outdoor recreation (Figure 2-33). Semi-improved grounds include areas of aircraft operations, weed control, and fire protection. Unimproved grounds are undeveloped areas used for wetland protection, sensitive species protection, wildlife habitat, and native vegetation protection.

Table 2-11 shows the acreage of ground categories on MHAFB and SAR.

TABLE 2-11
Acreage of Ground Categories on MHAFB and SAR

Area		Acres	
MHAFB	Improved	800	Athletic, housing, administrative areas, and golf course
	Semi-improved	1,090	Runways, storage areas, safety zones, and EOD range
	Unimproved	3,240	Undeveloped areas
SAR	Improved	0	None
	Semi-improved	20	Rifle target area
	Unimproved	3,171	All undeveloped areas
	TOTAL ACRES	**8,321**	

SAR

Most of the SAR is composed of unimproved lands (3,171 acres). Semi-improved lands are comprised of an approximately 20-acre area between the buildings and the berm and are maintained to control weeds.

The semi-improved lands at the SAR are used for training areas. The unimproved lands are used for sensitive species protection and wildlife habitat.

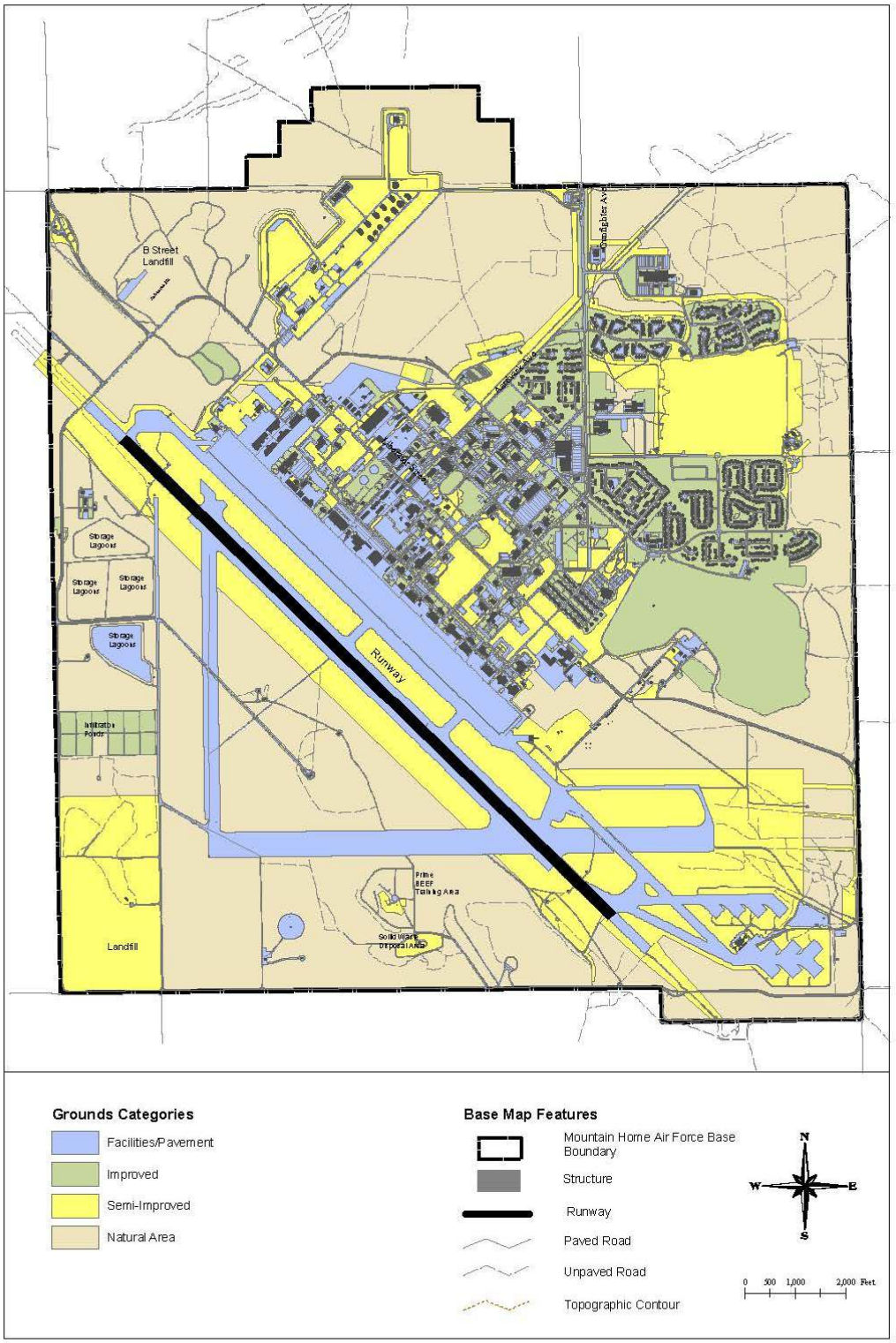


Figure 2-32
Grounds Categories at MHAFB

This page intentionally left blank.

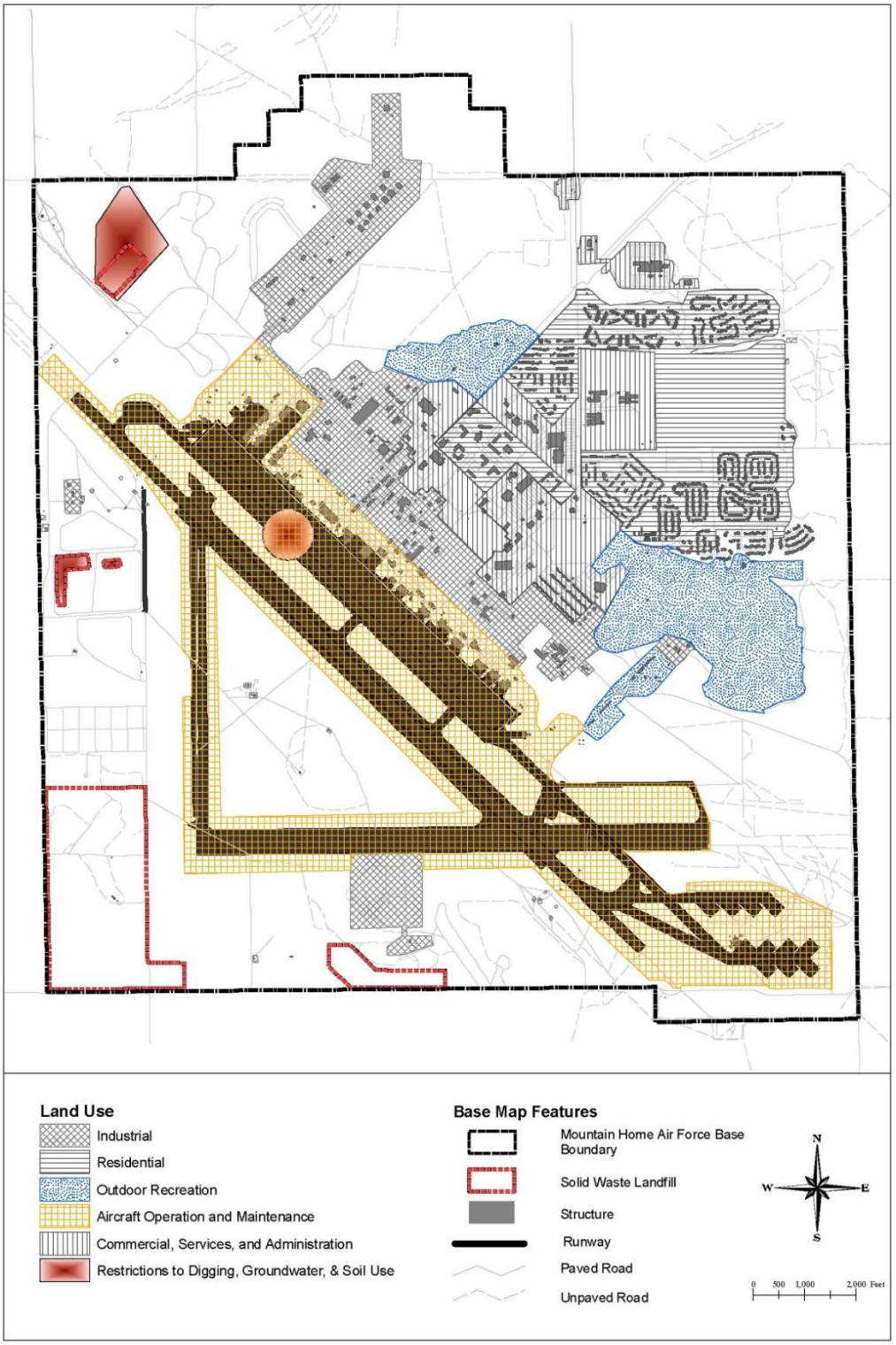


Figure 2-33
Land Use at MHAFB

This page intentionally left blank

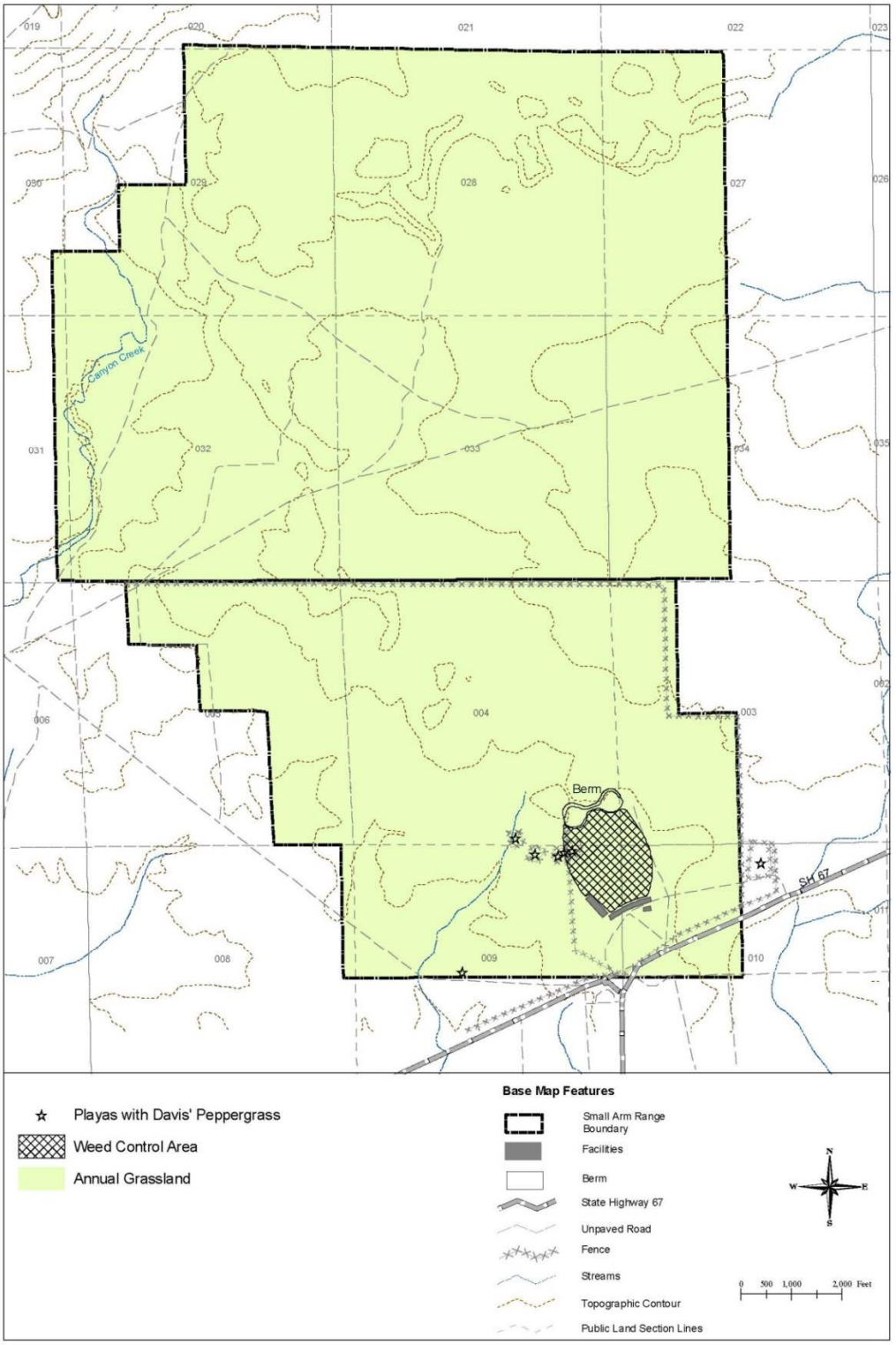


Figure 2-34
Land Management Categories at SAR

MHRC

SCR

All of SCR is composed of unimproved lands (109,544 acres). There are no ground maintenance activities performed. Targets, roads, and firebreaks are included as unimproved according to definitions provided in Section 4.10, Land Management. Maintenance of these facilities is provided by the Operations Support Squadron.

Acreages and general distribution are shown in Table 2-12.

TABLE 2-12
Acreage of Ground Categories on SCR

Area	Category	Acres	General Distribution
SCR	Improved	0	None
	Semi-improved	0	None
	Unimproved	109,544	All areas including EUA
	TOTAL ACRES	109,544	

JBR and Associated Sites

Only unimproved grounds are found on JBR, the emitter sites, Grasmere EC site, and the ND target sites, comprising approximately 12,675 acres of rangeland. Maintenance is performed for erosion control, fire-hazard reduction, or weed control.

A variety of overlapping land uses occur with the primary use being the training mission. Other uses include livestock grazing, vegetation and wildlife habitat, and water impoundment for livestock grazing and fire protection.

Maintenance may include mowing along perimeter fence lines and target areas, as well as weed and erosion control along roads, buildings, targets, or other range-related structures on an annual basis as needed.

2.4.3 Current Major Impacts

Air Pollution

Air quality at a given location is described by the concentration of various pollutants in the surrounding atmosphere. National Ambient Air Quality Standards are established by the U.S. Environmental Protection Agency (EPA) for criteria pollutants including ozone (O3), carbon monoxide (CO), nitrogen dioxide (NO2), sulfur dioxide (SO2), particulate matter equal to or less than ten micrometers in diameter (PM10), and lead (Pb). The National Ambient Air Quality Standards represent the maximum levels of background pollution that are considered safe, with an adequate margin of safety to protect public health and welfare. Air Quality management is conducted by MHAFB in compliance with the Title V Permit, Idaho Administrative Procedures Act (IDAPA) regulations, Code of Federal Regulations, and AFI 32-7040 (USAF, 2007c).

MHAFB

Air quality near MHAFB, the city of Mountain Home, and Elmore County is rated very well. The Idaho Department of Environmental Quality (IDEQ) has designated the area unclassifiable since ambient pollutant concentrations have rarely been monitored within Elmore County.

MHAFB is required to obtain a major source operating permit (Title V permit) due to the potential to emit approximately 240 tons per year of NO2 and 160 tons per year of CO based on the2015 Title V renewal application from stationary sources located on MHAFB; however, in 2015, 14.6 tons of NO2 and 16 tons of CO were actually emitted.

MHRC

SCR

There are no air issues associated with SCR. Fugitive dust emissions from maintenance activities are the major air pollution impact at SCR. Fugitive dust emissions standards have not been set for Owyhee County by the IDEQ.

JBR

There are no air issues associated with JBR. Fugitive dust emissions from maintenance activities are the major air pollution impact at JBR. Fugitive dust emissions standards have not been set for Owyhee County by the IDEQ.

Noise Pollution

Noise is defined as any sound that is undesirable because it interferes with communication, is intense enough to damage hearing, or is otherwise annoying. Human response to noise varies by the type and characteristic of the noise source, distance between source and receptor, receptor sensitivity, and time of day.

Noise Pollution is documented by the use of AICUZ Program and studies under the direction of AFI 32-7063 (USAF, 2004c).

MHAFB

At MHAFB, noise levels from flight operations exceeding ambient background noise typically occur beneath the main approach and departure corridors and in areas immediately adjacent to parking ramps and aircraft staging areas. As aircraft take off and gain altitude, their contribution to the noise environment drops to levels indistinguishable from the ambient background (Figure 2-35). The height at which the noise becomes indistinguishable varies depending on the aircraft and meteorological conditions. As would be expected, the highest noise levels generated by takeoff and landing are found at the runway on MHAFB.

MHRC

Noise levels would typically be higher at MHRC sites than the surrounding areas due to aircraft overflight and approach. Aircraft training utilizes targets on SCR and JBR regularly, and incorporates emitters, ND targets, and the EC on an infrequent or intermittent basis. Aircraft noise intensity varies to a listener on the ground depending on proximity to the noise event, meteorological conditions, and by type, speed, and heading of the aircraft.

Noise levels are higher at the 12,200-acre EUA on SCR than the surrounding areas. The EUA contains the targets that form the focal point for aircraft operations (United States Air Force Air Combat Command [USAF ACC], 1996).

When aircraft are present, noise levels are higher at the ND targets, emitter sites, and Grasmere EC site than the surrounding areas due to increased aircraft overflight. The Shoshone-Paiute Tribes of the Duck Valley Indian Reservation have expressed concerns about aircraft noise interfering with tribal activities and potential effects on wildlife in Owyhee County.

Water Pollution

Water quality is described by the concentration of various pollutants in drinking water, groundwater, or surface water. Pollutants are defined as chemicals or other materials, which, when discharged to water in excessive quantities, cause or contribute to water pollution. Water pollution is defined as impacts to water quality, clarity, or usability. Storm water run-off and wastewater may be factors in water pollution.

The Water Quality Program and Environmental Restoration Program (ERP) on MHAFB are implemented in compliance with EPA's National Pollutant Discharge Elimination System permits, state of Idaho Wastewater Land Application Permit, and all other applicable state and federal water resource laws. Water Quality Standards are met to maintain or improve water quality for the safety of Base residents and local aquifer users.

MHAFB

Impacts to surface waters are minimal at MHAFB and the SAR. Few areas contain surface water, and the majority of impacts result from construction activities. Impacts from construction activities are minimal. MHAFB annually reviews and updates its Storm Water Pollution Prevention Plan (SWPPP) to reduce potential pollution caused by precipitation run-off (MHAFB, 2009b). Figure 2-36, showing the location of the storm/wastewater discharge point at McCalley Dam. Wastewater is treated at the Base wastewater treatment plant (WWTP). Treated effluent is land applied at the WWTP, Golf Course and 11 rapid infiltration basins on the Base. MHAFB is permitted under a National Pollutant Discharge Elimination System permit to discharge wastewater off Base only under specific permitted conditions and is permitted by Idaho Department of Environmental Quality for the wastewater reuse. The wastewater reuse permit must be renewed every five years.

Groundwater quality at MHAFB was surveyed in 1994, for the ERP inspection. A basewide investigation identified 31 potential sites of groundwater and/or soil contamination; these sites are identified in Figure 2-13. Twenty-one have been cleared for Unlimited Use/Unlimited Exposure (UU/UE) and closed (MHAFB, 2010g). This conclusion was reached after the sites were remediated or determined to have no risk to human health. FT-08 and ST-11 have ongoing remediation actions. LF-01, LF-02, LF-03, and LF-23 are effectively closed and land use restrictions are in place. No further action will be taken at these four sites. Closure and continuing monitoring actions are being negotiated for ST-24. Continued monitoring of ST-24 involves monitoring of Operable Unit 3 (regional aquifer) for chlorinated solvents.

Water pollution from hazardous materials is not an issue at the SAR as no intermittent streams are found within areas used for military activity.

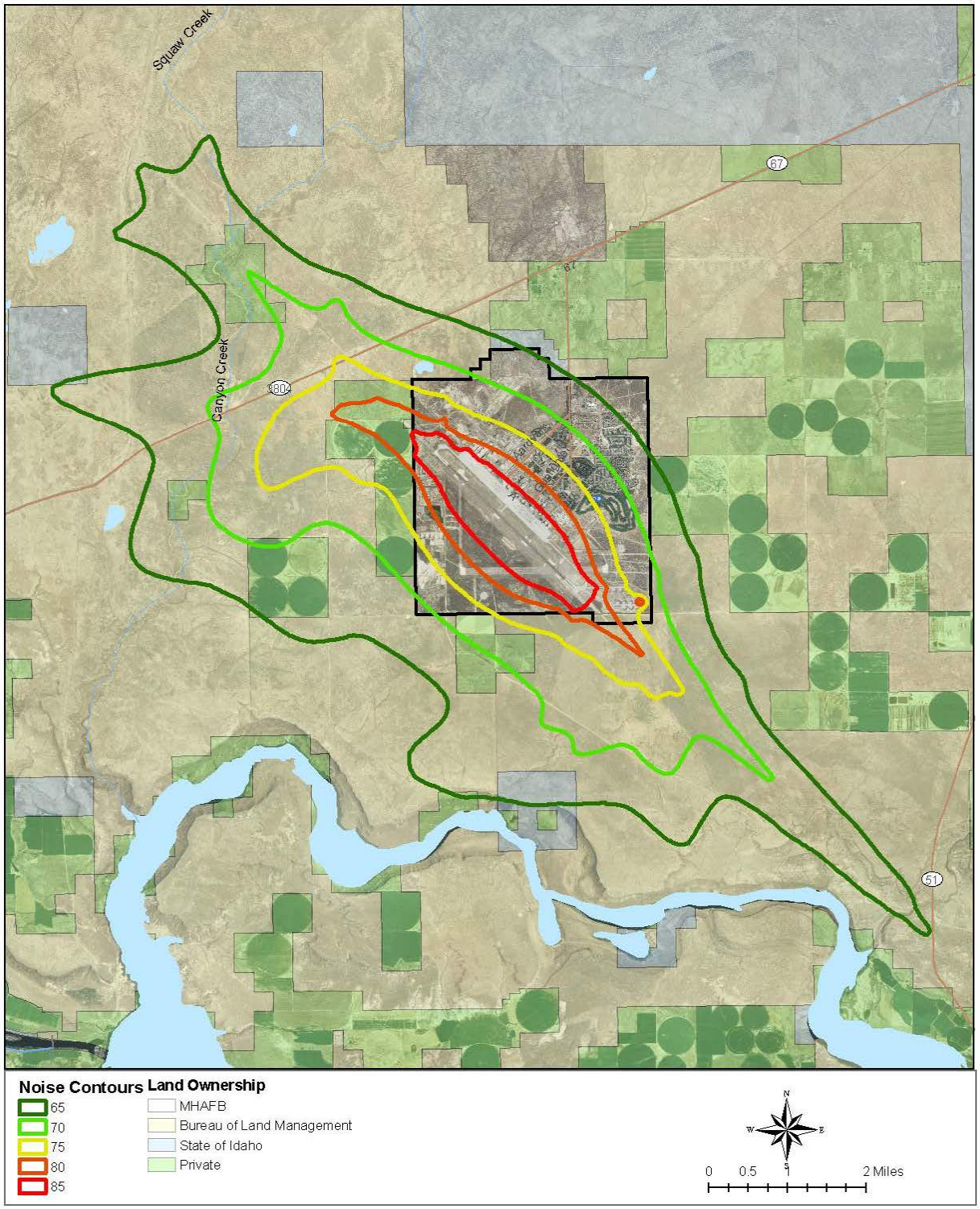


Figure 2-35
Noise Contours at MHAFB

This page intentionally left blank.

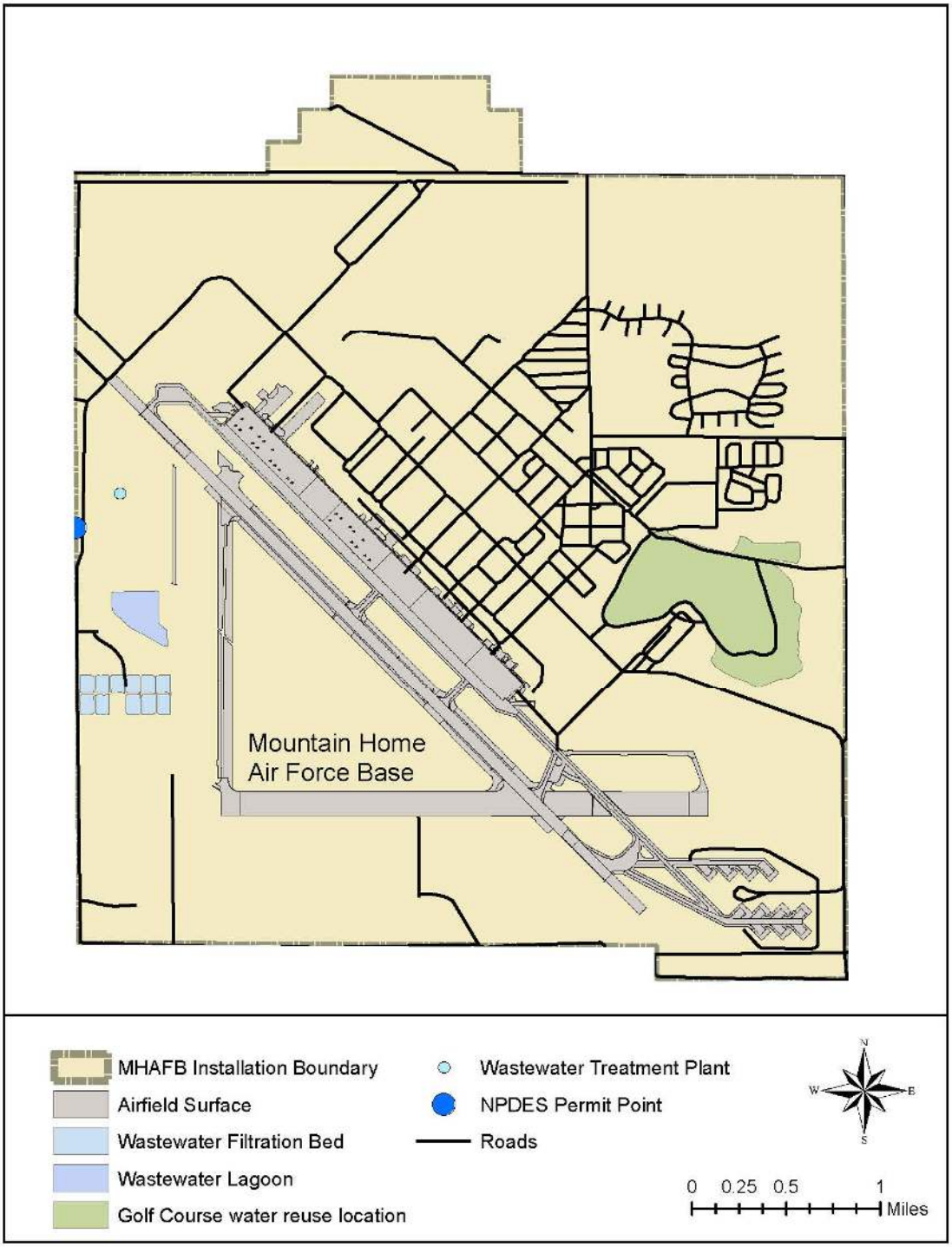


Figure 2-36
MHAFB Wastewater and Stormwater Discharge

MHRC

SCR

SCR surface water may be impacted by many activities, including grazing, fire, fire suppression, or other land-disturbing activities that may lead to erosion. These impacts are located along intermittent streams, small springs, and playas. Livestock and wildlife are attracted to these areas due to increased forage levels, seasonal availability of drinking water, and other attributes. Hoof action, wallowing, overgrazing, and fecal deposition in the streams, springs, and playas may increase sedimentation rates and bacteria/algae growth rates.

Because the streams on SCR are intermittent or ephemeral, the consequences of these impacts are not well documented or understood. Water quality impacts are unlikely on SCR.

JBR

There is no water pollution issues associated with JBR. JBR was constructed with retention ponds around key facilities and the central target area to prevent sedimentation into Juniper Draw. Juniper Draw is an ephemeral channel. No impacts to water quality from training or use of JBR are likely to occur.

Other MHRC Components

The ND targets and emitter sites were constructed with retention berms around their perimeters to store any water accumulation on-site, where it could then percolate down into the soil. Grasmere EC site is atop a rhyolite outcropping. Infiltration rates at the site are expected to be high over the fractured rhyolite. No water quality impacts are associated with the operation of any of these sites.

Hazardous Materials and Hazardous Waste Management

Hazardous materials are products that, due to their inherent properties, are ignitable, corrosive, reactive, or toxic, and may pose a threat to human health or the environment. Hazardous materials can be in liquid, solid, or gaseous forms. The users of the hazardous materials are responsible for properly segregating, storing, and labeling the hazardous materials used in their work areas. They are also responsible for marking, packaging, and transferring the hazardous materials deemed “no longer usable” to the permitted MHAFB 90-day facility for disposal (MHAFB, 2008a; MHAFB, 2010a).

MHAFB

After “no longer usable” hazardous materials are taken to the MHAFB 90-day facility for disposal, they are declared a hazardous waste. It is considered by the EPA to be a “large quantity generator.” Hazardous wastes are manifested and transported to a permitted treatment, storage, and disposal facility within 90 days of receipt.

SAR

Hazardous materials and hazardous wastes are not an issue at the SAR because they are not used at this site.

MHRC

Potential release of hazardous materials during maintenance activities is a concern on SCR, JBR, ND targets, and emitter sites. Prevention measures have been implemented to avoid fuel and oil spills.

Groundwater Depletion

MHAFB

The regional aquifer underlying the Mountain Home Plateau and MHAFB is being depleted at rate of approximately two feet per year (Bendixsen, 1994). Primary causes for this depletion are overdrafts of water for irrigation of agricultural lands.

MHRC

SCR, JBR, and other range complex components are not supplied with water from the aquifers underlying those locations. All water is trucked in from off site. Groundwater depletion from Air Force activities is not an issue at these sites.

Fire and Ground Safety

Fire and ground safety impacts are defined as those impacts from fire, firefighting, fire rehabilitation, and the essential ground safety strategies required to successfully complete the training mission.

MHAFB

Fires may result from a variety of human activities or lightning strikes. The potential for fire starts increases as summer progresses and with increased outdoor activity. Ground safety impacts to the environment are essential elements of the training mission and may include grading clear areas or maintaining clear areas for a variety of reasons. Ground safety requirements are instrumental in Base planning, helping to deconflict the military mission with planning efforts.

MHRC

Fire may result from lightning strikes, ordnance delivery, or ground activities. The potential for fire starts increases as summer progresses and with increased outdoor activity including smoking, target maintenance, and driving over tall grasses or two-track roads that are overgrown.

Biological Resources

Biological resources are all the living components of an ecosystem. General and potential impacts to biological resources are discussed in the following pages.

MHAFB

Biological resources at MHAFB include various wildlife and plant species. Many birds that are protected by the Migratory Bird Treaty Act reside or migrate through the Base. Plants of concern on the Base include Davis' peppergrass and sagebrush. Much of the open areas on the Base have been degraded over the past years. Sagebrush areas are shrinking due to careless use of off highway vehicles (OHVs). OHVs include all-terrain vehicles (ATVs), motorcycles, 4x4's, and other vehicles. Weeds continue to be a growing problem. Sagebrush protection is a priority.

MHRC

SCR and JBR

Operation of SCR and JBR could result in direct impacts to biological resources from training ordnance and range operations, indirect impacts to biological resources from range operations, and direct impacts to biological resources from ground disturbance, wildfire, or ground personnel use of sites. Ground

personnel may affect protected and sensitive wildlife and plant species that are known to be easily disturbed (e.g., ferruginous hawks, slickspot peppergrass).

Other MHRC Components

Use of emitter sites and ND targets by ground personnel may temporarily affect the use of adjacent lands by certain wildlife species. Use of Grasmere EC site is not known to affect dispersal or use patterns of wildlife.

Transportation

Transportation impacts may be increased by the use of roads and public thoroughfares. Transportation impacts may include heavy traffic, or traffic patterns that cause temporary delays.

MHAFB

Transportation impacts from use of MHAFB include heavy traffic during morning and evening as Base employees and military personnel travel to and from work. Traffic patterns in the city of Mountain Home are altered during these times and may cause temporary congestion of public roads.

MHRC

Occasional delay or inconvenience to public road users may result from increased vehicular traffic on roads associated with maintenance and operation of the MHRC, but is unlikely due the infrequent use of these roads.

2.4.4 Potential Future Impacts

The Mountain Home Air Force Installation Development Plan (IDP) provides the installation commander and other decision-makers a condensed picture of an installation's capability to support the mission with its physical assets and delivery systems. It is a general assessment of the installation's infrastructure and attributes for the purpose of gauging development potential. The IDP replaces the Base General Plan, which was last updated in 2010.

The INRMP has been incorporated by reference into the IDP, and the digital maps and data included in the INRMP provided the basis for many of the IDP's resource maps. The interface of the INRMP with the IDP will be such that whenever the INRMP maps and associated databases are updated, the IDP maps will also be updated.

Potential Changes

MHAFB

Three Environmental Assessments (EAs) are being proposed for analysis:

The Air Force is initiating an EA to evaluate the effects of constructing and operating a water pipeline and a drinking water treatment facility on MHAFB to supply potable water to MHAFB. The proposed routes and alternatives include constructing a pump station on the Snake River and a pipeline from the river to MHAFB. The majority of the surrounding land associated with the proposed action is BLM land; therefore, the Air Force and BLM have agreed to participate as Cooperating Agencies in the preparation of the EA, as prescribed in the President's Council on Environmental Quality (CEQ) National Environmental Policy Act (NEPA) Regulations, 40 CFR 1501.6, Cooperating Agencies.

MHAFB is also working on a Cheatgrass Control EA to analyze potential impacts associated with the cheatgrass and weed control on MHAFB, SAR, and in the MHRC. The EA can be tiered to the 2007 BLM PEIS and 2000 MHAFB EA. The purpose of the proposed action is to control the invasive and noxious weeds within designated areas ensuring consistent uses of the ranges. An additional benefit of this action would be improved wildlife. The project is needed because invasive species, including cheatgrass, Russian thistle, pigweed, kochia, and other Idaho State listed noxious weeds are increasing the risk of wildlife which can impact the use of the ranges impairing the mission. The proposed action would control of cheatgrass and other undesirable weeds using herbicides. The proposed action would be accomplished by using 3 tools: aerial and/or ground application of 1) the bioherbicide *Pseudomonas fluorescens* (a cheatgrass suppressing bacteria); 2) imazapic (commonly known as Plateau); 3) other commonly used herbicides such as Glyphosate and Sulfometuron/Chlorosulfuron (commonly known as Roundup and Landmark). 366 FW proposes to use the herbicides to control cheatgrass and other weeds over large areas on MHAFB (6,844 acres), SAR (4,622 acres), ND-1 (726 acres), SCR (109,466 acres), and JBR (12,141 acres). Only alternative to be analyzed along with the Proposed Action is the No-Action Alternative.

Pseudomonas fluorescens would be used to reduce cheatgrass in areas at risk of wildfire and incorporated in post-fire rehabilitation practices to reduce competition with desirable species. Imazapic would continue to be used on SCR, but would also be used on MHAFB, SAR, and ND-1. Imazapic use on JBR and Emitter sites would be restricted to use on parking lots and along roads. Other herbicides would be used to control weeds on parking lots and roads and would also be used to control weeds during post-fire rehabilitation projects.

Finally, MHAFB is analyzing the adaptive reuse potential of Building 291 and associated 103-acres that comprise the former Alert Complex, while considering both the Sustainable Installations and Air Force 20/20 by 2020 memorandum calling for reduction and consolidation of USAF real property, and EO 13287: Preserve America, which serves to protect cultural resources. Under the Proposed Action, the Alert Complex will be utilized for various training scenarios. Currently, the 366 CES Readiness and Emergency Management Flight and the 366 FW are interested in utilizing the facility for training and Building 291 will be renovated such that it could be used to support training operations. Under the No-action 1 Alternative, the Alert Complex would be managed according to the terms and conditions identified within the 2015 Programmatic Agreement.

Additionally, MHAFB continues to update and change as mission requirements demand. Because it was constructed during WWII and the Korean War era in the 1940s and 1950s, much of the infrastructure is outdated and in need of refurbishment, repair, or replacement. The current quality and quantity of facilities on MHAFB do not, however, affect future military missions or readiness.

MHRC

A proposal for operational and use changes on JBR is being formulated and will be analyzed in accordance with NEPA. The proposed changes are necessary to support increased training and reduce scheduling conflicts on SCR. Significant changes proposed to JBR include: strafe targets at the North SAM site, South SAM site, and at a site NE of the current targets in the Industrial Complex; smaller building targets within the existing Industrial Complex target set; smaller building targets away from the Industrial Complex but still inside the 660 acre Impact Area; roads in between existing targets in the Industrial Complex and new target buildings to create an “urban alley”; and four helicopter landing sites away from the Industrial Complex to insert on-the-ground personnel.

JBR was established in 1998 through the JBR Withdrawal Act (JBRWA), which is set for renewal in 2023. The JBRWA renewal requires a Legislative Environmental Impact Statement (LEIS) to fulfill NEPA compliance. The LEIS is being accomplished by the Air Force NEPA Center (AFCEC/ACC) to meet NEPA Requirements with support from the installation.

Constraints and Opportunities Map

Figure 2-38 is a Composite Constraints and Opportunities Map for MHAFB.

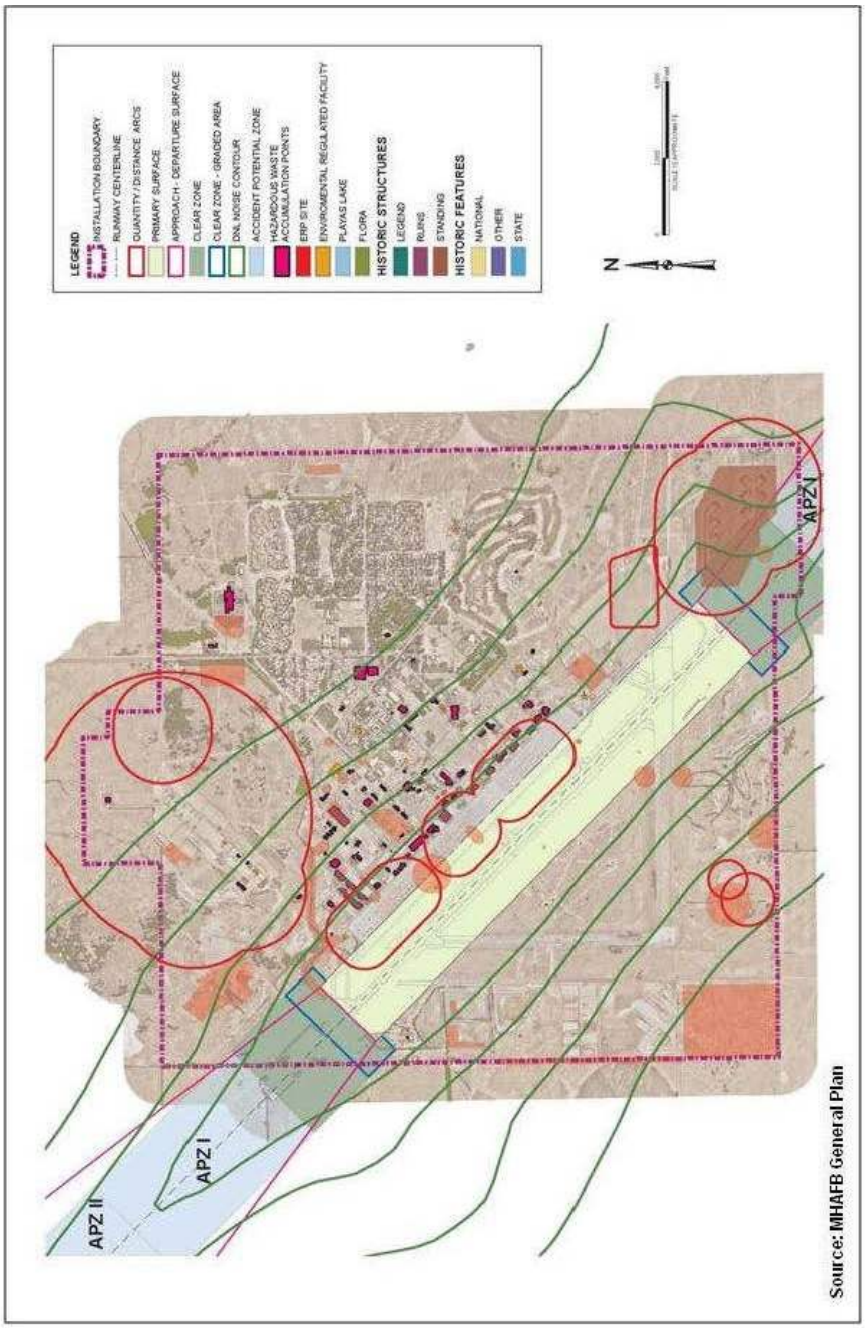


Figure 2-38
Composite Constraints and Opportunities, MHAFB

2.4.5 Natural Resources Needed to Support the Military Mission

The MHAFB requires desert-like terrain to support military training requirements. Realistic training depends on an intact natural setting that includes varied terrain, stable soils, vegetation for concealment, and open areas for trainee safety and maintenance activities. The MHAFB needs the land and its natural resources to function together in a healthy ecosystem to support training. Degraded training lands and soil erosion may degrade or prevent sustainable long-term training. Degradation of natural resources results in inadequate training, impaired readiness, and wasted training dollars. Maintaining healthy ecosystems keeps the training land continuously available for use by Airmen while meeting the legislative requirements outlined in Public Law 103-64. Healthy ecosystems are also more resilient to disturbance and can support long-term training needs.

The MHAFB recognizes that its ongoing and proposed training activities, maintenance actions, and administrative requirements affect the natural resources associated with the MHAFB and the associated MHRC, and that successful mission execution depends on maintaining these resources for sustainable use. The MHAFB recognizes its responsibility to manage for continued and sustainable access to land, air, and water resources of the MHAFB and the associated MHRC for realistic military training while ensuring that the natural and cultural resources entrusted to their care are sustained in a healthy condition for future users and for compliance with Public Law 103-64.

3.0 ENVIRONMENTAL MANAGEMENT SYSTEM

The AF environmental program adheres to the Environmental Management System (EMS) framework and it's Plan, Do, Check, Act cycle for ensuring mission success. Executive Order (EO) 13693, *Planning for Federal Sustainability in the Next Decade*, U.S. Department of Defense Instruction (DoDI) 4715.17, *Environmental Management Systems*, AFI 32-7001, *Environmental Management*, and international standard, ISO 14001:2004, provide guidance on how environmental programs should be established, implemented, and maintained to operate under the EMS framework.

The natural resources program employs EMS-based processes to achieve compliance with all legal obligations and current policy drivers, effectively managing associated risks, and instilling a culture of continuous improvement. The INRMP serves as an administrative operational control that defines compliance-related activities and processes.

4.0 GENERAL ROLES AND RESPONSIBILITIES

General roles and responsibilities that are necessary to implement and support the natural resources program are listed in the table below. Specific natural resources management-related roles and responsibilities are described in appropriate sections of this plan.

Office/Organization/Job Title (Listing is not in order of hierarchical responsibility)	**Installation Role/Responsibility Description**
Installation Commander	• Approve the INRMP by signature on all revised INRMPs. The Installation Commander may re-delegate signature authority to a lower level provided that the signatory has control over all aspects and management objectives addressed within the subject INRMP.

Office/Organization/Job Title (Listing is not in order of hierarchical responsibility)	Installation Role/Responsibility Description
	• Certifies the annual review of the INRMP as valid and current; or delegates the certification of the annual INRMP review authority to no lower than the 366th FW Chief of Staff. • Provide appropriate staffing to ensure implementation of the INRMP. • Control access to and use of installation natural resources • Sign cooperative agreements entered into, pursuant to the Sikes Act, 16 U.S.C. § 670c-1. • Approve and sign the installation Wildland Fire Management Plan (WFMP). The Installation Commander may re-delegate signature authority to a lower level provided that the signatory has control over all aspects of WFMP implementation. • Ensure that a notice of intent (NOI) is prepared, per 32 C.F.R. §989.17, and a public scoping process initiated per 32 C.F.R. §989.18 as described in the Environmental Impact Assessment Process (EIAP) on actions that may affect wetlands. • Consider, in coordination with the Environmental Planning Function (EPF), the impact of their proposed actions on federally listed threatened and endangered species by including the species in the scoping of the NEPA analysis at the earliest possible time and follow the EIAP.
AFCEC Natural Resources Media Manager/Subject Matter Expert (SME)/ Subject Matter Specialist (SMS)	• Serves as the natural resources program manager and provides technical assistance and guidance to Air Force on Natural Resources issues. • Advocates for resources required to implement approved installation INRMPs. • Provides and manages contracts, interagency agreements, and cooperative agreements on behalf of, and for use by Air Force organizations for natural resources program management assistance and implementation of natural resources management projects, with the exception of the installation BASH program, which will be managed by the Wing Flight Safety Office. AFCEC Director is delegated authority to sign cooperative agreements and interagency agreements entered into pursuant to the Sikes Act, 16 U.S.C., §670c-1. • Administers the reimbursable forestry, agricultural and grazing, and fish and wildlife account programs as well as dispersed outdoor recreation programs on Air Force installations.

Office/Organization/Job Title (Listing is not in order of hierarchical responsibility)	**Installation Role/Responsibility Description**
	• Manages the DoD Forest Reserve Account program for Air Force and distributes funds for approved projects. • Operate the AF Wildland Fire Center at Eglin Air Force Base, administers National Wildfire Coordinating Group (NWCG) training and certification records for personnel involved in wildland fire management activities, and maintains records of wildfires and prescribed fires on AF property. • Administer training and certification records for Air Force conservation law enforcement officers. • Develop and promotes the natural resources program requirements to support the Environmental Management System (EMS). • Manage the Air Force General Thomas D. White and the Secretary of Defense environmental awards program IAW AFI 36-2817, Engineering Awards Program. • Provide technical guidance and expertise to Air Force for grounds maintenance and pest management.
Installation Natural Resources Manager/POC	• Coordinate this plan with appropriate federal, state and local government officials and other public groups with interest or jurisdiction and with planners of installation activities that affect natural resources. • Routinely review work requests and job orders affecting natural resources and ensure their compatibility with this plan. • Coordinate and manage activities of this plan with all affected installation offices. • If the installation natural resources manager cannot resolve any conflicts that may arise concerning natural resources, the installation ESOHC will make the decision.
Installation Security Forces	• Consults with Installation Commander to determine the extent of access on all areas designated in the INRMP as suitable for outdoor recreation by the general public when such use is deemed by the commander to be compatible with the military mission.
Installation Unit Environmental Coordinators (UECs); see AFI 32-7001 for role description	• Review proposed projects/management actions for EIAP potential.
Installation Wildland Fire Program Manager	• Responsible for the development, update, and implementation of the WFMP. • May approve plans for prescribed burns if minimally qualified as a RXB2 Type 2 Burn Boss.

Office/Organization/Job Title (Listing is not in order of hierarchical responsibility)	**Installation Role/Responsibility Description**
Pest Manager	• Coordinates with Natural Resources Manager to ensure that the IPMP and INRMP are mutually supportive and not in conflict.
Range Operating Agency	• Responsible for providing quality electronic simulations of ground-based air defense threats on MHRC. • Implement INRMP strategies in day-to-day operations. • Schedule and coordinate logistics for natural resource management activities on ranges.
NEPA/Environmental Impact Analysis Process (EIAP) Manager	• Review all actions for environmental compliance.
US Fish and Wildlife Service (USFWS)	<u>Idaho Fish and Wildlife Office</u> • Review and concur with INRMP and actions relating to federally listed threatened and endangered species. • Provide data and management input regarding the plant species slickspot peppergrass. • Provide consultation with respect to federally listed threatened or endangered species. • Enforcement of federal fish and wildlife laws. • Provide data and management input regarding wildlife management. • Assist in protection and conservation of state listed species of concern. <u>Central Washington National Wildlife Refuge Complex</u> • Implement Military Interdepartmental Purchasing Request (MIPR)-funded projects on MHAFB and MHRC as described in the INRMP. <u>Migratory Birds and Habitat Program Office</u> • Review INRMP and actions related to migratory bird management, conservation, take, and permitting. • Consult with if incidental take may occur. • Discuss with regarding conservation opportunities and bird research proposals. • Seek advice regarding best management practices to avoid and minimize take of birds.
Idaho Department of Fish and Game (IDFG)	• Review and concur with INRMP and actions relating to fish and wildlife. • Conserve and manage state sensitive species. • Administer and enforce hunting and fishing laws.

Office/Organization/Job Title (Listing is not in order of hierarchical responsibility)	**Installation Role/Responsibility Description**
	• Provide data and management input regarding wildlife management. • Assist in protection and conservation of state listed species of concern. • Control of predatory animals.
HQ ACC/A7AN	• Provide execution guidance and oversee implementation of natural resources management programs on installations within the command. • Validate installation natural resources budgets, staffing, and training requirements. • Review installation INRMPs to ensure compliance with applicable directives. • Ensure that installations conduct required inventories of natural resources assets. • Provide guidance to installations on integrating natural resources information into the installation comprehensive planning process.
HQ ACC/A3A	• Define range requirements to accomplish assigned missions. • Review and coordinate all range-related documents to include relevant INRMPs. • Conduct comprehensive range planning. • Review and approve all unit Comprehensive Range Plans (CRPs). • Develop policy, advocate for resources, and manage the oversight of Major Command (MAJCOM) ranges.
366th A 3/A3TR	• Schedule and coordinate logistics for natural resource management activities on ranges. • Ensure compliance with instructions and other directives applicable to range programs. • Review, coordinate or approve all range-related documents to ensure compatibility with range operations. • At least annually, coordinate with CEIE environmental planning function and ensure that range operations are in compliance with applicable environmental requirements and within the scope of all relevant environmental analyses, including any existing management actions or mitigations required. • Sustain, restore, and modernize the natural and manmade infrastructure on range, including identifying range natural infrastructure requirements and regularly evaluating the health of the natural infrastructure. • Publish a MAJCOM-approved CRP.

Office/Organization/Job Title (Listing is not in order of hierarchical responsibility)	Installation Role/Responsibility Description
Bureau of Land Management (BLM)	• Management of livestock grazing on Saylor Creek Range.
Idaho Department of Lands (IDL)	• Administer livestock grazing on the Small Arms Range.

5.0 TRAINING

AF installation NRMs/POCs and other natural resources support personnel require specific education, training and work experience to adequately perform their jobs. Section 107 of the Sikes Act requires that professionally trained personnel perform the tasks necessary to update and carry out certain actions required within this INRMP. Specific training and certification may be necessary to maintain a level of competence in relevant areas as installation needs change, or to fulfill a permitting requirement. ***See AFI 32-7064 for updated guidance.*

Natural resources (NR) management training is provided to ensure that base personnel, contractors, and visitors are aware of their role in the program and the importance of their participation to its success. Training records are maintained IAW the Recordkeeping and Reporting section of this plan. Below are key NR management-related training requirements and programs:

- The Civil Engineering Squadron (CES) will provide for periodic and comprehensive technical instruction and training of natural resource management personnel responsible for the control of insects and plant pests.
- Personnel engaged in weed control operations (including control of objectionable trees, brush, poisonous plants, and aquatic plants) require special training in handling pesticides and associated equipment.
- The NRM provides for periodic and comprehensive technical instruction and training of facility management personnel in conjunction with other environmental programs.
- Maximum utilization will be made of locally available training (for example, extension service, university, professional and trade organizations, Government, commercial) and that offered by the armed services.

6.0 RECORDKEEPING AND REPORTING

6.1 Recordkeeping

The installation maintains required records IAW Air Force Manual 33-363, *Management of Records*, and disposes of records IAW the Air Force Records Management System (AFRIMS) records disposition schedule (RDS). Numerous types of records must be maintained to support implementation of the natural resources program. Specific records are identified in applicable sections of this plan, in the Natural Resources Playbook and in referenced documents.

6.2 Reporting

The installation NRM is responsible for responding to natural resources-related data calls and reporting requirements. The NRM and supporting AFCEC Media Manager and Subject Matter Specialists should

refer to the Environmental Reporting Playbook for guidance on execution of data gathering, quality control/quality assurance, and report development.

Installation Supplement –Reporting

MHAFB supplies the BLM with an annual report that described the location and spot spray treatment of noxious weeds on BLM-administered rights-of-way for MHRC emitter sites and associated access roadways. The USDA requires records be kept for certified applicators of federally restricted pesticides. Federal pesticide record keeping regulations require all professional applicators, both agricultural and non-agricultural, to furnish a copy of the data they are currently keeping, or the data elements required by this regulation, to the customer within 30 days of the restricted use pesticide application. These records provide BLM with documentation of compliance with pesticide application requirements, including applicator name, date and time of application, application rate, application method, wind speed, area MHAFB supplies the BLM with an annual report that described the location and spot spray treatment of noxious weeds on BLM-administered rights-of-way for MHRC emitter sites and associated access roadways. The USDA requires records be kept for certified applicators of federally restricted pesticides. Federal pesticide record keeping regulations require all professional applicators, both agricultural and non-agricultural, to furnish a copy of the data they are currently keeping, or the data elements required by this regulation, to the customer within 30 days of the restricted use pesticide application. These records provide BLM with documentation of compliance with pesticide application requirements, including applicator name, date and time of application, application rate, application method, wind speed, area treated, and the name of the pesticide used. Copies of recent MHAFB pesticide application records submitted to BLM are provided in section 14, Appendix B.

7.0 NATURAL RESOURCES PROGRAM MANAGEMENT

This section describes the current status of the installation's natural resources management program and program areas of interest. Current management practices, including common day-to-day management practices and ongoing special initiatives, are described for each applicable program area used to manage existing resources. Program elements in this outline that do not exist on the installation are identified as not applicable and include a justification, as necessary.

Installation Supplement –Natural Resources Program Management

This INRMP integrates all aspects of natural resource management, including the management of sensitive species, vegetation, wetlands, watersheds, fish and wildlife, outdoor recreation, public access, fire, and grazing out-leasing with the current military mission. Other studies that are relevant to these activities have been consulted and integrated into this plan. This approach ensures that the military mission is successfully accomplished by integrating all aspects of natural resources management with each other and with the MHAFB mission.

7.1 Fish and Wildlife Management

Applicability Statement

This section applies to all AF installations that maintain an INRMP. The installation is required to implement this element.

Program Overview/Current Management Practices

MHAFB wildlife management practices include species and habitat conservation efforts on both MHAFB and associated MHRC properties. A diversity of species that use sagebrush steppe and grassland habitats are present on the facility properties. Actions in the Wildlife Management Program include inventories, monitoring, and wildlife habitat improvement.

Wildlife Surveys

In a given year, surveys for small mammals, large mammals, raptors, general avian species, and range health are accomplished to capture a subset of data representing all habitats found on MHAFB and its GSUs. This procedure is repeated every 5 years, with each year a subset of representative habitat types being surveyed. After 5 years, the data set collected in year 1 is repeated and so on in subsequent years. This accomplishes four main things: first, MHAFB can "trend" data and create long-term data sets that will help the natural resources manager understand if the ecosystem condition is trending upward, downward, or is stable. Second, collecting data this way captures natural variability in the ecosystem including climatic events, cyclic population trends, natural disturbances, and mission disturbances; giving a complete interactive picture. Third, surveys for different plant and animal species overlap which builds knowledge on the "complete package" of ecosystem function, from the largest scale down to the smallest scale of soil chemistry and biological soil crusts. Fourth, these data help identify locations for habitat restoration and enhancement efforts. All restoration and enhancements are meant to restore ecosystem functionality rather than focus on a single species.

Arthropod surveys will be performed to determine if there are any sensitive species present on MHAFB or its GSUs. Many GSUs remain unsurveyed for arthropods. By performing this survey, all properties will have an accurate accounting for arthropod presence and diversity.

Other surveys performed on a five year rotational basis are bat, reptile and small mammal trapping. Although not yet detected in Idaho, White Nose Syndrome (WNS) is affecting bats at an alarming rate in the US, which necessitates annual surveys to detect the syndrome as early as possible. MHAFB and its GSUs are surveyed at least once every five years for bats, which includes examination for signs of WNS.

Required Permits

MHAFB's NR Program must maintain certain permits for taking and retaining deceased bird specimens (Table: Required Permits for NR Management Activities*). These permits are updated annually or as required. Contractors conducting any activities on behalf of NR are required to obtain the applicable permits.

Table – Required Permits for NR Management Activities*

Permit		**Purpose**	**Permit Issuer**
Federal	Special Purpose – Salvage Permit	Authorizes salvage of abandoned migratory bird nests, nonviable eggs out of nesting season, and dead migratory birds not on the ESA.	USFWS
State	Scientific Collection Permit	Authorizes the possession of the carcass or parts thereof of a migratory bird for educational purposes.	IDFG

Wildlife Management Overview

For each parcel, wildlife management issues and concerns, standard operating procedures, and conservation measures are described below.

MHAFB

Issues and Concerns.

Concerns include:

- Weedy annual grasses that promote fire, reduce native wildlife habitat potential, and invade playas.
- Controlling birds or mammals that pose a BASH problem.
- The attractiveness of the storage lagoons to waterfowl.
- Controlling pests (voles, mice, and Piute ground squirrels).
- Disturbance to burrowing owls and/or their habitat.
- Disturbance to long-billed curlew nests.
- Compliance with the MBTA and other wildlife laws and regulations during construction, maintenance, and mission activities.

Standard Operating Procedure: Restore and enhance wildlife habitats to increase biological diversity.

Conservation Practices:

- Use tree and shrub wind breaks to enhance habitat for songbirds and other neotropical migrant birds away from the flightline.
- Establish perennial vegetation in undeveloped and developed areas on Base.
- Develop conservation or environmental awareness opportunities for Base staff and the general public.
- Improve and protect sagebrush habitat.

Standard Operating Procedure: Avoid ground nesting birds.

Conservation Practices:

- Provide education to Base personnel and residents to avoid ground nesting species.

Standard Operating Procedure: Provide protection for special status species.

Conservation Practices:

- Prevent harassment of burrowing owls
- Avoid use of pesticides near burrowing owls.
- Reduce the BASH potential for raptors.
- Evaluate sites for burrowing owl presence or absence before construction and pesticide application.
- Report burrowing owl observations to Environmental Office (208-828-6351).
- Refrain from developing raptor roosting substrate near the flightline.

SAR

Issues and Concerns: Weedy annual grasses that promote fire, reduce wildlife habitat potential, and invade playas are a concern.

Standard Operating Procedure: Restore and enhance wildlife habitats to increase biological diversity.

Conservation Practices:

- Establish perennial vegetation in undeveloped and developed areas on the SAR.
- Develop conservation or environmental awareness opportunities for Base staff and the general public.

SCR (***See Section 7.4, Greater sage-grouse below*).

Issues and Concerns: Primary concerns are fires, invasive non-native plants (primarily cheatgrass), and historic seeding of crested wheatgrass, which have decreased plant species and habitat diversity, limiting habitat for some species.

The prevention of wildfire is imperative to protect and maintain native areas. Disturbance to sagebrush grasslands from water developments and new salt block placements is a concern because it decreases biological diversity.

Disturbance to burrowing owls and/or their habitat, ferruginous hawks, greater sage-grouse, nesting long-billed curlew, and other special status wildlife species is a concern.

Loss of sagebrush habitat impacts all species whose lifecycle, or portions of their lifecycle, depends on food, cover, and young-rearing habitat offered by sagebrush. Species known to utilize sagebrush habitats include greater sage-grouse, mule deer, pronghorn, sage thrasher, sage sparrow, loggerhead shrike, and Brewer's sparrow.

Standard Operating Procedure: Restore and enhance wildlife habitats to increase biological diversity.

Conservation Practices:

- Plant native species and sagebrush to the maximum extent practicable and in concert with the military mission.
- Restore native or fire-resistant vegetation.
- Work with the BLM to ensure conservation measures related to livestock grazing are implemented. Examples include installation of wildlife escape structures for birds and small mammals in stock tanks.
- Properly use prescribed fire to control fine fuel accumulation.
- Enhance and protect wildlife habitat through management of weeds, fire, and livestock grazing.

Standard Operating Procedure: Avoid disturbance to special status species.

Conservation Practices:

- Avoid disturbance of burrowing owls, ferruginous hawks, long-billed curlews, and greater sage-grouse to the maximum extent practicable.
- Complete appropriate environmental training for all range personnel to improve understanding of the regional ecosystem, animals present, habitat requirements, and restrictions on disturbance.
- Except where unavoidable, require all vehicles to remain on existing roads, avoid destroying habitat, and avoid driving over or breaking sagebrush.
- Conduct off-road driving only when requirements set forth in MHAFB Instruction 32-7003 have been met (MHAFB, 2010e).
- Follow prescribed weed management and fire management programs.

- Request all range personnel to report any uncommon wildlife, such as greater sage-grouse and ferruginous hawks, to the Natural Resource Manager (208-828-6351).

JBR and Associated Sites (**S*ee Section 7.4, Greater sage-grouse).*

Issues and Concerns. Loss of biodiversity on JBR, disruption of Juniper Draw as a viable wildlife corridor, and direct and indirect effects to wildlife and habitat from human disturbance, habitat degradation, weed invasion, and increased fire risk are concerns.

Disturbance to burrowing owls and/or their habitat is a concern.

Ferruginous hawk nest site abandonment is a concern because of their limited nesting habitat within the area, and concern over their susceptibility to human disturbance.

Loss of sagebrush habitats for sage thrasher, sage sparrow, loggerhead shrike, and Brewer's sparrow are a concern because they depend on sagebrush habitat. Loss of sagebrush habitat decreases biological diversity.

California bighorn sheep are a species of concern due to their proximity to the MHRC even though they are not found on the USAF lands. Section 14, Appendix B contains past studies concentrating on California bighorn sheep issues. Natural Resources personnel continue to be vigilant in the timely detection and mitigation of any conflict between Air Force operations and California bighorn sheep.

Standard Operating Procedure: Restore and enhance wildlife habitats to increase biological diversity.

Conservation Practices:

- Plant native species and sagebrush to the maximum extent practicable and in concert with the military mission.
- Restore native or fire-resistant vegetation.
- Provide avoidance of Juniper Draw during ferruginous hawk nesting season.
- Properly use prescribed fires used to control fine fuel accumulation.
- Enhance and protect wildlife habitat through management of weeds, fire, and livestock grazing.

Standard Operating Procedure: Avoid disturbance to special status species.

Conservation Practices:

- Avoid disturbance of burrowing owls, ferruginous hawks, long-billed curlews, and greater sage-grouse to the maximum extent practicable.
- Complete appropriate environmental training for all range personnel to improve understanding of the regional ecosystem, animals present, habitat requirements, and restrictions on disturbance.
- Except where unavoidable, require all vehicles to remain on existing roads, avoid destroying habitat, and avoid driving over or breaking sagebrush.
- Conduct off-road driving only when requirements set forth in MHAFB Instruction 32-7003 have been met.
- Follow prescribed weed and fire management programs.
- Request all range personnel report any uncommon wildlife (such as greater sage-grouse and ferruginous hawk) to the Natural Resource Manager (208-828-6351).

Standard Operating Procedure: Provide for the conservation of special status species.

Conservation Practices:

- Restore native habitat with initial emphasis on invasive and noxious species control and reduction of fine fuels and fire potential.
- Conserve sagebrush and known greater sage-grouse use areas.
- Avoid developing raptor nesting and roosting substrate within the EUA.
- Avoid disturbance of burrowing owls.
- Use herbicide applications appropriately.
- Reseed areas with fire-resistant perennial species.
- Train personnel to identify and report greater sage-grouse and ferruginous hawk sightings.
- Apply fire prevention measures.
- Report burrowing owl, ferruginous hawk, and greater sage-grouse observations to Environmental Office (208-828-6351).

Standard Operating Procedure: Continue mitigation for bighorn sheep as set forth in the ROD, SROD, and SA (*refer to Section 14, Appendix E*).

Conservation Practice:

- Participate with the cooperating agencies in coordination meetings as set forth in the ROD, SROD, and SA (*refer to Section 14, Appendix E*).

Standard Operating Procedure: Avoid ferruginous hawk nest sites.

Conservation Practice:

- Establish implementation and monitoring strategies to ensure avoidance of critical ferruginous hawk habitat.
- Avoid activities around ferruginous hawk nest sites at critical times of the year. Between February 15 and July 15, this area should be avoided by ground personnel. Work schedules and construction activities should be arranged to provide a 400-foot buffer around the nesting site during the breeding season.
- Conserve juniper groves. Do not drive through, cut, or otherwise damage the junipers.
- Continue annual monitoring of ferruginous hawk nest sites in Juniper Draw.
- Train all ground personnel in raptor identification and report any sightings of ferruginous hawks to Environmental Office (208-828-6351). (USAF 1998).

Migratory and Non-Migratory Bird Management

All native birds not protected by the ESA and the MBTA are protected by Idaho Administrative Rules (IDAPA 13.01.06). Birds not protected by the ESA, MBTA, or IDAPA include these introduced species that have established self-sustaining breeding populations in the U.S.:

- European Starling (*Sturnus vulgaris*)
- Eurasian Collared-Dove (*Streptopelia decaocto*)
- Rock Pigeon or Rock Dove (*Columba livia*)
- Birds in the Family Passeridae (old world sparrows including house and English sparrows).

Game birds are considered protected species, as season of use and harvest is controlled by the IDFG.

Approximately half of Idaho's breeding bird species are considered migrants; that is, they come to Idaho only to nest and raise young. These species may spend their winters in states to the south (e.g., California, Arizona, and Texas) or may travel thousands of miles to countries in Central and South America, such as Mexico, Costa Rica, Venezuela, and Brazil. Species traveling south of the U.S.-Mexico border are called Neotropical migratory birds and are of particular interest to ornithologists because many of them are experiencing significant population declines. Due in part to these declines, a number of Idaho's birds have been classified as priority species by the IDFG. Some bird species that occur on the MHAFB and the MHRC are also ranked as Species of Greatest Conservation Need in the IDFG's draft Idaho SWAP (IDFG, 2015).

Migratory Bird Conservation Programs in Idaho

All native birds found commonly in the United States, with the exception of native resident game birds and introduced species are protected under the MBTA. The Service's migratory bird conservation activities are focused on four primary areas: population assessment; international, national and flyway coordination; habitat management; and regulating take. The U.S. Fish and Wildlife Service’s Pacific Region cooperates with partners on the following projects in Idaho:

Population Assessment

- Mid-Winter Waterfowl Surveys
- Mourning Dove Call Count Survey
- Waterfowl Banding Program
- Trumpeter Swan Restoration

Coordination

- Bird Communities in Managed Forests
- Development of the Intermountain West Waterbird Conservation Plan
- International Migratory Bird Day
- Junior Duck Stamp Contest
- Partners in Flight Conservation Plan Implementation
- Shorebird Conservation Plan Implementation

Habitat Management

- Intermountain West Joint Venture
- Wetland and Grassland Protection, Restoration and Enhancement

Regulations/Permits

- Development of Hunting Regulations
- Issuance of 18 types of Migratory Bird Permits

Partnerships

- IDFG
- DoD Partners in Flight
- USGS Biological Research Division
- USDA Wildlife Services
- Ducks Unlimited

- Trumpeter Swan Society
- NRCS
- Wildlife Management Institute

***Maps of the Central and Pacific Flyways are shown in Figures 7-1 and 7-2 respectively (TPWD 2005).*

Figure 7-1

Central Flyway for Migratory

Photo courtesy of Texas Parks and Wildlife Department © 2004

This page intentionally left blank.

Photo courtesy of Texas Parks and Wildlife Department © 2004

Figure 7-2

Pacific Flyway for Migratory Birds

MHAFB

MHAFB is located in the southwestern part of Idaho and is near the Pacific Flyway, a principal migratory route. The Migratory Bird Treaty Act applies to the Armed Forces and MHAFB will continue to exercise extreme caution during flight training exercises. The BAM is reviewed to assess strike risk during the course of Air Force training. The BAM for MHAFB is available at http://www.ushas.com/bam/.

Standard Operating Procedure: Restore and enhance wildlife habitats to increase biological diversity.

Conservation Practices:

- Use tree and shrub wind breaks to enhance habitat for songbirds, neotropical migrant birds, and quail away from the flightline.
- Establish perennial vegetation in undeveloped and developed areas on Base.
- Develop conservation or environmental awareness opportunities for Base staff and the general public.
- Improve and protect sagebrush habitat.

Standard Operating Procedure: Avoid ground nesting birds.

Conservation Practices:

- Provide education to Base personnel and residents to avoid ground nesting species, particularly burrowing owls.
- Work with 366th CES Flights and contracting to identify and avoid impacts to nesting species.
- Avoid use of pesticides near burrowing owls.

Standard Operating Procedure: Provide protection for special status species.

Conservation Practices:

- Reduce the BASH potential for raptors
- Evaluate sites for burrowing owl presence or absence.
- Report burrowing owl observations to Environmental Office (208-828-6351).
- Refrain from developing raptor roosting substrate near the flightline.
- Avoid developing or improving habitat for raptor prey species near flightline.
- Avoid developing waterfowl attractants near flightline.
- Establish perennial vegetation and trees in appropriate areas on Base.
- Ensure wildlife escape ramps are present in livestock water troughs.

Standard Operating Procedure. Control birds that pose a BASH problem.

Enforcement of Fish and Wildlife Laws (**S*ee also Section 7.3 below*).

The IDFG and the Elmore and Owyhee County Sheriff's offices are responsible for all law enforcement located on MHRC (MHAFB, 2007e). All wildlife, including fish, are owned by the state of Idaho and are managed through regulations under the IDFG. The USFWS is responsible for law enforcement concerning migratory birds under the MBTA, bald and golden eagles under the BGEPA, and listed species under the ESA. MHAFB has responsibility for managing habitat on lands under its jurisdiction. The C.J. SDRA is the only area associated with MHAFB that contains fish resources or habitat.

Feral Animal Management

Stray or feral animals are managed by 366 Security Forces Squadron (SFS). MHAFBI 31-202 describes the responsibilities of pet owners on base, base veterinarian, and SFS (MHAFB, 2004). However, MHAFB 31-202 will be rescinded in the near future. The stray or feral animal program will then be managed by the 366 Civil Engineer Squadron (CES) with support from SFS and the base veterinarian. CES will establish a blanket purchase agreement with the City of Mountain Home Animal Shelter for disposition of stray animals caught on the installation.

Wildlife Habitat Management (***See Section 7.11, Integrated Pest Management*)

An essential component of wildlife management is the management of vegetation to support wildlife species. On MHAFB and MHRC, vegetation varies by site, but most native plant communities have been altered by human disturbance to some degree. Vegetation concerns and issues vary by site and are described below.

MHAFB

Issues and Concerns. Concerns on MHAFB include protecting remnant sagebrush patches, converting the understory of existing sagebrush patches from weedy annuals to bunchgrasses, controlling noxious weeds, using native and drought-tolerant species for xeriscaping, and improving vegetation communities base wide.

Standard Operating Procedure: Improve vegetation communities base wide.

Conservation Practices:

- Reseed areas after disturbance.
- Provide educational materials for Base residents and personnel on appropriate plant species for projects.
- Maintain availability of plant selection and care sheets at the Base Housing Office and Self-Help Store.
- Require construction or maintenance contracts to incorporate reseeding efforts into projects on Base.

MHRC

Habitat restoration treatments of SCR and JBR have become a major project in recent years. A concerted effort has been made to start reclaiming the acreages lost to fires and other disturbances over the history of SCR and JBR. Annual projects to perform phased plantings of burned and weed infested habitats occur each fall. Phase 1 entails the planting of some nonnative plant species such as crested wheatgrass in highly degraded habitats to outcompete the prevalent and aggressive invasive species, such as cheatgrass. In order to establish native species in the future, invasive plant species must be minimized to reduce competition with natives as well as to break the modified wildfire cycle associated with invasive non-native annual plants such as cheatgrass.

SCR

Issues and Concerns. General concerns related to vegetation on SCR are the necessity for managing vegetation to decrease weedy annual species and their associated fire risk, enhancing biodiversity and the quality of habitat for wildlife use, protecting sagebrush and greater sage-grouse use areas, and controlling invasive and noxious weeds.

A variety of vegetation types exist on SCR with a range of disturbance levels. Therefore, some areas will require more protection than others, and no single management technique is appropriate for all areas. The most protective management is designated for sagebrush stands.

Standard Operating Procedure: Create a realistic training environment that maintains and enhances biodiversity.

Conservation Practices:

- Prevent weed and fire spread from all the MHRC components.
- Maintain plant species composition and rehabilitate disturbed areas.
- Protect biologically diverse areas and sagebrush stands from fire and off-road driving.

Standard Operating Procedure: Reduce fine fuels that contribute to wildfires.

Conservation Practices:

- Reduce amount of non-native annuals on ranges that are distributed uniformly and quickly carry fires.
- Seed perennial bunchgrasses and sagebrush to the maximum extent practicable and in concert with the military mission.
- Rehabilitate disturbed areas as needed.
- Remove excess vegetation around targets and fire-prone areas mechanically, or when appropriate, with herbicides.

Standard Operating Procedure: Maintain vegetation quality.

Conservation Practices:

- Promote native plant species through fire reduction and rehabilitation of disturbed areas.
- Collect baseline vegetation data.
- Assess long-term vegetation trends and adjust the management as needed.
- Work collaboratively with BLM to review Trend Analysis data and make recommendations for management.
- Work collaboratively with BLM on reseeding projects after fires on SCR to achieve vegetation and habitat goals.

JBR and Associated Sites *(**See Section 7.4, Slickspot Peppergrass, Greater Sage-grouse, and Davis' Peppergrass*)

Issues and Concerns. General concerns related to vegetation on JBR and the associated emitters and ND target areas include vegetation biodiversity, wildlife habitat and vegetation quality for livestock use, and rare and sensitive species.

A variety of vegetation types exist on JBR and associated emitters and ND target areas with a range of disturbance levels. Therefore, some areas will require more protection than others, and no single management technique is appropriate for all areas. The most protective management is placed on unique areas or areas susceptible to further damage. The Juniper Draw area of JBR fits this category, as well as the isolated sagebrush stands on the range and near the emitter sites.

Standard Operating Procedure: Create a realistic training environment that maintains and enhances biodiversity.

Conservation Practices:

- Prevent weed and fire spread from all the MHRC components.
- Maintain plant species composition and rehabilitate disturbed areas.
- Protect biologically diverse areas, such as Juniper Draw and sagebrush stands, from fire and off-road driving.

Standard Operating Procedure: Reduce fine fuels that contribute to wildfires.

Conservation Practices:

- Reduce amount of non-native annuals on ranges that are distributed uniformly and quickly carry fires.
- Use grazing management practices to reduce fine fuels.
- Seed native perennial bunchgrasses and sagebrush to the maximum extent practicable and in concert with the military mission.
- Rehabilitate disturbed areas as needed.
- Remove excess vegetation around targets and fire-prone areas mechanically, or when appropriate, with herbicides.

Standard Operating Procedure: Maintain vegetation quality.

Conservation Practices:

- Promote native plant species through fire reduction and rehabilitation of disturbed areas.
- Control weed and fire spread at emitter sites and target areas.
- Collect baseline vegetation data.
- Assess long-term vegetation trends and adjust the management as needed.
- Employ the BLM Long-Term Trend Analysis method of vegetation data collection on four locations on JBR. The compatibility of these data with BLM data will allow the Air Force to compare trends detected within JBR with trends detected outside of the range.

Use the 15 permanent data points established in 1998 and 6 permanent data points established in 2000 to more fully understand the long-term vegetation trends of JBR (USAF, 1999a).

7.2 Outdoor Recreation and Public Access to Natural Resources

Applicability Statement

This section applies to all AF installations that maintain an INRMP. The installation is required to implement this element.

Program Overview/Current Management Practices

Recreation management on Air Force lands is designated into use classes based on multiple use potential and ecosystem sustainability:

- Class I areas (general outdoor recreation areas) are suitable for intensive recreational activities, such as camping, picnicking, and athletic sports.
- Class II areas (natural environmental areas) can support dispersed occasional activities such as hunting, bird watching, driving, and hiking.
- Class III areas (special interest areas) contain valuable archaeological, ecological, geological, historic, zoological, scenic, or other features that require protection.

Only MHAFB, SCR, and C.J. SDRA support Class I and Class II recreational activities. There are no Class III areas on these lands. Some areas, such as archeological sites and rare plant and animal sites, could be considered as potential Class III sites, if developed. However, protection of these resources restricts disturbance and unregulated public access, preventing any potential development of Class III areas.

MHAFB

Status of Inventory and Current Conditions. Class I recreation areas are located within MHAFB. These areas have the highest demand and are the most accessible to military personnel and their families.

Outdoor recreation at MHAFB is currently supervised by the Force Support Squadron (FSS) that provides activities, rental equipment, and recreational facilities for military personnel and their families. Activities sponsored by the FSS include whitewater rafting, outdoor education, and winter cross-country skiing. Facilities managed by the FSS include the FamCamp, archery range, skeet range, golf course, swimming pool, and CJ SDRA boat launch and pavilions. There is a nature trail by the FamCamp and a newly constructed Fitness Trail near the Gunfighter Club. Several good bird watching sites exist on Base, including several ponds and the golf course. No hunting is allowed on the Base for safety reasons. Public access is restricted to MHAFB and its recreational facilities.

Fishing opportunities associated with MHAFB facilities are limited to CJ SDRA. Multiple public assess sites also exist on CJ Strike Reservoir outside of the MHAFB's CJ SDRA. Fish species in CJ Strike Reservoir include bluegill, rainbow trout, yellow perch, crappie, and bullhead catfish. Management of fish in CJ Strike Reservoir is under the jurisdiction of IDFG.

Issues and Concerns. Issues and concerns on MHAFB include loss of high priority locations that currently have native plants in landscaping, and inadequate activities for Base personnel.

Standard Operating Procedure: Provide an outdoor recreation and public access program that is compatible with both the military mission and natural resource protection.

Conservation Practices:

- Develop and install appropriate signage and barriers to prevent use of areas by OHVs.
- Educate military personnel and their families on appropriate behavior while using outdoor recreational facilities.
- Conserve sensitive resources, such as burrowing owl burrows, playas, and sagebrush.
- Maintain public access through leases for use of the SAR by Mountain Home Gun Clubs, IDFG, and the state of Idaho.

MHRC

Regional recreational activities include hunting, hiking, river-running, camping, nature viewing, rock-collecting, and photography. Although there are Wilderness Areas, Wild and Scenic Rivers, Special Recreation Management Areas (SRMAs), and ACECs in the region, SCR, JBR, emitter sites, ND targets, and the Grasmere EC site are not located within these special designated areas. The Bruneau River, a popular kayaking and boating river, has one access point located about 15 miles from JBR. The river flows north within 1 mile of the western boundary of SCR. Much of the Bruneau-Jarbidge River system is listed as a Wild and Scenic River. Air Force use of common roads will not preclude use of the roads by river users.

In order to better deconflict noise issues and recreation, the airspace managed by MHAFB will be closed to military training activities, except for transiting aircraft, during weekends associated with Memorial Day, Labor Day, and the 4th of July holidays. This voluntary flight restriction will continue to be in place absent compelling national security circumstances, military contingencies, or hostilities.

MHAFB will make available to civilian aviation and other interested individuals, via telephone and the Internet, the airspace schedule of MOAs controlled by MHAFB.

SCR

The general public has access to all lands outside the EUA. Land within the EUA is restricted to military personnel for training purposes only. Hunting is allowed under IDFG regulations on lands outside the EUA only and is managed entirely by IDFG. The area outside the EUA also provides Class II activities, such as hiking, mountain biking, OHV use, and exploration of the flora, fauna, and geology of the region.

Issues and Concerns. Issues and concerns on SCR include public safety, aircraft noise, hunter access to lands outside the EUA, and proper OHV use.

Standard Operating Procedure: Provide facilities that meet Air Force operational and training needs with limited effects on regional recreation use and activities.

Conservation Practices:

- Inform public of range use.
- Coordinate with the BLM regarding high visitor use scenarios, particularly during high water years.
- Ensure non-detrimental existing recreational opportunities are maintained.
- The airspace schedule of the MOAs will be made available to civilian aviation and other interested individuals.
- Host semiannual meetings of interested parties to discuss issues, problems, and concerns, and seek resolutions.
- Notify the public about low-altitude crossings of the river canyons and periods of increased military training activities.
- The Air Force, BLM, and state of Idaho will meet at least semiannually to address the needs and expectations of managers and users of resources in southwest Idaho. They will also jointly identify and seek funding to protect resources and support military training activities.

Standard Operating Procedure: Protect sensitive natural and cultural resources.

Conservation Practices:

- Inform public of range use.
- Prevent OHV damage to sensitive resources.
- OHV (including ATVs, motorcycles, and 4x4s) use is restricted to existing roads and trails. Develop signage to inform public of restrictions.
- Maintain access to Idaho Centennial Trail for OHV use.
- Close and rehabilitate trails and roads created by unauthorized overland travel.
- Close roads and trails that present a threat to sensitive natural and cultural resources.
- Inform grazing permitees about allowable overland travel and travel restrictions.

JBR and Associated Sites

Status of Inventory and Current Conditions: Traditionally, JBR was used by hunters and recreation users. In the region, recreational resources are widely scattered and generally undeveloped. To fulfill the military mission and ensure public safety, the Air Force routinely restricts public access on military lands. There is no public access to the 12,000-acre range without special permission and clearance from MHAFB.

Issues and Concerns: Issues and concerns at JBR and other MHRC sites include public safety, aircraft noise, hunter access to lands outside JBR, and proper OHV use.

Standard Operating Procedure: Provide facilities that meet Air Force operational and training needs with limited effects on regional recreation use and activities.

Conservation Practices:

- Inform public of range use.
- Implement mitigation measures as set forth in the ROD, SROD, and SA (***refer to Section 14, Appendix E*).
- Coordinate with the BLM regarding high visitor use scenarios, particularly during high water years.
- Ensure non-detrimental recreational opportunities are maintained.
- Monitor and protect sensitive resources from misuse by the public and military personnel and their families.
- The airspace schedule of the MOAs will be made available to civilian aviation and other interested individuals.
- Host semiannual meetings of interested parties to discuss issues, problems, and concerns, and seek resolutions.
- The public will be informed that recreation-related concerns outside of JBR will be directed to the appropriate BLM office.
- Notify the public about low-altitude crossings of the river canyons and periods of increased military training activities.

The Air Force, the BLM, and state of Idaho will meet at least semiannually to address the needs and expectations of managers and users of resources in southwest Idaho. They will also jointly identify and seek funding to protect resources and support military training activities.

Off-Base Recreation Facilities

Status of Inventory and Current Conditions: In addition to Base facilities, the FSS has eleven trailer camp sites at Yellowstone National Park. The FSS also acquires yearly permit passes for river put-ins on the Snake River, Boise River, Payette River, and Bruneau River.

Beach and picnic facilities located at C.J. SDRA are available for military members and retired military personnel. Three cabins are also available for rent. Fishing is accessible at C.J. SDRA and is managed under IDFG regulations by the state of Idaho. Outdoor equipment can be rented by military members and retired military personnel at the CJ SDRA marina and dock.

Issues and Concerns: The following issues relate to off-base recreation facilities: Protecting natural resources by educating Base personnel on proper outdoor etiquette, and providing a variety of activities for Base personnel.

Standard Operating Procedure: Provide an outdoor recreation and public access program that is compatible with both the military mission and natural resource protection.

Conservation Practices:

- Educate military personnel and their families on appropriate behavior while using outdoor recreational facilities.
- Encourage FSS staff and visitors to report noxious and invasive species locations to CES.

7.3 Conservation Law Enforcement

Applicability Statement

This section applies to all AF installations that maintain an INRMP. The installation is required to implement this element.

Program Overview/Current Management Practices

MHAFB does not have conservation law enforcement officers. Non-natural resource related laws are regulated by MHAFB Security Forces (as per Air Force regulations). On the MHRC only, the IDFG and the Elmore and Owyhee County Sheriff's offices are responsible for all law enforcement (MHAFB, 2007e). The Environmental Office and other base organizations participate in one manner or another in carrying out MHAFB's mission, especially in upholding federal laws and regulations that protect natural resources. Because there are vast expanses of land between MHRC sites, accomplishment of MHAFB's law enforcement for federal laws and regulation is a product of trust, cooperation, and collaboration between the IDFG, Elmore and Owyhee County Sheriff's offices and MHAFB personnel. In March 2007, a Memorandum of Understanding (MOU) between Elmore, Owyhee and Twin Falls County Sheriff's offices and the 366 SFS was signed. It outlines the responsibilities and procedures for response to any situation requiring law enforcement action on the MHRC.

The USFWS is responsible for law enforcement concerning migratory birds under the MBTA, bald and golden eagles under the BGEPA, and listed species under the ESA. The USFWS investigates wildlife crimes, with an emphasis on preventing the illegal take and sale of federally protected resources.

Migratory Bird Treaty Act of 1918

All migratory birds are protected under the Migratory Bird Treaty Act (MBTA). The MBTA was implemented in 1918 as a result of a convention between Great Britain (for Canada) and the U.S. Since then Mexico, Japan, and Russia have been included. The original purpose was to protect and regulate migratory bird populations from over harvest. The importance of this was originally recognized due to the diminishing populations of waterfowl and birds whose feathers were used on hats.

The MBTA prohibits the pursuit, hunt, take, kill, capture, possession, sale, or transport of any migratory bird, bird part, nest or egg except as specifically permitted under the act (16 U.S.C. 703-713). Violators can be fined up to $15,000 and/or imprisoned for up to 1 year.

In 2007 the U.S. Congress passed a revision providing an avenue for the Armed Forces to apply for take permits. A take permit can be issued for the "incidental take of migratory birds during military readiness activities". The proponent of a permit must confer and cooperate with the USFWS "to develop appropriate and reasonable conservation measures to minimize or mitigate identified significant adverse effects" (Department of Interior, Federal Regulation. 72:39, 28 Feb. 2007). "Military readiness does not include (a) the routine operation of installation operating support functions, such as: administrative

offices; military exchanges; commissaries; water treatment facilities; storage facilities; schools; housing; motor pools; laundries; morale, welfare, and recreation activities; shops; and mess halls, (b) the operation of industrial activities, or (c) the construction or demolition of facilities listed above".

Reporting Bald Eagle and Golden Eagle Remains (MHAFB 2011, SOP 9)

The Bald and Golden Eagle Protection Act of 1940 prohibits people to take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, any of these two eagles alive or dead, or possess any part, nest or egg. When a dead bald or golden eagle is observed or any part, nest or egg is located the following must occur:

- Record the location of the find using UTM's and immediately report this information to the base CRM.
- The base CRM will then contact the Fish and Wildlife Service and provide them with the location coordinates, and
- The base CRM will notify the Shoshone-Paiute of Duck Valley and any other Native American tribe that wants to be notified regarding bald and golden eagle remains.

7.4 Management of Threatened and Endangered Species, Species of Concern and Habitats

Applicability Statement

This section applies to AF installations that have threatened and endangered species on AF property. This section **IS** applicable to this installation.

Program Overview/Current Management Practices

ESA LISTED SPECIES

Slickspot Peppergrass

One species currently listed as threatened under the ESA is found on MHAFB lands in Idaho. Initially listed in 2009, *Lepidium papilliferum* (Slickspot Peppergrass, LEPA) was re-instated as threatened under the ESA effective September 16, 2016 (USFWS, 2016). LEPA is a southwestern Idaho endemic species that is found on MHAFB's JBR. As described in Section 2.4.1, complete inventories of on JBR have been completed for this species, and annual monitoring to detect population trends and potential management issues have been ongoing since 2003. Due to the conservation actions described in the MHAFB INRMP, JBR and nearby rights-of-way for emitter sites and access roads on BLM lands are exempt from critical habitat designation for this ESA threatened plant species. BLM lands immediately adjacent to the JBR boundary are currently proposed as critical habitat for the species.

Section 7 consultation was completed for ongoing actions on JBR in 2010 following the listing of this species, with consultation on the MHAFB INRMP completed in 2012 when the INRMP was updated. As there are no prohibitions on "take" of plant species in the ESA, these formal consultations do not contain associated Terms and Conditions. Activities which do not fit within the goals, objectives, and mitigation measures described below will be evaluated on a case-by-case basis. If new actions are proposed that may affect the species, if the environmental baseline condition of JBR changes, or if new information on species biology or threats to the species become available, MHAFB will engage in additional section 7 consultation with the USFWS, when appropriate.

The following is adapted from the "Slickspot Peppergrass (*Lepidium papilliferum*) Biological Assessment for Juniper Butte Range" and "Biological Opinion on the effects of U.S. Air Force ongoing actions at JBR

and in Owyhee County, Idaho on the Slickspot Peppergrass (*Lepidium papilliferum*)" (MHAFB, 2010h; USFWS, 2010a). These documents are included in section 14, Appendix D.

Activities on JBR include dropping inert ordnance from planes on targets within a centrally located 660 acre area, use of combat lasers for targeting, target maintenance and repair, range clearance (UXO disposal), and road maintenance. Other mission support activities include active fire suppression, preventive fire management through fuels management (vegetation treatments) including cattle grazing, noxious weed and invasive species control, selective herbicide use, mowing, and weed burning (prescribed burns). Training exercises occur on JBR and involve on-the-ground personnel, vehicles, and on-site bivouac for consecutive days. Other activities include monitoring natural and cultural resources including ferruginous hawks, greater sage-grouse, LEPA studies, grazing monitoring, and cultural resource survey, monitoring, and testing. All activities occur annually and will continue through the end of the withdrawal period per the JBR Withdrawal Act (25 years from enactment date, 17 October 1998).

It is the USFWS's biological opinion that continued implementation of the six ongoing actions is not likely to jeopardize the continued existence of this species. This was the determination after reviewing the current status of the Slickspot Peppergrass, the environmental baseline for the action areas, the direct and indirect effects of the six ongoing Air Force actions, and cumulative effects (USFWS, 2010a).

"The Slickspot Peppergrass conservation measures being implemented by the Air Force in conjunction with the six ongoing actions on JBR considered in [the Biological Opinion] are either specific measures designed to reduce impacts to the species and its habitat at the local level, or general measures designed to improve the ecological condition of native sagebrush-steppe vegetation at a landscape scale" (USFWS, 2010a). Effects of Air Force ongoing actions as described in the Biological Opinion are summarized below in Table 7-7.

Activities conducted on JBR:

1. Have no effect; or
2. May affect, are not likely to adversely affect LEPA; or
3. May affect, are likely to adversely affect LEPA.

Table 7-7
Ongoing Air Force Actions on Juniper Butte Range
Analyzed in the Biological Assessment (USFWS, 2010a)

Ongoing Action Name	Project-Specific Effects Determination for the Slickspot Peppergrass
Military Training – Aircraft Operations	MA,LAA
Military Training – Ground Operations	MA,NLAA
Military Training – Aircraft Use of Chaff and Flares	MA,LAA
Range Clearance	MA,LAA
Fire Suppression	MA,LAA
Maintenance Activities	MA,NLAA
Vegetation Treatments	MA,LAA
Livestock Grazing and Livestock Facilities Use and Maintenance	MA,LAA
Studies	No Effect

MA, LAA = May Affect, Likely to Adversely Affect MA, NLAA = May Affect, Not Likely to Adversely Affect

Standard Operating Procedure: Provide conservation of special status species.

Conservation Practices:

- Provide annual Natural and Cultural Resource Awareness Training to all personnel using the range.
- Restore native habitat with emphasis on invasive and noxious species control and reduction of fine fuels and fire potential.
- Conserve sagebrush.
- Monitor effects of management on Slickspot Peppergrass habitat and shrub steppe vegetation through integrated monitoring program.
- Use adaptive management to modify grazing system and UXO disposal, as necessary, if Slickspot Peppergrass management goal is impacted by these practices.
- Prevent fire ignition by reducing standing fuels and weeds.
- Avoid the use of herbicides within 25 feet of slickspots and only if the wind is favorable (away from the slickspot) to prevent loss of Slickspot Peppergrass plants.
- Protect habitat by restricting OHV use.
- Continue efforts in accordance with Record of Decision (3) (b), “Contingent on available funds, the Air Force and BLM would test procedures to reestablish Slickspot Peppergrass on suitable habitat that could be impacted within the 12,000-acre withdrawal area during ETI construction or operation.”
- Continue efforts in accordance with Record of Decision (3) (b), “The 366th Wing will conduct construction activities so as to minimize the loss of Slickspot Peppergrass, a BLM-sensitive species. Measures will be taken to protect significant populations on withdrawn lands, participate in

interagency ecosystem goals designed to propagate and protect the species, and facilitate increased knowledge of the species by providing outside agency access to the protected habitat."

Standard Operating Procedure: Prevent fire ignition.

Conservation Practices:

- Manage vegetation to lessen fuel load.
- Plant fire-resistant vegetation in areas with a higher potential for ignition sources, such as areas along roads.
- Minimize bare ground areas to limit weed invasion.
- Decrease wildfire ignition and spread potential by placing appropriate restrictions on activities.
- Use fire indices. Restrict activities when fire hazard rating is extreme.

Standard Operating Procedure: Conduct firefighting in a manner consistent with slickspot conservation.

Conservation Practices:

- Avoid slickspots and Slickspot Peppergrass during firefighting operations to the maximum extent practicable.
- Use Slickspot Peppergrass maps to plan disc lines prior to emergency discing to avoid occupied habitat.
- Disc the least area required to subdue a fire.

Standard Operating Procedure: Utilize "Slickspot Peppergrass friendly" rehabilitation practices.

Conservation Practices:

- Use only non-invasive plant materials. Forage kochia, intermediate wheatgrass, and salt tolerant species such as four-wing saltbush will not be used.
- Use native plants to the maximum extent practicable and in concert with the military mission.
- Use drill seeders equipped with depth bands to avoid unnecessary disturbance to soils.
- Use broadcast seeding where and when appropriate to the maximum extent practicable and in line with reseeding goals.
- Avoid slickspots to the maximum extent practicable in drill seeding efforts.
- Establish greenstrips or fire-resistant vegetation in key areas to lower the risk of fire starts from training and maintenance activities.

Standard Operating Procedure: Provide a grounds maintenance program that is compatible to the military mission as well as Slickspot Peppergrass.

Conservation Practices:

- Provide annual Natural and Cultural Resource Awareness Training to all personnel using the range.
- Use herbicides, pesticides, and soil sterilants appropriately.

Standard Operating Procedure: Prevent noxious and invasive weed establishment.

Conservation Practices:

- Conduct pest management activities in a manner compatible with other natural resource goals.

- Avoid the use of herbicides within 25 feet of slickspots and only if wind conditions are favorable (away from the slickspot) to prevent the loss of Slickspot Peppergrass.
- Prevent exotic annual species spread by reseeding disturbed areas with native vegetation to the maximum extent practicable.
- Eradicate noxious weeds prior to spread.
- Delay movement between pastures when soils are wet.
- Avoid livestock use inside exclosures.
- Use existing roads for grazing-associated activities. Avoid OHV travel to the maximum extent practicable.
- Use adaptive management to adjust the grazing system.

Standard Operating Procedure: Avoid off-road driving impacts to Slickspot Peppergrass.

Conservation Practices:

- Operate mission essential OHV in a responsible manner.
- Avoid creating ruts.
- Avoid slickspots, Slickspot Peppergrass, and sagebrush to the maximum extent practicable.

Standard Operating Procedure: Minimize impacts to slickspots and Slickspot Peppergrass on Juniper Butte during Range Clearance.

Conservation Practices:

- Coordinate with Environmental Office on sensitive areas and avoidance periods.
- Use existing roads and trails for heavy vehicle access on JBR.
- Operate all vehicles to minimize disturbance and fire.
- Site “firing area” in clear location.

Activity Effects Descriptions

Military Training- Aircraft Ordnance Dropping, Combat Laser Use

Aircraft overflight and combat laser use will have no effect on LEPA.

Ordnance dropping may affect, is likely to adversely affect LEPA.

Although monitoring on JBR has not shown ordnance impacts to slickspots or mortality to LEPA, future ordnance dropping may affect slickspots. The concentration of ground strikes (disturbance) will continue to be localized in areas around targets that were disturbed during construction. Slickspots occur throughout the 660 acre target area. The possibility exists, remotely, that ordnance will strike the ground in slickspots. Ordnance dropped in the 34 acre disturbed target area will not impact any slickspots. Ordnance dropping is likely to degrade LEPA habitat on JBR, but not enough to create a change in trend from static to down.

1. *Direct Effects*: Ground disturbance in slickspots or habitat, direct mortality to LEPA plants, fire caused by ordnance sparking rocks within the target area.
2. *Indirect Effects*: Invasive or nonnative species proliferation in slickspots or matrix vegetation where disturbance has occurred from ordnance, increased fire potential from increase in invasive or nonnative species, and a decrease in sagebrush and native plants outside of slickspots.

3. *Interrelated or Interdependent Actions*: Military Training - Aircraft Flare and Chaff Use; Military Training - Ground Operations; Range Clearance; Fire Suppression; Maintenance Activities.
4. *Cumulative Effects*: None. There are no State or private activities reasonably foreseeable on JBR.

Conservation Practices:

- Use cold spot or no spot ordnance to reduce risk of fires.
- Use simulated ordnance dropping during high fire risk times.
- Use fire ratings and restrictions to reduce the risk of fires.
- Provide ordnance cleanup to reduce the likelihood of ordnance striking ordnance or unconsumed flares and starting a fire.
- Employ firefighters on range during declared fire season to provide immediate initial response for fires.

Military Training - Ground Operations, CSAR, SERE, CAS, JTAC

On the ground training will have no effect on LEPA.

Driving on roads, driving off roads, walking overland, landing helicopters, and deploying incendiary devices will not affect LEPA. Slickspots are actively avoided during all components of on the ground activities.

Training exercises are carefully planned and executed to meet the training objective. The Environmental Office aids in the site selection and places restrictions on cantonment, vehicle use, and other aspects of exercise requirements so that the mission is achieved with the least amount of impact to the environment. Previously disturbed areas are used to the maximum extent practicable in accordance with the goals of the training mission. Monitoring on JBR has not shown ground training impacts to slickspots or mortality to LEPA. Slickspots are actively avoided during on the ground training, therefore training exercises are likely to maintain LEPA populations on JBR and hold a static trend.

Training activities which do not fit within the goals, objectives, and mitigation measures for LEPA will be evaluated on a case-by-case basis. MHAFB will engage in consultation with the USFWS when appropriate.

1. *Direct Effects*: None.
2. *Indirect Effects*: None.
3. *Interrelated or Interdependent Actions*: Military Training - Aircraft Flare and Chaff Use; Military Training - Aircraft Ordnance Dropping; Fire Suppression, Maintenance Activities.
4. *Cumulative Effects*: None. There are no State or private activities reasonably foreseeable on JBR.

Conservation Practices:

- Restrict the use of incendiary devices according to fire ratings.
- Require all incendiary devices allowed for exercise to be deployed in clear areas such as graveled roads or the target complex.
- Conduct off-road driving only when requirements set forth in MHAFB Instruction 32-7003 have been met. Except where unavoidable, require all vehicles to remain on existing roads, avoid destroying habitat, and avoid driving over or breaking sagebrush.

- Brief all personnel to stay out of slickspots and avoid slickspots during overland foot travel.
- Require helicopters to land in roads, the target complex, or maintenance complex, or designated Landing Zone.
- Provide annual Natural and Cultural Resource Awareness Training to all personnel who use the MHRC annually.
- Digging and ground disturbance is not allowed without prior evaluation and approval.

Military Training - Aircraft Use of Flares and Chaff

Use of chaff will have no effect on LEPA.

Use of flares may affect, is likely to adversely affect LEPA.

Although flares may cause fires, this action is mitigated by release altitudes above 2,000 feet AGL, and only above 5,000 feet AGL during fire risk category 4 and 5. Both flare fires on JBR (one 10 acre fire, one 900 acre fire) were caused by pilot error and release of flares much lower than 2,000 feet AGL. Flare use is likely to cause fires and degrade habitat over time, resulting in a downward trend.

1. *Direct Effects*: Fire caused by improper flare deployment; direct mortality of LEPA.
2. *Indirect Effe*cts: Invasive or nonnative species proliferation, increased fire potential, decrease in sagebrush and native plants.
3. *Interrelated or Interdependent Actions*: Military Training - Aircraft Ordnance Dropping; Range Clearance; Fire Suppression.
4. *Cumulative Effects*: None. There are no State or private activities reasonably foreseeable on JBR.

Conservation Practices:

- Elevate flare release altitudes during declared fire season according to fire ratings.
- Provide ordnance cleanup to reduce the likelihood of ordnance striking ordnance or unconsumed flares and starting a fire.
- Employ firefighters on range during declared fire season to provide immediate initial response for fires.

Range Clearance

Range clearance may affect, is likely to adversely affect LEPA.

Use of heavy trucks and front-end loaders on roads will have no effect on LEPA.

Use of heavy trucks and front-end loaders off roads may affect, is likely to adversely affect LEPA.

Use of ATVs and “MULES” off roads will have no effect on LEPA.

Detonating ordnance and flares is not expected to affect LEPA.

Monitoring on JBR has not shown range clearance impacts to slickspots or mortality to LEPA. Slickspots and LEPA may be damaged in clearance activities by off-road vehicle travel. This is mitigated by training all personnel to recognize slickspots and slickspot avoidance. Range clearance is likely to degrade LEPA populations on JBR, but not enough to create a change in trend from static to down.

1. *Direct Effects*: Ground disturbance in slickspots or habitat from vehicle use or ordnance removal; direct mortality of LEPA from off-road vehicle use.

2. *Indirect Effects*: Invasive or nonnative species proliferation which may result in increased fire potential or a decrease in sagebrush and native plants.
3. *Interrelated or Interdependent Actions*: Military Training - Aircraft Ordnance Dropping; Military Training - Flare and Chaff Use; Fire Suppression.
4. *Cumulative Effects*: None. There are no State or private activities reasonably foreseeable on JBR.

Conservation Practices:

- Use ATVs and "MULES" for mobility off road and to avoid slickspots and decrease ground disturbance.
- Provide range clearance in late spring and early summer to avoid wet slickspots and fire season to the maximum extent practicable.
- Move UXO and unconsumed flares to a designated demolition pit.
- Use fire ratings and restrictions to reduce the risk of fires.
- Provide ordnance cleanup to reduce the likelihood of ordnance striking ordnance or unconsumed flares and starting a fire.
- Employ firefighters on range during declared fire season to provide immediate initial response for fires.

Fire Suppression – Firefighting

Fire suppression activities would have the most negative impacts of all the activities to LEPA in the short term, but LEPA and slickspots are anticipated to recover in the long term.

Fire suppression may affect, is likely to adversely affect LEPA.

Similarly, not employing fire suppression is also a management action that may affect, is likely to adversely affect LEPA.

Water trucks on roads will have no effect on LEPA.

Water trucks off roads, discing or blading firelines, or hand cutting firelines may affect, are likely to adversely affect LEPA.

It is noted that slickspots try to reform over several years after fires. Disturbance to slickspots may not preclude their use by LEPA as future habitat. Disturbance caused by fire suppression activities is likely to be localized and have far less impact, both in the short term and long term, than allowing fires to go unchecked. Fire suppression activities may decrease LEPA populations in the local area of activity, but would help maintain LEPA populations throughout the rest of JBR. Fire suppression activities are likely to locally degrade LEPA populations on JBR, resulting in a localized change in trend from static to down.

1. *Direct Effects*: Ground disturbance in slickspots and habitat from vehicles, bulldozers, tractors, discs, and water trucks; ground disturbance from use of hand tools; direct mortality of LEPA from firefighting activities and equipment; water erosion from water application and mop up activities.
2. *Indirect Effects*: Wind or water erosion within the fire footprint, invasive or nonnative species proliferation which may result in increased fire potential and decrease in native species.
3. *Interrelated or Interdependent Actions*: Military training - Aircraft Ordnance Dropping; Military training - Aircraft Use of Flares and Chaff; Military training - Ground Operations; Range Clearance.

4. *Cumulative Effects*: None. There are no State or private activities reasonably foreseeable on JBR.

Conservation Practices:

- Maintain firefighters on SCR and JBR during declared fire season.
- Disc or blade the least possible area to subdue a fire.
- Disc or blade to avoid slickspots as much as possible, if conditions will support such caution.
- Use existing roads as firebreaks. Use natural barriers and previously disturbed areas to the maximum extent practicable to establish firelines.
- Maintain the ISSA with BLM for firefighting support.
- Provide annual Natural and Cultural Resource Awareness Training to all personnel who use the MHRC annually.
- Maintain slickspot maps for firefighting personnel to show the areas of least slickspots for use in cutting in emergency firelines.
- Maintain/mow all roads on JBR, including two-track roads, to maximize range access during firefighting.

Maintenance Activities - Road, Utility, and Target Maintenance

Range maintenance activities will have no effect on slickspots or LEPA.

Range maintenance activities occur in areas that have been previously disturbed, or occur in areas where slickspots are not found in the immediate action area. Monitoring on JBR has not shown maintenance activities impact slickspots or cause mortality to LEPA. Range maintenance activities will maintain LEPA populations on JBR and result in a static condition.

Off range utility operations for the powerline in the BLM ROW along Clover Three-Creek Road will be conducted by Idaho Power. Idaho Power will follow the mitigation measures listed below. Most maintenance will have no effect on slickspots or LEPA. Project specific consultation will occur for maintenance projects that may affect slickspots or LEPA unless it is an emergency. Emergencies can be events such as damaged structures which require immediate repair to prevent a threat to public safety or threaten Idaho Power's ability to provide service. Post emergency consultation with the USFWS and site mitigation will occur on a case by case basis.

1. *Direct Effects*: None.
2. *Indirect Effects*: None.
3. *Interrelated or Interdependent Actions*: Military training - Aircraft Ordnance Dropping; Military Training - Ground Operations; Range Clearance; Fire Suppression - Firefighting.
4. *Cumulative Effects*: None. There are no State or private activities reasonably foreseeable on JBR.

Conservation Practices:

- Perform maintenance activities in previously disturbed areas to avoid impacts to slickspots.
- Control undesirable vegetation in disturbed areas to limit weed encroachment and spread. Target cheatgrass and Russian thistle. Eliminate any noxious weeds found.
- Reseed disturbed areas with perennial grasses, forbs, and shrubs to restore disturbed areas and treat invasive species, where and when appropriate. Emphasis is placed on using native seed.

- Perform maintenance tasks when soils are drier, but prior to fire season to the maximum extent practicable.
- Restrict maintenance activities during fire season in accordance with fire ratings. Activities that may cause a fire (welding, using cutting torches) are restricted to morning hours in fire rating 3, or avoided altogether if fire rating is 4 or 5.

Vegetation Treatments - Seeding, Mowing, Herbicide Applications, Prescribed Fire

Vegetation Treatments may affect, are likely to adversely affect slickspots or LEPA.

Drill seeding may affect, is likely to adversely affect LEPA.

Broadcast seeding may affect, is likely to adversely affect LEPA.

Mowing fuelbreaks may affect, is likely to adversely affect LEPA.

Herbicide applications may affect, is likely to adversely affect LEPA.

Prescribed fire will have no effect on LEPA.

Seedings can be performed to avoid impacts to slickspots by avoiding the use of salt-tolerant or rhizomatous species such as intermediate wheatgrass, by going around slickspots to the maximum extent practicable, using depth bands on drill seeders to avoid cutting into the soil too deep, or by broadcast seeding. However, the topography of the range and the distribution of slickspots make total avoidance of slickspots with a drill seeder or broadcast seeder nearly impossible. Seeding activity may introduce seeded or weedy species into slickspots, or crush LEPA plants with tractors and seeding equipment. If slickspots are avoided, seedings are likely to maintain or restore LEPA populations on JBR, resulting is an upward trend.

Mowing fuelbreaks may affect, is likely to adversely affect LEPA. Mowing is done to avoid the detrimental impacts of discing firebreaks on JBR, which would cause monumental weed encroachment. Mowing is done to shorten vegetation, but does not remove desirable vegetation from occupying a site. Mowing may affect slickspots by covering them with litter. Mowing will maintain LEPA populations on JBR, resulting in a static trend. Over the long term, mowing of fuelbreaks in conjunction with conservation practices will benefit LEPA by reducing the risk of fire spread; USFWS has identified the increased frequency and intensity of wildfire as one of the primary threats to the species.

Herbicides may have both a positive and negative effect on LEPA. Potential effects are minimized by: utilizing certified professional applicators, discontinuing spraying within 25 ft of slickspots when boom spraying herbicides along road shoulders, and spot-spraying noxious weeds. However, The USFWS Biological Opinion states that some occupied slickspots may be inadvertently sprayed with herbicides while conducting the 30 ft boom spraying herbicide treatments along the main JBR road, resulting in some localized adverse effects. Over the long term, herbicide use in conjunction with conservation practices will benefit LEPA by reducing invasive nonnative plants; USFWS has identified invasive nonnative plants as one of the primary threats to the species.

Prescribed fire will have no effect on slickspots or LEPA. Prescribed fire is carefully controlled and allowed only under optimal circumstances. Prescribed fire is only allowed to remove buildup of tumbleweeds. Tumbleweeds are brought to graveled areas and burned. Prescribed burns do not occur in slickspots or habitat. Monitoring on JBR has not shown prescribed burn impacts to slickspots or mortality to LEPA. Prescribed burns will maintain LEPA populations on JBR, resulting in a static trend.

1. *Direct Effects*: Ground disturbance in slickspots and habitat from drill seeding; deposition of plant material in slickspots from mowing; potential to start a fire while mowing if the mower hits a rock and causes sparks; direct mortality to LEPA from tractors and drill seeders; fuelbreaks are established which help slow fire spread; invasive and nonnative species are controlled or removed.
2. *Indirect Effects*: Invasive or nonnative species proliferation in disturbed areas; increased fire potential if weedy vegetation establishes; desirable vegetation increases.
3. *Interrelated or Interdependent Actions*: Military training - Aircraft Ordnance Dropping; Military Training - Aircraft Use of Flares and Chaff; Military Training - Ground Operations; Range Clearance; Fire Suppression; Maintenance Activities; Grazing; Studies.
4. *Cumulative Effects*: None. There are no State or private activities reasonably foreseeable on JBR.

Conservation Practices:

- Mow fuelbreaks to reduce fire spread potential.
- Mow or use herbicides to reduce vegetation around targets and down two-track road centers.
- Herbicides application must be made at least 25 feet away from slickspots and may only be applied downwind from a slickspot to avoid herbicide drift.
- Apply herbicides in accordance with law to reduce or eliminate undesirable species in disturbed areas.
- Use prescribed burns to eliminate tumbleweed buildup which could contribute to hotter fires, and eliminate seed source.
- Accomplish seedings in disturbed areas to replace undesirable vegetation.

Grazing - Grazing; Fencing; Pipeline Repair or Replacement

Grazing might affect LEPA. However, in the area surrounding occupied slickspots, cattle grazing removes fine fuels and aids in fire prevention over most of the range. Reducing fine fuels can help reduce the frequency and spread of fire. Cattle gathering and trailing is done during drier periods to the maximum extent practicable to avoid impacts to wet slickspots. Use of yearling heifers on JBR minimizes impacts to slickspots as heifers weigh less than full grown cows and tend to disperse widely over an area in small bands instead of concentrating use in one area.

Grazing may degrade, maintain, or restore LEPA populations on JBR (**_See Appendix 9, MHAFB, 2010h_). Intermediate wheatgrass cover is significantly lower in slickspots and in the surrounding vegetation community in the pastures where grazing takes place. Intermediate wheatgrass cover is higher is non-grazed areas and may contribute to fire impacts to slickspots. The highest number of native forb species is found in the pastures. Grazing is likely to degrade individual slickspots, but overall, would help maintain LEPA populations on JBR, resulting in a static trend.

Fence repair and maintenance will have no effect on LEPA. Fencing is static on JBR and the same routes are used to access fences year after year. Fence repair is typically only done at the beginning of the grazing period. Of the 167 slickspots documented to occur within 10’ of a fence, seven contained LEPA in 2001. Slickspots are actively avoided during fence repair; therefore there are no impacts to slickspots. Fencing is likely to maintain LEPA populations on JBR.

Pipeline repair and replacement will have no effect on LEPA. Pipeline repair and replacement will not cause new impacts to slickspots or LEPA, as the pipelines are static and slickspots were removed during original pipeline placement activities. Pipeline repair is typically only done at the beginning of the grazing period except in emergency situations. Establishing new pipelines would be done outside of slickspots to

the maximum extent practicable and described in a separate BA. Pipeline activities will likely maintain LEPA populations on JBR.

1. *Direct Effects*: Ground disturbance in slickspots and habitat from cattle hoof prints; ground disturbance in habitat from pipeline repair or replacement; ground disturbance in habitat from fencing repairs; ground disturbance from off-road driving to accomplish any grazing related tasks; deposition of feces in slickspots; direct mortality of LEPA from cattle hooves; increased salts in habitat from salt placement; ground disturbance around troughs (long term) and salt locations (short term, but slickspots are actively avoided); ground disturbance from cattle gathering and trailing activities; introduction of weeds into slickspots; increased native species and forbs in grazed pastures; decreased intermediate wheatgrass in slickspots and habitats; decreased fine fuels.
2. *Indirect Effects*: Invasive or nonnative species proliferation in disturbed areas; increased fire potential in disturbed areas from weed establishment; decreased fire risk from fine fuel removal.
3. *Interrelated or Interdependent Actions*: Vegetation Treatments; Studies.
4. *Cumulative Effects*: None. There are no State or private activities reasonably foreseeable on JBR.

Conservation Practices:

- Use the slickspot wetness protocol to determine when grazing turn-in can begin between 15 April and 15 May.
- Push back grazing season window start from 1 April to 15 April to take advantage of drier, warmer weather.
- Utilize no more than 50% of seeded species and preferably less than 40% of native species available forage in any pasture.
- Do not gather and trail cattle during wet periods.
- Place salt in tubs to avoid salt accumulation on the ground and pedestaling around salt blocks. Place salt in different areas annually, away from slickspots, to minimize permanent damage to soils and vegetation and encourage more even livestock removal of biomass.
- Turn troughs on-off to draw cattle to different areas of the pastures for more even biomass removal.
- Gather utilization data within one week of livestock removal from a pasture and again at the end of the growing season.
- Utilize yearling heifers as many years as possible to avoid the extreme congregating that occurs with cow-calf pairs. Yearling heifers are also lighter and do less damage to wet soils.
- Avoid slickspots during off-road driving, fence repair, and other grazing support activities.

Studies - Cultural Resource Studies, Monitoring, and Testing; Wildlife Survey and Monitoring; Grazing Utilization; Slickspot Peppergrass Monitoring

Scientific studies as described in the 2010 Biological Assessment will have no effect on LEPA. The 2010 ongoing studies are non-destructive and require no commitment of natural resources. Scientific studies may have an overall positive effect on LEPA, as information from the studies will be used to fine tune management practices on JBR. The long-term benefits of such studies may help in the management and increase LEPA numbers. Studies are likely to maintain LEPA on JBR, resulting in a static trend.

Consultation requirements must be fulfilled for study activities which may affect LEPA and are not described in the 2010 Biological Assessment, 2010 Biological Opinion, and section 14, Appendix D.

Scientific studies not described in the 2010 Biological Assessment may require additional section 7 consultation. Ongoing or future scientific studies that include collection of individual LEPA plants or seeds or the placement of LEPA seeds or plants into the wild will require a Section 10 scientific recovery permit from the USFWS.

1. *Direct Effects*: None.
2. *Indirect Effects*: None.
3. *Interrelated or Interdependent Actions*: Military training - Aircraft Ordnance Dropping; Military Training - Aircraft Use of Flares and Chaff; Military Training - Ground Operations; Range Clearance; Fire Suppression; Maintenance Activities; Vegetation Treatments; Grazing.
4. *Cumulative Effects*: None. There are no State or private activities reasonably foreseeable on JBR.

SENSITIVE SPECIES

In conjunction with IDFG, a Sensitive Species List has been compiled for the MHAFB and MHRC. The draft Idaho SWAP (2015) presents a list of sensitive species based on the following:

- *Tier I*: Tier 1 Species of Greatest Conservation Need (SGCN) are IDFG's highest priority for the SWAP and represent species with the most critical conservation needs, i.e., an early-warning list of taxa that may be heading toward the need for ESA listing.
- *Tier II*: Tier 2 SGCN are secondary in priority and represent species with high conservation needs-that is, species with longer-term vulnerabilities or patterns suggesting management intervention is needed but not necessarily facing imminent extinction or having the highest management profile.
- *Tier III*: Tier 3 SGCN include a suite of species that do not meet the above tier criteria, yet still have conservation needs. In general, these species are relatively more common, but commonness is not the sole criterion and often these species have either declining trends rangewide or are lacking in information.

MHAFB and MHRC support one Tier I wildlife species: greater sage-grouse.

Greater Sage-Grouse

The FWS determined that listing of greater sage-grouse was not warranted in 2015. This decision also included a review of the status of the species in 2020 to verify that implementation of conservation plans for the species that were the foundation of the not-warranted determination, have been implemented and are effective. Thus, greater sage-grouse have the potential to be reconsidered for listing under the ESA during the 5-year span of the MHAFB INRMP. Surveys will continue to be performed on habitats and properties providing life requirements for greater sage-grouse to discover where possible, conflicts may be managed prior to any listing reconsideration for the species.

Greater sage-grouse and greater sage-grouse habitat are present on the MHRC. Greater sage-grouse and greater sage-grouse habitat are not present on MHAFB, SAR, Rattlesnake Radar Site, or CJ SDRA (Figure 2-27). Activities on MHRC include dropping inert ordnance from planes on targets within the SCR EUA and the centrally located 660 acre area on JBR, use of combat lasers for targeting, target maintenance and repair, range clearance (UXO disposal), and road maintenance. Other mission support activities include active fire suppression, preventive fire management through fuels management (vegetation treatments) including cattle grazing, noxious weed and invasive species control, selective herbicide use, mowing, and weed burning (prescribed burns). Training exercises occur on SCR, JBR, and

ND-1 and involve on-the-ground personnel, vehicles, and on-site bivouac for consecutive days. Other activities include monitoring natural and cultural resources.

MHAFB continues to implement the conservation measures for greater sage-grouse outlined in the JBWA, Settlement Agreement (SA), ROD, and SROD.

Standard Operating Procedure: Support greater sage-grouse and maintain and enhance greater sage-grouse habitat.

Conservation Practices:

- Prevent fires. Report fires immediately when observed.
- Continue to coordinate with the Local Sage-Grouse Working Groups and IDFG.
- Ensure that personnel recognize and report listed noxious weeds.
- Restore native or fire-resistant vegetation.
- Use native seeds to the maximum extent practicable in fire rehabilitation.
- Conserve sagebrush and known greater sage-grouse use areas.
- Enhance and protect wildlife habitat through weed, fire, and grazing management.

Activity Effects Descriptions

Military Training - Aircraft Overflight, Ordnance Dropping, Combat Laser Use

Aircraft overflight might affect greater sage-grouse. Noise is the predominant disturbance from aircraft overflight. Noise effects from aircraft overflight are infrequent nature and short duration in most of the MOAs (MHAFB, 2008B). During nighttime hours and during most daylight hours, hourly noise levels on days with military flight activity do not differ significantly from hourly noise levels on days without military flight activity. However, differences in hourly noise levels on the order of 10 dB occurred in a few late morning and early afternoon hours. Note that even during hours in which aircraft noise elevated ambient noise levels, average hourly equivalent levels remained lower than 40 dB (40 dB is the amount of noise produced by a refrigerator). Individual military aircraft sorties are occasionally noticeable and typically lasting tens of seconds. High level aircraft noise intrusions are rare events in MOAs. Hourly equivalent sound levels at most sites are generally lower than 40 dB. Although certain aircraft types often operated at high subsonic speeds in the MOAs, flight operations at supersonic speeds capable of producing sonic booms audible on the ground are rare events (Fidell Associates, Inc, 2003).

Low-level flights are common near SCR and JBR. Low-level flights generate short duration, high intensity noise events as high as 140 dB (Table 7-2). Low-level flights are uncommon in the rest of the MOAs and are restricted by the parameters of the MOAs, JBRWA, ROD, SROD, SA and FAA regulations (See Section 14, Appendix E).

Upland game birds have not been found to vacate areas or experience reproductive losses in response to short-term exposure to aircraft noise or sonic booms (Manci et al. 1988). Manci et al. 1988 further summarized results from Lynch and Speake (1978) and Lamp (1989) indicating that gallinaceous birds are not known to be highly sensitive to aircraft noise. Greater sage-grouse may show a temporary response to overflights, but are expected to develop a tolerance to noise levels.

Combat laser use won't affect greater sage-grouse. Laser targeting-equipped aircraft operate on SCR and JBR. Use of "combat" mode of operation is limited to specific targets. While the potential for an animal's exposure to the high-intensity main beam of the laser cannot be totally discounted, it is considered to be highly improbable due to the specific series of events that would have to occur to result in such exposure.

This series of events include being immediately adjacent to the target being lazed, directly looking at the approaching aircraft, and continuing to look at the aircraft during the targeting process (USAF, 1998).

Ordnance dropping won't affect greater sage-grouse. The potential for an animal to be hit by ordnance is lower than for a combat laser. An effect from ordnance dropping is highly improbable.

1. *Direct Effects*: Noise from overflights in the MOAs is unlikely to affect the greater sage-grouse. Noise from low-level flights may increase stress in greater sage-grouse. Fire caused by ordnance sparking rocks or targets within the target area on SCR and JBR may degrade greater sage-grouse habitat.
2. *Indirect Effects*: Invasive or nonnative species proliferation where disturbance has occurred from ordnance, increased fire potential from increase in invasive or nonnative species, and a decrease in sagebrush and native plants.
3. *Interrelated or Interdependent Actions*: Military Training - Aircraft Flare and Chaff Use; Military Training - Ground Operations; Range Clearance; Fire Suppression; Maintenance Activities.
4. *Cumulative Effects*: None. There are no related State or private activities reasonably foreseeable on MHRC.

Conservation Practices:

- Use cold spot or no spot ordnance to reduce risk of fires on JBR and during fire season on SCR.
- Use simulated ordnance dropping during high fire risk times.
- Use fire ratings and restrictions to reduce the risk of fires.
- Provide ordnance cleanup to reduce the likelihood of ordnance striking ordnance or unconsumed flares and starting a fire.
- Employ firefighters on range during declared fire season to provide immediate initial response for fires.
- Flight activities are dispersed across MOA airspace to reduce associated noise.

Military Training - Ground Operations, CSAR, SERE, CAS, JTAC, Emitters

On the ground training might affect greater sage-grouse.

Direct disturbance of individuals and noise from driving on roads, driving off roads, walking overland, landing helicopters, and deploying incendiary devices might increase stress for sage-grouse. Noise from crews and threat emitter equipment on emitter sites might disturb birds during winter, breeding, and nesting season.

Training exercises are carefully planned and executed to meet the training objective. The Environmental Office aids in the site selection and places restrictions on cantonment, vehicle use, and other aspects of exercise requirements so that the mission is achieved with the least amount of impact to the environment. Previously disturbed areas are used to the maximum extent practicable in accordance with the goals of the training mission. Leks are avoided during the breeding season. High quality brood rearing habitat is not present on SCR or on JBR. Training exercises are unlikely to affect brood rearing.

1. *Direct Effects*: Vehicles, helicopters, emitter equipment, incendiary devices, and personnel may disturb greater sage-grouse. There is also the remote chance that an individual greater sage-grouse could be struck by a vehicle.
2. *Indirect Effects*: None.

3. *Interrelated or Interdependent Actions*: Military Training - Aircraft Flare and Chaff Use; Military Training - Aircraft Ordnance Dropping; Fire Suppression, Maintenance Activities.
4. *Cumulative Effects*: None. There are no related State or private activities reasonably foreseeable on MHRC.

Table 7-2
Relative Comparisons of Decibel Levels (MHAFB, 2008B)

Sound	Noise Level (dB)	Effect
Boom Cars	140	
Jet Engines (Near)	140	
Shotgun Firing	130	
Jet Takeoff (100-200 Fl.)	130	
Rock Concerts (Varies)	110-140	Threshold of pain (125 dB)
Oxygen Torch	121	
Discotheque/Boom Box	120	Threshold of sensation (120 dB)
Thunderclap (Near)	120	
Stereos (Over 100 Watts)	110-125	
Symphony Orchestra	110	Regular exposure of more than 1 minute risks permanent hearing loss (over 100 dB)
Power Saw (Chain Saw)	110	
Jackhammer	110	
Snowmobile	105	
Jet Fly-over (1000 Ft.)	103	
Electric Furnace Area	100	No more than 15 minutes of unprotected exposure recommended (90-100 dB)
Garbage Truck/Cement Mixer	100	
Farm Tractor	98	
Newspaper Press	97	
Subway, Motorcycle (25 Ft)	88	Very annoying
Lawnmower, Food Blender	85-90	Level at which hearing damage (8 hrs.) begins (85dB)
Recreational Vehicles, TV	70-90	
Diesel Truck (40 Mph, 50 Ft.)	84	
Average City Traffic Noise	80	Annoying; interferes with conversation; constant exposure may cause damage
Garbage Disposal	80	

Sound	Noise Level (dB)	Effect
Washing Machine	78	
Dishwasher	75	
Vacuum Cleaner	70	Intrusive; interferes with telephone conversation
Hair Dryer	70	
Normal Conversation	50-65	
Quiet Office	50-60	
Refrigerator Humming	40	Comfortable (under 60 dB)
Whisper	30	
Broadcasting Studio	30	
Rustling Leaves	20	Just audible
Normal Breathing	10	
	0	Threshold of normal hearing (1000 4000 Hz)

Conservation Practices:

- Implement Emitter Site Avoidance Actions (See Below)
- Restrict the use of incendiary devices according to fire ratings.
- Require all incendiary devices allowed for exercise to be deployed in clear areas such as graveled roads or the target complex.
- Conduct off-road driving only when requirements set forth in MHAFB Instruction 32-7003 have been met. Except where unavoidable, require all vehicles to remain on existing roads, avoid destroying habitat, and avoid driving over or breaking sagebrush.
- Report greater sage-grouse observations to the Environmental Office (208-828-6351).
- Require helicopters to land in roads, the target complex, or maintenance complex or designated Landing Zone.
- Provide annual Natural and Cultural Resource Awareness Training to all personnel who use the MHRC annually.

Emitter Site Avoidance Actions.

The Air Force has and continues to take steps to limit its disturbance of greater sage-grouse breeding and nesting near its emitter sites. Experts consider wintering, breeding, and nesting, particularly during sensitive times. Air Force ground crew emitter activity is not expected to impact wintering greater sage-grouse as explained below (Table 7-3).

- Wintering Season *(Approximately December 15 to February 15)*. Use of emitter sites (except AV/ND-4) during winter should not greatly affect greater sage-grouse because the sites are in or adjacent to large stands (1 square mile or greater) of greater sage-grouse habitat, allowing movement of wintering grouse if they perceive a threat. Use of AV/ND-4 should be limited during the winter (Trent, 2000). If

habitat near emitter sites becomes fragmented by fire or other means, or if these sites are impacted by heavy snows that would restrict use and movement by greater sage-grouse, ground emitter crew "wintering" restrictions will be considered on a case-by-case basis.

- Breeding Season *(Approximately March 15 to May 1)*. The Air Force will not use emitters during breeding season in accordance with Table 7-3. Greater sage-grouse lek surveys have been completed annually since 2003 for Emitter Sites AV-ND-4, AU, AQ, AF, AG-ND-7, AI, and BD (section 14, Appendix B).
- Nesting Season *(Approximately April 15 to June 7)*. IDFG feels that the use of AU and AI two to three times during the nesting season should not disturb greater sage-grouse in such a way that hens would abandon their nests (Trent, 2000). In 2010, nesting habitat around AI was burned and now no longer exists. To minimize disturbance of nesting greater sage-grouse, the Air Force should limit ground emitter crew activity, during the nesting season, as outlined in Table 7-3.

Table 7-3
Greater Sage-Grouse Emitter Site Avoidance Actions

Season	Dates	Time	Sites*
Wintering	December 15 to February 15	24 hours a day	AV/ND-4
Breeding	March 15 to May 1	4 a.m. to 9:30 a.m.	AF, AU, BD
Nesting	April 15 to June 7	24 hours a day	AV/ND-4
Open	No restrictions	No restrictions	AA, AB, AC, AD, AE, AG, AH, AI**, AJ, AK, AL, AM, AN, AO, AP, AQ, AT, BA, BB, BC, BE, BG, BK, BJ, BI, BF, ND-1, ND-5, ND-7, ND-9

*Sites will be reviewed annually
**Emitter site AI removed from breeding restrictions due to wildfire

Military Training- Aircraft Use of Flares and Chaff

Use of chaff will have no effect on greater sage-grouse.

Use of flares might affect greater sage-grouse.

Although flares may cause fires, this action is mitigated by release altitudes above 2,000 feet AGL, and only above 5,000 feet AGL during fire risk category 4 and 5.

1. *Direct Effects*: Fire caused by improper flare deployment.
2. *Indirect Effects*: Invasive or nonnative species proliferation, increased fire potential, and decrease in sagebrush and native plants.
3. *Interrelated or Interdependent Ac*tions: Military Training - Aircraft Ordnance Dropping; Range Clearance; Fire Suppression.
4. *Cumulative Effects*: None. There are no related State or private activities reasonably foreseeable on MHRC.

Conservation Practices:

- Elevate flare release altitudes during declared fire season according to fire ratings.
- Provide ordnance cleanup to reduce the likelihood ordnance striking ordnance or unconsumed flares and starting a fire.
- Employ firefighters on range during declared fire season to provide immediate initial response for fires.

Range Clearance

Range clearance might affect greater sage-grouse.

Range clearance operations typically last less than one week at each range. Use of heavy trucks, front-end loaders, and ATVs on and off-roads roads will have negligible effect on greater sage-grouse. These pieces of equipment are unlikely to cause mortality to birds or nests. During range clearance all vehicles travel at low speed. Range clearance operations occur in and immediately adjacent to the impact areas at SCR and JBR. The area affected on SCR contains low quality greater sage-grouse habitat. Nesting in the affected area on SCR is unlikely due to the absence of sagebrush. The area affected on JBR contains medium quality habitat. Nesting in the affected area on JBR may occur.

Noise from vehicles and helicopters used during range clearance might cause stress to individual birds. Noise from detonating ordnance and flares might affect greater sage-grouse.

1. *Direct Effects*: Ground disturbance from vehicle use or ordnance removal may degrade habitat. Direct mortality of nests may occur from off-road vehicle use.
2. *Indirect Effects*: Invasive or nonnative species proliferation which may result in increased fire potential or a decrease in sagebrush and native plants.
3. *Interrelated or Interdependent Actions*: Military Training - Aircraft Ordnance Dropping; Military Training - Flare and Chaff Use; Fire Suppression.
4. *Cumulative Effects*: None. There are no State or private activities reasonably foreseeable on JBR.

Conservation Practices:

- Provide annual Natural and Cultural Resource Awareness Training to all personnel who use the MHRC.
- Driving on sagebrush is not allowed where avoidable.
- Use ATVs and "MULES" for mobility off road and to decrease ground disturbance on JBR.
- Provide range clearance in late spring and early summer to avoid fire season and take advantage of peak ground visibility.
- Keep the duration of range clearance operations as short as possible.
- Move UXO and unconsumed flares to a designated demolition pit.
- Use fire ratings and restrictions to reduce the risk of fires.
- Provide ordnance cleanup to reduce the likelihood of ordnance striking ordnance or unconsumed flares and starting a fire.
- Employ firefighters on range during declared fire season to provide immediate initial response for fires.
- Keep vehicles clean to avoid spreading weed seeds.

Fire Suppression – Firefighting

Overall, fire suppression positively affects greater sage-grouse.

Similarly, not employing fire suppression is also a management action that negatively affects greater sage-grouse.

Wildfire is the dominant threat to greater sage-grouse in southeast Owyhee County (OCSGLWG, 2004). Water trucks off roads, discing or blading firelines, or hand cutting firelines might affect greater sage-grouse habitat.

1. *Direct Effects*: Some sagebrush bushes may be destroyed by fire fighting activities. Stands of sagebrush may be saved from burning.

2. *Indirect Effects*: Wind or water erosion within the fire footprint, invasive or nonnative species proliferation which may result in increased fire potential and decrease in native species.
3. *Interrelated or Interdependent Actions*: Military training - Aircraft Ordnance Dropping; Military training - Aircraft Use of Flares and Chaff; Military training - Ground Operations; Range Clearance.
4. *Cumulative Effects*: None. There are no related State or private activities reasonably foreseeable on MHRC.

Conservation Practices:

- Maintain firefighters on SCR and JBR during declared fire season.
- Disc or blade the least possible area to subdue a fire.
- Use existing roads as firebreaks. Use natural barriers and previously disturbed areas to the maximum extent practicable to establish firelines.
- Maintain the ISSA with BLM for firefighting support.
- Provide annual Natural and Cultural Resource Awareness Training to all personnel who use the MHRC.
- Maintain/mow frequently used roads on SCR and JBR, including two-track roads, to maximize range access during firefighting and to reduce ignition potential from vehicle exhaust systems.
- Reseed disturbed areas with perennial grasses, forbs, and shrubs to restore disturbed areas and treat invasive species, where and when appropriate. Emphasis is placed on using native seed.

Maintenance Activities - Road, Utility, and Target Maintenance

Range maintenance activities will have no effect on greater sage-grouse.

Range maintenance activities occur on existing infrastructure such as roads, buildings, and targets.

1. *Direct Effects*: None.
2. *Indirect Effects*: None.
3. *Interrelated or Interdependent Ac*tions: Military training - Aircraft Ordnance Dropping; Military Training - Ground Operations; Range Clearance; Fire Suppression - Firefighting.
4. *Cumulative Effects*: None. There are no related State or private activities reasonably foreseeable on JBR.

Conservation Practices:

- Perform maintenance activities in previously disturbed areas to avoid impacts to greater sage-grouse habitat.
- Control undesirable vegetation in disturbed areas to limit weed encroachment and spread. Target cheatgrass and Russian thistle. Eliminate any noxious weeds found.
- Reseed perennial grasses, forbs, and shrubs to restore disturbed areas and treat invasive species, where and when appropriate. Emphasis is placed on using native seed.
- Restrict maintenance activities during fire season in accordance with fire ratings. Activities that may cause a fire (welding, using cutting torches) are restricted to morning hours in fire rating 3, or avoided altogether if fire rating is 4 or 5.

Vegetation Treatments - Seeding, Mowing, Herbicide Applications, Prescribed Fire

Vegetation Treatments will have a net positive effect on greater sage-grouse.

Drill and broadcast seeding will positively affect greater sage-grouse. Seeding occurs to restore rangelands after a fire and to rehabilitate a disturbed area. Seed mixes are chosen for their site suitability. Emphasis is placed on native grass and forb species.

Mowing fuelbreaks might affect greater sage-grouse. Fuelbreaks are mowed on JBR annually to prevent the spread of a fire should one occur. Mowing is general accomplished in June. Several two-track roads on JBR and SCR are mowed to prevent the exhaust systems on vehicles from causing fires.

Herbicide applications will have a positive effect on greater sage-grouse. Herbicides are selectively used to control cheatgrass and noxious weeds. Herbicides are applied to graveled parking areas on MHRC to prevent weeds. Herbicides have also been applied to two-track roads on SCR and JBR as a growth inhibitor to prevent the exhaust systems on vehicles from causing fires. Herbicide applications are strictly controlled.

Prescribed fire will have no effect on greater sage-grouse. Prescribed fire is carefully controlled and allowed only under optimal circumstances. Prescribed fire is only allowed to remove buildup of tumbleweeds. Tumbleweeds are brought to graveled areas and burned on JBR. Tumble weed buildup in areas such as along fences or in gullies is burned on SCR. Prescribed burns do not occur in sagebrush.

1. *Direct Effects*: Reduction of cheatgrass, noxious weeds, and tumbleweeds will maintain and positively affect sage-grouse habitat.
2. *Indirect Effects*: Invasive or nonnative species proliferation in disturbed areas; increased fire potential if weedy vegetation establishes; desirable vegetation increases.
3. *Interrelated or Interdependent Actions*: Military training - Aircraft Ordnance Dropping; Military Training - Aircraft Use of Flares and Chaff; Military Training - Ground Operations; Range Clearance; Fire Suppression; Maintenance Activities; Grazing; Studies.
4. *Cumulative Effects*: None. There are no related State or private activities reasonably foreseeable on MHRC.

Conservation Practices:

- Mow fuelbreaks to reduce fire spread potential on JBR.
- Mow or use herbicides to reduce vegetation around targets and down two-track road centers.
- Apply herbicides in accordance with law to reduce or eliminate undesirable species in disturbed areas.
- Use prescribed burns to eliminate tumbleweed buildup which could contribute to hotter fires, and eliminate seed source.
- Accomplish seedings in disturbed areas to remove undesirable vegetation.

Grazing - Grazing; Fencing; Pipeline Repair or Replacement

Grazing is managed by the BLM and State of Idaho on MHRC except on JBR.

No grazing is allowed on 1 acre emitter sites, 5 acre ND sites and Grasmere EC site. These areas are fenced to prevent access.

Effects common to SCR and JBR

Fence repair and maintenance will not have an effect on greater sage-grouse. Stevens (2011) found 0.70 to 0.75 sage-grouse fence strikes per km within 2km of sage-grouse leks. Marking fences reduced collisions by up to 74%. Fence markers are being implemented as a mitigation measure near leks.

Pipeline repair and replacement might affect the greater sage-grouse. Establishing new pipelines and other livestock water infrastructure would be done outside of greater sage-grouse habitat to the maximum extent practicable.

1. *Direct Effects*: Ground disturbance in greater sage-grouse habitat from cattle hoof prints; ground disturbance in habitat from pipeline repair or replacement; ground disturbance in habitat from fencing repairs; ground disturbance from off-road driving to accomplish any grazing related tasks; increased disturbance around salt blocks, supplements and livestock water troughs where livestock gather; ground disturbance from livestock gathering and trailing activities; introduction and spread of weeds; increased native species and forbs in grazed pastures; decreased fine fuels.
2. *Indirect Effects*: Invasive or nonnative species proliferation in disturbed areas; increased fire potential in disturbed areas from weed establishment; decreased fire risk from fine fuel removal.
3. *Interrelated or Interdependent Ac*tions: Vegetation Treatments; Studies.
4. *Cumulative Effects*: There are no State or private activities reasonably foreseeable on JBR. There are no private activities reasonably foreseeable on SCR. The State of Idaho issues grazing permits on state lands on SCR which can result in both benefits or localized effects on greater sage-grouse.

SCR Specific Actions

Livestock grazing and its connected actions might affect greater sage-grouse on SCR. Livestock utilization on SCR is low. There are 8 acres per AUM under the current permitted grazing system. This utilization rate is unlikely to negatively affect greater sage-grouse habitat except immediately adjacent to water facilities and trails. Reductions in fine fuels will benefit greater sage-grouse. Sheep grazing might affect forb cover and diversity, which is important for greater sage-grouse.

JBR Specific Actions

Livestock grazing and its connected actions might affect greater sage-grouse on JBR.

Conservation Practices:

- Manage grazing utilization rates in greater sage-grouse habitat to provide adequate cover for nesting and brood rearing.
- Utilize no more than 50%; preferably less than 40% of available forage in any pasture.
- Place salt in tubs to avoid salt accumulation on the ground and pedestaling around salt blocks. Place salt in different areas annually to minimize permanent damage to soils and vegetation and encourage more even livestock removal of biomass for fuels management.
- Turn troughs on-off to draw cattle to different areas of the pastures for more even biomass removal.
- Gather utilization data within one week of livestock removal from a pasture and again at the end of the growing season.

- Utilize yearling heifers as many years as possible to avoid the extreme congregating that occurs with cow-calf pairs. Yearling heifers are also lighter which compacts soils less.
- Avoid off-road driving during fence repair and other grazing support activities to the maximum extent practical.

Studies - Cultural Resource Studies, Monitoring, and Testing; Wildlife Survey And Monitoring; Grazing Utilization; Slickspot Peppergrass Monitoring

Only scientific studies involving individual greater sage-grouse will have an effect on greater sage-grouse. Counting greater sage-grouse on leks and from emitter sites is done in a manner that will not disturb greater sage-grouse. All other studies and monitoring will not affect greater sage-grouse. Ongoing studies are non-destructive and require no commitment of natural resources. Scientific studies involving greater sage-grouse may have an overall positive effect on greater sage-grouse, as information from the studies will be used to fine tune management practices on MHRC. The long-term benefits of such studies will help in the management and ultimately increase greater sage-grouse numbers.

1. *Direct Effects*: Study activities may flush greater sage-grouse, increasing the risk of predation for individual birds and nests. Studies involving radio or GPS collars may have a detrimental effect on individual birds.
2. *Indirect Effects*: None.
3. *Interrelated or Interdependent Actions*: Military training - Aircraft Ordnance Dropping; Military Training - Aircraft Use of Flares and Chaff; Military Training - Ground Operations; Range Clearance; Fire Suppression; Maintenance Activities; Vegetation Treatments; Grazing.
4. *Cumulative Effects*: Greater sage-grouse radio collared by the IDFG or universities may cross ownership boundaries onto Air Force lands. Studies may be approved on SCR or JBR on a case by case basis.

Davis' Peppergrass

Davis' Peppergrass (*Lepidium davisii*) is a small perennial herbaceous forb categorized as a BLM Sensitive species, a species of special concern by the USFWS and a category GP3, priority 5 plant by the Idaho Native Plant Society. A category GP3 plant is vulnerable globally, either because it is very rare and local throughout its range, or because of other factors making it vulnerable to extinction or elimination (typically 21 to 100 occurrences) (Idaho Native Plant Society, 2008). Its habitat is a unique type of wetland: vernal lakes or playas. These areas fill with water in the spring and can become as dry as concrete in the summer. This rare plant species has been documented to occur on MHAFB, SAR, and SCR.

MHAFB

Issues and Concerns. Issues and concerns related to Davis' Peppergrass include noxious weed invasion, motor vehicle disturbance, fire, herbicides, protection and restoration of species with conservation status, and identifying occupied habitat.

Standard Operating Procedure: Provide conservation of special status species.

Conservation Practices:

- Conserve Davis' Peppergrass playas.
- Minimize disturbance by ground crews on Davis' Peppergrass populations by limiting off-road travel.
- Train personnel to identify Davis' Peppergrass.

- Avoid the use of herbicides on or near occurrences of Davis' Peppergrass.

SAR

Issues and Concerns. Concerns at the SAR include protecting Davis' Peppergrass playas and remnant patches of sagebrush, reducing fire risk, and improving the plant community to decrease weeds.

Standard Operating Procedure: Provide conservation of special status species.

Conservation Practices:

- Conserve Davis' Peppergrass playas.
- Maintain fences around the populations.
- Minimize disturbance by ground crews on Davis' Peppergrass populations by limiting off-road travel.
- Train personnel to identify Davis' Peppergrass.
- Avoid the use of herbicides on or near occurrences of Davis' Peppergrass.

7.5 Water Resource Protection

Applicability Statement

This section applies to AF installations that have water resources. This section **IS** applicable to this installation.

Program Overview/Current Management Practices

The Water Quality Program and Environmental Restoration Program (ERP) on MHAFB are implemented in compliance with EPA's National Pollutant Discharge Elimination System permits, state of Idaho Wastewater Land Application Permit, and all other applicable state and federal water resource laws. Water Quality Standards are met to maintain or improve water quality for the safety of Base residents and local aquifer users.

MHAFB

Impacts to surface waters are minimal at MHAFB and the SAR. Few areas contain surface water, and the majority of impacts result from construction activities. Impacts from construction activities are minimal. MHAFB annually reviews and updates its Storm Water Pollution Prevention Plan (SWPPP) to reduce potential pollution caused by precipitation run-off (MHAFB, 2009b). Wastewater is treated at the Base wastewater treatment plant (WWTP). Treated effluent is land applied at the WWTP, Golf Course and 11 rapid infiltration basins on the Base. MHAFB is permitted under a National Pollutant Discharge Elimination System permit to discharge wastewater off Base only under specific permitted conditions and is permitted by Idaho Department of Environmental Quality for the wastewater reuse. Potential impacts to water quality associated with hazardous materials are not an issue at the SAR as no intermittent streams are found within areas used for military activity.

SCR

SCR surface water may be impacted by many activities, including grazing, fire, fire suppression, or other land-disturbing activities that may lead to erosion. Impacts to water quality from these activities may occur along intermittent streams, small springs, and playas. Livestock and wildlife are attracted to these areas due to increased forage levels, seasonal availability of drinking water, and other attributes. Hoof

action, wallowing, overgrazing, and fecal deposition in the streams, springs, and playas may increase sedimentation rates and bacteria/algae growth rates, which may locally impact water quality.

Because the streams on SCR are intermittent or ephemeral, the consequences of these impacts are not well documented or understood. Therefore, water quality impacts are unlikely on SCR.

JBR

There are no water quality issues associated with JBR. JBR was constructed with retention ponds around key facilities and the central target area to prevent sedimentation into Juniper Draw. Juniper Draw is an ephemeral channel. Therefore, potential impacts to water quality from training or use of JBR are not likely to occur.

Other MHRC Components

The ND targets and emitter sites were constructed with retention berms around their perimeters to store any water accumulation on-site, where it could then percolate down into the soil. Grasmere EC site is atop a rhyolite outcropping. Infiltration rates at the site are expected to be high over the fractured rhyolite. Therefore, no water quality impacts are associated with the operation of these sites.

7.6 Wetland Protection

Applicability Statement

This section applies to AF installations that have existing wetlands on AF property. This section **IS** applicable to this installation.

Program Overview/Current Management Practices

Although there are no jurisdictional wetlands located on MHAFB or MHRC, conservation of playas and non-jurisdictional wetland sites covered in this INRMP are as follows.

MHAFB

Issues and Concerns. Impacts to playas from off-road driving, fires, sedimentation, or other disturbance that could negatively impact Davis' Peppergrass populations. There are no deep water habitats at MHAFB. There are no Jurisdictional Wetlands on MHAFB.

Standard Operating Procedure: Avoid impacts to Davis' Peppergrass populations.

Conservation Practices:

- Maintain signs around playas.
- Prevent fires.

Standard Operating Procedure: Achieve a "no net loss" with regard to the type and quantity of wetlands.

Conservation Practices:

- Avoid or mitigate wetlands loss associated with Base activities.
- Determine and maintain a list and map of wetlands to plan for wetland avoidance in Base planning activities.

Standard Operating Procedure: Prevent creation of man-made wetlands near flightline.

Conservation Practices:

- Use strategies for stormwater management which do not create wetlands in areas that could interfere with the military mission.
- Obtain a CWA Section 404 permit from the USACE prior to discharging any material into waters of the U.S.
- BMP 74: Maintain a list and map of wetlands to plan for wetland avoidance in Base planning activities.

SAR

Issues and Concerns. Impacts to playas from off-road driving, fires, sedimentation, or other disturbance could negatively impact Davis' Peppergrass populations. There are no Jurisdictional Wetlands on SAR.

Standard Operating Procedure: Avoid impacts to Davis' Peppergrass populations.

Conservation Practices:

- Maintain signs and fences around playas.
- Prevent fires.

Standard Operating Procedure: Achieve a "no net loss" with regard to the type and quantity of wetlands.

Conservation Practices:

- Avoid or mitigate wetlands loss associated with Base activities.
- Determine and maintain a list and map of wetlands to plan for wetland avoidance in Base planning activities.
- Maintain existing fencing around playas.
- Obtain a CWA Section 404 permit from the USACE prior to discharging any material into waters of the U.S.

SCR

Issues and Concerns. The concern for SCR is livestock grazing, which may impact the water quality and wetland vegetation along Pot Hole Creek. There are no Jurisdictional Wetlands on SCR.

Standard Operating Procedure: Avoid impacts to wetlands on SCR.

Conservation Practices:

- Work collaboratively with BLM to provide wetland protection.

Standard Operating Procedure: Achieve a "no net loss" with regard to the type and quantity of wetlands. .

Conservation Practices:

- Avoid or mitigate wetlands loss associated with Base activities.
- Determine and maintain a list and map of wetlands to plan for wetland avoidance in Base planning activities.
- Obtain a CWA Section 404 permit the USACE prior to discharging any material into waters of the U.S.

JBR and Associated Sites

Issues and Concerns. Protection of identified wetlands on JBR. There are no Jurisdictional Wetlands on JBR.

Standard Operating Procedure: Avoid impacts to wetlands on JBR.

Conservation Practices:

- Provide wetland protection.

Standard Operating Procedure: Achieve a "no net loss" with regard to the type and quantity of wetlands.

Conservation Practices:

- Avoid or mitigate wetlands loss associated with Base activities.
- Determine and maintain a list and map of wetlands to plan for wetland avoidance in Base planning activities.
- Obtain a CWA Section 404 permit from the USACE prior to discharging any material into waters of the U.S.

7.7 Grounds Maintenance

Applicability Statement

This section applies to AF installations that perform ground maintenance activities that could impact natural resources. This section **IS** applicable to this installation.

Program Overview/Current Management Practices

Procedures and guidelines for maintaining installation lands are found in:

- MHAFB Urban Forest Management Plan, (MHAFB, 2000).
- Grounds Maintenance Improved Grounds Contract Statement of Work.
- Grounds Maintenance Semi-Improved Grounds Contract Statement of Work for MHAFB.

These plans address the use, management, and maintenance of all improved, semi-improved, and unimproved lands at MHAFB. Procedures and guidelines for each area are outlined. The Grounds Maintenance for Improved and Semi-Improved Grounds documents are located and maintained in Bldg. 1300, Contract Management Office. These include proper maintenance procedures for military grounds; general land management practices; weed, erosion, and dust control; schedules for grounds maintenance; species to be used in landscaping on the Base; and mulching and fertilization guidelines.

Status of Inventory and Current Conditions. MHAFB grounds maintenance issues focus around pest and pesticide management (which is discussed in section 7.11 below), wind erosion and fugitive dust, water conservation, and urban forestry.

Wind Erosion

Wind erosion and subsequent fugitive dust is also a concern in areas with no vegetation, such as firebreaks. Management practices including purchasing weed mats or applying crushed rock to control wind erosion are not feasible due to the lack of funding and the large area needing protection. Establishing low growing native vegetation will aid in controlling wind erosion. Wind erosion after wildfire also creates fugitive dust.

Ten acres of forage kochia have been planted on MHAFB as a cooperative effort with IDFG. These acres are located on semi-improved areas at the center of MHAFB. Sites were chosen to help control weed and erosion problems. An additional 32 acres of thickspike wheatgrass (*Agropyron dasytachyum*) were planted for additional weed and erosion control.

Standard Operating Procedure: Reduce wind erosion on base.

Conservation Practices:

- Use tree rows around housing areas to decrease wind speeds and dust.
- Revegetate bare areas and weedy areas to establish perennial vegetation, which reduces dust.

Solid Waste

Solid wastes associated with grounds maintenance consist mainly of grass clippings and other vegetation. This is not a problem currently, as vegetation solid waste is transported to an area where it is composted and reused as a soil amendment. Tree branches are chipped and used in landscaping.

Excessive Water Use

Excessive water use is a problem because there is a lack of general enforcement and public education on proper watering techniques. On-base personnel and visitors are uninformed on which plants are adapted to the dry desert environment, and many desire a "green base." Education of personnel on native and xeriscape ornamental plants, appropriate chemical usage, and watering practices is recommended. MHAFB incorporated a "self-help" program where individuals and groups provide labor for landscape projects.

Wastewater is treated and reclaimed for reused on the Silver Sage Golf Course. This system recycles between 5 and 7 million gallons of water each year.

Standard Operating Procedure: Conserve water on MHAFB.

Conservation Practices:

- Replace Kentucky bluegrass lawn areas on base with turf-type tall fescues.
- Utilize turf-type tall fescues to the maximum extent for new lawns.
- Reduce overall acreage of lawns on base. Reduce lawns that have no use other than providing greenscape.
- Use xeriscaping as much as possible.
- Use plant species on the MHAFB approved plants list.
- Use drip irrigation as much as possible.

Urban Forestry

MHAFB has maintained a Tree City USA status since 1997.

Procedures and guidelines for maintaining installation lands are found in the Urban Forest Management Plan, Survey Report (MHAFB 2000) and the Grounds Maintenance Improved Grounds Contract Statement of Work and the Grounds Maintenance Semi-Improved Grounds Contract Statement of Work for MHAFB are located in Bldg. 1300, Contact Management Office.

Trees on base are planted in windbreaks and around buildings and parks. All trees on MHAFB were inventoried as part of the Urban Forest Management Plan. This information is maintained in a GIS feature

class. Many of the trees found on MHAFB were originally planted in the 1940's and 1950's. Mature trees are a valuable commodity on the base. The trees that form the urban forest on MHAFB provide many values to the people who live and work on base. The urban forest creates an oasis in the desert. Not only do they provide wildlife habitat, they make the base more habitable for people. The trees slow the wind and provide shade. This reduces heating and cooling costs.

Only tree species that are appropriate to the climate in southwest Idaho are used on MHAFB. Between 1990 and 2000 the CES Grounds Department worked with the NRCS — Aberdeen Plant Materials Center to test a variety of trees for longevity and vigor while providing for wind breaks. Good data about appropriate species was generated by the project, and MHAFB uses tree and shrub species in Base landscapes that performed well in these tests.

Maintaining mature trees during construction activities is a priority. Replanting young trees post-construction is costly and the trees take many years to provide the maximum benefit. Trees must be watered and care must be taken to prevent damage to their roots to maintain healthy mature trees during construction. Removing more trees than is necessary to complete a job is strongly discouraged.

Standard Operating Procedure: Maintain MHAFB's Tree City USA status.

Conservation Practices:

- Conserve trees during and after construction projects.
- Provide pruning and preventative maintenance to all trees every 3 years or less.
- Design projects to incorporate existing trees on site.
- Avoid repeated plant/remove/plant tree installation cycles.
- Use tree species on the MHAFB approved plants list.
- Avoid planting trees too close to buildings, foundations, and sidewalks.
- Require tree work to be overseen by a certified arborist or forester.

7.8 Forest Management

Applicability Statement

This section applies to AF installations that maintain forested land on AF property. This section **IS NOT** applicable to this installation.

There are no forests located on the MHAFB and its GSUs.

Program Overview/Current Management Practices

Not applicable to MHAFB and its GSUs.

7.9 Wildland Fire Management

Applicability Statement

This section applies to AF installations with unimproved lands that present a wildfire hazard and/or installations that utilize prescribed burns as a land management tool. This section **IS** applicable to this installation.

Program Overview/Current Management Practices

This section addresses fire management and the requirements of the Air Force Fire Protection Operation and Fire Prevention Program (AFI 32-2001), as they are implemented for MHAFB, the SAR, SCR, JBR and its associated emitters and ND targets. Requirements for fire suppression activities include staffing, equipment and maintenance, accessibility, training, and the Support Agreement Between 366th Fighter Wing, MHAFB, and the Department of Interior Bureau of Land Management Lower Snake River District (May 2008).

Wildland fire management is a major concern on all of the properties controlled by MHAFB. Fires caused either naturally, by lighting, or human caused fires have destroyed thousands of acres in the vicinity of the MHRC. Natural fire return rates are beneficial to the environment and a natural part of vegetative community succession. However, accelerated fire return rates in southern Idaho have resulted in the invasion of non-native annuals such as cheatgrass (*Bromus tectorum*). Cheatgrass is a winter annual and will quickly out compete native forbs and slow or even prevent the re-establishment of native shrubs such as sagebrush. Monocultures of cheatgrass become more of an increased fire danger than native plants by adding to the fuel load each year.

MHAFB and SAR

Status of Inventory and Current Conditions. Firefighting on MHAFB and the SAR is the responsibility of the MHAFB Fire Department. The BLM will assist the MHAFB Fire Department in firefighting only at the request of the MHAFB Fire Chief. Figure 2-20 in Section 2 of this document shows the history of range fires on MHAFB and the SAR from the 1980's through 2015.

On MHAFB, most open space on the Base is covered by a mix of weedy annual grasses, invasive species such as annual kochia (*Bassia scoparia*), Russian thistle (*Salsola kali*), and bur buttercup. This mix forms a blanket of fine fuels over large areas of open spaces on the Base. Seedings and weed control treatments on MHAFB have improved some areas by establishing perennial grasses and removing cheatgrass and annual weeds. Treatments in MOAB, on the EOD pro-range, and the landfill caps have improved these areas.

The entire SAR burned in 1996 (Figure 2-20), which caused an increase in invasive species such as cheatgrass, Russian thistle, kochia, halogeton, bur buttercup, clasping leaf peppergrass (*Lepidium perfoliatum*), and tumble mustard. Annual grasses and invasive weeds, especially tumbleweeds, have proliferated. The area is at high risk for fires. Tumbleweed buildup on fence lines greatly increases fire risk and smothers wide corridors along fence lines, preventing vegetation from growing. When the tumbleweeds are burned off during controlled burns, the resulting vegetation is usually more tumbleweeds.

Vegetation treatments to control cheatgrass and seeding to establish perennial grasses have been partially successful in converting 100 acres of the SAR to a less fire-prone plant community. The 100 acres receiving multiple treatments surrounds the facilities and extends to the backstop berm, where wildfire is more likely due to increased human activity.

A perimeter road may serve as a potential firebreak to prevent range fires from coming onto or leaving MHAFB. Plowed firebreaks exist in undeveloped areas on MHAFB and the SAR and are maintained annually. High risk areas are mowed or prescription burned to reduce weed and fuels buildup outside of sagebrush areas. The potential exists for an uncontrolled structure fire to ignite adjacent undeveloped areas. Fire ignition sources on MHAFB are few. Human activity poses the greatest fire ignition threat.

Fire ignition sources on the SAR are likely to be caused by weapons firing or other human activity, and lightning. Recreation users may cause a slight risk for fire ignition on MHAFB or the SAR. OHV users that travel cross country may ignite tall dry vegetation. Improper extinguishing of cigarettes may cause fire starts.

Issues and Concerns. Issues and concerns associated with fire management at MHAFB and the SAR include lack of availability of firefighting personnel due to deployments, difficulty accessing remote portions of MHAFB and the SAR, response time to the SAR after a fire report is made, fire escaping onto adjacent public and private lands, and a structure fire escaping into undeveloped areas on MHAFB.

Standard Operating Procedure: Prevent fire ignition.

Conservation Practices:

- Manage vegetation to lessen fuel load.
- Plant fire-resistant vegetation in areas with a higher potential for ignition sources, such as areas along roads.
- Minimize bare ground areas to prevent weed invasion.
- Decrease wildfire ignition and spread potential by placing appropriate restrictions on activities.
- Use fire indices. Restrict activities when fire hazard rating is extreme.

MHRC

Status of Inventory and Current Conditions. Since 2000, 53,888 acres have burned on SCR outside the EUA, with some parcels experiencing fire in more than one year (*see Figure 2-23 in section 2 of this document*). Only 9,374 acres of SCR vegetation have not burned since 1939. Fires in the EUA on SCR are largely a result of training activity and are usually small as a result of expeditious detection and response. In 2005, a large fire (Clover Fire) burned a significant amount of Wyoming big sagebrush in the southern portion of SCR. Since this fire, the vegetation has recovered and is healthy. Most of the areas that have burned now consist of crested wheatgrass or cheatgrass/Sandberg bluegrass communities.

On JBR, all but 60 acres burned in 1973 (Figure 2-23). Several other fires occurred on JBR before 1998. Fires outside of the impact areas in JBR and SCR are typically lightning caused and larger due to delayed detection and response (MHAFB 2007a). Current potential sources of ignition are lightning, camp fires, cigarettes, ordnance delivery, operating vehicles, and conducting maintenance activities.

Aggressive fire suppression usually begins in June and extends through August. Fire season for the MHRC is declared by the Base Fire Department, typically on or about June 15. Declaration of fire season can vary with weather and fuel conditions. However, during dry years, the fire season can begin as early as May and last until November. On SCR, the range operations and maintenance contractor ensures all firebreaks are disced prior to fire season.

Fire suppression equipment and personnel are stationed on SCR and JBR to quickly suppress any fires that may start. In addition, the BLM has a cooperative agreement with MHAFB for protection of withdrawn lands. The Support Agreement Between 366th Fighter Wing, MHAFB, and the DoI BLM Lower Snake River District (May 2008) states that BLM will provide fire support for all land outside the EUA on SCR, and the emitter and ND targets. BLM will only respond to fires in the EUA at SCR or anywhere on JBR at the request of the Air Force.

The BLM stages firefighters on JBR on an as-needed basis. The BLM uses JBR as a forward location from which to deploy for quick response to fires on lands in the JBR area during fire season. Currently,

the BLM does not stage firefighters at JBR on a season long basis, but only as needed during summer when responding to fires in that remote region.

Issues and Concerns. Issues include fuel accumulation, ignition sources, suppression activity accessibility, suppression capabilities, and prescribed fires.

Fuel Accumulation

Disturbance, such as fire, construction, off-road driving, and ordnance use, may remove native species and increase invasion by exotic annual species. These areas can accumulate a continuous cover of fine fuels that carry and spread fire much more rapidly than can native bunchgrass species. A patchy growth distribution pattern, typical of native bunchgrasses, does not provide the continuous fuel cover and may therefore lead to slower fire spread rates.

Ignition Sources

Training ordnance is a potential source of ignition. Ordnance used on SCR includes BDUs. The BDU-33 and MK-76 are small 25-pound inert training ordnances fitted with hot-spots, cold-spots, or no-spots. Hot-spots contain red phosphorus, which ignites with contact with air, producing smoke to mark the location of the ordnance on the target. Cold-spots contain titanium tetrachloride, which reacts with the moisture in the air producing a whitish puff of "smoke." There is no ignition source in a cold-spot. Ordnance without a spotting charge is designated as "no-spot." Examples of "heavies" used at SCR including BDU-50s, BDU-56s, GBU-12s, and GBU-31s (see Section 2, Table 2-4). These heavyweight ordnance range in mass from 500 pounds to 2,000 pounds, are made of steel and concrete, may have a parachute, and contain no spotting charge. Other training aids include simulated Smokey SAMs, which mimic a small rocket fired upward, Smokey Guns AAA, which are similar in effect to a firecracker that produces smoke, and the 2.75 inch rocket used for the delivery of munitions (see Section 2, Table 2-4 for rocket warhead types).

Flares and chaff may be used over the ranges. Chaff, small metal "hairs" used to deflect radar readings, is not a fire risk. Flares may be used at a height that ensures full consumption prior to striking the ground. Flares may be used at SCR at 700' AGL, pending no fire season restrictions (see Table 7-4). At all times of the year, flare use occurs only above 5,000 feet AGL on JBR and in the MOAs.

JBR requires the use of BDU-33s with cold-spots. This reduces risk of fire ignition to an acceptable level in all but the most extreme fire hazard conditions. The only potential risk of fire ignition is from the ordnance striking a surface and creating sparks. Hot-spot ordnance, simulated Smokey SAMs, AAA and 2.75 inch rockets are not used at JBR.

With the exception of ND-9, ND targets are equipped with small propane heaters surrounded by concrete walls and covered by metal replicas of battle tanks or buildings. The small heaters provide a potential source of ignition if weeds build up in the area. However, this potential has been minimized through target design.

Maintenance vehicles driving and parking within the range provide some potential for igniting fires when grass contacts hot catalytic converters and exhaust systems. In addition, personnel who smoke cigarettes may provide an ignition source from matches and butts. Site maintenance includes repairs involving welding and other activities, such as UXO clean-up, which could also ignite fire.

The MHAFB Wildland Fire Management Plan is provided in section 15 –Tab 1.

Accessibility for Wildfire Suppression Activities

Maintaining accessibility for wildfire suppression activities is a concern for the MHRC. The SCR and JBR are accessible for fire suppression activities through all gates. Some roads are improved, which increases accessibility. In addition, once inside the perimeter fences, fire engines can access remote points by driving off-road on the flat terrain. Although normally discouraged, off-road driving is allowed for emergency fire suppression.

Response time for the BLM fire suppression crews to the area varies from 1.5 to 3 hours after the fire has been reported. However, response time at JBR is greatly improved because fire suppression capabilities are located onsite. Additional personnel, pumper trucks, slip-ons, air support tankers, and helicopters are available, as necessary, through the BLM. The BLM response time from Boise is about 1.5 to 3 hours once a fire is reported to dispatch and assistance is requested. Response time from Bruneau is about 1.5 to 2 hours. Most of the MHRC is within the Jarbidge Resource Management Area and is serviced by South Central Idaho Interagency Dispatch Center (SCIIDC), 1-800-974-2373 or 208-886-2373.

Fire Suppression Capabilities

At SCR during fire season a fireguard/RCO always mans the RCO tower whenever ordnance is being delivered. During fire season the contractor must maintain a minimum of 13,000 gallons of water on hand at SCR. Firefighting assets at SCR normally consist of one 1,200 gallon pumper truck (Primary Training Range [PTR] Contractor Vehicle), one 500 gallon pump truck (PTR Contractor Vehicle), one 300 gallon pump truck (PTR Contractor Vehicle), one Grader (1 GFE), and a tractor with disk. Available water to fight fires includes a 10,000 gallon railcar and 3,000 gallon water trailer at the North Main Tower and 12,000 gallon water tank at the West Gate Area. In the average fire season at SCR approximately 5,000-10,000 gallons per year are used for firefighting. The PTR contractor has a minimum of three personnel on duty at all times for firefighting. During fire season ordnance cannot be dropped on SCR or JBR unless the required number of fire personnel is on duty and the fire suppression equipment fully operational. (MHAFB, 2010i). At JBR during fire season, a fireguard always mans the observation room whenever ordnance is being delivered. Firefighting assets normally consist of two 300 gallon fire pump trucks (GFE), one 1,500 gallon pumper truck (GFE), and 3,000 gallon water truck used for transporting only. There is also a tractor with disk (GFE). There is a 50,000 gallon water tank for firefighting water. The JBR grazing lessee completed a one million gallon reservoir on the southwestern boundary of the range in December 2005. The reservoir is connected by pipeline to a hydrant in the southwest corner of the range for firefighting access. The average fire season at JBR uses less than 1,000 gallons of water. The contractor maintains seven personnel at JBR, Monday through Thursday, during fire season for fire suppression (MHAFB, 2010i).

Prescribed Fire

Closely coordinated prescribed fire for weed removal and reduction of fire ignition risks is permitted in accordance with the Wildland Fire Program Management Plan. An AF Form 813 and Prescribed Burn Plan must be submitted to CES/CEIE and CES/CEF and approved prior to any prescribed burn operations. As part of BLM pre-suppression activities under the Interagency Support Agreement, MHAFB can request support for pre-fire season controlled burns from BLM. Factors such as timing, frequency, and intensity of burns must be integrated with the mission and other management objectives for vegetation, rare species, and wildlife.

Fire Ratings

Fire ratings provided by the Twin Falls District BLM establish the minimum restrictions imposed on range training. The BLM uses an interagency system, the National Fire Danger Rating System, for daily fire danger indices to predict ignition potential for specific areas. These indices are generated for an area by analyzing vegetation types, temperature, precipitation, fuel moisture, humidity, wind, lightning activity, and human factors. The BLM uses weather data to calculate a burning index and then adds in lightning, human interaction, and fire suppression resource availability to produce a fire rating classification for the grasslands and shrublands of southeast Idaho. The fire rating is broken into five categories (1 to 5) ranging from low to extreme fire hazard (Table 7-4). This information is provided to MHAFB and is the basis for determining what training and maintenance activities may occur on that day for both SCR and JBR. However, if the RCO or fire management office determines a higher rating is justified, range operations are adjusted for site conditions. Restrictions on training are implemented according to the fire rating scale.

Table 7-4
Training and Maintenance Restrictions at
Saylor Creek Range and Juniper Butte Range by Fire Ratings

BLM Rating	MHAFB Rating	Hazard	Restrictions NOTE: Hot spots are <u>never</u> allowed on JBR	Factors that would Incur This Rating
1	1	Low	• No special restrictions. • During the fire season, firefighters are on the range during normal working hours. • All necessary equipment is in place and training complete at the beginning of fire season. • All smoking material must be extinguished completely and properly disposed of in ashcans.	• Low temperatures (50s-70s). • High humidity (50-100%). • Low wind speeds (0-5 knots). • Green vegetation (>16% Ten-Hour fuel moisture). • Very low or absent LAL (1-2). • Moist stable lower atmosphere Haines Index (2-Very Low Potential).
2	2	Moderate	• Smoking is permitted only in areas completely cleared of vegetation (firebreaks, road beds, graveled areas, etc.).	• Moderate temperatures (70s and 80s). • Moderate humidity (30-50%). • Low to moderate wind speeds (5-10 knots). • Green vegetation (9-15% Ten-Hour fuel moisture). • Low LAL (3).

BLM Rating	MHAFB Rating	Hazard	Restrictions NOTE: Hot spots are <u>never</u> allowed on JBR	Factors that would Incur This Rating
				• Haines Index (3- Very Low Potential).
3	3	High	• Extreme caution is used during vehicle operations and maintenance. • Driving on two-track roads is only permitted in morning hours when humidity is higher and temperatures are lower. • Driving off road is prohibited except for emergency situations. • No hot spots or Smokey Guns can be used on SCR. • Firefighters are on duty during all dropping operations and are able to leave the range after 1/2 hour after the last drop to ensure no fire starts are present.	• High temperatures (low 90s). • Low humidity (20-30%). • Moderate wind speeds (10-20 knots). • Drying vegetation (7-8% Ten-Hour fuel moisture). • Moderate LAL (4). • Haines Index (4-Low Potential).
4	4	Very High	• Target maintenance is only performed in morning hours and only as necessary. • Driving on two-track roads is prohibited except for emergencies. • Driving off road is prohibited except for emergency situations. • Flares and Chaff will be dropped above 5000 feet on SCR, JBR, and in the MOAs. • No hot spots or Smokey SAMS can be used on SCR. • Firefighters are on duty during all dropping operations and are able to leave the range after	• Very High temperatures (high 90s). • Very low humidity (10-20%). • High wind speeds (15-25 knots). • Dry vegetation (5-6% Ten-Hour fuel moisture). • High LAL (5). • Haines Index (5-Moderate Potential).

BLM Rating	MHAFB Rating	Hazard	Restrictions NOTE: Hot spots are <u>never</u> allowed on JBR	Factors that would Incur This Rating
			1/2 hour after the last drop to ensure no fire starts are present.	
5	5	Extreme	• Ordnance delivery operations cease, unless precluded by order of the Range Operating Authority (designated by the 366 FW/CC) as determined to be mission essential. • Firefighters are maintained on the range during the daily established flying window in a ready posture to fight any fire.	• Record High temperatures (100s). • Extremely low humidity (5-10%). • Very high wind speeds (greater than 25 knots, or high winds with gusts and changing wind directions). • Very dry vegetation (1-4% Ten-Hour fuel moisture). • Very high LAL (6). • Haines Index (6-High Potential, Very Dry Unstable Lower Atmosphere).

Fire ratings provided by the SCIIDC in Shoshone, ID establish the starting point for 366 CES/CEF fire ratings. The BLM uses an interagency system, the National Fire Danger Rating System, for daily fire danger indices to predict ignition potential for specific areas. These indices are generated for an area by analyzing vegetation types, temperature, precipitation, fuel moisture, humidity, wind, lightning activity, and human factors. The BLM uses weather data to calculate a burning index and then adds lightning, human interaction, and fire suppression resource availability to produce a fire rating classification for the grasslands/shrublands of southeastern Idaho.

Daily fire ratings for USAF property will be determined every day during fire season. 366 CES/CEF will determine and broadcast daily fire ratings for MHAFB, SCR and JBR according to the following methods:

1. Call SCIIDC Dispatch for daily Fire Danger Rating and AM Briefing: 208-886-2373.
2. Obtain Fire Danger Rating from the following websites: https://gacc.nifc.gov/gbcc/dispatch/id-scc/index.htm
3. Access the following website maps for information on Haines Index (Lower Atmosphere Stability), Fire weather, fuel condition observations (10-hour fuels), predicted fire outlooks, *lightning potentials (Lightning Activity Levels or LAL), and live fuel moisture:* https://www.wfas.net/
4. Both the predicted fire rating for that day and the previous day's rating are recorded. The day's activities on the range are based on the predicted rating, which is calculated during late afternoon the previous day. The predicted rating is provided at 4:00 p.m. each day for the next day. The RCO may upgrade this rating based on observed current conditions at any time.

Personnel and Training

All PTR contractor personnel receive annual training in rangeland fire suppression techniques. Firefighters are required to complete the firefighting courses ICS-100, S-130 and S-190. This can be completed on-line. After completing these courses, the BLM provides practical training on range annually. Onsite firefighters will be physically capable of firefighting and know how to operate the necessary equipment.

Fire Ignition

At the ignition or suspicion of a fire on or near the MHRC sites, personnel will notify the RCO (208-828-2422 or 208-828-2448), or command post, if the RCO is off duty and Boise Dispatch by telephone (208-384-3400) or radio frequency (163.9375 megahertz [mHz]). The RCO will close the range immediately, if warranted. The range will remain closed until firefighting operations are terminated.

Assistance with a Fire

The head PTR contractor on the range will determine when additional assistance is required to contain or control a fire on the range and prevent it from spreading to adjoining lands. When in doubt, call for assistance.

As part of the Support Agreement between 366th Wing, MHAFB and the U.S. Department of Interior, BLM Twin Falls District (MHAFB, 2008c), and fire support is provided by the BLM for emitters and ND targets. The BLM will notify the Air Force and its PTR contractors if fire occurs on unmanned range. The Air Force will report fires in the vicinity of emitters and ND sites to BLM upon discovery.

Upon immediate determination, the head PTR contractor or RCO will call BLM. If assistance is required on the range, the head PTR contractor or RCO will contact the SCIIDC by telephone (208-886-7633/2373) or radio frequency (163.9375 MHz) and the 366 CES/CEF Dispatch Center (208-828-6292).

Once onsite, the BLM's Incident Commander will assume control of the fire until the fire is extinguished.

Bruneau and Grandview ambulances will respond to the emergency calls in the MHRC, if requested. MHAFB hospital will provide medical assistance to BLM or contract personnel transported from the MHRC to MHAFB, if needed. BLM is responsible for coordinating transportation for the injured party.

Access for Suppression

The BLM will have full access to JBR if fire assistance is requested by the Air Force or its PTR contractors. All aircraft called in to assist with fire suppression must request air space clearance through Cowboy Control (208-828-4804), radar approach control (RAPCON) (208-828-2854) or the Federal Aviation Administration (FAA) Salt Lake City Center (801-320-2567). The USAF has a Letter of Agreement with the BLM that addresses procedures for BLM firefighting aircraft to enter the MHRC airspace.

Standard Operating Procedure: Prevent fire ignition.

Conservation Practices:

- Manage vegetation to lessen fuel load.
- Plant fire-resistant vegetation in areas with a higher potential for ignition sources, such as areas along roads and within the target areas.

- Conduct grazing on JBR in the spring to reduce the biomass of seeded grasses and cheatgrass, but to maximize growth of native grasses in early summer.
- Minimize bare ground areas (except for slickspots on JBR) to reduce cheatgrass invasion.
- Decrease wildfire ignition and spread potential by reducing fuel loads and placing appropriate restrictions on activities.
- Use fire indices. Restrict range activities when fire hazard rating is extreme.
- Provide UXO cleanup to lower risk of ordnance striking ordnance and creating sparks.
- Apply active risk management. All possible precautions are taken to prevent man-made fires from initiating on the range.
- Avoid off-road driving in accordance with MHAFBI 32-7003.
- Use caution when driving down two-track roads. Avoid driving on unmowed two-track roads in accordance with fire rating categories.
- Identify roads to be mowed prior to fire season.
- Clean out vehicle undercarriages frequently to avoid vegetation buildup around catalytic converters and exhaust systems.
- Ensure that all vehicles assigned to the range are equipped with spark arrestors, shovels, and fire extinguishers.
- Park maintenance vehicles only in areas clear of or with minimal vegetation (areas with vegetation less than 6 inches).
- Park emitters on the gravel pads.
- Smoking is prohibited off the graveled areas and in government vehicles. Dispose of smoking materials in ashcans.
- Ensure that trained fire personnel and equipment are present onsite for immediate fire suppression during maintenance activities and ordnance dropping conducted during the fire season.
- Bolt heated targets with electric elements rigidly in place inside metal targets. Ensure that they meet or exceed operation safety standards established by the National Fire Codes and published by the National Fire Protection Association.
- Control or remove weeds from around all targets prior to fire season.

Standard Operating Procedure: Immediate fire suppression.

Conservation Practices:

- Maintain equipment in ready state by performing routine maintenance and readiness checks.
- Train personnel in wildland firefighting techniques and safety.
- Require personnel to meet and maintain minimum physical fitness requirements within contractual limitations.
- Establish procedures for assistance or coordination during a fire.
- Continue Interagency Support Agreement with the BLM for suppression response.
- Require contractor to follow proper procedures for contacting the BLM and cooperating during a fire incident.
- Provide annual wildfire training to PTR contractor firefighters.
- Annually review fire procedures, including coordination, reporting, and assistance procedures prior to fire season.

Standard Operating Procedure: Conduct firefighting in a manner consistent with LEPA conservation.

Conservation Practices:

- Avoid ground disturbance within slickspots and impacts to LEPA plants during firefighting operations to the maximum extent practicable.
- Use LEPA maps to plan disc lines prior to emergency discing to avoid occupied habitat.
- Disc the least area required to subdue a fire.
- Provide LEPA maps to firefighting personnel at the annual Natural and Cultural Resource Awareness Training.

The Environmental Office will work with firefighters to recommend potential disc areas to be utilized in a fire emergency prior to fire season each year.

7.10 Agricultural Outleasing

Applicability Statement

This section applies to AF installations that lease eligible AF land for agricultural purposes. This section **IS** applicable to this installation.

Program Overview/Current Management Practices

According to AFI 32-7064, livestock grazing programs must adhere to the following guidelines (USAF, 2004):

- Livestock grazing programs must be consistent with the use of the installation to support military readiness.
- Livestock grazing programs must support the goals and objectives of the installation INRMP.
- Grazing will not be authorized unless such use is documented in the INRMP as essential to achieve land management goals.
- Livestock grazing programs must not degrade the natural ecological integrity of the landscape.
- Do not allow grazing within native plant communities where it has been determined that such use is inappropriate for the plant community type. Suspend grazing on lands where historic overgrazing and other abusive grazing practices have limited the ability of the plant community to recover.

Agricultural outleasing administered by the AF on MHAFB lands is limited to livestock grazing on JBR. Grazing is used as a tool to reduce fine fuels that may contribute to the spread of wildfire on JBR. Annual spring livestock turnout dates are determined by soil moisture thresholds that serve to avoid or minimize potential livestock trampling impacts to LEPA and slickspot microsites. Utilization levels are monitored annually to ensure livestock grazing management meets identified use targets identified in the Grazing Component Plan. Trend data collected since 2002 indicate stable or slightly upward trends in vegetation cover in both grazed and ungrazed areas. The following sections provide grazing outleasing information throughout MHAFB properties.

SAR

The northern half of the SAR is owned by the state of Idaho. State lands are grazed under permit issued by the state of Idaho. MHAFB does not manage grazing on these state lands. There is no grazing on the Air Force portion of the SAR.

MHRC

SCR

Status of Inventory and Current Conditions: Although grazing occurs on SCR, outside of the EUA, MHAFB does not administer the grazing outlease. According to Federal Register Public Land Orders (section 14, Appendix E) grazing is administered by the BLM and Idaho Department of Lands, including permits, fee collection, and maintenance. However, to provide for safety while managing the lands, and ensure compliance with applicable laws, the BLM and MHAFB have agreed to confer and coordinate training and grazing activities occurring at SCR.

A map of the grazing allotments on SCR and the BLM permitted AUMs is in section 14, Appendix K.

Issues and Concerns: General issues and concerns include the need for cooperative grazing management with BLM of the area outside the EUA. Other concerns are impacts to sensitive areas, the decline in the biodiversity and ecosystem health brought about by wildfire and exotic weed invasion.

JBR

Status of Inventory and Current Conditions: JBR lies within the BLM's old Juniper Draw grazing allotment. JBR is approximately 12,000 acres, while the Juniper Draw allotment was approximately 19,000 acres. JBR is roughly 63 percent of the original allotment. The area now withdrawn as JBR was grazed for the 10 years prior to withdrawal at a historical stocking rate of 1,806 AUMs annually, with various numbers of Temporary Non Renewable AUMs issued in fall or winter to allow cattle use of excess forage. The historic BLM grazing period was conducted year round, while the current Air Force livestock use period is compressed into a six-week period each spring.

Species used for livestock forage include a mix of native grasses such as bluebunch wheatgrass (*Pseudoroegneria spicata*) as well as seeded nonnative perennial grasses such as intermediate wheatgrass (*Thinopyrum intermedium*). The number of Animal Unit Months (AUMs) of use vary by year, with the lowest level being 702 AUMs in 2001 and the highest level as 1,210 AUMs in 2007. Annual monitoring of utilization levels is conducted to ensure vegetation management targets for fuel reduction are being met by livestock use levels, type of livestock, and stocking rates.

Issues and Concerns: Maintaining grazing with training requirements, fire prevention, and LEPA habitat conservation.

Standard Operating Procedure: Provide a grazing program that is compatible with both the military mission and natural resource protection.

Conservation Practices:

- Reduce fire risk.
- Reduce operations and maintenance costs.
- Use grazing to reduce biomass on JBR.
- JBR grazing system will be implemented through a lease agreement between the Air Force and lessee.
- Monitor the effects of the grazing system implementation as described in the Grazing Component Plan.
- The vegetation communities on JBR will be monitored using a series of permanent vegetation sampling plots.

- Collect and review the data in a timely manner (i.e., utilization monitoring is done annually, trend monitoring is done every 5 to 8 years) to identify trends in range health.

Standard Operating Procedure: Avoid livestock trampling of slickspots and negative grazing impacts to vegetation quality and composition.

Conservation Practices:

- Provide salt in locations away from occupied habitat.
- Avoid gathering and trailing cattle when soils are wet.
- Delay turn out until soils are firm.
- Avoid livestock use inside exclosures.
- Use existing roads for grazing-associated activities.
- Use adaptive management to adjust the grazing system.
- Implement the grazing system in Project 5, Grazing System, in the Grazing Component Plan.
- Implement the grazing monitoring in Project 6, Utilization Monitoring, in the Grazing Component Plan.
- Implement the slickspot wetness protocol.
- Implement the monitoring in Project 1, Long Term Monitoring of Vegetation, in the Vegetation Component Plan.

Standard Operating Procedure: Prevent fire ignition.

Conservation Practices:

- Manage vegetation to lessen fuel load.
- Plant fire-resistant vegetation in areas with a higher potential for ignition sources, such as areas along roads.
- Minimize bare ground areas to prevent weed invasion.
- Decrease wildfire ignition and spread potential by placing appropriate restrictions on activities.
- Use fire indices. Restrict activities when fire hazard rating is extreme.

Emitter Sites and ND Target Areas

Grazing is prohibited on the 1/4-acre and 1-acre emitter sites. Grazing is also prohibited on the 5-acre ND target areas. Grazing on ND-1 is administered under a BLM grazing permit and is under the control of the BLM.

Other than agricultural outleasing, MHAFB has several other leases and outgrants as shown in Table 7-5.

Table 7-5
MHAFB Outgrants and Leases

Site	Lease Type	With whom
MHAFB	Utilites	Various utility providers
SAR	Access and Use	IDFG for Hunter Safety Course
SAR	Access and Use	Idaho Army National Guard
SCR	Water Delivery Pipeline	Rancher with BLM grazing rights
JBR	Permit	BLM for firefighting personnel quarters
JBR	Utilities	Idaho Power
JBR	Grazing Lease	Rancher with historic grazing rights under BLM

7.11 Integrated Pest Management Program

Applicability Statement

This section applies to AF installations that perform pest management activities in support of natural resources management, e.g. invasive species, forest pests, etc. This section **IS** applicable to this installation.

Program Overview/Current Management Practices

Executive Order 13112 requires all federal agencies to prevent the introduction of invasive species, to provide for their control, and to minimize the economic, ecological, and human health impacts that invasive species may cause. Invasive species can be a threat to natural resources, impact local economies, and adversely affect the military mission. The Idaho Invasive Species Act of 2008 was signed into law on April 9, 2008. The provisions allow the state to determine what is invasive, to set up mandatory inspection and decontamination stations for boats, and establish an emergency response fund. (Session Law Chapter 387). Invasive species are defined as an alien species whose introduction does or is likely to cause economic or environmental harm or harm to human health. Alien species are further defined as any species, including its seeds, eggs, spores, or other biological material capable of propagating that species that is not native to that ecosystem. The purpose of the MHAFB invasive species program is to detect and manage invasive species in order to inhibit negative impacts to the environment and military training operations.

Standard Operating Procedure: Identify and control invasive species, especially state and federally listed noxious species.

Conservation Practices:

- Conduct annual surveys for invasive species including vegetation, fish, birds and mammals.
- Determine the location and extent of invasive species on MHAFB lands.

- Determine an index of noxious weed abundance relative to native vegetation.
- Map all invasive locations and maintain a current Geographic Information System database for proactive management.
- Develop and implement protocol to inhibit movement of invasive species among posts from military convoys and exercises.

Idaho has been invaded by a number of harmful exotic plants and animals. Some of the worst current and potential invaders are shown in Table 7-6.

Reducing the Spread of Noxious Weeds

The state of Idaho provides a few guidelines to help lessen the spread of noxious weeds.

- Avoid driving in noxious weed infested areas. Seeds can become stuck in tire treads or mud on the vehicle and be carried to unaffected areas.
- Don't transport flowering plants that you cannot identify.
- If you find a small number of isolated noxious weeds that have no flowers or seeds, pull the weeds and leave them where you found them to dry out.
- If you find noxious weeds and they have flowers or seeds, pull them, place them in a plastic bag or container to avoid spreading seeds, and either burn them or dispose of them in a sanitary landfill.
- Report newly-found noxious weeds to the county weed superintendent or county extension office.

Pest management on MHAFB is conducted according to the "Installation Pest Management Plan" (IPMP; MHAFB, 2017; section 15, Tab 5). The primary objective of the program is to ensure effective control of undesirable insects, rodents, birds, weeds, and other organisms. The IPMP is updated regularly and is managed by MHAFB's Entomology shop (CEOIE). The plan is reviewed by the natural resources program as well as other environmental sections to ensure technical competency, environmental compliance, and relevance. The IPMP details the types of pesticides (which include insecticides, herbicides, and fungicides) and equipment used to control pest populations. DoD policy and guidance is recommended by the Armed Forces Pest Management Board (AFPMB), whose mission is to ensure environmentally sound and effective programs are present to prevent pests and disease vectors from adversely affecting DoD operations. The DoD takes these recommendations and develops instruction for base pest management programs. The MHAFB pest management program incorporates the provisions of DODI 4150.7. The instruction states, it is DoD policy to establish and maintain safe, effective, and environmentally sound integrated pest management programs to prevent or control pests and disease vectors adversely impacting readiness or military operations by affecting the health of personnel or damaging structures, material, or property.

The IPMP contains policies, standards, and requirements for CE personnel performing all operations in connection with the IPMP at MHAFB and is consistent with DODI 4150.7. Integrated pest management practices employ physical, mechanical, cultural, biological, and educational methods to maintain pests at populations low enough to prevent undesirable damage or annoyance. In addition, if chemicals are needed as a last resort, the least-toxic chemical capable of performing the control will be utilized. Control measures for mosquitoes, crawling insects (ants, crickets, cockroaches, etc.) and spiders, birds, mice, squirrels, and other vertebrate pests which could be detrimental to the health and welfare of personnel and property are described in the IPMP. The natural resource program works closely with CEOIE to help identify and resolve pest problems needing natural resource input such as: Exotic and invasive species ongoing control, as well as spraying noxious weeds. Mapping of weeds on MHAFB problem areas will be performed by the natural resources program and turned over to the pest management shop for treatment.

Table 7-6
Important Invasive Species in Idaho

Name	Type	Origin	Extent	Damage
Rush skeletonweed	Plant	Eurasia, first detected in Idaho on 5 acres in 1960	26 counties in western and central Idaho	Displaces beneficial forage plants and also invades cropland
Cheatgrass	Plant	Mediterranean, entered in shipments of grain or in packing material	Throughout intermountain west; 17.5 million acres in Idaho and Utah	Increases fire frequency and intensity on rangelands, degrades sagebrush & grassland habitats, problematic weed in wheat fields.
Leafy spurge	Plant	Eurasian, brought to U.S. in late 1800s	Found in nearly every county in Idaho.	Irritant "latex" in plant causes blisters and blindness; reduces forage values.
Yellow Starthistle	Plant	Mediterranean region and Asia	4 million acres across the western states. At least 500,000 acres in Idaho	Decreases rangeland value and poisons horses, outcompetes native plants
Balsam wooly adelgid	Insect	Europe, introduced in 1908	14,000 square miles in Idaho1	Feeds on and destroys fir species
Eurasian Watermilfoil	Aquatic Plant	Eurasia, introduced to North America in 1880's	4,000 surface acres	Form dense canopies, displacing native flora and fauna. Inhibits recreational activities such as swimming and boating.
White pine blister rust	Fungus	Probably Asia, entered U.S. in 1910 on infected pine seedlings from Europe	Has impacted Western white pines through most of Idaho	The rust has reduced Inland Northwest white pine stands by 90 to 95 percent. Only scattered remnants remain of Idaho's state tree
Zebra mussel	Mollusk	Black sea and Aral Sea region of Asia, introduced to Great Lakes in 1986	Widespread east of the 100th Meridian. Confirmed observations in Colorado and California	If established in Idaho, the zebra mussel could cause billions in damage, by damaging habitats, clogging power plant intake pipes, and damaging boat engines

Source: (Idaho Invasive Species Council, 2009a & 2009b; Livingston, 2000).

MHAFB

Status of Inventory and Current Conditions: Pests of primary importance include mosquitoes, Piute ground squirrels, and terrestrial weeds. Other pests also occur on the installation.

Grounds maintenance and pest management issues include: maintaining low use of soil sterilants and identifying high priority areas for pesticide application.

Weed control is a particular problem in the rock shoulders found adjacent to roads. These rock shoulders originally had weed barriers built into them, however, airborne dust particles have accumulated between the rocks, and formed soil pockets that support weeds. The Grounds Contract allows use of RoundupTM and 2, 4-D (Weed-B-Gon™) herbicides in these rock shoulders only.

Issues and Concerns. Expanding weed populations are a concern because they decrease biological diversity and can increase fire susceptibility. Inappropriate use of herbicides or eliminating herbicide use for the control of weeds is a concern.

Standard Operating Procedure: Provide a grounds maintenance program that is compatible to the military mission and Base community as well as the natural resources that occur on the lands managed by MHAFB. This includes identifying and eradicating noxious weeds. Reduction in herbicide use is also a concern. With expanding weed populations, weed control is a high priority and herbicide reduction becomes more difficult.

Conservation Practices:

- Control annual exotic species that reseed and expand into disturbed areas.
- Develop an education program to inform military personnel and families of the appropriate native and ornamental plants to be used, care of these plants, chemicals that can be used, and management practices to be implemented.
- Use herbicides, pesticides, and soil sterilants appropriately.
- Increase use of xeriscaping.
- Increase water conservation.
- Maintain native vegetation. Healthy native vegetation requires little or no maintenance.
- Eliminate non-compliance by contractors performing maintenance and grounds duties.
- Follow the Installation Pest Management Plan.
- Provide information to base users on eDASH.

Standard Operating Procedure: Prevent noxious weed establishment.

Conservation Practices:

- Conduct pest management activities in a manner compatible with other natural resource goals.
- Prevent exotic annual species spread by reseeding disturbed areas.
- Eradicate noxious weeds prior to spread.
- Educate maintenance staff to identify noxious weeds, report their location, and implement appropriate control measures.
- Avoid spreading weeds from one location to another.
- If personnel observe noxious weeds, they should report location, type of noxious weed, and area of infestation to Environmental Office (208-828-6351).
- Control efforts will be performed in the spring and early summer, prior to the plants producing seed.
- Aerial herbicide application should be avoided and application should only occur under calm wind conditions to avoid drift of spray into slickspots.
- All pesticide and herbicide applications will be performed by a state-certified applicator in accordance with applicable state and federal laws.
- Cheatgrass, tumble mustard, Russian thistle, and kochia may need to be controlled to prevent fire hazards or maintenance problems.

- Controlled burning may be used along fence lines to remove Russian thistle or tumble mustard build-up.
- Air Force vehicles and equipment used on ranges are required to be cleaned in a wash rack upon return to Base.

SAR

Status of Inventory and Current Conditions: SAR grounds maintenance issues focus around noxious and invasive species management.

Issues and Concerns: Expanding weed populations are a concern because they decrease biological diversity and can increase fire susceptibility. Increased herbicide use in the control of weeds is a concern.

Standard Operating Procedure: Conserve rare plants.

Conservation Practices:

- Protect Davis' Peppergrass populations.
- Do not use herbicides in a manner that might affect Davis' Peppergrass. Herbicide use on or near playas or upwind of playas could affect Davis' Peppergrass.
- Aerial herbicide application should be avoided and application should only occur under calm wind conditions to avoid drift of spray into slickspots and playas.
- All pesticide and herbicide applications will be performed by a state-certified applicator in accordance with applicable state and federal laws.
- Follow the Base Integrated Pest Management Plan.

Standard Operating Procedure: Provide a pest management program that is compatible to the military mission as well as the natural resources that occur on the lands managed by MHAFB. This includes identifying and eradicating noxious weeds. Reduction in herbicide use is also a concern. With expanding weed populations, weed control is a high priority and herbicide reduction becomes more difficult.

Conservation Practices:

- Control annual exotic species that expand into natural and disturbed areas is an issue.
- Use herbicides, pesticides, and soil sterilants appropriately.
- Control invasive annual grasses on and near the shooting range to prevent fire.
- Control wildfire.
- Follow the Base Integrated Pest Management Plan.

Standard Operating Procedure: Prevent noxious weed establishment.

Conservation Practices:

- Conduct pest management activities in a manner compatible with other natural resource goals.
- Prevent exotic annual species spread by reseeding disturbed areas.
- Eradicate noxious weeds prior to spread.
- Educate maintenance staff to identify noxious weeds, report their location, and implement appropriate control measures.
- Avoid spreading weeds from one location to another.
- If personnel observe noxious weeds, they should report location, type of noxious weed, and area of infestation to Environmental Office (208-828-6351).

- Control efforts will be performed in the spring and early summer, prior to the plants producing seed.
- Aerial herbicide application should be avoided and application should only occur under calm wind conditions to avoid drift of spray into slickspots and playas.
- All pesticide and herbicide applications will be performed by a state-certified applicator in accordance with applicable state and federal laws.
- Cheatgrass, tumble mustard, Russian thistle, and kochia may need to be controlled to prevent fire hazards or maintenance problems.
- Controlled burning may be used along fence lines to remove Russian thistle or tumble mustard build-up.
- Air Force vehicles and equipment used on ranges are required to be cleaned in a wash rack upon return to Base.

MHRC

SCR

Status of Inventory and Current Conditions. Pest management is limited to weed removal and rodent eradication on SCR. SCR also has areas of high disturbance that perpetuates weedy species and provides invasion sites for noxious weeds.

Issues and Concerns: An increase in invasive and noxious weed species is occurring at SCR.

Standard Operating Procedure: Provide a grounds maintenance program that is compatible to the military mission and Base community as well as the natural resources that occur on the lands managed by MHAFB.

Conservation Practices:

- Limit ground disturbance to limit weed encroachment is suggested.
- Use herbicides, pesticides, and soil sterilants appropriately.
- Eliminate non-compliance by contractors performing maintenance and grounds duties.
- Follow the Base Integrated Pest Management Plan.

Standard Operating Procedure: Prevent noxious weed establishment.

Conservation Practices:

- Conduct pest management activities in a manner compatible with other natural resource goals.
- Coordinate Air Force weed control activities with the BLM and Owyhee County.
- Prevent exotic annual species spread by reseeding disturbed areas.
- Eradicate noxious weeds prior to spread.
- Educate maintenance staff to identify noxious weeds, report their location, and implement appropriate control measures.
- Avoid spreading weeds from one location to another.
- Range contractors and other range personnel will be trained to identify noxious weeds and the procedure for reporting them.
- If personnel observe noxious weeds, they should report location, type of noxious weed, and area of infestation to Environmental Office (208-828-6351).
- Control efforts will be performed in the spring and early summer, prior to the plants producing seed.
- Use aerial herbicide applications as necessary for large invasive species control projects.

- All pesticide and herbicide applications will be performed by a state-certified applicator in accordance with applicable state and federal laws.
- Cheatgrass, tumble mustard, Russian thistle, and kochia may need to be controlled to prevent fire hazards or maintenance problems.
- Controlled burning may be used along fence lines to remove Russian thistle or tumble mustard build-up.
- Air Force vehicles and equipment used on ranges are required to be cleaned in a wash rack upon return to Base.

JBR and Associated Sites

Status of Inventories and Current Conditions. Noxious weed surveys are performed annually for JBR, emitter sites, ND targets, Grasmere EC site, and all road ROWs issued for the MHRC. Noxious weeds are the largest pest management control problem potentially occurring on JBR and its associated emitters and ND targets. Other exotic annual species such as cheatgrass, tumbleweed, tumble mustard, and kochia are found on JBR and emitter sites. Noxious weeds have been identified on several of the ROWs and nearby roads. The Air Force has an active weed control program implemented annually for JBR, emitter sites, ND targets, Grasmere EC site, and road ROWs.

Issues and Concerns. General concerns include invasion of noxious weeds, exotic annual species replacing native or seeded species, potential effects of herbicides on LEPA, and increased fire hazard from weed build-up along buildings and fences.

Standard Operating Procedure: Provide a grounds maintenance program that is compatible with the military mission as well as the natural resources that occur on the lands managed by MHAFB.

Conservation Practices:

- Use herbicides, pesticides, and soil sterilants appropriately.
- Eliminate non-compliance by contractors performing maintenance and grounds duties.
- Follow the Base Integrated Pest Management Plan.

Standard Operating Procedure: Prevent noxious weed establishment.

Conservation Practices:

- Conduct pest management activities in a manner compatible with other natural resource goals.
- Avoid the use of herbicides within 25 feet of slickspots and only if wind conditions are favorable (away from the slickspot) to prevent the loss of LEPA.
- Coordinate USAF weed control activities with the BLM and Owyhee County.
- Prevent exotic annual species spread by reseeding disturbed areas.
- Eradicate noxious weeds prior to spread.
- Educate maintenance staff to identify noxious weeds, report their location, and implement appropriate control measures.
- Avoid spreading weeds from one location to another.
- Range contractors and other range personnel will be trained to identify noxious weeds and the procedure for reporting them.
- If personnel observe noxious weeds, they should report location, type of noxious weed, and area of infestation to Environmental Office (208-828-6351).
- Control efforts will be performed in the spring and early summer, prior to the plants producing seed.

- All pesticide and herbicide applications will be performed by a state-certified applicator in accordance with applicable state and federal laws.
- Prior to the use of pesticides on ROW and emitter sites, the BLM must give written approval of a plan showing the type and quantity of the material to be used (P.L. 105-261).
- Cheatgrass, tumble mustard, Russian thistle, and kochia may need to be controlled to prevent fire hazards or maintenance problems.
- Controlled burning may be used to remove Russian thistle or tumble mustard build-up. Weeds are gathered to a clear area (such as graveled sites or roads) to avoid impacts to LEPA and reduce the risk of fire escaping into the surrounding country.
- Air Force vehicles and equipment used on ranges are required to be cleaned in a wash rack upon return to Base.

7.12 Bird/Wildlife Aircraft Strike Hazard (BASH)

Applicability Statement

This section applies to AF installations that maintain a BASH program to prevent and reduce wildlife-related hazards to aircraft operations. This section **IS** applicable to this installation.

Program Overview/Current Management Practices

Birds (See also Section 7.1, Migratory Birds Management).

Although birds may become a problem for BASH, MHAFB has a very low incident of bird-aircraft strikes, and removing individuals or eliminating habitat is seldom necessary. BASH is evaluated daily by Flight Safety to determine the level of risk each morning and evening by identifying bird locations and counting the number of birds. Frequently, scare tactics (e.g., making loud noise) are used to reduce the numbers of birds around the flightline. To avoid attracting birds to the area, vegetation (such as high grass and shrubs) is strictly controlled, reducing potential habitat for higher risk species. If the birds do not leave and all other methods have been exhausted, then Flight Safety is authorized by the State of Idaho and USFWS to kill a minimal number of birds. Approximate numbers killed during a year range from 80 to 150 birds. Species include horned larks, ravens, sea gulls, and water fowl. The MHAFB Bird and Wildlife Strike Hazard Safety Plan contains further information on tactics to prevent BASH (MHAFB, 2009a; section 15, Tab 2).

<u>Raptors</u>

Although these large birds can create a BASH problem, protocols have been successful in avoiding incidents. There is no need to eliminate or increase the populations of these birds on MHAFB. Many raptors have been observed on the Base: burrowing owl, prairie falcon (*Falco mexicanus*), American kestrel (*Falco sparverius*), red-tailed hawk (*Buteo jamaicensis*), and great-horned owl (*Bubo virginianus*). Prairie falcons are known to nest in the Snake River Canyon to the south of MHAFB, but suitable nesting substrate does not occur on MHAFB. Great-horned owls readily habituate to urban areas and nest in the trees on MHAFB. Burrowing owls are found around the golf course, near rubble piles, and in annual grasslands with suitable abandoned badger holes on MHAFB. Other raptors that may forage on MHAFB include: northern harriers (*Circus cyaneus*), short-eared owls (*Asio flemmeus*), and golden eagles (*Aquila chrysaetos*).

Between 4,000 and 8,000 raptors migrate through the area each fall and spring (Idaho Bird Observatory, 2007; Haak & Oelrich, 2009). Awareness of raptor nests on and migration through the MHRC can reduce the risk of BASH.

Raptors are surveyed each year during nesting season to determine territory occupancy, reproductive success, fledgling success, and overall health of raptors. Raptor nest surveys will be conducted annually on all installation lands where suitable raptor habitat exists. From this effort, data have been and will be acquired to show where possible mission conflicts between raptors and aircraft may occur as current and future data are analyzed. Current partnerships with USFWS, IDFG, and universities will be utilized to the fullest extent possible.

Waterfowl

Waterfowl concentrate along the Snake River and use it year-round. Because of the proximity to MHAFB, water birds utilize the treated effluent storage lagoon and RIBs. A greater number of birds migrate through the area during the spring and fall, but some birds are found year-round. Canada geese (*Branta canadensis*), mallards, blue-winged teal (*Anas disc*ors), buffleheads (*Bucephala albe*ola), goldeneyes (*Bucephala clan gula*), American coots (*Fulica atra*), western grebes (*Aechmophorus occidentalis*), and avocets (*Recurvirostra americana*) have been observed. Because the storage lagoon supports waterfowl, bald eagles may forage here during the winter, but they have never been reported. MHAFB has an active program to discourage waterfowl use of these lagoons for Air Force BASH prevention.

Other Birds

American robins (*Turdis migratorius*), house finches (*Carpodacus mexicanus*), killdeer (*Charadrius vociferus*), western meadowlarks (*Sturnella neglecta*), Brewer's blackbird (*Agelaius phoenicus*), starlings (*Sturnus vulgaris*), and sage, savannah, and vesper sparrows use trees, shrubs, utility lines, ditches, annual grassland areas, and sagebrush flats. Turkey vultures (*Catharles aura*) were seen on the west side of MHAFB frequently, but are rarely seen since the Base municipal solid waste landfill was closed and capped in 2008. Long-billed curlews (*Numenius americanus*) can be found near the golf course, RIBs, and the annual grasslands near the north end of the flightline. Large flocks of quail are seen around housing and in the tree windbreaks.

Most of these birds do not pose a BASH hazard and help control some insects. Increasing habitat for these birds is encouraged through the use of shrubbery around Base residential areas and facilities away from the flightline. Tree windbreaks provide much of the habitat used by these species. Tree windbreaks are found along the entrance road and near the hospital, around the Family Campground (FamCamp), and around several housing areas. The wind breaks reduce wind, dust, and provide an aesthetic buffer that provides for military family outdoor recreation opportunities such as bird watching.

Issues and Concerns. Managing and maintaining a wide variety of bird species to achieve species diversity, bird-watching opportunities, and compliance with the MBTA, while reducing BASH attractants is a primary concern.

Standard Operating Procedure: Reduce BASH potential.

Conservation Practices:

- Maintain airfield vegetation at a height of 8-14 inches.
- Avoid use of attractive vegetation, from trees used for perching, to grasses producing seedheads at 8-14 inches in height, around the airfield and support facilities.
- Require facility designs to eliminate bird-perching sites.

7.13 Coastal Zone and Marine Resources Management

Applicability Statement

This section applies to AF installations that are located along coasts and/or within coastal management zones. This section **IS NOT** applicable to this installation.

There are no coastal zones or marine resources within or adjacent to MHAFB and its GSUs.

Program Overview/Current Management Practices

Not applicable to MHAFB and its GSUs.

7.14 Cultural Resources Protection

Applicability Statement

This section applies to AF installations that have cultural resources that may be impacted by natural resource management activities. This section **IS** applicable to this installation.

Program Overview/Current Management Practices

The MHAFB ICRMP is a five-year plan to integrate the planning and conduct of MHAFB military mission activities, along with real property and land use decisions, at the base and its ranges, with legal requirements for historic preservation (MHAFB, 2011). The ICRMP addresses compliance with the National Historic Preservation Act and other laws, regulations, and Executive Orders relative to the management of cultural resources while conducting federal and state mission objectives. Any modifications to the MHAFB Cultural Resources management plan are required to be reviewed by the natural resources manager to ensure compatibility with the MHAFB INRMP.

Ground-disturbing activities associated with wildlife habitat improvement or fire suppression actions covered in this INRMP have the potential to impact cultural resources. However, MHAFB will follow its ICRMP to avoid or minimize potential impacts to cultural resources. For example, as part of the JBR Enhanced Training in Idaho (ETI) project, mitigation measures for cultural resources focused on continuing government-to government dialogue with the tribes and collaboration on monitoring procedures for sensitive cultural resources at JBR. These mitigation measures were specified in the project Record of Decision. The Air Force, BLM, and Tribes continue to meet to discuss procedures to protect cultural resources associated with this project.

7.15 Public Outreach

Applicability Statement

This section applies to all AF installations that maintain an INRMP. The installation is required to implement this element.

Program Overview/Current Management Practices

An installation outreach program is another component of an integrated natural resources management program. Each natural resource program area will conduct outreach activities, and the natural resources program management function integrates these efforts through a conservation web page, displays, and participation in other outreach events.

A natural resources education and outreach program is necessary to help users and stakeholders of natural resources on MHAFB appreciate the importance of these resources and their conservation. The natural resources education program is developed to focus on the importance of natural resource conservation to the military mission, reducing maintenance costs at MHAFB, maintaining a healthy human environment, and promoting outdoor recreation. A sense of understanding of the sensitivity of natural resources and stewardship of them must be ensured by participants at MHAFB.

The public has a vested interest in MHAFB installation natural resources management. As taxpayers, they own the land, and provide the funding of the various programs and, in some cases; they are users of the resources. Members of the public often serve as volunteers to support natural resources programs where they have a personal interest, and they review environmental documents and management plans affecting these programs when appropriate. The natural resources Program at MHAFB works to educate the public on the mission of the Air Force. This is accomplished by striving to heighten military family and public awareness through such events as Earth Day, Arbor Day, and participation with Tree City USA.

At MHAFB, current outreach efforts include:

- Displays and kiosks in the Environmental Office, the main Civil Engineering office, Base Library, Silver Sage Golf Course, base housing, and Wing Headquarters' Building.
- Xeriscape demonstration project at building 1297.
- "Brown-Bag" lectures on various topics.
- Earth Day booth at the Base Exchange.
- Mandatory Cultural/Natural Resources Training for all range users.
- Kiosks on Mountain Home AFB and Saylor Creek Range.
- Information on "eDash" website (DoD users only).
- Periodic Posters and Newspaper articles.
- Government to Government Consultation with federally recognized tribes.
- Participation in Owyhee County Sage-Grouse Local Working Group and Jarbidge Sage-Grouse Local Working Group.

7.16 Geographic Information Systems (GIS)

Applicability Statement

This section applies to all AF installations that maintain an INRMP, since all geospatial information must be maintained within the AF GeoBase system. The installation is required to implement this element.

Program Overview/Current Management Practices

The Natural Resources program uses a Geographic Information System (GIS) and the AF GeoBase system to assist in biological inventory and management by utilizing up to date, accurate, and reliable geographic and attribute data for MHAFB and MHRC installation lands. This system provides the ability to analyze the military mission and ecosystem management. Applications are used to manage biodiversity and assist in the preparation of required military operation requests to ensure regulatory compliance. This capability is critical to the success of an integrated natural resources management program by providing methods in baseline measurement, tracking of progress, identification of problems, and solution strategy implementation.

All Sites

All of the natural resource projects have standard practices in common. GIS technology is utilized to map, model and identify MHAFB natural resources data. Data from surveys, field tablets, data loggers, and GPS units are downloaded into the Natural Resource GIS Database for reference and analysis in trend reports.

Status of Inventory and Current Conditions. GeoBase is the GIS program managed by the 366th Civil Engineer Squadron, Site Development Section. GeoBase maintains a GIS database using the DoD database structure standard: Spatial Data Standards for Facilities, Infrastructure, and Environment (SDSFIE) The Environmental Office maintains all data pertinent to its protocols.

The data managed by the Environmental Office was initially obtained from past projects such as EISs, EAs, and environmental baseline surveys. Contract work frequently results in GIS deliverables. This has resulted in an extensive library of data layers. Data layers and descriptions of the information or attributes of each layer are maintained in a SDE database. Major categories of information available from this database include archaeology, vegetation, species of concern, soils, topography, rivers and streams, roads, and fire history.

Project data such as reports and photos are linked to GIS layers for much of the database. Continual management of the database is necessary to incorporate new data and updated information.

Issues and Concerns. General concerns related to GIS include the necessity for regularly updating GIS information and integrating GIS data into planning, acquiring, and using new software, and training personnel to use the database and software to keep records current.

Standard Operating Procedure: Provide an updated GIS database system.

Conservation Practices:

- Develop a complete GIS database for MHAFB.
- Continually update the GIS database system.

- Require all data collection and future survey results to be integrated and compatible with the GIS database.
- Require that all data collection and future survey results be provided in a form consistent with SDSFIE.
- Notify incoming key personnel in appropriate areas (i.e., range squadron or pest management) of availability and usefulness of data.
- Refine and update all pertinent GIS databases, as new information becomes available.

8.0 MANAGEMENT GOALS AND OBJECTIVES

The installation establishes long term, expansive goals and supporting objectives to manage and protect natural resources while supporting the military mission. Goals express a vision for a desired condition for the installation's natural resources and are the primary focal points for INRMP implementation.

Objectives indicate a management initiative or strategy for specific long or medium range outcomes and are supported by projects. Projects are specific actions that can be accomplished within a single year. Also, in cases where off-installation land uses may jeopardize AF missions, this section may list specific goals and objectives aimed at eliminating, reducing or mitigating the effects of encroachment on military missions. These natural resources management goals for the future have been formulated by the preparers of the INRMP from an assessment of the natural resources, current condition of those resources, mission requirements, and management issues previously identified. Below are the integrated goals for the entire natural resources program.

The installation goals and objectives are displayed in the 'Installation Supplement' section below in a format that facilitates an integrated approach to natural resource management. By using this approach, measurable objectives can be used to assess the attainment of goals. Individual work tasks support INRMP objectives. The projects are key elements of the annual work plans and are programmed into the conservation budget, as applicable.

Installation Supplement – Management Goals and Objectives

GOAL 1: IMPLEMENT THE INRMP THROUGH COMPLIANCE WITH EXISTING LAWS WHILE ENSURING NO NET LOSS IN THE CAPABILITY OF INSTALLATION LANDS TO SUPPORT THE MILITARY MISSION.

- **OBJECTIVE 1.1**: Holistically evaluate natural resources decision making by complying with National Environmental Protection Act (NEPA) (40 CFR 1508.18(b) (2)) using the Environmental Impact Analysis Process (EIAP) (32CFR989); AFI 32-7064 (2.8). Manage natural resources in the most effective and cost efficient manner by complying with DODI 4715.3 (Enclosure 3 (1) (c), (1)(d), (3)(a), (3)(b)).
    - **Project 1.1.1**: Environmental compliance

      Implement the EIAP process to ensure full assessment of potential impacts to natural resources from all actions to include training and construction.

    - **Project 1.1.2**: Adaptive management

      As data and information are gathered, INRMP management practices will be adapted to utilize this new knowledge. In alternate years the project will: 1) survey 100 m transects of areas previously reseeded under the post-fire rehab project and invasive species projects and compare these areas to unaffected areas, and also compare areas treated

using different methodologies and seed mixes. A two-man team will survey for two-weeks and then produce a report. 2) Acquire satellite or aerial imagery at a sufficient resolution and frequency to facilitate remote sensing of vegetation on MHAFB, SAR, SCR, JBR, and ND-1. Purchase imagery with sufficient copyrights so that the AF can reanalyze the images at a later date using other methods. Suggested imagery specs: 7 meter resolution, 5 bands, <10% cloud cover, 16-bit radiometric resolution, and 5 different images taken during different seasons. Rights to distribute the images are not needed. Report the findings of the project to include detectable changes in vegetation, where historic data is available, and evaluate the effectiveness of vegetation treatment projects.

- **Project 1.1.3**: GIS data collection, storage and analysis.

  Manage and integrate environmental data in GeoBase. Collect data necessary for environmental management. Perform analyses that support INRMP implementation.

- **Project 1.1.4**: Implement conservation actions called for in the INRMP and coordinate conservation with stakeholders.

  Implement conservation actions in the INRMP including coordination with the Integrated Pest Management Plan, 366FW BASH Plan, 366FW CRP, 366FW Wildland Fire Management Plan, Bureau of Land Management, Idaho Department of Lands, and University Researchers.

- **OBJECTIVE 1.2**: Comply with Sikes Act (16USC670) Sec 101(a) (1) (B).
  - **Project 1.2.1**: INRMP annual review and update.

GOAL 2: PROTECT AND ENHANCE DESIRABLE WILDLIFE AND PLANT SPECIES AND THEIR HABITATS THAT PROVIDE FOR CURRENT AND FUTURE MISSIONS, INCLUDING ACTIONS TO ADDRESS INVASIVE SPECIES AND WILDLAND FIRE THROUGH USE OF ADAPTIVE MANAGEMENT.

- **OBJECTIVE 2.1**: Address negative impacts of invasive & noxious species by complying with Executive Order 13112; Federal Noxious Weed Law: 7USC2814 (a)(2); Idaho Statute Title 22 Chapter 24; DODI 4715.3 Enclosure 3 (1)(i), (3)(e) and by implementing the Integrated Pest Management Plan.

  - **Project 2.1.1**: Noxious weeds management

    Herbicide application to invasive species (cheatgrass) and state listed noxious weeds on MHAFB and SAR. Cheatgrass will be broadcast sprayed or biologically controlled, as appropriate. Identify and control of noxious weeds and cheatgrass using spot spray and broadcast herbicide application. Monitoring of treatment effectiveness will occur. Special attention will be given to areas with T&E and sensitive species (primarily Davis' peppergrass). Plan to treat 80 acres, 4 road miles, and monitor the treatments.

    Annual survey and herbicide application to invasive species locations on JBR, emitter sites (30), ROWs (81 miles), No Drop targets (5), and six (6) other properties. Weeds will be spot

sprayed, broadcast sprayed, mechanically controlled, or biologically controlled as appropriate (approximately 140 acres). Species to be treated include, but are not limited to, state listed noxious weeds (64 species) and cheatgrass. Special attention will be given to areas with T&E and sensitive species (primarily slickspot peppergrass and greater sage-grouse). Monitoring of treatment effectiveness will occur.

- **Project 2.1.2**: Annual grass management

  Cheatgrass will be broadcast sprayed or biologically controlled, as appropriate (~3200 acres). This project leverages labor, fuel, and equipment from the 757th AS/DOS from the 910th AW. The 757th use this project as a training mission. Using the 757th makes this project very cost effective. Identify and control of noxious weeds using spot spray and broadcast herbicide application (about 130 acres). Special attention will be given to areas with T&E and sensitive species (primarily greater sage-grouse).

- **Project 2.1.3**: Undeveloped and semi-improved land management

  Implement measures that reduce weeds and dust on MHAFB by planting healthy and resilient desirable vegetation on vacant lots and other degraded areas.

- **OBJECTIVE 2.2**: Assess raptors near AF facilities and comply with Settlement Agreement Section III(C)(2)(a), III(E)(2); ROD (2)(g) & (j); DODI 4715.3 Enclosure 3 (1)(g) & (h).

  - **Project 2.2.1**: Special status wildlife species assessment: raptors

    Conduct surveys for and establish habitat use of nesting raptors in Juniper Draw on JBR. Determine effects to raptors from Air Force operations through passive monitoring and radio/satellite telemetry. Consult with IDFG and BLM.

- **OBJECTIVE 2.3**: Implement policies and procedures to reduce the risk of ignition and spread of wildfire by implementing measures to manage vegetation in a manner that reduces the spread of wildfires and implement policies and procedures to maximally suppress wildfires after ignition. Comply with JBWA Sec 2908(e); Settlement agreement paragraphs III(D)(1).

  - **Project 2.3.1**: Wildland fire management plan implementation

  - **Project 3.2.1**: Fine fuel management with livestock grazing

- **OBJECTIVE 2.4**: Recover, maintain, or improve natural resources and comply with Public Land Order 1027 (1954); Settlement agreement paragraphs III(D)(2); DODI 4715.3 Enclosure 3 (3)(f).

  - **Project 2.4.1**: Post-fire rehabilitation with ground-based seeding and planting techniques

    Project will drill seed ~600 acres with an appropriate native seed mix. Herbicides may be used to reduce weedy competition with desirable seeded species. Project will also accomplish soil stabilization via placement of erosion control mats and silt fencing as required. Vegetation rehabilitation following wildfire is necessary to restore desired native vegetation and to prevent the encroachment of undesirable species into disturbed or burned areas. Project focuses on areas with T&E and sensitive species (primarily slickspot peppergrass and

greater sage-grouse) predominantly on Juniper Butte Range, the Saylor Creek Range, and various emitter sites.

- **Project 3.3.1**: Post-fire rehabilitation with aerial seeding techniques

- **OBJECTIVE 2.5**: Protect desirable wildlife species and their habitats from disturbance.

  - **Project 2.5.1**: Migratory bird management; Comply with the Migratory Bird Treaty Act.

    Survey for Burrowing Owls and other migratory birds before and during construction activities. Address migratory bird issues (nests and pests) at facilities.

  - **Project 2.5.2**: Special status wildlife species assessment: fairy shrimp, Davis' Peppergrass

    Assess as needed.

  - **Project 2.5.3**: Windbreaks, Urban Forestry

    Assess, inventory, and maintain trees on MHAFB. Provide for new plantings and perform maintenance as needed to serve as wind breaks, tumbleweed breaks, wildlife habitat, shade, dust control, and noise abatement.

  - **Project 2.5.4**: Protect special habitats

    Perform assessment, conservation, and management for the perpetuation of special habitats; specifically playas and sagebrush.

GOAL 3: PROTECT AND ENHANCE THREATENED AND ENDANGERED SPECIES AND THEIR HABITATS.

- **OBJECTIVE 3.1**: Identify and address potential impacts to slickspot peppergrass through habitat and population monitoring. Assess slickspot peppergrass population and AF management by complying with: Title 16 United States Code chapter 35 Endangered Species, Biological Opinion (14420-2010-F-0405, October 2010); Juniper Butte Range Withdrawal Act (Public Law 105-261, Sec 2907); ROD (3)(b).

  - **Project 3.1.1**: Slickspot peppergrass monitoring and management
  - **Project 3.1.2**: Weather station maintenance

- **OBJECTIVE 3.2**: Implement measures to provide for healthy and resilient desirable vegetation that provide for slickspot peppergrass. Comply with: Title 16 United States Code chapter 5C Section 670, the Sikes Act; Public Law 105-261, Sec 2907, Juniper Butte Range Withdrawal Act Sec 2909(a)(1)(B), Sec 2909(b)(2); ROD (1)(o); DODI 4715.3 Enclosure 3 (4)(a), (4)(e).

  - **Project 3.2.1**: Fine fuel management with livestock grazing

    Project accomplishes required monitoring to ensure proper grazing levels are not exceeded. Two-man team makes five trips to JBR (2 hrs one-way). First trip is to place twelve cages

over patches of grass to serve as controls (ungrazed status). Subsequent monitoring trips occur after cattle are moved between pastures. Each trip takes approximately 11 hrs to monitor ~3,800 acres. Each trip is 240 miles round-trip. Project includes preparation of annual report. Livestock grazing monitoring on JBR is required to preserve and protect slickspot peppergrass habitat.

- **Project 2.2.1**: Noxious weeds management

- **OBJECTIVE 3.3**: Implement measures to provide for healthy and resilient desirable vegetation that provide for greater sage-grouse. Assess raptor and sage-grouse near AF facilities by complying with Settlement Agreement Section III(C)(2)(a), III(E)(2); ROD (2)(g) & (j); DODI 4715.3 Enclosure 3 (1)(g) & (h).

  - **Project 3.3.1**: Post-fire rehabilitation with aerial seeding techniques

    Project will aerially seed ~5,450 acres with sagebrush seed via helicopter. Vegetation rehabilitation following wild fire is necessary to restore desired native vegetation and to prevent the encroachment of undesirable "weedy" species into disturbed or burned areas. Sagebrush is vital to the continuing existence of many obligate species such as the T&E species greater sage-grouse. In addition, seeding "weedy" areas caused by low germination or disturbances may be necessary to increase numbers of desirable species and reduce the risk of fire.

  - **Project 3.3.2**: Special status wildlife species assessment: greater sage-grouse

    Conduct surveys for and establish habitat use of greater sage-grouse around ETI components and on JBR. Determine effects to greater sage-grouse from ETI operations through passive monitoring and radio/satellite telemetry. Determine effects to greater sage-grouse from ETI operations. Consult with IDFG and BLM.

  - **Project 3.3.3**: Assess effects of aircraft noise on nesting greater sage-grouse

    Determine noise related effects to nesting greater sage-grouse from aircraft operations. Production of chicks is a limiting factor for greater sage-grouse populations. This project would assess nesting success of and stressors on hens in areas with and without low-flying aircraft.

- **OBJECTIVE 3.4**: Enhance slickspot peppergrass populations through development and implementation of cultivation/population enhancement/planting techniques.

  - **Project 3.4.1**: Slickspot peppergrass reintroduction study

    Develop and test methods for slickspot peppergrass reintroduction and propagation. This project could result in the ability to mitigate negative effects of military training on the species. Methods could contribute to species delisting.

GOAL 4: PROMOTE EDUCATION, AWARENESS, AND OPPORTUNTIES FOR CONSERVATION AND ENJOYMENT OF THE NATURAL RESOURCES OF AIR FORCE LANDS.

- **OBJECTIVE 4.1**: Plan, develop, and implement educational material to base personnel. Provide natural resource awareness training to active duty, DoD civilians, dependents, and contract workers on MHAFB to comply with the INRMP. Comply with Sikes Act (16USC670) Sec 103.

    - **Project 4.1.1**: Outreach

      Train base populous on natural resources issues through: CR/NR training, Earth Day, Arbor Day, Brown Bag Lectures, Kiosks, and FSS Outdoor Recreation.

9.0 INRMP IMPLEMENTATION, UPDATE, AND REVISION PROCESS

9.1 Natural Resources Management Staffing and Implementation

MHAFB's goals, objectives, and projects (***See Section 8.0*) are primarily carried out as duties and responsibilities of the Natural Resources staff. When possible, other organizations, contractors, and volunteers are utilized to supplement Natural Resources staff efforts. Efforts beyond the capabilities of the installation are carried forward as projects to AFCEC for inclusion in the five-year budget review.

As of 2019, MHAFB has 1 government position:

- GS-0401-12 BIOLOGICAL SCIENTIST (Natural Resources Program Manager)

To fully implement the goals and objectives of this INRMP and be able to adjust to significant changes in the MHAFB mission (in terms of types, tempo, and extent), additional resources beyond the capabilities of the current staff are needed. Given the size of MHAFB, the changing mission, and the complexities of natural resource management, the staffing deficiencies hindering INRMP implementation demand additional analysis. Requests are dependent on the availability of base resources, AFCEC resources/expertise, and funding.

The 366th CEIE is responsible for the planning and implementation of the INRMP. CEIE is responsible for coordination of the INRMP. The NRM is responsible for tracking its implementation. This is accomplished through INRMP coordination. Other evaluation mechanisms exist through the Environment, Safety, and Occupational Health Compliance Assessment and Management Program (ESOHCAMP).

INRMP implementation includes, but is not limited to, the following:

- Execute all "must fund" projects and activities in accordance with specific timeframes identified in the INRMP
- Ensure sufficient professionally trained natural resources management personnel are available to perform the tasks required by the INRMP
- Review the INRMP annually, update goals and objectives, and coordinate changes with regulators, as appropriate
- Document specific INRMP accomplishments undertaken each year

Supporting plans and organizations each have their own authority for budgeting and implementation. The NRM has the responsibility to review, provide input, and recommend changes to plans so they further the goals and objectives of the MHAFB INRMP. Overall implementation responsibility remains with the Installation Commander or designee.

9.2 Monitoring INRMP Implementation

Regular communications between MHAFB, USFWS, and IDFG will be established and maintained to address issues concerning implementation of the INRMP. At a minimum, this shall include an annual review of the INRMP by the installation in coordination with the USFWS and IDFG. The annual review will be certified by the installation commander, or designee. The annual review will verify that:

- An updated project list does not necessitate revising the INRMP if the goals and objectives remain unchanged.
- All required coordination with the USFWS and state fish and wildlife agency have occurred.
- Any significant changes to the installation's mission requirements or its natural resources have been identified.

Annually, the INRMP will be reviewed by the ESOHC planning subcommittee and results briefed at the ESOHC. The plan will be forwarded to the USFWS and the IDFG for review and comment. Once this review is completed, AFCEC/CZOW will be notified of the review and any changes made to the INRMP.

Environmental Chief will brief the Planning Subcommittee annually or as needed on the INRMP programs and projects implemented and status if projects are on-going.

9.3 Annual INRMP Review and Update Requirements

Integrated natural resource management and planning is an ongoing process at MHAFB. This INRMP serves as a reference document and management tool that is expected to evolve as mission requirements, environmental and regulatory conditions, and natural resources management programs and initiatives evolve.

MHAFB is committed to frequent document reviews to monitor progress of planned action implementation, adjust where necessary and ensure the continued usefulness of this plan. The involvement of a cross section of land users and managers and resource agencies in the ongoing development, reviewand implementation of this INRMP also helps ensure the continued integration and coordination of natural resources management programs with other base and regional plans, programs and decision making processes.

10.0 ANNUAL WORK PLANS

The INRMP Annual Work Plans are included in this section. These projects are listed by fiscal year, including the current year and four succeeding years. For each project and activity, a specific timeframe for implementation is provided (as applicable), as well as the appropriate funding source, and priority for implementation. The work plans provide all the necessary information for building a budget within the AF framework. Priorities are defined as follows:

- High: The INRMP signatories assert that if the project is not funded the INRMP is not being implemented and the Air Force is non-compliant with the Sikes Act; or that it is specifically tied to an INRMP goal and objective and is part of a "Benefit of the Species" determination necessary for ESA Sec 4(a)(3)(B)(i) critical habitat exemption.

- Medium: Project supports a specific INRMP goal and objective, and is deemed by INRMP signatories to be important for preventing non-compliance with a specific requirement within a natural resources law or by EO 13112 on Invasive Species. However, the INRMP signatories would not contend that the INRMP is not be implemented if not accomplished within programmed year due to other priorities.

- Low: Project supports a specific INRMP goal and objective, enhances conservation resources or the integrity of the installation mission, and/or support long-term compliance with specific requirements within natural resources law; but is not directly tied to specific compliance within the proposed year of execution.

Annual Work Plans 2017	**OPR**	**Funding Source**	**Priority Level**
Project 1.1.1: Environmental compliance	MHAFB	In-House, QYZH177635	High
Project 1.1.2: Adaptive management	MHAFB	QYZH661417,	Medium
Project 1.1.3: GIS data collection, storage and analysis	MHAFB	In-House, QYZH177635	Medium
Project 1.1.4: Implement conservation actions called for in the INRMP and coordinate conservation with stakeholders	MHAFB	QYZH177635, QYZH176636, QYZH176648	Medium
Project 1.2.1: INRMP annual review and update	MHAFB	In-House	High
Project 2.1.1: Noxious weeds management	MHAFB	GGWR176644, QYZH664417	High
Project 2.1.2: Annual grass management	MHAFB	VAPM666217	Medium
Project 2.1.3: Undeveloped and semi-improved land management	MHAFB	In-House, QYZH177635	Low
Project 2.1.1: Special status wildlife species assessment: raptors	AFCEC/MHAFB	QYZH176646	Medium
Project 2.3.1: Wildland fire management plan implementation	AFCEC/MHAFB	In-House and ISSA 100010-07188-001	Medium
Project 2.4.1: Post-fire rehabilitation with ground-based seeding and planting techniques	MHAFB	QYZH166617	Medium

Project 2.5.1: Migratory bird management; Comply with the Migratory Bird Treaty Act.	MHAFB	In-House, QYZH176646	Medium
Project 2.5.2: Special status wildlife species assessment: fairy shrimp, Davis peppergrass	MHAFB	In-House, QYZH177635, QYZH176636, QYZH176648	Low
Project 2.5.3: Windbreaks, Urban Forestry	MHAFB	TBD	Low
Annual Work Plans 2017	**OPR**	**Funding Source**	**Priority Level**
Project 2.5.4: Protect special habitats	MHAFB	In-House, QYZH177635	Medium
Project 3.1.1: Slickspot peppergrass monitoring and management	MHAFB	QYZH666117,	High
Project 3.1.2: Weather station maintenance	MHAFB	In-House, QYZH177635, QYZH176636, QYZH176648	Medium
Project 3.2.1: Fine fuel management with livestock grazing	MHAFB	QYZH176647	Medium
Project 3.3.1: Post-fire rehabilitation with aerial seeding techniques	MHAFB	QYZH166617	Medium
Project 3.3.2: Special status wildlife species assessment: greater sage-grouse	MHAFB	QYZH176646	Medium
Project 3.3.3: Assess effects of aircraft noise on nesting greater sage-grouse	MHAFB	GGWR176674	Medium
Project 3.4.1: Slickspot peppergrass reintroduction study	MHAFB	GGWR176675	Medium
Project 4.1.1: Outreach	MHAFB	QYZH176764	Medium

Annual Work Plan 2018	OPR	Funding Source	Priority Level
Project 1.1.1: Environmental compliance	MHAFB	In-House, QYZH187635	High
Project 1.1.2: Adaptive management	MHAFB	QYZH661418,	Medium
Project 1.1.3: GIS data collection, storage and analysis	MHAFB	In-House, QYZH187635	Medium
Project 1.1.4: Implement conservation actions called for in the INRMP and coordinate conservation with stakeholders	MHAFB	QYZH187635, QYZH186636, QYZH186648	Medium
Project 1.2.1: INRMP annual review and update	MHAFB	In-House	High
Project 2.1.1: Noxious weeds management	MHAFB	GGWR186644, QYZH664418	High
Project 2.1.2: Annual grass management	MHAFB	VAPM666218	Medium
Project 2.1.3: Undeveloped and semi-improved land management	MHAFB	In-House, QYZH187635	Low
Project 2.1.1: Special status wildlife species assessment: raptors	MHAFB	QYZH186646	Medium
Project 2.3.1: Wildland fire management plan implementation	MHAFB	In-House and ISSA 100010-07188-001	Medium
Project 2.4.1: Post-fire rehabilitation with ground-based seeding and planting techniques	MHAFB	QYZH166618	Medium
Project 2.5.1: Migratory bird management; Comply with the Migratory Bird Treaty Act.	MHAFB	In-House, QYZH876646	Medium
Project 2.5.2: Special status wildlife species assessment: fairy shrimp, Davis peppergrass	MHAFB	In-House, QYZH187635, QYZH186636, QYZH186648	Low
Project 2.5.3: Windbreaks, Urban Forestry	MHAFB	TBD	Low

Annual Work Plan 2018	OPR	Funding Source	Priority Level
Project 2.5.4: Protect special habitats	MHAFB	In-House, QYZH187635	Medium
Project 3.1.1: Slickspot peppergrass monitoring and management	MHAFB	QYZH666118,	High
Project 3.1.2: Weather station maintenance	MHAFB	In-House, QYZH187635, QYZH186636, QYZH186648	Medium
Project 3.2.1: Fine fuel management with livestock grazing	MHAFB	QYZH186647	Medium
Project 3.3.1: Post-fire rehabilitation with aerial seeding techniques	MHAFB	QYZH166618	Medium
Project 3.3.2: Special status wildlife species assessment: greater sage-grouse	MHAFB	QYZH186646	Medium
Project 3.3.3: Assess effects of aircraft noise on nesting greater sage-grouse	MHAFB	GGWR186674	Medium
Project 3.4.1: Slickspot peppergrass reintroduction study	MHAFB	GGWR186675	Medium
Project 4.1.1: Outreach	MHAFB	QYZH186764	Medium

Annual Work Plan 2019	OPR	Funding Source	Priority Level
Project 1.1.1: Environmental compliance	MHAFB	In-House, QYZH197635	High
Project 1.1.2: Adaptive management	MHAFB	QYZH661419,	Medium
Project 1.1.3: GIS data collection, storage and analysis	MHAFB	In-House, QYZH197635	Medium
Project 1.1.4: Implement conservation actions called for in the INRMP and coordinate conservation with stakeholders	MHAFB	QYZH197635, QYZH196636, QYZH196648	Medium
Project 1.2.1: INRMP annual review and update	MHAFB	In-House	High
Project 2.1.1: Noxious weeds management	MHAFB	GGWR196644, QYZH664419	High
Project 2.1.2: Annual grass management	MHAFB	VAPM666219	Medium
Project 2.1.3: Undeveloped and semi-improved land management	MHAFB	In-House, QYZH197635	Low
Project 2.1.1: Special status wildlife species assessment: raptors	MHAFB	QYZH196646	Medium
Project 2.3.1: Wildland fire management plan implementation	MHAFB	In-House and ISSA 100010-07188-001	Medium
Project 2.4.1: Post-fire rehabilitation with ground-based seeding and planting techniques	MHAFB	QYZH166619	Medium
Project 2.5.1: Migratory bird management; Comply with the Migratory Bird Treaty Act.	MHAFB	In-House, QYZH196646	Medium
Project 2.5.2: Special status wildlife species assessment: fairy shrimp, Davis peppergrass	MHAFB	In-House, QYZH197635, QYZH196636, QYZH196648	Low
Project 2.5.3: Windbreaks, Urban Forestry	MHAFB	TBD	Low

Annual Work Plan 2019	OPR	Funding Source	Priority Level
Project 2.5.4: Protect special habitats	MHAFB	In-House, QYZH197635	Medium
Project 3.1.1: Slickspot peppergrass monitoring and management	MHAFB	QYZH666119,	High
Project 3.1.2: Weather station maintenance	MHAFB	In-House, QYZH197635, QYZH196636, QYZH196648	Medium
Project 3.2.1: Fine fuel management with livestock grazing	MHAFB	QYZH196647	Medium
Project 3.3.1: Post-fire rehabilitation with aerial seeding techniques	MHAFB	QYZH166619	Medium
Project 3.3.2: Special status wildlife species assessment: greater sage-grouse	MHAFB	QYZH196646	Medium
Project 3.3.3: Assess effects of aircraft noise on nesting greater sage-grouse	MHAFB	GGWR196674	Medium
Project 3.4.1: Slickspot peppergrass reintroduction study	MHAFB	GGWR196675	Medium
Project 4.1.1: Outreach	MHAFB	QYZH196764	Medium

Annual Work Plan 2020	OPR	Funding Source	Priority Level
Project 1.1.1: Environmental compliance	MHAFB	In-House, QYZH207635	High
Project 1.1.2: Adaptive management	MHAFB	QYZH661420,	Medium
Project 1.1.3: GIS data collection, storage and analysis	MHAFB	In-House, QYZH207635	Medium
Project 1.1.4: Implement conservation actions called for in the INRMP and coordinate conservation with stakeholders	MHAFB	QYZH207635, QYZH206636, QYZH206648	Medium
Project 1.2.1: INRMP annual review and update	MHAFB	In-House	High
Project 2.1.1: Noxious weeds management	MHAFB	GGWR206644, QYZH664420	High
Project 2.1.2: Annual grass management	MHAFB	VAPM666220	Medium
Project 2.1.3: Undeveloped and semi-improved land management	MHAFB	In-House, QYZH207635	Low
Project 2.1.1: Special status wildlife species assessment: raptors	MHAFB	QYZH206646	Medium
Project 2.3.1: Wildland fire management plan implementation	MHAFB	In-House and ISSA 100010-07188-001	Medium
Project 2.4.1: Post-fire rehabilitation with ground-based seeding and planting techniques	MHAFB	QYZH206617	Medium
Project 2.5.1: Migratory bird management; Comply with the Migratory Bird Treaty Act.	MHAFB	In-House, QYZH206646	Medium
Project 2.5.2: Special status wildlife species assessment: fairy shrimp, Davis peppergrass	MHAFB	In-House, QYZH207635, QYZH206636, QYZH206648	Low
Project 2.5.3: Windbreaks, Urban Forestry	MHAFB	TBD	Low

Annual Work Plan 2020	OPR	Funding Source	Priority Level
Project 2.5.4: Protect special habitats	MHAFB	In-House, QYZH207635	Medium
Project 3.1.1: Slickspot peppergrass monitoring and management	MHAFB	QYZH666120,	High
Project 3.1.2: Weather station maintenance	MHAFB	In-House, QYZH207635, QYZH206636, QYZH206648	Medium
Project 3.2.1: Fine fuel management with livestock grazing	MHAFB	QYZH206647	Medium
Project 3.3.1: Post-fire rehabilitation with aerial seeding techniques	MHAFB	QYZH166620	Medium
Project 3.3.2: Special status wildlife species assessment: greater sage-grouse	MHAFB	QYZH206646	Medium
Project 3.3.3: Assess effects of aircraft noise on nesting greater sage-grouse	MHAFB	GGWR206674	Medium
Project 3.4.1: Slickspot peppergrass reintroduction study	MHAFB	GGWR206675	Medium
Project 4.1.1: Outreach	MHAFB	QYZH206764	Medium

Annual Work Plan 2021	OPR	Funding Source	Priority Level
Project 1.1.1: Environmental compliance	MHAFB	In-House, QYZH217635	High
Project 1.1.2: Adaptive management	MHAFB	QYZH661421,	Medium
Project 1.1.3: GIS data collection, storage and analysis	MHAFB	In-House, QYZH217635	Medium
Project 1.1.4: Implement conservation actions called for in the INRMP and coordinate conservation with stakeholders	MHAFB	QYZH217635, QYZH216636, QYZH216648	Medium
Project 1.2.1: INRMP annual review and update	MHAFB	In-House	High
Project 2.1.1: Noxious weeds management	MHAFB	GGWR216644, QYZH664421	High
Project 2.1.2: Annual grass management	MHAFB	VAPM666221	Medium
Project 2.1.3: Undeveloped and semi-improved land management	MHAFB	In-House, QYZH217635	Low
Project 2.1.1: Special status wildlife species assessment: raptors	MHAFB	QYZH216646	Medium
Project 2.3.1: Wildland fire management plan implementation	MHAFB	In-House and ISSA 100010-07188-001	Medium
Project 2.4.1: Post-fire rehabilitation with ground-based seeding and planting techniques	MHAFB	QYZH166621	Medium
Project 2.5.1: Migratory bird management; Comply with the Migratory Bird Treaty Act.	MHAFB	In-House, QYZH216646	Medium
Project 2.5.2: Special status wildlife species assessment: fairy shrimp, Davis peppergrass	MHAFB	In-House, QYZH217635, QYZH216636, QYZH216648	Low
Project 2.5.3: Windbreaks, Urban Forestry	MHAFB	TBD	Low

Annual Work Plan 2021	OPR	Funding Source	Priority Level
Project 2.5.4: Protect special habitats	MHAFB	In-House, QYZH217635	Medium
Project 3.1.1: Slickspot peppergrass monitoring and management	MHAFB	QYZH666121,	High
Project 3.1.2: Weather station maintenance	MHAFB	In-House, QYZH217635, QYZH216636, QYZH216648	Medium
Project 3.2.1: Fine fuel management with livestock grazing	MHAFB	QYZH216647	Medium
Project 3.3.1: Post-fire rehabilitation with aerial seeding techniques	MHAFB	QYZH166621	Medium
Project 3.3.2: Special status wildlife species assessment: greater sage-grouse	MHAFB	QYZH216646	Medium
Project 3.3.3: Assess effects of aircraft noise on nesting greater sage-grouse	MHAFB	GGWR216674	Medium
Project 3.4.1: Slickspot peppergrass reintroduction study	MHAFB	GGWR216675	Medium
Project 4.1.1: Outreach	MHAFB	QYZH216764	Medium

11.0 REFERENCES

11.1 Standard References *(Applicable to all AF installations)*

- AFI 32-7064, *Integrated Natural Resources Management*
- Sikes Act
- eDASH Natural Resources Program Page
- Natural Resources Playbook – a Internal AF reference available at https://cs2.eis.af.mil/sites/10624/MtHome/_layouts/15/start.aspx#/SitePages/Home.aspx

11.2 Installation References

- MHAFB WFMP(see section 15, Tab 1)
- MHAFB Bird/ BASH Plan (see section 15, Tab 2)
- MHAFB ICRMP (see section 15, Tab 4)
- MHAFB IPMP (see section 15, Tab 5)
- MHAFB CRP
- MHAFB General Plan
- AICUZ Study
- MHAFBI 32-7003, Range Standard Operating Procedures
- Mountain Home Air Force Reseeding Manual
- Tree City USA MHAFB Community Tree Ordinance
- MHAFB Urban Forestry Management Plan Survey Report

12.0 ACRONYMS

12.1 Standard Acronyms *(Applicable to all AF installations)*

- eDASH Acronym Library
- Natural Resources Playbook – Acronym Section
- U.S. EPA Terms & Acronyms

12.2 Installation Acronyms

- **ACEC** – Area of Critical Environmental Concern
- **AUM** – Animal Unit Months
- **BDU** – Bomb Dummy Units
- **BLM** – Bureau of Land Management
- **C.J. SDRA** – C.J. Strike Dam Recreation Annex
- **CWA** – Clean Water Act
- **EOD** – Explosive Ordnance Disposal
- **EPA** – Environmental Protection Agency
- **ERP** – Environmental Restoration Program
- **ESA** – Endangered Species Act
- **ESOHC** – Environmental, Safety, & Occupational Health Committee
- **ETI** – Enhanced Training in Idaho
- **FMZ** – Fire Management Zone
- **FONSI** – Finding of No Significant Impact
- **ISDD** – Idaho Species Diversity Database

- **IDANG** – Idaho Air National Guard
- **IDAPA** – Idaho Administrative Procedures Act
- **IDARNG** – Idaho Army National Guard
- **IDEQ** – Idaho Department of Environmental Quality
- **IDFG** – Idaho Department of Fish and Game
- **JBR** – Juniper Butte Range
- **JBWA** – Juniper Butte Withdrawal Act of 1998
- **LEPA** – *Lepidium papilliferum* (slickspot peppergrass)
- **MBTA** - Migratory Bird Treaty Act
- **MHAFB** – Mountain Home Air Force Base
- **MHAFBI** – Mountain Home Air Force Base Instruction
- **MHRC** – Mountain Home Range Complex
- **MOU** – Memorandum of Understanding
- **NCA** – Morley Nelson Snake River Birds of Prey National Conservation Area
- **ND** – No-Drop
- **NEPA** – National Environmental Policy Act
- **NRCS** – Natural Resources Conservation Service
- **O&M** – Operations and Maintenance
- **PLO** – Public Land Order
- **ROD** – Record of Decision
- **ROW** – Right-of-Way
- **RSAF** – Republic of Singapore Air Force
- **RTS** – Remote Training Site
- **SA** – Settlement Agreement
- **SAR** – Small Arms Range
- **SCR** – Saylor Creek Range
- **SROD** – Supplemental Record of Decision
- **T&E** – Threatened and Endangered
- **USFS** – United States Forest Service
- **USFWS** – United States Fish and Wildlife Service
- **USGS** - United States Geological Survey
- **UXO** – Unexploded Ordnance
- **WWTP** – Waste Water Treatment Plant

13.0 DEFINITIONS

13.1 Standard Definitions (Applicable to all AF installations)

- Natural Resources Playbook – Definitions Section

13.2 Installation Definitions

- **Firebreak** – A strip of bare soil that may act to slow or stop the progress of fire.
- **Fuelbreak** – A strip or block of vegetation that has been altered to slow or stop the progress of fire

14.0 APPENDICES

Appendix A. Annotated Summary of Key Legislation Related to Design and Implementation of the INRMP

Federal Public Laws and Executive Orders	
National Defense Authorization Act of 1989, Public Law (P.L.) 101-189; Volunteer Partnership Cost-Share Program	Amends two Acts and establishes volunteer and partnership programs for natural and cultural resources management on DoD lands.
Defense Appropriations Act of 1991, P.L. 101-511; Legacy Resource Management Program	Establishes the "Legacy Resource Management Program" for natural and cultural resources. Program emphasis is on inventory and stewardship responsibilities of biological, geophysical, cultural, and historic resources on DoD lands, including restoration of degraded or altered habitats.
EO 11514, Protection and Enhancement of Environmental Quality	Federal agencies shall initiate measures needed to direct their policies, plans, and programs to meet national environmental goals. They shall monitor, evaluate, and control agency activities to protect and enhance the quality of the environment.
EO 11593, Protection and Enhancement of the Cultural Environment	All Federal agencies are required to locate, identify, and record all cultural resources. Cultural resources include sites of archaeological, historical, or architectural significance.
EO 11987, Exotic Organisms	Agencies shall restrict the introduction of exotic species into the natural ecosystems on lands and waters which they administer.
EO 11988, Floodplain Management	Provides direction regarding actions of Federal agencies in floodplains, and requires permits from state, territory and Federal review agencies for any construction within a 100-year floodplain and to restore and preserve the natural and beneficial values served by floodplains in carrying out its responsibilities for acquiring, managing and disposing of Federal lands and facilities.

EO 11989, Off-Road vehicles on Public Lands	Installations permitting off-road vehicles to designate and mark specific areas/trails to minimize damage and conflicts, publish information including maps, and monitor the effects of their use. Installations may close areas if adverse effects on natural, cultural, or historic resources are observed.
EO 11990, Protection of Wetlands	Requires Federal agencies to avoid undertaking or providing assistance for new construction in wetlands unless there is no practicable alternative, and all practicable measures to minimize harm to wetlands have been implemented and to preserve and enhance the natural and beneficial values of wetlands in carrying out the agency's responsibilities for (1) acquiring, managing, and disposing of Federal lands and facilities; and (2) providing Federally undertaken, financed, or assisted construction and improvements; and (3) conducting Federal activities and programs affecting land use, including but not limited to water and related land resources planning, regulating, and licensing activities.
EO 12088, Federal Compliance With Pollution Control Standards	This EO delegates responsibility to the head of each executive agency for ensuring all necessary actions are taken for the prevention, control, and abatement of environmental pollution. This order gives the U.S. Environmental Protection Agency (US EPA) authority to conduct reviews and inspections to monitor Federal facility compliance with pollution control standards.
EO 12898, Environmental Justice	This EO requires certain federal agencies, including the DoD, to the greatest extent practicable permitted by law, to make environmental justice part of their missions by identifying and addressing disproportionately high and adverse health or environmental effects on minority and low-income populations.
EO 13112, Exotic and Invasive Species	To prevent the introduction of invasive species and provide for their control and to minimize the economic, ecological, and human health impacts that invasive species cause.

EO 13186, Responsibilities of Federal Agencies to Protect Migratory Birds	The U.S. Fish and Wildlife Service (USFWS) has the responsibility to administer, oversee, and enforce the conservation provisions of the Migratory Bird Treaty Act, which includes responsibility for population management (e.g., monitoring), habitat protection (e.g., acquisition, enhancement, and modification), international coordination, and regulations development and enforcement.
United States Code	
Animal Damage Control Act (7 U.S.C. § 426-426b, 47 Stat. 1468)	Provides authority to the Secretary of Agriculture for investigation and control of mammalian predators, rodents, and birds. DoD installations may enter into cooperative agreements to conduct animal control projects.
Bald and Golden Eagle Protection Act of 1940, as amended; 16 U.S.C. 668-668c	This law provides for the protection of the bald eagle (the national emblem) and the golden eagle by prohibiting, except under certain specified conditions, the taking, possession and commerce of such birds. The 1972 amendments increased penalties for violating provisions of the Act or regulations issued pursuant thereto and strengthened other enforcement measures. Rewards are provided for information leading to arrest and conviction for violation of the Act.
Clean Air Act, (42 U.S.C. § 7401– 7671q, July 14, 1955, as amended)	This Act, as amended, is known as the Clean Air Act of 1970. The amendments made in 1970 established the core of the clean air program. The primary objective is to establish Federal standards for air pollutants. It is designed to improve air quality in areas of the country which do not meet Federal standards and to prevent significant deterioration in areas where air quality exceeds those standards.
Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980 (Superfund) (26	Authorizes and administers a program to assess damage, respond to releases of hazardous substances, fund cleanup, establish clean-up standards, assign liability, and other efforts to address environmental

U.S.C. § 4611–4682, P.L. 96-510, 94 Stat. 2797), as amended	contaminants. Installation Restoration Program guides cleanups at DoD installations.
Endangered Species Act (ESA) of 1973, as amended; P.L. 93-205, 16 U.S.C. § 1531 et seq.	Protects threatened, endangered, and candidate species of fish, wildlife, and plants and their designated critical habitats. Under this law, no Federal action is allowed to jeopardize the continued existence of an endangered or threatened species. The ESA requires consultation with the USFWS and the NOAA Fisheries (National Marine Fisheries Service) and the preparation of a biological evaluation or a biological assessment may be required when such species are present in an area affected by government activities.
Federal Aid in Wildlife Restoration Act of 1937 (16 U.S.C. § 669–669i; 50 Stat. 917) (Pittman-Robertson Act)	Provides Federal aid to states and territories for management and restoration of wildlife. Fund derives from sports tax on arms and ammunition. Projects include acquisition of wildlife habitat, wildlife research surveys, development of access facilities, and hunter education.
Federal Environmental Pesticide Act of 1972	Requires installations to ensure pesticides are used only in accordance with their label registrations and restricted-use pesticides are applied only by certified applicators.
Federal Land Use Policy and Management Act, 43 U.S.C. § 1701–1782	Requires management of public lands to protect the quality of scientific, scenic, historical, ecological, environmental, and archaeological resources and values; as well as to preserve and protect certain lands in their natural condition for fish and wildlife habitat. This Act also requires consideration of commodity production such as timbering.
Federal Noxious Weed Act of 1974, 7 U.S.C. § 2801–2814	The Act provides for the control and management of non-indigenous weeds that injure or have the potential to injure the interests of agriculture and commerce, wildlife resources, or the public health.
Federal Water Pollution Control Act (Clean Water Act [CWA]), 33	The CWA is a comprehensive statute aimed at restoring and maintaining the chemical, physical, and biological integrity of the

U.S.C. §1251–1387	nation's waters. Primary authority for the implementation and enforcement rests with the US EPA.
Fish and Wildlife Conservation Act (16 U.S.C. § 2901–2911; 94 Stat. 1322, PL 96-366)	Installations encouraged to use their authority to conserve and promote conservation of nongame fish and wildlife in their habitats.
Fish and Wildlife Coordination Act (16 U.S.C. § 661 et seq.)	Directs installations to consult with the USFWS, or state or territorial agencies to ascertain means to protect fish and wildlife resources related to actions resulting in the control or structural modification of any natural stream or body of water. Includes provisions for mitigation and reporting.
Lacey Act of 1900 (16 U.S.C. § 701, 702, 32 Stat. 187, 32 Stat. 285)	Prohibits the importation of wild animals or birds or parts thereof, taken, possessed, or exported in violation of the laws of the country or territory of origin. Provides enforcement and penalties for violation of wildlife related Acts or regulations.
Leases: Non-excess Property of Military Departments, 10 U.S.C. § 2667, as amended	Authorizes DoD to lease to commercial enterprises Federal land not currently needed for public use. Covers agricultural outleasing program.
Migratory Bird Treaty Act 16 U.S.C. § 703–712	The Act implements various treaties for the protection of migratory birds. Under the Act, taking, killing, or possessing migratory birds is unlawful without a valid permit.
National Environmental Policy Act of 1969 (NEPA), as amended; P.L. 91-190, 42 U.S.C. § 4321 et seq.	Requires Federal agencies to utilize a systematic approach when assessing environmental impacts of government activities. Establishes the use of environmental impact statements. NEPA proposes an interdisciplinary approach in a decision-making process designed to identify unacceptable or unnecessary impacts on the environment. The Council of Environmental Quality (CEQ) created Regulations for Implementing the National Environmental Policy Act [40 Code of Federal Regulations (CFR) Parts 1500– 1508], which provide

	regulations applicable to and binding on all Federal agencies for implementing the procedural provisions of NEPA, as amended.
National Historic Preservation Act, 16 U.S.C. § 470 et seq.	Requires Federal agencies to take account of the effect of any federally assisted undertaking or licensing on any district, site, building, structure, or object included in or eligible for inclusion in the National Register of Historic Places (NRHP). Provides for the nomination, identification (through listing on the NRHP), and protection of historical and cultural properties of significance.
National Trails Systems Act (16 U.S.C. § 1241–1249)	Provides for the establishment of recreation and scenic trails.
National Wildlife Refuge Acts	Provides for establishment of National Wildlife Refuges through purchase, land transfer, donation, cooperative agreements, and other means.
National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. § 668dd–668ee)	Provides guidelines and instructions for the administration of Wildlife Refuges and other conservation areas.
Native American Graves Protection and Repatriation Act of 1990 (25 U.S.C. § 3001–13; 104 Stat. 3042), as amended	Established requirements for the treatment of Native American human remains and sacred or cultural objects found on Federal lands. Includes requirements on inventory, and notification.
Rivers and Harbors Act of 1899 (33 U.S.C. § 401 et seq.)	Makes it unlawful for the USAF to conduct any work or activity in navigable waters of the United States without a Federal Permit. Installations should coordinate with the U.S. Army Corps of Engineers (USACE) to obtain permits for the discharge of refuse affecting navigable waters under National Pollutant Discharge Elimination System (NPDES) and should coordinate with the USFWS to review

	effects on fish and wildlife of work and activities to be undertaken as permitted by the USACE.
Sale of certain interests in land, 10 U.S.C. § 2665	Authorizes sale of forest products and reimbursement of the costs of management of forest resources.
Soil and Water Conservation Act (16 U.S.C. § 2001, P.L. 95-193)	Installations shall coordinate with the Secretary of Agriculture to appraise, on a continual basis, soil/water-related resources. Installations will develop and update a program for furthering the conservation, protection, and enhancement of these resources consistent with other Federal and local programs.
Sikes Act (16 U.S.C. § 670a–670l, 74 Stat. 1052), as amended	Provides for the cooperation of DoD, the Departments of the Interior (USFWS), and the State Fish and Game Department in planning, developing, and maintaining fish and wildlife resources on a military installation. Requires development of an Integrated Natural Resources Management Plan and public access to natural resources, and allows collection of nominal hunting and fishing fees. NOTE: AFI 32-7064 sec 3.9. Staffing. As defined in DoDI 4715.03, use professionally trained natural resources management personnel with a degree in the natural sciences to develop and implement the installation INRMP. (T-0). 3.9.1. Outsourcing Natural Resources Management. As stipulated in the Sikes Act, 16 U.S.C. § 670 et. seq., the Office of Management and Budget Circular No. A-76, Performance of Commercial Activities, August 4, 1983 (Revised May 29, 2003) does not apply to the development, implementation and enforcement of INRMPs. Activities that require the exercise of discretion in making decisions regarding the management and disposition of government owned natural resources are inherently governmental. When it is not practicable to utilize DoD personnel to perform inherently governmental natural resources management duties, obtain these services from federal agencies having responsibilities for the conservation and management of natural resources.

DoD Policy, Directives, and Instructions	
DoD Instruction 4150.07 DoD Pest Management Program dated 29 May 2008	Implements policy, assigns responsibilities, and prescribes procedures for the DoD Integrated Pest Management Program.
DoD Instruction 4715.1, Environmental Security	Establishes policy for protecting, preserving, and (when required) restoring and enhancing the quality of the environment. This instruction also ensures environmental factors are integrated into DoD decision-making processes that could impact the environment, and are given appropriate consideration along with other relevant factors.
DoD Instruction (DODI) 4715.03, Natural Resources Conservation Program	Implements policy, assigns responsibility, and prescribes procedures under DoDI 4715.1 for the integrated management of natural and cultural resources on property under DoD control.
OSD Policy Memorandum – 17 May 2005 – Implementation of Sikes Act Improvement Amendments: Supplemental Guidance Concerning Leased Lands	Provides supplemental guidance for implementing the requirements of the Sikes Act in a consistent manner throughout DoD. The guidance covers lands occupied by tenants or lessees or being used by others pursuant to a permit, license, right of way, or any other form of permission. INRMPs must address the resource management on all lands for which the subject installation has real property accountability, including leased lands. Installation commanders may require tenants to accept responsibility for performing appropriate natural resource management actions as a condition of their occupancy or use, but this does not preclude the requirement to address the natural resource management needs of these lands in the installation INRMP.
OSD Policy Memorandum – 1 November 2004 – Implementation of Sikes Act Improvement Act Amendments: Supplemental Guidance Concerning INRMP Reviews	Emphasizes implementing and improving the overall INRMP coordination process. Provides policy on scope of INRMP review, and public comment on INRMP review.

OSD Policy Memorandum – 10 October 2002 – Implementation of Sikes Act Improvement Act: Updated Guidance	Provides guidance for implementing the requirements of the Sikes Act in a consistent manner throughout DoD and replaces the 21 September 1998 guidance Implementation of the Sikes Act Improvement Amendments. Emphasizes implementing and improving the overall INRMP coordination process and focuses on coordinating with stakeholders, reporting requirements and metrics, budgeting for INRMP projects, using the INRMP as a substitute for critical habitat designation, supporting military training and testing needs, and facilitating the INRMP review process.
USAF Instructions and Directives	
32 CFR Part 989, as amended, and AFI 32-7061, Environmental Impact Analysis Process	Provides guidance and responsibilities in the EIAP for implementing INRMPs. Implementation of an INRMP constitutes a major federal action and therefore is subject to evaluation through an Environmental Assessment or an Environmental Impact Statement.
AFI 32-7062, Air Force Comprehensive Planning	Provides guidance and responsibilities related to the USAF comprehensive planning process on all USAF-controlled lands.
AFI 32-7064, Integrated Natural Resources Management	Implements AFPD 32-70, Environmental Quality; DODI 4715.03, Natural Resources Conservation Program; and DODI 7310.5, Accounting for Sale of Forest Products. It explains how to manage natural resources on USAF property in compliance with Federal, state, territorial, and local standards.
AFI 32-7065, Cultural Resources Management	This instruction implements AFPD 32-70 and DoDI 4710.1, Archaeological and Historic Resources Management. It explains how to manage cultural resources on USAF property in compliance with Federal, state, territorial, and local standards.
AFPD 32-70, Environmental Quality	Outlines the USAF mission to achieve and maintain environmental quality on all USAF lands by cleaning up environmental damage resulting from past activities, meeting all environmental standards applicable to present operations, planning its future activities to minimize environmental impacts, managing responsibly the

	irreplaceable natural and cultural resources it holds in public trust and eliminating pollution from its activities wherever possible. AFPD 32-70 also establishes policies to carry out these objectives.
Policy Memo for Implementation of Sikes Act Improvement Amendments, HQ USAF Environmental Office (USAF/ILEV) on January 29, 1999	Outlines the USAF interpretation and explanation of the Sikes Act and Improvement Act of 1997.

Appendix B Surveys

The following reports and surveys are found on the 366 FW network drive:

\\gyzh-fs-01pv\MountainHome_366FW_MDG_WS\A6-7\A7I- Installation Management

X

- Environmental\Natural

Grazing Monitoring

- 2001 Juniper Butte Range Grazing
- 2002 Juniper Butte Range Grazing
- 2003 Juniper Butte Range Grazing
- 2004 Juniper Butte Range Grazing
- 2005 Juniper Butte Range Grazing
- 2006 Juniper Butte Range Grazing
- 2007 Juniper Butte Range Grazing
- 2008 Juniper Butte Range Grazing
- 2009 Juniper Butte Range Grazing
- 2010 Juniper Butte Range Grazing
- 2011 Juniper Butte Range Grazing
- 2012 Juniper Butte Range Grazing
- 2013 Juniper Butte Range Grazing
- 2014 Juniper Butte Range Grazing
- 2015 Juniper Butte Range Grazing
- 2016 Juniper Butte Range Grazing
- 2017 Juniper Butte Range Grazing
- 2018 Juniper Butte Range Grazing

Slickspot Peppergrass Monitoring

- 1999 Juniper Butte Rare Plant Survey
- 2000 Juniper Butte Range LEPA Survey
- 2001 Juniper Butte Range LEPA Survey
- 2002 LEPA Seed Collection at Juniper Butte Range
- 2002 Juniper Butte Range Slickspot Habitat, LEPA Survey and Mapping Report
- 2002 Juniper Butte Range LEPA Survey
- 2003 Juniper Butte Range and Saylor Creek Range LEPA Survey
- 2004 Juniper Butte Range LEPA Survey

- 2004 Permanent Monitoring Plots for LEPA Juniper Butte Range
- 2005 Juniper Butte Range LEPA Survey
- 2005 Saylor Creek Range LEPA Survey
- 2006 Juniper Butte Range LEPA Survey
- 2007 Juniper Butte Range LEPA Survey
- 2008 Final Survey and Mapping Report for Slickspot Habitat and LEPA Inventory Owyhee County, Idaho, USFWS
- 2008 Juniper Butte Range LEPA Survey
- 2009 Juniper Butte Range LEPA Survey
- 2010 Juniper Butte Range LEPA Survey
- 2011 Juniper Butte Range LEPA Survey
- 2012 Juniper Butte Range LEPA Survey
- 2013 Juniper Butte Range LEPA Survey
- 2014 Juniper Butte Range LEPA Survey
- 2015 Juniper Butte Range LEPA Survey
- 2016 Juniper Butte Range LEPA Survey
- 2017 Juniper Butte Range LEPA Survey
- 2018 Juniper Butte Range LEPA Survey
- 2019 Juniper Butte Range LEPA Survey

Vegetation Trend Monitoring

- 1998 Juniper Butte Range Long Term Monitoring
- 2001 Juniper Butte Range Long Term Monitoring
- 2007 Effect of Plateau® Treatment on Vegetation and Fire Modeling for Cheatgrass Dominated Rangelands
- 2013 Adaptive Management Monitoring Final Report
- 2013 Juniper Butte Range Long Term Monitoring
- 2014 Effectiveness Vegetation Monitoring Mountain Home AFB
- 2015 Adaptive Management Report
- 2016 Adaptive Management Report
- 2017 Adaptive Management Report

Wetland Delineations

- 1998 Saylor Creek Range Wetland Delineation
- 2007 MHAFB Wetland Delineation and request for Jurisdictional Determination
- 2008 ACOE Wetland Delineation Concurrence Letter

Wildlife Surveys

- 1992 Status of Bat Populations in Owyhee County Idaho
- 1996 Pronghorn Antelope Surveys in the Owyhee Uplands of Southwestern Idaho 1993-1995

- 1996 Ecosystem Survey of MHAFB, SCR and R-3202A
- 1998 Owyhee River California Bighorn Sheep Herd Carrying Capacity Study
- 1999 Biological Resources Study of Emitter Sites, Target Areas and Rights-of-Way
- 2002 Ecology of Greater Sage Grouse in South-Central Owyhee County, Idaho
- 2003 Lek and Raptor Surveys (March)
- 2003 Lek and Raptor Surveys (December)
- 2004 Lek and Raptor Surveys
- 2004 Juniper Butte Range Wildlife Surveys
- 2005 MHAFB Avian Observational Study (March)
- 2005 Lek and Raptor Surveys
- 2005 MHAFB Avian Observational Study (June)
- 2005 Wildlife Surveys of Saylor Creek and Juniper Butte Ranges (July)
- 2005 Wildlife Surveys of MHAFB (August)
- 2005 Wildlife Surveys of Saylor Creek and Juniper Butte Ranges (October)
- 2005 Wildlife Surveys of MHAFB (December)
- 2006 Wildlife Surveys of Saylor Creek and Juniper Butte Ranges (January)
- 2006 Wildlife Surveys of MHAFB (February)
- 2006 Wildlife Surveys of Saylor Creek and Juniper Butte Ranges (April)
- 2006 Lek and Raptor Surveys
- 2006 Wildlife Surveys of MHAFB (May)
- 2006 Wildlife Surveys of Saylor Creek and Juniper Butte Ranges (July)
- 2006 Wildlife Surveys of MHAFB (August and November)
- 2006 Wildlife Surveys of Saylor Creek and Juniper Butte Ranges (October and January 2007)
- 2006 Wildlife Data Summary Report for MHAFB and MHRC
- 2007 Lek and Raptor Surveys
- 2007 Wildlife Surveys of MHAFB (March and May)
- 2007 Burrowing Owl Banding Activities Report
- 2007 Owl Pellet Evaluation
- 2008 Sage Grouse, Raptor, Breeding Bird Survey, MHAFB Facilities Technical Memorandum
- 2009 Lek and Raptor Surveys
- 2009 Raptor and Greater Sage-grouse Study at MHRC Sites
- 2010-2011 Lek and Raptor Surveys for Mountain Home Range Complex and Juniper Butte Range
- 2013 MHAFB Sage-Grouse and Raptor Summary
- 2014 Fairy Shrimp Survey Technical Memorandum
- 2014 Bat Inventory Technical Memorandum
- 2015 Final Summary Report for Golden Eagle Activity on Air Force Ranges in the Western United States

Other Surveys / Studies

- 1999 Davis Peppergrass Management Plan; SAR-MHAFB
- 1999 Biological Resources Survey of ETI ROWs
- 2003 Monitoring of Aircraft Noise in Owyhee and Jarbidge MOA's

- 2004 Survey and Analysis of Outdoor Recreation Activity Owyhee Canyonlands of Southwest Idaho
- 2015 Noxious Weed Survey and Spray Report

Appendix C. INRMP Benefits to ESA Endangered Species

Currently, a single ESA listed species, Slickspot Peppergrass (*Lepidium papilliferum*), is known to occur on lands associated with MHAFB and MHRC. This southwestern Idaho endemic plant, which is listed under the ESA as Threatened, occurs on the Air Force's JBR.

The Endangered Species Act was revised via the National Defense Authorization Act of 2004. It states that, "The Secretary [of the Interior] shall not designate as critical habitat any lands or other geographical areas owned or controlled by the DoD, or designated for its use, that are subject to an integrated natural resources management plan prepared under section 101 of the Sikes Act (16 U.S.C. 670a), if the Secretary determines in writing that such plan provides a benefit to the species for which critical habitat is proposed for designation" (Pub. L. 108-136 Sec 318). An installation may have its Integrated Natural Resources Management Plan (INRMP) obviate the need for critical habitat designation if the INRMP provides a benefit to listed species, and manages for the long-term conservation of the species.

The 366th Fighter Wing at Mountain Home AFB Idaho fully supports the INRMP for MHAFB, Small Arms Range, and MHRC (including SCR and JBR). The INRMP was developed in cooperation with the USFWS and IDFG. The INRMP reflects the mutual agreement of the US Air Force, USFWS and IDFG.

The USFWS has used the following three-point criteria to determine if the INRMP provides a benefit to the species:

1. A current INRMP must be completed and provide a benefit to the species.
2. The plan provides assurances that the conservation management strategies will be implemented.
3. The plan provides assurances that the conservation management strategies will be effective, by providing for adaptive management.

BENEFIT TO SLICKSPOT PEPPERGRASS (*LEPIDIUM PAPILIFERUM*)

1. A current INRMP must be completed and provide a benefit to the species:

   The INRMP continues the implementation of the conservation measures described in the Slickspot Peppergrass Biological Assessment (BA) for JBR, 27 April 2010, and Biological Opinion on the Effects of Ongoing Actions at JBR in Owyhee County, Idaho on Slickspot Peppergrass, 29 October 2010 (MHAFB, 2010f; USFWS, 2010a). These conservation measures are also outlined in Section 7.4. of the INRMP. Examples include ongoing weed control and fire suppression activities.

2. The plan provides assurances that the conservation management strategies will be implemented:

   Conservation of Slickspot Peppergrass and its habitat is integrated into daily operations. All range users take Cultural and Natural Resources Training annually. All range users implement the Range Standard Operating Procedures, CRP, and INRMP which include conservation measures for Slickspot Peppergrass (MHAFB, 2010d and MHAFB 2010e).

Programmed projects include Slickspot Peppergrass monitoring, grazing utilization monitoring, long-term vegetation monitoring, post-fire rehabilitation, and noxious weed identification and control. These projects have been programmed through 2021.

3. The plan provides assurances that the conservation management strategies will be effective, by providing for adaptive management:

   Implementation of Adaptive Management is described in Section 1.2.2 in the INRMP. The Air Force is able to implement the INRMP in an adaptive way because it is a living document. The Adaptive Management strategy is to implement goals and objectives, monitor, evaluate, and respond. A good example is the adjustment of the grazing turn out date based on soil moisture.

Appendix D. Endangered Species Coordination

The following references and surveys are found on the 366 FW network drive:

\\gyzh-fs-01pv\MountainHome_366FW_MDG_WS\A6-7\A7I- Installation Management\A7IE-Environmental\Natural

Slickspot Peppergrass

- 81 FR 55058 - Federal Register Notice Reinstating Threatened Status to Slickspot Peppergrass
- 74 FR 52014 - Federal Register Notice Listing Slickspot Peppergrass as Threatened
- 2010 USFWS Biological Opinion
- 2010 MHAFB Biological Assessment

Greater Sage-Grouse

- 80 FR 59858 - Federal Register Notice 12-Month Finding on Petition to List Greater Sage-Grouse

Other Studies

- 2003 Monitoring of Aircraft Noise in Owyhee and Jarbidge MOAs
- 2004 Survey and Analysis of Outdoor Recreation Activity - Owyhee Canyon Lands of Southwest Idaho

Appendix E. Public Lands Order for Saylor Creek Range, Juniper Butte Withdrawal Act, Settlement Agreement, Record of Decision, Supplemental Record of Decision, and Airspace Map

The following reports and surveys are found on the 366 FW network drive:

\\gyzh-fs-01pv\MountainHome_366FW_MDG_WS\A6-7\A7I- Installation Management\A7IE-Environmental\Natural

- Public Lands Order for Saylor Creek Range
- Juniper Butte Withdrawal Act
- Juniper Butte Settlement Agreement
- Enhanced Training In Idaho Record of Decision
- Supplemental Enhanced Training in Idaho Record of Decision
- Airspace Map

Appendix F. List of Memoranda of Understanding and Agreements and Tripartate Agreement

LIST OF MEMORANDA OF UNDERSTANDING

MEMORANDUM OF UNDERSTANDING

AMONG THE U.S. DEPARTMENT OF DEFENSE AND

THE U.S. FISH AND WILDLIFE SERVICE

AND THE INTERNATIONAL ASSOCIATION OF FISH AND WILDLIFE AGENCIES

FOR A COOPERATIVE INTEGRATED NATURAL RESOURCE MANAGEMENT PROGRAM ON MILITARY INSTALLATIONS

COOPERATIVE AGREEMENT FOR THE PROTECTION, DEVELOPMENT

AND MANAGEMENT OF FISH AND WILDLIFE RESOURCES AT

SAYLOR CREEK AIR FORCE RANGE

BETWEEN

USAF, USFWS, AND IDFG

MEMORANDUM OF UNDERSTANDING

BETWEEN

UNITED STATES DEPARTMENT OF DEFENSE (DOD)

UNITED STATES DEPARTMENT OF AGRICULTURE (USDA)

ANIMAL AND PLANT HEALTH INSPECTION SERVICE (APHIS)

ANIMAL DAMAGE CONTROL (ADC)

MEMORANDUM OF UNDERSTANDING

BETWEEN

OWYHEE, ELMORE AND TWIN FALLS COUNTY SHERIFF'S OFFICES

AND 366TH SECURITY FORCES SQUADRON

(MOUNTAIN HOME AFB ID)

FOR RESPONSE TO MHAFB RANGE COMPLEX

MEMORANDUM FOR DEPUTY ASSISTANT SECRETARY OF THE ARMY

(ENVIRONMENT, SAFETY, AND OCCUPATIONAL HEALTH)

DEPUTY ASSISTANT SECRETARY OF THE NAVY (ENVIRONMENT)

DEPUTY ASSISTANT SECRETARY OF THE AIR FORCE (ENVIRONMENT, SAFETY AND OCCUPATIONAL HEALTH),

DIRECTOR, DEFENSE LOGISTICS AGENCY

SUBJECT: Guidance to Implement the Memorandum of Understanding to Promote the Conservation of Migratory Birds

MEMORANDUM OF UNDERSTANDING

BETWEEN

THE DEPARTMENT OF DEFENSE

AND

BAT CONSERVATION INTERNATIONAL

MEMORANDUM OF UNDERSTANDING

BETWEEN THE DEPARTMENT OF DEFENSE

AND THE COEVOLUTION INSTITUTE AS COORDINATOR FOR THE

NORTH AMERICAN POLLINATOR PROTECTION CAMPAIGN (NAPPC)

FEDERAL NATIVE PLANT CONSERVATION

MEMORANDUM OF UNDERSTANDING

among the

BUREAU OF LAND MANAGEMENT, DEPARTMENT OF DEFENSE,

FEDERAL HIGHWAY ADMINISTRATION, U.S. GEOLOGICAL SURVEY,

NATIONAL PARK SERVICE, OFFICE OF SURFACE MINING

RECLAMATION AND ENFORCEMENT,

USDA AGRICULTURAL RESEARCH SERVICE

USDA FOREST SERVICE, USDA NATURAL RESOURCES CONSERVATION SERVICE,

AND U.S. FISH AND WILDLIFE SERVICE

SUBJECT: to establish and describe a Federal Native Plant Conservation Committee

MEMORANDUM OF UNDERSTANDING

between

U.S. DEPARTMENT OF AGRICULTURE

NATURAL RESOURCES CONSERVATION SERVICE

and

U.S. DEPARTMENT OF DEFENSE

SUBJECT: To promote cooperative conservation between NRCS and DoD, and

where appropriate, partnerships with other Federal agencies, states,

local governments, non-governmental organizations, and private landowners.

SHOSHONE-PAIUTE TRIBE, Plaintiff, -vs- UNITED STATES OF AMERICA, et al., Defendants. RICHARD L. OWEN, et al., Plaintiffs, -vs- UNITED STATES OF AMERICA, et al., Defendants. GREATER OWYHEE LEGAL DEFENSE, Plaintiff, -vs- DEPARTMENT OF DEFENSE, et al., Defendants.

Case No. 92-185-S-HLR, Case No. 92-188-S-HLR, Case No. 92-0189-S-HLR

UNITED STATES DISTRICT COURT FOR THE DISTRICT OF IDAHO

(challenged the legal sufficiency of the

Air Force in Idaho, Final Environmental Impact Statement, (January 1992))

MEMORANDUM OF UNDERSTANDING

among the DEFENDERS OF WILDLIFE

THE IZAAK WALTON LEAGUE OF AMERICA, INC

NATIONAL AUDUBON SOCIETY

NATIONAL WILDLIFE FEDERATION

and BUREAU OF LAND MANAGEMENT, NATIONAL PARK SERVICE,

U.S. FISH AND WILDLIFE SERVICE, BUREAU OF RECLAMATION

DEPARTMENT OF THE AIR FORCE, DEPARTMENT OF THE ARMY

DEPARTMENT OF THE NAVY, FOREST SERVICE

and INTERNATIONAL ASSOCIATION OF FISH AND WILDLIFE AGENCIES

SUBJECT: To promote and provide access to Watchable Wildlife

Appendix G. Mitigation and Monitoring Plan

MITIGATION AND MONITORING PLAN

1.0 INTRODUCTION

The Juniper Butte Range Withdrawal Act (JBRWA), Public Law 105-261, requires the Air Force to address mitigation activities on state and federal lands affected by military training associated with the Juniper Butte Range. This annex to the Integrated Natural Resource Management Plan (INRMP) identifies mitigation measures and implementation strategies by issue area.

Mitigation measures are based on commitments and responsibilities identified in the Enhanced Training in Idaho (ETI) Record of Decision (ROD), the Supplemental ROD (SROD), and additional measures identified in the Settlement Agreement as they relate to resources of the affected lands. These key documents are summarized below.

- ***ETI Record of Decision***. March 1998. Documents the Air Force's decision to select the Juniper Butte alternative.
- ***ETI Supplemental Record of Decision***. September 1998. In April 1998, the BLM issued findings and recommendations identifying issues to be resolved by expanding some mitigation measures and operational commitments by the Air Force. The BLM recommendations resulted in a Memorandum of Understanding (MOU) between the Air Force and BLM in June 1998. This MOU was incorporated into the SROD.
- ***Juniper Butte Range Withdrawal Act***. Public Law 105-261. October 1998. his act of Congress approved the Juniper Butte withdrawal and directed the Air Force and BLM to begin implementing the actions associated with ETI.
- ***Settlement Agreement***. November 1999. This agreement resolved litigation and established the Settlement Implementation Group (SIG) for continued coordination between parties. SIG members include the Air Force, Bureau of Land Management (BLM), and Greater Owyhee Legal Defense (GOLD) partners.

2.0 ORGANIZATION OF THE MITIGATION PLAN

This annex identifies mitigation measures and commitments specified in the documents identified above, and provides strategies for implementing those measures.

Section 3.0 lists cooperating agencies and participants.

Section 4.0 contains mitigation measures, implementation strategies, and monitoring measures for the following issue areas:

- Coordination and Public Involvement
- Seasonal overflight and avoidance
- Emitter sites and no-drop target sites – construction
- Emitter sites and no-drop target sites - operation
- Greater sage-grouse
- Slickspot peppergrass
- Bighorn sheep
- Cultural resources
- Recreation

- Grazing
- Fire, chaff, and flares
- Noise

Section 5.0 presents all mitigation implementation strategies, establishes priorities, responsible entities, and methods of monitoring for each strategy.

3.0 INRMP PARTICIPATING AGENCIES AND WORKING PARTNERS

The responsible entities identified in the mitigation measures and strategies are listed below alphabetically:

- Bureau of Land Management
- Contractor(s)
- Greater Owyhee Legal Defense
- Idaho Department of Fish and Game
- Natural Resource Council
- Owyhee County
- Settlement Implementation Group
- Shoshone-Paiute Tribe
- State of Idaho
- Three Creek Good Roads District
- U.S. Air Force
- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service

4.0 MEASURES AND STRATEGIES BY RESOURCE

The following mitigation measures are based on commitments and responsibilities identified in the ETI ROD, the SROD, and additional measures identified in the Settlement Agreement. The following sections identify those measures and implementation strategies to achieve those measures by resource. The resources include: coordination and public involvement; seasonal overflight and avoidance; emitter sites and no-drop target sites – construction and operation; greater sage-grouse; slickspot peppergrass; bighorn sheep; cultural resources; recreation; grazing; fire, chaff, and flares; and noise.

4.1 Coordination and Public Involvement

Mitigation measures for coordination and public involvement focus on a continuing dialogue among the Air Force, the tribes, federal and state agencies, the SIG, and other interested members of the public regarding the construction and operation of Juniper Butte Range. Mitigation measures were specified in the ROD, the SROD, and the Settlement Agreement.

4.1.1 Record of Decision (1) (a)

- Mitigation Measure: The Air Force will continue government-to-government dialogue with the Shoshone-Paiute Tribes in accordance with the Presidential Memorandum (29 April 1994) and ensure the Tribes are granted access to sacred and ceremonial sites in accordance with Executive Order 13007, Indian Sacred Sites.

- Implementation: The Air Force has and will continue to meet, on a regular basis, with the affected Tribes to fulfill the Air Force's commitment to government-to government consultation. The Air Force and Tribes will decide when the meetings will take place.
- Monitoring: The Air Force and Tribes will review past years efforts and address as an annual meeting agenda item.

4.1.2 Record of Decision (2) (d)

- Mitigation Measure: The Air Force, BLM, and State of Idaho will meet at least semiannually in accordance with a Memorandum of Agreement developed to address the needs and expectations of managers and users of resources in southwest Idaho. The Air Force, BLM, and State of Idaho will also use this process to jointly identify and seek funding as required for management and mitigation measures necessary to protect resources and support military training activities.
- Implementation: The Air Force will meet with cooperating agencies on a semiannual basis to address the needs and expectations of managers, and to identify and seek funding as necessary for management and mitigation measures. Meeting times will be decided by the Air Force, BLM, and State of Idaho.
- Monitoring: The Air Force, BLM, and State of Idaho will review past year's efforts and address as an annual meeting agenda item at one of the semi-annual meetings.

4.1.3 Supplemental Record of Decision (2) (d)

- Mitigation Measure: The Air Force and BLM will continue to work to discuss and resolve five additional areas as part of the Memorandum of Agreement between the Air Force and cooperating agencies. The parties are committed to military training activities co-existing with public land resources and land uses. The five areas involve the use of chaff; special status species; Native American traditional cultural and sacred sites; deviation from commitments; and refinement of the agreement. The Air Force will ensure BLM has an opportunity to review its site plans prior to beginning construction.
- Implementation: The Air Force will meet with the BLM to discuss and resolve the five additional issue areas. Meetings will be held at least semiannually, with meeting times decided by the Air Force and the BLM. Both the Air Force and BLM consult directly with Native American Tribes on issues of concern to the Tribes on a government to government basis.
- Monitoring: The Air Force and BLM will review the five areas of concern and address as an annual meeting agenda item at one of the semi-annual meetings.

4.1.4 Supplemental Record of Decision 2 (n) iii

- Mitigation Measure: The 366th Wing will host semiannual meetings of ETI¬interested parties to discuss issues, problems, and concerns, and seek resolutions.
- Implementation: The Air Force will host semi-annual meetings of ETI-interested parties to discuss issues, problems, and concerns for the purpose of seeking resolutions. The Air Force will coordinate the meeting times. Public involvement will be solicited through media channels.
- Monitoring: The Air Force will publish/disseminate meeting minutes from the ETI interested parties' semi-annual meetings.

4.1.5 Settlement Agreement III. A. 1.

- Mitigation Measure: Settlement Implementation Group: The parties agree to meet as the "Settlement Implementation Group" (SIG) no less than three times a year to discuss and attempt

to resolve environmental, conservation, and natural and cultural resource management issues, arising from military operations and facilities development under the AFI and ETI projects, including the implementation of mitigation and monitoring measures under the ETI ROD/ Supplemental ROD, Juniper Butte Range Withdrawal Act, and this Settlement Agreement.

- Implementation: The SIG has and will continue to meet at least three times per year to discuss, and attempt to resolve, environmental, conservation, and natural and cultural resource management issues arising from military operations and facilities development. An initial organizational meeting was held January 27, 2000. The AF and SIG partners have met 10 times since January 27, 2000. The SIG will decide meeting times and the agenda. Public participation will be solicited through news releases.
- Monitoring: The SIG will annually review progress and purpose of the meetings as an agenda item. The Air Force will publish/disseminate meeting minutes to inform the public.

4.1.6 Settlement Agreement III. A. 2.

- Mitigation Measure: Natural Resource Council: The Air Force will seek to broaden the scope of the existing Natural Resource Council (NRC) and propose a charter to define NRC interaction and relationship with other committees and entities, including the parties to this Agreement. In addition, the Air Force will submit sage grouse and aircraft overflight as items of discussion for the next and future NRC meetings.
- Implementation: The Air Force will broaden the scope of the NRC and will propose a charter to define NRC interaction with other entities. Agenda topics for future NRC meetings will include sage grouse and aircraft overflights.
- Monitoring: The SIG will annually assess the viability of the NRC as an agenda item.

4.1.7 Settlement Agreement III. A. 3. (a)

- Mitigation Measure: Air Force and BLM commit to a collaborative effort to seek funds to offset environmental concerns of the ETI project, in consultation with the SIG.
- Implementation: The Air Force will solicit SIG concerns about the ETI project and collaborate with BLM prior to the budget cycle.
- Monitoring: SIG meeting annual agenda item.

4.1.8 Settlement Agreement III. A. 3. (b)

- Mitigation Measure: The Air Force through the NRC also agrees to seek funding for an ecoregional initiative in cooperation with other agencies.
- Implementation: The Air Force will seek funding for NRC identified ecoregional initiatives in cooperation with other agencies.
- Monitoring: SIG and NRC annual agenda item.

4.2 Seasonal Overflight and Avoidance

Mitigation measures for airspace and overflights focus on aircrew training, flight altitudes, and scheduling at Juniper Butte Range. Mitigation measures were identified in the ROD, the SROD, and the Settlement Agreement.

4.2.1 Record of Decision (2) (m)

- Mitigation Measure: The 366th Wing will ensure that transient aircrews comply with the mitigation measures and any changes agreed to during semiannual meetings with the BLM and State of Idaho.
- Implementation: The Airspace Manager continually updates the airspace changes and restrictions and maintains and makes available this information for the aircrews. Aircrews are briefed extensively before all flying missions. All regulations, airspace restrictions and compliance issues identified in the ROD will be outlined to aircrews during these briefings and are expected to be followed as part of the training missions. This Mitigation Measure has been written into the Mountain Home Air Force Base Instruction (MHAFBI) 13-287, Mountain Home Ranges.
- Monitoring: The 366th Wing Public Affairs and Operations Group will track and follow up on all overflight issues. When active, Cowboy Control can vector aircraft away from sensitive areas, such as those identified in the SROD. Cowboy Control can record data to assist in monitoring noise complaints and provide trend data to the Operations Group.

4.2.2 Record of Decision (2) (e)

- Mitigation Measure: The training airspace managed by Mountain Home AFB will be closed to military training activities, except for transiting aircraft during weekends associated with Memorial Day, Labor Day, and July 4 holidays. This voluntary flight restriction will continue in place absent compelling national security circumstances, military contingencies, or hostilities.
- Implementation: The Air Force usually does not fly these weekends. Mountain Home AFB will not train in the airspace during these weekends except when there are compelling national security issues. This Mitigation Measure has been written into the MHAFBI 13-287, Mountain Home Ranges.
- Monitoring: Flying schedule is on the Mountain Home AFB web page and is available to the public.

4.2.3 Record of Decision (2) (k)

- Mitigation Measure: The 366th Wing will publicize to civilian aviation and other interested individuals, via telephone and the internet, the airspace schedule of the MOAs controlled by Mountain Home AFB.
- Implementation: Mountain Home AFB will make available to the public the airspace restrictions and airspace scheduling on its web page. All complaints are to be directed to the Public Affairs Office 208-828-6800, and will be logged, researched, and responded to by the Public Affairs Office. The Public Affairs Office Point of Contact (POC) and phone number will be included on the web page.
- Monitoring: Mountain Home AFB (http://www.mountainhome.af.mil) and Air Combat Command (ACC) (http://www.mil.acc.af.mil) web pages contain this information for the public.

4.2.4 Supplemental Records of Decision (2) (c) and (2) (f) and Settlement Agreements III.B.1 and III.B.2

- Mitigation Measures: There will be no military overflights below 5,000 feet AGL in the airspace over Little Jacks WSA within a 12-mile diameter circle centered on N4241 W11612 during April, May, and June. SROD (2) (c)

- Seasonal low-level flight restrictions: The Air Force will institute the following seasonal low-level flight restrictions for military users in the Jarbidge and Owyhee military operating areas to minimize conflicts with public land resources and uses. The restrictions apply during April, May, and June.

Bruneau/Jarbidge River System

i. In general, low-altitude training flights over canyons will be limited to 1,000 feet AGL and at that level will only cross perpendicular to the major canyons. Parallel flights within a mile of the canyons will be limited to 5,000 feet AGL.
ii. In addition, within 1 mile of the canyon rim, from the confluence of the Bruneau and Jarbidge Rivers north to the intersection with the East Fork of the Bruneau River (Clover Creek), low altitude training flights will be limited to 5,000 feet AGL, except for two Composite Wing Training exercises per month. The wing will notify BLM and the public of CWT exercises.
iii. In addition, from Friday through Monday, training flights will be limited to 5,000 feet AGL, within 1 mile from the rim, starting at the East Fork of the Bruneau (Clover Creek), N4235 W11538, north approximately 4.5 miles to Miller Water, N4238 W11541.

Owyhee River System

i. In general, low-altitude training flights over canyons will be limited to 1,000 feet AGL and at that level will only cross perpendicular to the major canyons. Parallel flights within a mile of the canyons will be limited to 5,000 feet AGL.
ii. In addition, except for two CWT exercises per month, training flights will be limited to 5,000 feet AGL within 1 mile of the canyon rim, from 45 Ranch, N4210 W11652, north on the South Fork of the Owyhee River, and east on the East Fork to Deep Creek, N4216 W11639.
iii. In addition, from Friday through Monday, training flights will be limited to 5,000 feet AGL within 1 mile of the rim, from the confluence of the East Fork of the Owyhee River and Deep Creek, N4216 W11639, southeast on the East Fork of the Owyhee to Battle Creek, N4214 W11632. SROD (2) (f)

- Implementation: Aircrews are briefed extensively before flying missions. All regulations, airspace restrictions, and compliance issues identified in the SROD will be outlined to aircrews and are expected to be followed as part of the training missions. The Airspace Manager continually updates the airspace changes and restrictions and maintains and makes available this information for the aircrews. This Mitigation Measure has been written into the MHAFBI 13-287, Mountain Home Ranges.
- Monitoring: The 366th Wing Public Affairs and Operations Group will track and follow up on all overflight issues. When active, Cowboy Control can vector aircraft away from sensitive areas, such as those identified in the SROD. Cowboy Control can record data to assist in monitoring noise complaints and provide trend data to the Operations Group.
- Mitigation Measures: The Air Force agrees that no supersonic flights will occur below 15,000 feet Above Ground Level (AGL) over East Fork Owyhee, South Fork Owyhee, and Little Owyhee Rivers, as set forth in Map 3 (refer to Annex A, Settlement Agreement), during April, May, and June of each year; except for two one-day Composite Wing Training exercises per month (see Map 3 for northern boundary which is approximately five miles north of Owyhee and East Fork Owyhee Rivers, and other boundaries of Oregon and Nevada state lines, and Duck Valley Reservation boundary). *Settlement Agreement III. B. Airspace Modifications, 1*

- The Air Force will move the current supplemental ROD (September 14, 1998) restriction of 5,000 feet AGL, during April, May, and June of each year over the Owyhee/South Fork Owyhee rivers south to Coyote Hole, except for two one-day Composite Wing Training exercises per month (see Map 4) (refer to Annex A, Settlement Agreement) *Settlement Agreement III. B. Airspace Modifications, 2*
- Implementation: Aircrews are briefed extensively before flying missions. All regulations, airspace restrictions, and compliance issues identified in the Settlement Agreement will be outlined to aircrews and are expected to be followed as part of the training missions. The Airspace Manager continually updates the airspace changes and restrictions and maintains and makes available this information for the aircrews. This Mitigation Measure has been written into the MHAFBI 13-287, Mountain Home Ranges.
- Mountain Home AFB will make available to the public the airspace restrictions and airspace scheduling on its web page. All complaints are to be directed to the Public Affairs Office 208-828-6800, and will be logged, researched, and responded to by the Public Affairs Office. The Public Affairs Office POC and phone number will be included on the web page (http://www.mountainhome.af.mil).
- Monitoring: The 366th Wing Public Affairs and Operations Group will track and follow up on all overflight issues. When active, Cowboy Control can vector aircraft away from sensitive areas, such as those identified in the SROD. Cowboy Control can record data to assist in monitoring noise complaints and provide trend data to the Operations Group.

4.2.5 Supplemental Record of Decision (2) (n)

- Mitigation Measure: Air Combat Command (ACC) will make every good faith effort to schedule the 366th Wing for off-station training or deployments during April, May, and June.
- Implementation: Scheduling for off-station training and deployments is at the discretion of Air Combat Command (ACC). ACC will decide when off-station training will occur. ACC will make a good faith effort to schedule the 366th Wing for off-station training or deployments during April, May, and June. This Mitigation Measure has been written into the MHAFBI 13-287, Mountain Home Ranges.
- Monitoring: Flying schedule is on the Mountain Home AFB web page (http://www.mountainhome.af.mil) and is available to the public.

4.3 Emitter Sites and No-Drop Target Sites--Construction

Mitigation measures for emitter and no-drop target sites construction focus on protocols for minimizing disturbance to wildlife, vegetation, land use, and visual resources at Juniper Butte Range. Mitigation measures were specified in the ROD and the Settlement Agreement.

4.3.1 Record of Decision (1) (e)

- Mitigation Measure: The 366th Wing will ensure contractors minimize disturbance to native vegetation and use erosion control measures (e.g., water conveyance, energy dissipation structures) and sediment control measures (e.g., basins, tarps, barriers) to minimize exposure and movement of soil to reduce impacts resulting from wind or water erosion at construction sites in order to reduce the possibility of the establishment of undesirable non-native plant species.
- Implementation: Selective and generic mitigation measures were implemented for Phase II and III construction and are listed in Table 4.3-1. These were stipulated in construction contracts.

- Monitoring: Construction activities were monitored by the Air Force, BLM, and USACE and determined to be in compliance.

4.3.2 Record of Decision (1) (f)

- Mitigation Measure: The Air Force will reduce potential effects to wildlife by using eagle-safe utility poles for the aboveground electrical transmission system and wildlife-safe fencing.
- Implementation: Eagle-safe utility poles (Idaho Power design) and wildlife-safe fencing (BLM recommended) were stipulated in the site plan designs and incorporated into the construction process by the contractors.
- Monitoring: Construction activities were monitored by the Air Force, BLM, and USACE and determined to be in compliance.

4.3.3 Record of Decision (1) (j)

- Mitigation Measure: Known critical or crucial habitat for threatened, endangered, or special status species will be avoided to the extent practicable. Selective mitigation will be developed for instances where such habitat cannot be avoided.
- Implementation: Selective and generic mitigation measures for Phase II and III construction were implemented and are listed in Table 4.3-1. These were stipulated in construction contracts. Several targets on Juniper Butte and many roads for emitter sites were realigned within the BLM issued Rights-of-way to avoid slickspots.
- Monitoring: Construction activities were monitored by the Air Force, BLM, and USACE and determined to be in compliance.

4.3.4 Record of Decision (1) (k)

- Mitigation Measure: Range project components will be sited to avoid or minimize potential effects on native vegetation, recreation activities, access, or special land use.
- Implementation: Selective and generic mitigation measures for Phase II and III construction were implemented and are listed in Table 4.3-1. These were stipulated in construction contracts. Several targets on Juniper Butte and many roads for emitter sites were realigned within the BLM issued rights-of-way to avoid slickspots.
- Monitoring: Construction activities were monitored by the Air Force, BLM, and USACE and determined to be in compliance.

4.3.5 Record of Decision (1) (l)

- Mitigation Measure: Electronic emitter sites will be dispersed to enhance the Air Force's ability to address agency and public seasonal environmental concerns.
- Implementation: The Air Force selected dispersed locations for electronic emitters.
- Monitoring: Construction activities were monitored by the Air Force, BLM, and USACE and determined to be in compliance. Rights-of-way are monitored by the BLM.

4.3.6 Record of Decision (1) (m)

- Mitigation Measure: Range project components will be sited to avoid privately owned lands. The public will be informed of range activities by the placement of signs at all facilities.
- Implementation: These items were stipulated in the site plan designs and incorporated into the construction by contractors.

- Monitoring: There is no use of private land in the ETI project with the exception of ND-9. The ND-9 location is near Grasmere EC site on private land. The AF has a lease agreement with the private landowner.

4.3.7 Record of Decision (1) (n)

- Mitigation Measure: Road improvements and new road construction will be designed to avoid negative impacts to soil, native vegetation, and visual resources.
- Implementation: Selective and generic mitigation measures for Phase II and III construction were implemented and are listed in Table 4.3-1. These have been stipulated in construction contracts.
- Monitoring: Construction activities were monitored by the Air Force, BLM, and USACE and determined to be in compliance. Rights-of-way are monitored by the BLM.

4.3.8 Record of Decision (1) (p)

- Mitigation Measure: Range facilities will be painted with non-contrasting desert colors to reduce visual impacts.
- Implementation: These items were stipulated in the site plan designs and incorporated into the construction by contractors.
- Monitoring: Construction activities were monitored by the Air Force, BLM, and USACE and determined to be in compliance.

4.3.9 Record of Decision (1) (q)

- Mitigation Measure: The potential for environmental contamination will be reduced by using double-walled, above ground diesel fuel storage tanks with secondary containment. Hazardous waste accumulation at training sites will be minimized.
- Implementation: These items were stipulated in the site plan designs and incorporated into the construction by contractors.
- Monitoring: Construction activities were monitored by the Air Force, BLM, and USACE for compliance and determined to be in compliance.

4.3.10 Record of Decision (1) (r)

- Mitigation Measure: Existing drainage grade to Clover Creek will be reestablished following bridge replacement.
- Implementation: These items were stipulated in the site plan designs and incorporated into the construction by contractors.
- Monitoring: The Clover Creek Bridge is complete. Pre-existing drainage grade is reestablished.

4.3.11 Settlement Agreement III. E.

- Mitigation Measure: ND-8: The Air Force will move ND-8 to an area that meets operational concerns, in consultation with the parties; and install a raptor-proof fence if necessary.
- Implementation: The Air Force established a new location for a replacement ND-8 site (now known as ND-9).
- Monitoring: Biological, cultural, and other surveys were done for the selected site. An Environmental Baseline Survey and NEPA were completed for the site prior to entering into a lease agreement with the private landowner.

4.4 Emitter Sites and No-Drop Target Sites--Operations

Mitigation measures for emitter and no-drop target sites operation focus on protocols for minimizing disturbance to wildlife, vegetation, and land use at Juniper Butte Range, and continued coordination with agencies, the SIG, and the public. Mitigation measures were specified in the ROD and the Settlement Agreement.

4.4.1 Record of Decision (2) (l)

- Mitigation Measure: The Air Force will execute an Interagency Support Agreement with Owyhee County and the Three Creek Good Roads Highway District for use and maintenance of specific roads associated with range operations.
- Implementation: The Air Force has an agreement with Owyhee County and the Three Creek Good Roads District in accordance with the terms of the ROD.
- Monitoring: Interagency Support Agreement deliverables.

4.4.2 Record of Decision (3) (c)

- Mitigation Measure: Prior to bridge reconstruction at Clover Creek crossing, the Air Force will comply with Section 106 of the National Historic Preservation Act (NHPA) and consult with the State Historic Preservation Officer (SHPO) and the Shoshone-Paiute Tribes to identify ways to reduce adverse effects to cultural resources at Clover Creek Crossing.
- Implementation: NHPA Section 106 compliance at Clover Creek Crossing, including consultation with the SHPO and Tribes, has been completed.
- Monitoring: NHPA Section 106 compliance at Clover Creek Crossing is complete.

4.4.3 Record of Decision (3) (d)

- Mitigation Measure: The Air Force will conduct site-specific surveys for spotted frogs, northern leopard frogs, and western toads at Clover Creek Crossing; if these species are found, bridge design will be modified to the extent practicable to minimize loss of amphibian breeding habitat. Construction of the dam at Clover Creek Crossing will take place in the autumn when potential impacts to amphibian populations will be lowest.
- Implementation: Surveys are complete. Selective mitigation measures for construction at Clover Creek Crossing were developed and implemented. These were stipulated in construction contracts.
- Monitoring: Construction activities were monitored by the Air Force and determined to be in compliance.

4.4.4 Settlement Agreement III. E. 1.

- Mitigation Measure: Use of Emitters and No-Drop Sites, 1. Public Participation: The Air Force will invite and involve public participation, including the SIG, in developing protocols for evaluating uses of ETI emitter and no-drop sites.
- Implementation: As an agenda item at SIG meetings, the Air Force will develop protocols for the use of emitter and no-drop sites with public and SIG participation.
- Monitoring: Annually, the Air Force in cooperation with the SIG will solicit inputs on how to safely and responsibly conduct ground emitter operations and repair emitter and No-Drop sites.

4.4.5 Settlement Agreement III. E. 2.

- Mitigation Measure: Use of Emitters and No-Drop Sites, 2. Seasonal Restrictions: The Air Force agrees to implement seasonal restrictions on use of the sites BD, AU, AQ, ND-4, and ND-8, in consultation with the SIG and ETI EIS cooperating agencies. Such consultation must be commenced on an annual basis so as to be completed before the Air Force's use of any of these sites.
- Implementation: ND-8 was relocated and renamed ND-9. Seasonal restrictions for ground personnel use on sites were developed by the Air Force, BLM, and IDFG and are included in the INRMP in Section 7. Consultation regarding the implementation of seasonal restrictions will be conducted annually with the SIG and cooperating agencies.
- Monitoring: After the development of seasonal restrictions prior to December of each year, the Air Force will consult with the SIG and cooperating agencies to review and update seasonal restrictions.

4.5 Greater Sage-Grouse

Mitigation measures for greater sage-grouse focus on training Air Force personnel; greater sage-grouse surveys and noise studies, and ongoing collaboration among the Air Force and interested parties. Mitigation measures were specified in the ROD and the Settlement Agreement.

4.5.1 Record of Decision (2) (g)

- Mitigation Measure: The Air Force will train emitter site crewmembers to identify greater sage-grouse and raptors. The individuals will be instructed to inspect ETI emitter sites for the presence of the birds before use. The Air Force will have a biologist inspect ETI emitter sites at critical times of the year and recommend when certain sites will be available or unavailable for use. Specific procedures for training emitter site crew members and inspecting ETI emitter sites will be based on consultation with the Idaho Department of Fish and Game (IDFG) and the BLM.
- Implementation: The Air Force has developed a Natural Resource Training module specific to ETI and currently provides annual training for all construction and ground personnel. Crews are trained to identify greater sage-grouse and report any sightings to the Base Environmental Office at 208-828-6351. The Air Force will work collaboratively with the other agencies to develop annual site inspection criteria and avoidance criteria in areas of ground personnel use and construction.
- Monitoring: The Natural Resource Manager will maintain a log of training attendees and respond to all requests from squadrons to train new crew members. The Air Force will provide IDFG and BLM with an annual greater sage-grouse, emitter, and no drop inspection report. The report will be reviewed annually and adjustments will be made as necessary to the avoidance protocol. New information will be used to update the training module.

4.5.2 Record of Decision (2) (i)

- Mitigation Measure: The Air Force will supplement the IDFG annual survey in 1998 to determine baseline populations for greater sage-grouse and California bighorn sheep in areas where there are ground and airspace changes because of ETI.
- Implementation: The Air Force funded work in FY 98 to gather greater sage-grouse and California bighorn sheep data.

- Monitoring: The Air Force reviews the greater sage-grouse and California bighorn sheep data gathered by IDFG.

4.5.3 Record of Decision (2) (j)

- Mitigation Measure: The Air Force, BLM, and State of Idaho agree that the Air Force will work collaboratively with BLM, State, and appropriate greater sage-grouse working groups established according to the IDFG Greater Sage-Grouse Management Plan (8/97).
- Implementation: The Air Force has and will continue to attend the Owyhee County Local Greater Sage-Grouse Working Group meetings.
- Monitoring: The Air Force will review the minutes of the working group meeting at the Wing ETI meeting.

4.5.4 Settlement Agreement III. C. 2.

- Mitigation Measure: Air Force agrees to undertake the following in cooperation and coordination with the Idaho Department of Fish and Game (IDFG) and BLM:
    (a) Monitoring greater sage-grouse and bighorn sheep in areas of potential ETI impacts and Little Jacks Creek expanded airspace changes beginning in the 2000 field season;
    (b) In addition to existing monitoring commitments, the Air Force agrees to seek funding for greater sage-grouse and bighorn sheep monitoring in the amount of $110,000 per year in FY 2002 and 2003;
    (c) The INRMP for the ETI will address bighorn sheep and greater sage-grouse monitoring as part of the management plan;
    (d) Evaluate monitoring results after five years to determine if additional funding is needed.
- Implementation: Funding and monitoring occurred as described in FY2000, 2001, 2002, and 2003. The Air Force continues to monitor greater sage-grouse according to ROD (2) (g).
- Monitoring: Funding commitments have been fulfilled. Study results will be presented to agency partners and SIG and reviewed to identify and assess data gaps.

4.5.5 Settlement Agreement III. E. 4.

- Mitigation Measure: The Air Force will restore 25 acres of greater sage-grouse habitat in collaboration with BLM, IDFG, SIG, and the public as a demonstration project.
- Implementation: The Air Force developed a proposal to restore 25 acres of sage grouse habitat in collaboration with BLM (a SIG member), IDFG, GOLD (a SIG member), and the public. The seeding protocol was accomplished. The 25-acre area on SCR is in the third year of monitoring. The results of the 25-acre restoration study will be a topic of discussion at future SIG and agency meetings.
- Monitoring: SIG agenda item.

4.6 Slickspot Peppergrass

Mitigation measures for slickspot peppergrass focus on construction provisions to avoid or minimize impacts. Mitigation measures were specified in the ROD.

4.6.1 Record of Decision (3) (b)

- Mitigation Measure: The 366th Wing will conduct construction activities to minimize the loss of slickspot peppergrass, a BLM-sensitive species. Measures will be taken to protect significant

populations on withdrawn lands, participate in interagency ecosystem goals designed to propagate and protect the species, and facilitate increased knowledge of the species by providing outside agency access to the protected habitat. Contingent on available funds, the Air Force and BLM would test procedures to reestablish slickspot peppergrass on suitable habitat that could be impacted within the 12,000-acre withdrawal area during ETI construction or operation.

- Implementation: The Air Force's construction contracts contain provisions to avoid or minimize impacts to slickspot peppergrass. Contract mitigation measures are listed in Table 4.3-1 found at the end of this document. Complete surveys of Juniper Butte have occurred to accurately locate occupied habitat. Maps of occupied habitat will be used for management decisions. See Slickspot Peppergrass in Section 7.4 for all conservation measures used to conserve slickspot peppergrass.
- Monitoring: Monitoring feedback loops are incorporated into the Vegetation Component plan.

4.7 Bighorn Sheep

Mitigation measures for bighorn sheep focus on overflight, bighorn sheep and noise studies, and ongoing collaboration among the Air Force, state and federal agencies, the SIG, and the public. Mitigation measures were specified in the ROD and the Settlement Agreement.

4.7.1 Record of Decision (2) (i)

- Mitigation Measure: The Air Force will supplement IDFG annual survey in 1998 to determine baseline populations for greater sage-grouse and California bighorn sheep in areas where there are ground and airspace changes because of ETI.
- Implementation: The Air Force funded work in FY 98 to gather bighorn sheep data.
- Monitoring: The Air Force reviewed the bighorn sheep data gathered by IDFG.

4.7.2 Record of Decision (2) (h)

- Mitigation Measure: The Air Force will consult with IDFG and BLM annually to jointly determine critical California bighorn sheep lambing area, lambing periods, and avoidance criteria in the Owyhee canyonlands consistent with 366th Wing training needs and IDFG determinations of bighorn sheep needs. The 366th Wing is prepared to restrict flight near lambing areas in specific locations throughout the training airspace, during critical lambing periods, absent compelling national security circumstances, military contingencies, or hostilities. Information from ongoing studies will be provided for use in the consultation.
- Implementation: To avoid/minimize impacts to bighorn sheep, the Air Force will meet with IDFG and BLM to review research, deliverables received, and results of previous fiscal year's efforts. MHAFB has consulted annually with IDFG since 1995 on critical lambing areas and abides by seasonal avoidance protocol.
- Monitoring: Evaluation of effectiveness, monitoring strategy, and meeting goals will be discussed at the annual meeting to determine if efforts are adequate or should continue.

4.7.3 Settlement Agreement III. B. 2.

- Mitigation Measure: The Air Force will move the current supplemental ROD (September 14, 1998) restriction of 5,000 feet AGL, during April, May, and June of each year over the Owyhee/South Fork Owyhee rivers south to Coyote Hole, except for two one-day Composite Wing Training exercises per month (see Map 4) (refer to Annex A, Settlement Agreement).
- Implementation: Aircrews are briefed extensively before flying missions. All regulations, airspace restrictions, and compliance issues identified in the Settlement Agreement will be

outlined to aircrews and followed as part of training missions. The Airspace Manager continually updates the airspace changes and restrictions and maintains and makes this information available for the aircrews. This Mitigation Measure has been written into the MHAFBI 13-287, Mountain Home Ranges.

- Monitoring: The Airspace Manager will review the flight briefing log periodically. The 366th Wing Public Affairs and Operations Group will track and follow up on all overflight issues. When active, Cowboy Control (real-time radar tracking and control system) can vector aircraft away from sensitive areas, such as those identified in the SROD. Cowboy Control can record data to assist in monitoring noise complaints and provide trend data to the Operations Group. Flying schedule is on the MHAFB web page and is available to the public.

4.7.4 Settlement Agreement III. C. 2.

- Mitigation Measure: Air Force agrees to undertake the following in cooperation and coordination with the Idaho Department of Fish and Game (IDFG) and BLM:
  (a) Monitoring greater sage-grouse and bighorn sheep in areas of potential ETI impacts and Little Jacks Creek expanded airspace changes beginning in the 2000 field season.
  (b) In addition to existing monitoring commitments, the Air Force agrees to seek funding for greater sage-grouse and bighorn sheep monitoring in the amount of $110,000 per year in FY 2002 and 2003.
  (c) The INRMP for the ETI will address bighorn sheep and greater sage-grouse monitoring as part of the management plan.
  (d) Evaluate monitoring results after five years to determine if additional funding is needed.
- Implementation: Funding and monitoring occurred as described in FY2000, 2001, 2002, and 2003.
- Monitoring: Funding commitments have been fulfilled. Study results will be presented to agency partners and SIG and reviewed to identify and assess data gaps. Monitoring results will be presented to agency partners and SIG and reviewed to identify and assess data gaps.

4.8 Cultural Resources

Mitigation measures for cultural resources focus on continuing government-to government dialogue with the tribes and collaboration on monitoring procedures for sensitive cultural resources at Juniper Butte Range. Mitigation measures were specified in the ROD.

4.8.1 Record of Decision (1) (a)

- Mitigation Measure: The Air Force will continue government-to-government dialogue with the Shoshone-Paiute Tribes in accordance with the Presidential Memorandum (29 April 1994) and ensure the Tribes are granted access to sacred and ceremonial sites in accordance with Executive Order 13007, Indian Sacred Sites.
- Implementation: The Air Force has and will continue to meet, on a regular basis, with the affected Tribes to fulfill the Air Force's commitment to government-to government consultation. The Air Force and Tribes will decide when the meetings will take place.
- Monitoring: Air Force and Tribes will review past years efforts and address as an annual meeting agenda item.

4.8.2 Record of Decision (2) (b)

- The Air Force will work with the Shoshone-Paiute Tribes and BLM to develop monitoring procedures to protect sensitive cultural resources near ETI range components. The Air Force will also work with the Shoshone-Paiute Tribes to develop a Memorandum of Agreement stipulating procedures for the handling, distribution, and storage of sensitive information, procedures which meet tribal concerns for confidentiality and Air Force requirements for environmental analysis, planning, and contracting.
- Implementation: Mitigation and monitoring plans will be addressed in the Cultural Resources Management Plan as part of the INRMP. The Air Force, BLM, and Tribes will set meeting times to discuss development of procedures to protect cultural resources. This process is ongoing. The MOA was developed and signed.
- Monitoring: Mitigation and monitoring strategies and activities will be reviewed at a meeting with the Air Force, BLM, and Tribes.

4.9 Recreation

Mitigation measures for recreation address public notification regarding low-level flights, and a collaborative study on recreational use. Mitigation measures were specified in the SROD.

4.9.1 Supplemental Record of Decision (2) (n) ii

- Mitigation Measure: The 366th Wing will work closely with the BLM to notify the public about low-level crossings of the river canyons and periods of increased military training activities.
- Implementation: The Air Force and BLM will work closely to notify the public about low level crossings of the river canyons and periods of military training activities. Airspace scheduling is publicized on the Mountain Home AFB web page. Kiosks are being developed to place at river recreation sites to inform the public of activities in the area.
- Monitoring: Agenda item at semi-annual cooperating agency meeting to review strategy. Air Force and BLM will review the results of the recreation study to ascertain if the public is being notified of overflight issues. Air Force and BLM PA will continue to work together on the strategy.

4.9.2 Supplemental Record of Decision (2) (n) iv

- Mitigation: The Air Force will participate in a collaborative study on recreational use in the Owyhee Bruneau/Jarbidge canyons and Little Jacks Creek WSA.
- Implementation: The BLM and Air Force have conducted a Recreation Study including a visitor survey. The first phase included a visitor survey to collect demographic data on recreation users, current levels and types of recreation use, and perceived effects of aircraft overflights on visitor experience. The recreation study is completed but the results have not yet been reviewed by the AF at the time of this INRMP update.
- Monitoring: BLM and Air Force will review the results of the recreation survey.

4.10 Grazing

Mitigation measures for grazing address grazing accommodation and compensation. Mitigation measures were specified in the ROD.

4.10.1 Record of Decision (1) (o)

- Mitigation Measure: Livestock grazing will be accommodated to the greatest extent practicable on federal lands withdrawn or state lands leased for project facilities.
- Implementation: The proposed grazing management plan is included as a component plan.
- Monitoring: The component plan contains monitoring feedback loops. Management actions may be modified in response to data from monitoring.

4.10.2 Record of Decision (3) (a)

- Mitigation Measure: The Air Force will provide in-kind compensation to ranching operations for disruption to and loss of grazing on withdrawn acreage. This will consist of grazing permits or a combination of grazing permits and cash, fencing the lands associated with the new permits, modifying existing water pipelines affected by the withdrawal, extending existing water pipelines onto the lands associated with the new permits, and constructing a less than one-acre above-ground water reservoir in the corner of the withdrawn lands and associated with a water pipeline. Should the Air Force decide to outlease all or part of the withdrawn land for grazing, the existing permit holder will have the first right of refusal.
- Implementation: Decisions were made by the Assistant Secretary of the Department of the Interior to transfer AUMs, issue grazing permits, and approve projects needed to facilitate the removal of cattle from the withdrawn acres to a new allotment. The existing permit holder has the first right of refusal for a grazing lease on the withdrawn acres.
- Monitoring: The Air Force is developing a lease.

4.11 Fire, Chaff, and Flares

Mitigation measures for fire, chaff, and flares address protocols for chaff and flare use, and fire suppression issues at Juniper Butte Range. Mitigation measures were specified in the ROD and the Settlement Agreement.

4.11.1 Record of Decision (1) (b)

- Mitigation Measure: Flares will not be used below 2,000 feet AGL except over SCR exclusive use area. The minimal release altitude at SCR exclusive use area is 700 feet AGL. Flares will continue to be used in MOA's in accordance with the Inter-Department Memorandum of Agreement among Mountain Home AFB and BLM State Offices in Idaho, Nevada, and Oregon, dated 31 March 1993.
- Implementation: Flare use is written into MHAFBI 13-287, Mountain Home Ranges, and is discussed in section 4.15 of the INRMP.
- Monitoring: The OG will review flare procedures annually and ensure all squadrons brief flare use on sorties employing flares. BLM and Air Force fire investigators determine the source of range fires. If it is determined a fire is started by an aircraft flare, the OG will investigate the cause and take actions to prevent future fires.

4.11.2 Record of Decision (1) (d)

- Mitigation Measure: Non-explosive, self-protection chaff will continue to be used by military aircraft within Mountain Home AFB restricted airspace and MOAs. Chaff will not be used on Mountain Home AFB military training routes. Chaff use within Mountain Home AFB airspace will not increase during FY 99. After FY 99, the USAF and BLM will meet to discuss the issue of increasing chaff beyond baseline levels within Mountain Home AFB airspace.

- Implementation: Chaff was one of the five unresolved areas of BLM concern that the Air Force agreed to continue discussing with BLM. Air Force and BLM will continue to discuss this issue and will specifically address the five areas as part of the MOA between the Air Force and the cooperating agencies.
- Monitoring: Air Force and BLM will review the five areas of concern and address as an annual meeting agenda item at semi-annual meetings.

4.11.3 Records of Decision (1) (c) and (2) (a)

- Fire potential will be reduced by using "cold spot" or "no spot" training ordnance, no-drop target areas, and on-site fire suppression capabilities. ROD (1) (c)
- 366th Wing will develop a range support agreement with BLM that will include a fire suppression plan for the Juniper Butte site. ROD (2) (a)
- Implementation: Fire potential is reduced by using "cold spot" or "no spot" training ordnance on Juniper Butte Range. Fire potential is further reduced by the use of no-drop target areas. As the principal wildland fire suppression force in the area, the BLM will supply fire suppression for the Juniper Butte Range. A support agreement has been in place for many years for the Saylor Creek Range, and was updated to include Juniper Butte Range.
- Monitoring: Air Force and BLM will set "Fire Reduction and Suppression" as an agenda item during semi-annual meetings. While BLM is the primary wildland fire suppression force, the Air Force has an initial response fire suppression team on Juniper Butte Range during ordnance dropping during the fire season.

4.11.4 Settlement Agreements III. D. 1. And III. D. 2.

- Mitigation Measure: The Air Force and BLM will use existing procedure to recover costs from Air Force for BLM fire suppression (according to Interservice Support Agreement Number I00010-98-262-001 or as may be amended) and rehabilitation activities. Settlement Agreement III. D. Fire Suppression, 2. Cost Recovery
- The Air Force will restore native vegetation where practicable, based on historic use in the areas of Air Force-caused fires in accordance with BLM best management practices. Settlement Agreement III. D. Fire Suppression, 2. Restoration
- Implementation: The Air Force is accountable for fires attributed to Air Force activities. Rehabilitation goals are included in the Vegetation Component Plan.
- Monitoring: Annually, the SIG will review "Fire Suppression Cost Recovery and Vegetation Restoration" as an agenda item.

4.12 Noise

Mitigation measures for noise include the accomplishment of a study to describe the actual noise levels for ETI. Mitigation measures were specified the Settlement Agreement.

4.12.1 Settlement Agreement III. C. 1.

- Mitigation Measure: The Air Force will conduct a study of actual noise associated with ETI activities, as follows:
    (a) Air Force will commit supersonic and subsonic noise monitoring assets to conduct the noise study;
    (b) Air Force will, no later than the first scheduled meeting of the SIG after March 2000, compile and deliver to the SIG a list of qualified noise experts or firms; with input from

cooperating agencies on the ETI EIS and Plaintiff GOLD, to design and conduct the study referenced in this section;

(c) GOLD will then select a noise expert or firm from the list (paragraph C.1. [b]) for that expert or firm to develop a noise study design. Air Force will pay for the work of the expert or firm in the study design, implementation, and report of findings at a value not to exceed $300,000. Such amount shall be exclusive of the value or cost of any monitoring assets owned or provided by the Air Force (paragraph C.1. [a]).

(d) The final study design to be implemented by the noise expert or firm, including selection of noise monitoring sites, shall be developed cooperatively between the SIG and the noise expert or firm.

(e) Air Force will add "Cowboy Control" data, when available, to the proposal for analysis along with noise data, subject to security considerations.

- Implementation: The Air Force is currently compiling a list of qualified noise experts to present to the SIG and will continue to work with the SIG to define and implement the noise study.
- Monitoring: The Air Force, in cooperation with the other SIG partners, will review the noise study and make the results available to the public.

5.0 Implementation and Monitoring

5.1 Implementation

Implementation is the phase of the process, which makes the commitments stated in the plan become reality. Sections 4.1 through 4.12 include implementation strategies and monitoring measures sorted by resource and listed with the corresponding mitigation measure. The primary mechanism to verify that implementation strategies have been successful at accomplishing the intended goal defined in this plan is the Environmental Compliance Assessment and Management Program (ECAMP) process. In addition to evaluating implementation of the management strategies it is necessary to evaluate the success of the strategies described in this annex at accomplishing their intended purpose to mitigate the effects of Air Force operations on other State and Federal lands by military activities associated with use of the Juniper Butte Training Range.

5.2 Monitoring

Periodic monitoring of the requirements described in this plan, to include the negotiated mitigation and monitoring effects of military activities associated with the use of the Juniper Butte Training Range are routinely accomplished via the ECAMP process.

TABLE 4.3-1

Mitigation for Phase II and Phase III Sites Included in the Mitigation Plan

Site Name	Site Type	Selective Mitigation Measures[1]	Generic Mitigation
PHASE II			
Maintenance complex	Range maintenance facility	S1	G1-6
Industrial complex	Drop site	S1	G1-6
SAM Array	Drop site	S1	G1-6
AE	1/4 acre emitter	N/A	G1-7
AF	1/4 acre emitter	S2	G1-7
AG	1/4 acre emitter	S3	G1-7
AJ	1/4 acre emitter	N/A	G1-7
BC	1-acre emitter	S6	G1-7
BE	1-acre emitter	N/A	G1-7
BJ	1-acre emitter	N/A	G1-7
ND-7	No drop site	S3	G1-7
PHASE III			
ND-4	No drop site	S5,S7-8	G1-7
ND-5	No drop site	N/A	G1-7
ND-8	No drop site	Site not used	Site not used
ND-9	No drop site	TBD	TBD
AA	1/4 acre emitter	N/A	G1-7
AB	1/4 acre emitter	N/A	G1-7
AC	1/4 acre emitter	N/A	G1-7
AH	1/4 acre emitter	N/A	G1-7
AI	1/4 acre emitter	S2, S7	G1-7
AK	1/4 acre emitter	N/A	G1-7
AM	1/4 acre emitter	N/A	G1-7
AQ	1/4 acre emitter	S4	G1-7
AT	1/4 acre emitter	N/A	G1 -7
AV	1/4 acre emitter	S5	G1-7
BA	1-acre emitter	S6	G1-7
BB	1-acre emitter	N/A	G1-7
BD	1-acre emitter	S4	G1-7
BF	1-acre emitter	N/A	G1-7
BG	1-acre emitter	S6	G1-7
BI	1-acre emitter	N/A	G1-7
BK	1-acre emitter	N/A	G1-7

Note 1: Selective Mitigation Measures

Note 2: Generic Mitigation Measures

Mitigation Measure Number	Description
S1	The contractor will provide on-site monitoring of slickspot peppergrass and slickspot peppergrass habitat during construction thus ensuring that the minimum amount of habitat is destroyed during construction. The number of slickspots and number of plants lost to placement of site facilities should be documented. In addition, the contractor should flag all sites that are on the periphery of the construction site to reduce construction impacts outside the ROW.
S2	Construction activity prohibited from February 15 to June 30 to avoid disturbance of breeding/nesting/brooding greater sage-grouse.
S3	Construction activity prohibited from March 15 to May 31 to avoid greater sage-grouse/wildlife disturbance.
S4	Construction activity prohibited from December 1 to May 31 to avoid greater sage-grouse/wildlife disturbance.
S5	Construction activity prohibited from December 1 to June 30 to avoid greater sage-grouse/wildlife disturbance.
S6	To avoid disturbance of wintering greater sage-grouse, construction activity is prohibited from December 1 to February 15.
S7	Maintain native habitat at no-drop sites. Where possible, situate facilities so as to reduce destruction of native vegetation.
S8	The contractor will affix bird spikes to buildings at ND-4 to discourage perching by raptors.

Mitigation Measure Number	Description
G1	If unanticipated cultural discoveries are made during construction, construction activities will cease in the affected area and would not resume until instructed by the contracting officer. The contractor's representative will notify the Air Force environmental officer. The Air Force official would then notify a qualified permitted archeologist for a consultation. If the site is significant, e.g., human burial site, the archeologist will contact the State Historical Preservation Office (SHPO) for further consultation.
G2	The contractor will have all personnel trained in the use of fire suppression equipment at construction sites.
G3	All vehicles entering construction areas will carry fire extinguishers and shovels.
G4	Contractors will minimize disturbance to native vegetation and use erosion control measures (e.g., water conveyance, energy dissipation structures) and sediment retention measures (e.g., basins, tarps, and barriers) to minimize exposure and movement of soil to reduce impacts resulting from wind or water erosion at construction sites thus, reducing the possibility of the establishment of undesirable non-native plants.
G5	To reduce the establishment of undesirable non-native plants, the contractor will re-seed areas of exposed soil after construction with a seed mixture approved by Bureau of Land Management botanists.
G6	To minimize disturbance to native vegetation, the contractor will utilize existing roads in the rights-of-way if present. The contractor will restrict all vehicle and construction equipment to existing roadways.
G7	The contractor will restrict movement of construction equipment, staging areas, and material storage to within the boundaries of the surveyed rights-of-ways. The contractor will not work outside the existing rights-of-ways.

Appendix H. Status and Scientific Nomenclature of Flora and Fauna Found in the Mountain Home Air Force Base Integrated Natural Resource Management Plan Resource Areas

Flora

(USDA Plants Database 2008)

COMMON NAMES	SCIENTIFIC NAMES	NON-NATIVE	NATIVE	OBSERVED
Shrubs				
Low sagebrush	*Artemisia arbuscula*		X	SCR, JBR
Wyoming big sagebrush	*Artemisia tridentata* var.*wyomingensis*		X	All
Fourwing saltbush	*Atriplex canescens*		X	SCR, JBR
Shadscale saltbush	*Atriplex confertifolia*		X	SCR
Nuttall's saltbush	*Atriplex nuttallii*		X	SCR
Gray rabbitbrush	*Ericameria nauseosa*		X	JBR, SCR
Green rabbitbrush	*Chrysothamnus viscidiflorus*		X	JBR, SCR
Spiny hopsage	*Grayia spinosa*		X	SCR, MHAFB
Winterfat	*Krascheninnikovia lanata*		X	SCR, MHAFB
Golden currant	*Ribes aureum*		X	SCR,MHAFB
Greasewood	*Sarcobatus vermiculatus*		X	SCR
Utah snowberry	*Symphoricarpos oreophilus* var. *utahensis*		X	JBR
Tamarisk *	*Tamarix sp.*	X		SCR
Littleleaf horsebrush	*Tetradymia glabrata*		X	SCR
Shortspine horsebrush	*Tetradymia spinosa*		X	SCR
Forbs				
Western yarrow	*Achillea millefolium*		X	All
Russian knapweed *	*Acroptilon repens*	X		MHAFB, SCR, ES

COMMON NAMES	SCIENTIFIC NAMES	NON-NATIVE	NATIVE	OBSERVED
Bigflower Agoseris	*Agoseris grandiflora*		X	SCR
Annual agoseris	*Agoseris heterophylla*		X	JBR
False Dandelion	*Agoseris glauca*		X	JBR
Wild onion	*Allium* sp.		X	All
Hooker's onion	*Allium acuminatum*		X	JBR
Nevada onion	*Allium nevadense*		X	JBR
Small onion	*Allium parvum*		X	JBR
Prostrate pigweed	*Amaranthus albus*	X		All
Bristly fiddleneck	*Amsinckia tessellate*		X	SCR, JBR
Low pussytoes	*Antennaria dimorpha*		X	JBR
Silver rockcress	*Arabis puberula*		X	JBR
Sandwort	*Arenaria sp.*		X	JBR
Milkweed	*Asclepias sp.*		X	MHAFB, SCR, JBR
Balloonpod milkvetch	*Astragalus whitneyi*		X	SCR
Milkvetch	*Astragalus sp*		X	JBR
Owyhee milkvetch	*Astragalus atratus owyheensis*		X	JBR
Snake River milkvetch ~	*Astragalus purshii ophiogenes*		X	SCR
Thistle milkvetch	*Astragalus kentrophyta var jessiae*		X	SCR
Woollypod milkvetch	*Astragalus purshii*		X	JBR
Hooker's balsamroot	*Balsamorhiza hookeri*		X	SCR, JBR
Arrowleaf balsamroot	*Balsamorhiza sagittata*		X	SCR
Forage kochia	*Bassia prostrata*	X		MHAFB, SCR
Annual Kochia	*Bassia scoparia*	X		All
Sego lily	*Calochortus nuttallii*		X	SCR
Tansy-leaved evening Primrose	*Camissonia tanacetifolia*		X	SCR

COMMON NAMES	SCIENTIFIC NAMES	NON-NATIVE	NATIVE	OBSERVED
Whitetop *	*Cardaria draba*	X		MHAFB, SCR, ES
Musk thistle *	*Carduus nutans*	X		ES
Indian paintbrush	*Castilleja sp.*		X	All
Narrow-leaf paintbrush	*Castilleja angustifolia*		X	JBR, SCR
Desert paintbrush	*Castilleja chromosa*		X	JBR
Diffuse knapweed *	*Centaurea diffusa*	X		SCR, ES
Spotted knapweed *	*Centaurea maculosa*	X		MHAFB, SAR, SCR, ES
Bur Buttercup	*Ceratocephala testiculata*	X		All
Douglas' dustymaiden	*Chaenactis douglasii*		X	SCR
Lambsquarters	*Chenopodium album*	X		MHAFB, SAR, SCR
Rush skeletonweed *	*Chondrilla juncea*	X		MHAFB, SAR, SCR, ES
Crossflower	*Chorispora tenella*	X		SCR, JBR
Bull thistle	*Cirsium vulgare*	X		ES
Canada thistle *	*Cirsium arvense*	X		MHAFB, SCR, ES
Alkali Cleomella ~	*Cleomella plocasperma*		X	ES
Blue-eyed mary	*Collinsia parviflora*		X	JBR
Bastard Toadflax	*Comandra umbellate*		X	SCR
Field bindweed *	*Convolvulus arvensis*	X		MHAFB, SCR, ES
Baker's hawksbeard	*Crepis bakeri*		X	JBR
Tapertip hawksbeard	*Crepis acuminata*		X	All
Low hawksbeard	*Crepis modocensis*		X	JBR
Cryptantha	*Cryptantha sp.*		X	JBR
Dodder	*Cuscuta sp.*	X		MHAFB
Greeley's wavewing ~	*Cymopterus acaulis greeleyorum*		X	SCR
Springparsley	*Cymopterus sp.*		X	JBR

COMMON NAMES	SCIENTIFIC NAMES	NON-NATIVE	NATIVE	OBSERVED
Plains springparsley	*Cymopterus acaulis*		X	JBR
Houndstoungue *	*Cynoglossum officinale*	X		ES
Weakstem cryptantha	*Cryptantha flaccida*		X	JBR
Roundspike cryptantha	*Cryptantha humilis*		X	JBR
Elko cryptantha	*Cryptantha interrupta*		X	JBR
Fringed waterplantain ~	*Damasonium californicum*		X	ES
Low larkspur	*Delphinium bicolor*		X	SCR, JBR
Common larkspur	*Delphinium nuttallianum*		X	JBR
Flixweed	*Descurainia sophia*	X		All
Pinnate tansymustard	*Descurainia pinnata*		X	JBR
Dimeresia	*Dimeresia howellii*		X	ES
Spring draba	*Draba verna*		X	JBR
White eatonella ~	*Eatonella nivea*		X	ES
Tall annual willowherb	*Epilobiuma brachycarpum*		X	JBR
Giant helleborine ~	*Epipactis gigantean*		X	ES
Shaggy fleabane	*Erigeron pumilus*		X	JBR
Purple cushion fleabane	*Erigeron poliospermus*		X	JBR
Rayless shaggy fleabane	*Erigeron aphanactis*		X	JBR, SCR
Douglas' buckwheat	*Eriogonum douglasii douglasii*		X	JBR
Whitewooly buckwheat	*Eriogonum ochrocephalum*		X	SCR
Matted cowpie buckwheat ~	*Eriogonum shockleyi shockleyi*		X	ES
Packard's buckwheat ~	*Eriogonum shockleyi packardiae*		X	ES
Calcareous buckwheat ~	*Eriogonum ochrocephalum*		X	ES
Redstem Stork's Bill	*Erodium circtarium*		X	MHAFB, SAR, SCR, ES
Owyhee frasera	*Frasera albicaulis* var *cusickii*		X	JBR

COMMON NAMES	SCIENTIFIC NAMES	NON-NATIVE	NATIVE	OBSERVED
Chocolate lily	*Fritillaria atropurpurea*		X	JBR
Curlycup Gumweed	*Grindelia squarrosa*		X	MHAFB, SAR, SCR
White-margined wax plant ~	*Glyptopleura marginata*		X	ES
Halogeton	*Halogeton glomeratus*	X		All
Common Sunflower	*Helianthus annuus*		X	MHAFB, SAR, SCR, ES
Dwarf Hesperochiron	*Hesperochiron pumilus*		X	JBR
Jagged chickweed	*Holosteum umbellatum*	X		JBR
Waterleaf	*Hydrophyllum sp.*		X	ES
Black henbane *	*Hyoscyamus niger*	X		MHAFB, ES
Lava aster	*Ionactis alpine*		X	JBR
Spreading gilla ~	*Ipomopsis polycladon*		X	SCR, ES
Davis' peppergrass ~	*Lepidium davisii*		X	MHAFB, SAR, ES
Perennial pepperweed *	*Lepidium latifolium*	X		MHAFB
Slick Spot peppergrass ~	*Lepidium papilliferum*		X	JBR, ES
Clasping-leaf peppergrass	*Lepidium perfoliatum*	X		All
Bruneau river prickly phlox ~	*Leptodactylon glabrum*		X	ES
Granite prickly phlox	*Linanthus pungens*		X	SCR, JBR, ES
Dalmatian toadflax *	*Linaria dalmatica*	X		ES
Flax	*Linum perenne*	X		All
Woodland star	*Lithophragma sp.*		X	SCR
Bulbous woodland star	*Lithophragma glabrum*		X	JBR
Smallflower woodland star	*Lithophragma parviflora*		X	JBR
Biscuit root	*Lomatium* sp.		X	All
Fernleaf biscuitroot	*Lomatium dissectum*		X	JBR

COMMON NAMES	SCIENTIFIC NAMES	NON-NATIVE	NATIVE	OBSERVED
Gray's biscuitroot	*Lomatium grayi*		X	JBR
Henderson's biscuitroot	*Lomatium hendersonii*		X	SCR
Nine-leaf biscuitroot	*Lamatium triternatum*		X	JBR
Lupine	*Lupinus sp.*		X	All
Longspur Lupine	*Lupinus arbustus*		X	JBR
Silvery lupine	*Lupinus argenteus*		X	JBR
Silky lupine	*Lupinus sericeus*		X	JBR
Inch-high lupine ~	*Lupinus uncialis*		X	ES
Hoary tasyaster	*Machaeranthera canescens*		X	SCR, JBR, ES
Common mallow	*Malva neglecta*	X		MHAFB
Horehound	*Marrubium vulgare*		X	SCR
Alfalfa	*Medicago sativa*	X		MHAFB, SCR, JBR
Yellow sweetclover	*Melilotus officinalis*	X		All
Smoothstem blazingstar	*Mentzelia laevicaulis*		X	SCR
Torey's blazingstar	*Mentzelia toreyi acerosa*		X	SCR
Whitestem blazingstar	*Mentzelia albicaulis*		X	MHAFB
Small bluebell	*Mertensia longiflora*		X	JBR
Lindley's silverpuffs	*Microseris lindleyi*		X	JBR
Seep monkeyflower	*Mimulus guttatus*		X	SCR
Annual sandwort	*Minuartia pusilla*		X	SCR, JBR
Sagebrush false dandelion	*Mothocalais troximoides*		X	JBR
Strict forget-me-not	*Myosotis stricta*		X	JBR
Rigid threadbush ~	*Nemacladus rigidus*		X	ES
Pale evening primrose	*Oenothera palida*		X	SCR
Scotch thistle *	*Onopordum acanthium*	X		MHAFB, SCR, ES
Clustered broomrape	*Orobanche fasciculate*		X	SCR

COMMON NAMES	SCIENTIFIC NAMES	NON-NATIVE	NATIVE	OBSERVED
Sharp-leaved penstemon	*Penstemon acuminatus*		X	All
Hot-rock penstemon	*Penstemon deustus*		X	SCR
Lowly penstemon	*Penstemon humilus*		X	JBR
Janish's penstemon ~	*Penstemon janishiae*		X	ES
Palmer's penstemon	*Penstemon palmeri*		X	MHAFB, SAR, SCR
Rocky Mountain penstemon	*Penstemon strictus*		X	MHAFB, SCR
Spine-noded milkvetch ~	*Peteria thompsoniae*		X	ES
Spiny phlox	*Phlox hoodii*		X	JBR
Long-leafed phlox	*Phlox longifolia*		X	All
Common plantain	*Plantago major*	X		MHAFB
Woolly plantain	*Plantago patagonica*		X	JBR
Thorn Skeletonweed	*Pleiacanthus spinosus*		X	SCR
Douglas' knotweed	*Polygonum douglasii*		X	JBR
Rockloving wavewing	*Pteryxia petraea*		X	SCR
Sagebrush buttercup	*Ranunculus glaberrimus*		X	All
Curly dock	*Rumex crispus*	X		MHAFB, SCR, JBR
Russian thistle	*Salsola kali*	X		All
Dwarf skullcap	*Scutellaria nana*		X	JBR
Tall tumblemustard	*Sisymbrium altissimum*	X		All
Buffalobur *	*Solanum rostratum*	X		MHAFB
Perennial sowthistle *	*Sonchus arvensis*	X		MHAFB, ES
Scarlet globemallow	*Sphaeralcea coccinea*		X	JBR
Gooseberryleaf globemallow	*Sphaeralcea grossulariifolia*		X	MHAFB
Munro's globemallow	*Sphaeralcea munroana*		X	JBR, SCR
Desert princesplume	*Stanleya pinnata*		X	SCR

COMMON NAMES	SCIENTIFIC NAMES	NON-NATIVE	NATIVE	OBSERVED
Common dandelion	*Taraxacum officinale*	X		JBR
Yellow salsify	*Tragopogon dubius*		X	All
Puncturevine *	*Tribulus terrestris*	X		All
Clover	*Trifolium sp.*	X	X	All
White clover	*Trifolium repens*	X		MHAFB
Broadleaf cattail	*Typha latifolia*		X	MHAFB, SCR, JBR
Stinging nettle	*Urtica dioica*		X	JBR
Bigbract verbena	*Verbena bracteata*		X	MHAFB, SAR, SCR
Common Mullein	*Verbascum thapsus*		X	SCR, JBR
Water speedwell	*Veronica anagallis*		X	MHAFB, SCR
Beckwith's violet	*Viola beckwithii*		X	JBR
Rough Cocklebur	*Xanthium strumarium*		X	SCR
Death camas	*Zygadenus venenosus*		X	SCR, JBR
Grasses				
Indian ricegrass	*Achnatherum hymenoides*		X	All
Thurber's needlegrass	*Achnatherum thurberianum*		X	SCR
Crested wheatgrass	*Agropyron cristatum*	X		All
Siberian wheatgrass	*Agropyron fragile*	X		SCR
Purple threeawn	*Aristida purpurea*		X	SCR
Field brome	*Bromus arvensis*	X		JBR
Rattlesnake brome	*Bromus briziformis*	X		SCR, JBR
Smooth brome	*Bromus inermis*	X		JBR
Cheatgrass	*Bromus tectorum*	X		All
Orchard grass	*Dactylis glomerata*	X		JBR
Rough barnyardgrass	*Echinochloa muricata*		X	MHAFB

COMMON NAMES	SCIENTIFIC NAMES	NON-NATIVE	NATIVE	OBSERVED
Bottlebrush squirreltail	*Elymus elymoides*		X	All
Slender wheatgrass	*Elymus tracycaulus*		X	JBR
Idaho fescue	*Festuca idahoensis*		X	JBR
Creeping red fescue	*Festuca rubra*	X		MHAFB
Needle-and-thread grass	*Hesperostipa comata*		X	All
Common velvetgrass	*Holcus lanatus*	X		SCR
Basin wildrye	*Leymus cinereus*		X	SCR, JBR
Italian ryegrass	*Lolium perenne*	X		MHAFB
Green needlegrass	*Nassella viridula*		X	SCR, JBR
Bulbous bluegrass	*Poa bulbosa*	X		SCR, JBR
Kentucky bluegrass	*Poa pratensis*	X		MHAFB
Sandberg bluegrass	*Poa secunda*		X	All
Annual rabbitsfoot grass	*Polypogon monspeliensis*	X		MHAFB
Russian wildrye	*Psathyrostachys juncea*	X		MHAFB, SAR, SCR
Bluebunch wheatgrass	*Pseudoroegneria spicata*		X	JBR, SCR
Intermediate wheatgrass	*Thinopyrum intermedium*	X		JBR, SCR
Rush				
Beaked spikerush	*Eleocharis rostella*		X	SCR
Fewflower spikerush	*Eleocharis quinqueflora*		X	SCR
Common rush	*Juncus effuses*		X	SCR
Toad rush	*Juncus bufonius*		X	SCR
Common threesquare	*Schoenoplectus pungens*		X	SCR
Bulrush	*Scirpus sp.*		X	MHAFB
Sedge				

COMMON NAMES	SCIENTIFIC NAMES	NON-NATIVE	NATIVE	OBSERVED
Sedge	*Carex sp.*		X	MHAFB, SCR, JBR
Trees				
Rocky Mountain Juniper	*Juniperus scopulorum*		X	SCR, JBR
Western Juniper	*Juniperus occidentalis*		X	SCR, JBR
Bebb willow	*Salix bebbiana*		X	SCR
Coyote willow	*Salix exigua*		X	SCR
Blue elderberry	*Sambucus nigra*		X	JBR
Lichen				
Hayden's rimmed navel lichen	*Rhizoplaca haydenii*		X	SCR
Cactus				
Simpson's hedgehog cactus ~	*Pediocactus simpsonii*		X	ES

~ indicates plants on county special status list (as found in Appendix J)

* indicates plant on Idaho's list of noxious weeds (as found in Appendix I)

Fauna

Common Name	Scientific Name	IDFG Game Species	Species Protected by:	Observed
BIRDS				
Ducks, Geese, and Swans				
Canada Goose	*Branta Canadensis*	Yes	MBTA	MHAFB
Tundra Swan	Cygnus columbianus		MBTA	MHAFB, ES
Gadwall	*Anas strepera*	Yes	MBTA	MHAFB
American Widgeon	*Anas americana*	Yes	MBTA	MHAFB, SCR
Mallard Duck	*Anas platyrhynchos*	Yes	MBTA	MHAFB, SCR
Blue-Winged Teal	*Anas discors*	Yes	MBTA	MHAFB
Cinnamon Teal	*Anas cyanoptera*		MBTA	MHAFB
Northern Shoveler	*Anas clypeata*	Yes	MBTA	MHAFB
Northern Pintail	*Anas acuta*	Yes	MBTA	MHAFB
Green-Winged Teal	*Anas carolinensis*	Yes	MBTA	SCR
Redhead	*Aythya americana*	Yes	MBTA	MHAFB
Lesser Scaup	*Aythya affinis*	Yes	MBTA	MHAFB
Bufflehead	*Bucephala albeola*	Yes	MBTA	MHAFB
Common Goldeneye	*Bucephala clangula*	Yes	MBTA	MHAFB
Ruddy Duck	*Oxyura jamaicensis*		MBTA	MHAFB
New World Quail				
California Quail	*Callipepla californica*	Yes	IDFG	MHAFB, SCR
Partridges, grouse, turkeys, and Old World quail				
Chukar	*Alectoris chukar*	Yes	MBTA	ES
Gray Partridge	*Perdix perdix*	Yes	MBTA	SCR

Common Name	Scientific Name	IDFG Game Species	Species Protected by:	Observed
Ring-Necked Pheasant	*Phasianus colchicus*	Yes	IDFG	MHAFB
Greater Sage-Grouse	*Centrocercus urophasianus*	Yes	IDFG	SCR, JBR
Pelicans				
American White Pelican ~	*Pelecarus erythrorhynchos*		MBTA	MHAFB
Ibises and spoonbills				
White-Faced Ibis ~	*Plegadis chihi*		MBTA	MHAFB
New World vultures				
Turkey Vulture	*Cathartes aura*		MBTA	SCR, JBR
Hawks, kites, eagles, and allies				
Bald Eagle ~	*Haliaeetus leucocephalus*		MBTA, BGEPA	MHAFB
Northern Harrier	*Circus cyaneus*		MBTA	All
Sharp-Shinned Hawk	*Accipiter striatus*		MBTA	SCR
Swainson's Hawk	*Buteo swainsoni*		MBTA	All
Red-Tailed Hawk	*Buteo jamaicensis*		MBTA	All
Ferruginous Hawk ~	*Buteo regalis*		MBTA	SCR, JBR
Rough-Legged Hawk	*Buteo lagopus*		MBTA	All
Golden Eagle	*Aquila chrysaetos*		MBTA, BGEPA	MHAFB, SCR
Rails, gallinules, and coots				
American Coot	*Fulica americana*		MBTA	MHAFB, SCR
Cranes				
Sandhill Crane	*Grus Canadensis*	Yes	MBTA	ES

Common Name	Scientific Name	IDFG Game Species	Species Protected by:	Observed
Stilts and avocets				
Black-necked Stilt	*Himantopus mexicanus*		MBTA	ES
American Avocet	*Recurvirostra americana*		MBTA	MHAFB
Lapwings and plovers				
Killdeer	*Charadrius vociferous*		MBTA	MHAFB, SCR
Sandpipers, phalaropes, and allies				
Spotted Sandpiper	*Actitis macularia*		MBTA	MHAFB
Willet	*Catoptrophorus semipalmatus*		MBTA	ES
Lesser Yellowlegs	*Tringa flavipes*		MBTA	ES
Long-Billed Curlew ~	*Numenius americanus*		MBTA	MHAFB, SCR
Short-billed Dowitcher	*Limnodromus griseus*		MBTA	ES
Wilson's Phalarope	*Phalaropus tricolor*		MBTA	MHAFB
Gulls, terns, and skimmers				
California Gull ~	*Larus californicus*		MBTA	MHAFB
Pigeons and doves				
Rock Dove	*Columba livia*		Not Protected	MHAFB
Eurasian Collared Dove	*Streptopelia decaocto*		Not Protected	MHAFB
Mourning Dove	*Zenaida macroura*	Yes	MBTA	All
Barn owls				
Barn Owl	*Tyto alba*		MBTA	MHAFB

Common Name	Scientific Name	IDFG Game Species	Species Protected by:	Observed
Typical owls				
Western Screech-owl	*Megascops kennicottii*		MBTA	SCR, ES
Great Horned Owl	*Bubo virginianus*		MBTA	MHAFB, JBR
Burrowing Owl ~	*Athene cunicularia*		MBTA	All
Short-Eared Owl	*Asio flammeus*		MBTA	SCR, JBR
Goatsuckers				
Common Nighthawk	*Chordeilus minor*		MBTA	All
Common Poorwill	*Phalaenoptilus nuttallii*		MBTA	JBR
Hummingbirds				
Ruby-Throated Hummingbird	*Archilochus colubris*		MBTA	MHAFB
Black-Chinned Hummingbird	*Archilochus alexandri*		MBTA	MHAFB
Broad-Tailed Hummingbird	*Selasphorus platycercus*		MBTA	MHAFB
Rufous Hummingbird	*Selasporus rufus*		MBTA	MHAFB
Calliope Hummingbird	*Stellula calliope*		MBTA	MHAFB
Woodpeckers and allies				
Northern Flicker	*Colaptes auratus*		MBTA	All
Caracaras and falcons				
American Kestrel	*Falco sparverius*		MBTA	All
Merlin	*Falco columbarius*		MBTA	SCR
Gyrfalcon	*Falco rusticolus*		MBTA	SCR

Common Name	Scientific Name	IDFG Game Species	Species Protected by:	Observed
Prairie Falcon	*Falco mexicanus*		MBTA	All
Tyrant flycatchers				
Western Wood Pewee	*Contopus sordidulus*		MBTA	MHAFB
Hammond's Flycatcher	*Empidonax hammondii*		MBTA	MHAFB
Gray Flycatcher	*Empidonax wrightii*		MBTA	JBR
Say's Phoebe	*Sayornis saya*		MBTA	JBR
Western Kingbird	*Tyrannus verticalis*		MBTA	All
Shrikes				
Loggerhead Shrike ~	*Lanius ludovicianus*		MBTA	All
Crows and jays				
Black-Billed Magpie	*Pica hudsonia*		MBTA	All
American Crow	*Corvus brachyrhynchos*	Yes	MBTA	MHAFB
Common Raven	*Corvus corax*		MBTA	All
Larks				
Horned Lark	*Eremophila alpestris*		MBTA	All
Swallows				
Bank Swallow	*Riparia riparia*		MBTA	MHAFB
Cliff Swallow	*Petrochelidon pyrrhonota*		MBTA	SCR, JBR
Barn Swallow	*Hirundo rustica*		MBTA	MHAFB
Black- throated Sparrow ~	*Amphispiza bilineata*		MBTA	ES
Chickadees and titmice				
Black-Capped Chickadee	*Poecile atricapillus*		MBTA	MHAFB

Common Name	Scientific Name	IDFG Game Species	Species Protected by:	Observed
Mountain Chickadee	*Poecile gambeli*		MBTA	SCR
Nuthatches				
Red-Breasted Nuthatch	*Sitta canadensis*		MBTA	MHAFB
Wrens				
Rock Wren	*Salpinctes obsoletus*		MBTA	MHAFB, JBR
Marsh Wren	*Cistothorus palustris*		MBTA	SCR
Thrushes				
Western Bluebird	*Sialia mexicana*		MBTA	SCR
Mountain Bluebird	*Sialia currucoides*		MBTA	SCR
American Robin	*Turdus migratorius*		MBTA	All
Mockingbirds and thrashers				
Sage Thrasher	*Oreoscoptes montanus*		MBTA	All
Starlings				
European Starling	*Sturnus vulgaris*		Not protected	All
Waxwings				
Cedar Waxwing	*Bombycilla cedrorum*		MBTA	MHAFB
Wood-warblers				
Yellow Warbler	*Dendroica petechia*		MBTA	MHAFB
Yellow-Rumped Warbler	*Dendroica coronata*		MBTA	SCR
Emberizids				
Spotted Towhee	*Pipilo maculates*		MBTA	SCR
Chipping Sparrow	*Spizella passerina*		MBTA	MHAFB, JBR

Common Name	Scientific Name	IDFG Game Species	Species Protected by:	Observed
Brewer's Sparrow	*Spizella breweri*		MBTA	All
Vesper Sparrow	*Pooecetes grammineus*		MBTA	All
Lark Sparrow	*Chondestes grammacus*		MBTA	MHAFB, SCR
Sagebrush Sparrow	*Artemisiospiza nevadensis*		MBTA	All
Savannah Sparrow	*Passerculus sandwichensis*		MBTA	ES
Grasshopper Sparrow	*Aminodramus savannarum*		MBTA	SCR
Fox Sparrow	*Passerella iliaca*		MBTA	JBR
Song Sparrow	*Melospiza melodia*		MBTA	JBR
White-Crowned Sparrow	*Zonotrichia leucophrys*		MBTA	All
Dark-Eyed Junco	*Junco hyemalis*		MBTA	All
Cardinals, saltators and allies				
Western Tanager	*Piranga ludoviciana*		MBTA	MHAFB
Black-headed Grosbeak	*Pheucticus melanocephus*		MBTA	MHAFB
Lazuli Bunting	*Passerina amoena*		MBTA	MHAFB
Blackbirds				
Red-Winged Blackbird	*Agelaius phoeniceus*		MBTA	SCR
Western Meadowlark	*Sturnella neglecta*		MBTA	All
Yellow-Headed Blackbird	*Xanthocephalus xanthocephalus*		MBTA	MHAFB
Brewer's Blackbird	*Euphagus cyanocephalus*		MBTA	MHAFB, SCR
Brown-Headed Cowbird	*Molothrus ater*		MBTA	MHAFB, JBR

Common Name	Scientific Name	IDFG Game Species	Species Protected by:	Observed
Bullock's Oriole	*Icterus bullockii*		MBTA	MHAFB, JBR
Fringilline and cardueline finches and allies				
House Finch	*Carpodacus mexicanus*		MBTA	MHAFB
Pine Siskin	*Carduelis pinus*		MBTA	MHAFB
American Goldfinch	*Carduelis tristis*		MBTA	MHAFB
Old World sparrows				
House Sparrow	*Passer domesticus*			MHAFB
MAMMALS				
Hares and rabbits				
Black-Tailed Jackrabbit	*Lepus californicus*			All
White-Tailed Jackrabbit	*Lepus townsendii*		Not protected	JBR, ES
Mountain Cottontail	*Sylvilagus nuttallii*	Yes	IDFG	All
Feral Rabbit	*Oryctolagus cuniculus*		Not protected	MHAFB
Shrews				
Vagrant Shrew	*Sorex vagrans*		IDFG	MHAFB
Bats				
Townsend's big-eared bat	*Corynorhinus townsendii*		IDFG	Possibly SCR
Big Brown Bat	*Eptesicus fuscus*		IDFG	MHAFB
Silver-Haired Bat	*Lasionycteris noctivagans*		IDFG	MHAFB
Little Brown Bat	*Myotis lucifugus*		IDFG	MHAFB, JBR
Long-Eared Myotis	*Myotis evotis*		IDFG	MHAFB, SCR
Yuma Myotis ~	*Myotis yumanensis*		IDFG	MHAFB, SCR

Common Name	Scientific Name	IDFG Game Species	Species Protected by:	Observed
Dogs, foxes, and wolves				
Coyote	*Canis latrans*		Not protected	All
Red Fox	*Vulpes vulpes*	Yes	IDFG	MHAFB
Kit Fox ~	*Vulpes macrotis*		IDFG	JBR, ES
Cats				
Bobcat	*Lynx rufus*	Yes	IDFG	JBR
Cougar	*Puma concolor*	Yes	IDFG	JBR, ES
Weasels, otters, and badgers				
American Badger	*Taxidea taxus*	Yes	IDFG	All
Raccoons, ringtails, and coatis				
Raccoon	*Procyon lotor*	Yes	IDFG	MHAFB
Horses and asses				
Feral Horse	*Equus caballus*		IDFG	ES
Pronghorn				
Pronghorn Antelope	*Antilocapra americana*	Yes	IDFG	SCR, JBR
Deer				
Elk	*Cervus canadensis*	Yes	IDFG	SCR
Mule Deer	*Odocoileus hemionus*	Yes	IDFG	All
New World mice, rats, and voles				
Sagebrush Vole	*Lemmiscus curtatus*		IDFG	SCR, JBR
Montane Vole	*Microtus montanus*		IDFG	MHAFB, JBR
Bushy-Tailed Woodrat	*Neotoma cinerea*		Not protected	MHAFB, SCR
Desert Woodrat	*Neotoma lepida*		Not protected	All
Deer Mouse	*Peromyscus maniculatus*		Not protected	MHAFB

Common Name	Scientific Name	IDFG Game Species	Species Protected by:	Observed
New World porcupines				
North American Porcupine	*Erethizon dorsatus*		IDFG	SCR
Pocket gophers				
Northern Pocket Gopher	*Thomomys talpoides*		IDFG	SCR, JBR
Pocket mice and kangaroo mice				
Ord's Kangaroo Rat	*Dipodomys ordii*		IDFG	All
Great Basin Pocket Mouse	*Perognathus parvus*		IDFG	MHAFB, SCR
Squirrels				
Yellow-Bellied Marmot	*Marmota flaviventris*		Not Protected	JBR
Fox Squirrel	*Sciurus niger*		Not protected	MHAFB
Least Chipmunk	*Tamias minimus*		IDFG	JBR
Columbia Basin (Merriam's) Ground Squirrel	*Urocitellus canus*		IDFG	ES
Great Basin (Piute) Ground Squirrel	*Urocitellus mollis*		IDFG	MHAFB, SCR
REPTILES				
Collared and leopard lizards				
Longnose Leopard Lizard	*Gambelia wislizenii*		IDFG	SCR
North American spiny lizards				
Short-Horned Lizard	*Phrynosoma douglasii*		IDFG	SCR

Common Name	Scientific Name	IDFG Game Species	Species Protected by:	Observed
Desert Horned Lizard	*Phrynosoma platyrhinos*		IDFG	SCR
Sagebrush Lizard	*Sceloporus graciosus*		IDFG	MHAFB
Western Fence Lizard	*Sceloporus occidentalis*		IDFG	All
Side-blotched Lizard	*Uta stansburiana*		IDFG	SCR
Skinks				
Western Skink	*Eumeces skiltonianus*		IDFG	SCR
Whiptails and allies				
Western Whiptail	*Aspidoscelis tigris*		IDFG	MHAFB, SCR
Colubrids				
Western Yellow-Bellied Racer	*Coluber constrictor*		IDFG	JBR
Striped Whipsnake	*Masticophis taeniatus*		IDFG	ES
Gopher Snake	*Pituophis catenifer*		IDFG	MHAFB, SCR
Common Gartersnake	*Thamnophis sirtalis*		IDFG	All
Vipers				
Western Rattlesnake	*Crotalus viridis*		IDFG	MHAFB, JBR
AMPHIBIANS				
North American spadefoots				
Great Basin Spadefoot	*Spea intermontana*		IDFG	SCR

Common Name	Scientific Name	IDFG Game Species	Species Protected by:	Observed
INVERTEBRATES				
Fairy shrimp				
Colorado Fairy Shrimp	*Branchinecta coloradensis*			SCR

Trees Planted on MHAFB

Trees On Base (without windbreak)	**Count**
Common name:	
Unidentified	3,525
Amur maple	50
Ash species	7
Austrian Pine	246
Basswood	6
Black cottonwood	28
Black Hills spruce	16
Black locust	18
Boxelder	224
Cherry/plum species	8
Colorado blue spruce	452
Colorado spruce	41
Common apple	44
Common lilac	1
Common privet	2
Common smoketree	3
Cypress species	20
Dwarf Alberta spruce	3
Eastern redbud	1
Elm species	1
European mountain-ash	23
European white birch	13
Forsythia	10
Goldenrain-tree	5
Green ash	224
Hawthorn species	1
Honey-locust	11
Littleleaf linden	35
Locust species	7
Lodgepole pine	35
Lombardy black poplar	73
Mountain-ash species	5
Mugo pine	30
Northern red oak	5
Norway maple	191
Norway spruce	53
Ornamental arborvitae	82
Ornamental cherry	37
Ornamental crabapple	178
Ornamental dogwood	1

Trees in windbreaks	Count
Ornamental hawthorn	33
Ornamental juniper	46
Ornamental lilac	15
Ornamental magnolia	1
Ornamental pear	69
Paperbark maple	4
Pin oak	11
Pine species	20
Ponderosa pine	7
Purple-leaf plum	143
Purpleleaf sand cherry	12
Quaking aspen	15
Raywood ash	318
Red Maple	18
Red-osier dogwood	8
Robust Poplar	5
Rocky Mountain Juniper	80
Russian-olive	95
Scotch pine	508
Shuberts Chokecherry	9
Siberian elm	294
Siberian Peashrub	1
Silver linden	6
Silver maple	119
Stump	4
Sugar maple	11
Sweetgum	4
Thornless honey-locust	499
Unidentified dead	19
Verify species identity	6
Weeping mulberry	5
Weeping white willow	15
White poplar	9
Unidentified	72
Austrian pine	921
Red maple	59
Robust poplar	726
Rocky Mtn. juniper	1,444
Shuberts chokecherry	907
Siberian peashrub	1,704
Skunkbush sumac	510
Unknown willow	33

Appendix I. Idaho Noxious Weed List

Black Henbane (*Hyoscyamus niger)*	Perennial pepperweed (*Lepidium latifolium)*
Bohemian Knotweed (*Plygonum bohemicum*)	Perennial sowthistle (*Sonchus arvensis)*
Brazilian Elodea (*Egeria densa P.)*	Plumeless Thistle (*Carduus acanthoides*)
Buffalobur (*Solanum rostratum)*	Poison hemlock (*Conium maculatum)*
Canada thistle (*Cirsium arvense)*	Policeman's Helmet (*Impatiens glandulifera*)
Common crupina (*Crupina vulgaris)*	Puncturevine (*Tribulus terrestris)*
Dalmation toadflax (*Linaria dalmatica)*	Purple Loosestrife (*Lythrum salicaria)*
Diffuse Knapweed (*Centaurea diffusa)*	Rush skeletonweed (*Chondrilla juncea)*
Dyer's woad (*Isatis tinctioria)*	Russian Knapweed (*Acroptilon repens*)
Eurasian watermilfoil *(Myriophyllum spicatum)*	Saltcedar (*Tamarix*)
Field bindweed (*Convolvulus arvensis)*	Scotch broom (*Cytisus scoparius)*
Giant Hogweed (*Heracleum mantegazzianum*)	Scotch thistle (*Onopordon acanthium)*
Giant Knotweed (*Polygonum sachalinesnse*)	Silverleaf nightshade (*Solanum elaeagnifolium)*
Hoary Alyssum (*Berteroa incana*)	Skeletonleaf bursage (*Ambrosia tomentosa)*
Houndstongue (*Cynoglossum officinale*)	Small Bugloss (*Anchusa arvensis*)
Hydrilla (*Hydrilla verticillata*)	Spotted knapweed (*Centaurea maculosa)*
Japanese Knotweed (*Polygonum cuspidatum*)	Squarrose knapweed (*Centaurea squarrosa)*
Johnsongrass (*Sorghum halepense)*	Syrian beancaper (*Zygophyllus fabago)*
Jointed goatgrass (*Aegilops cylindrica)*	Tall Hawkweed (*Hieracium piloselloides)*
Leafy spurge (*Euphorbia esula)*	Tansy ragwort (*Senecio jacobaea)*
Matgrass (*Nardus stricta)*	Toothed spurge (*Euphorbia dentata)*
Meadow knapweed (*Centaurea pratensis)*	Vipers Bugloss (*Echium vulgare*)
Mediterranean Sage (*Salvia aethiopis*)	Water Hyacinth (*Eichhornia crassipes M*.)
Milium (*Milium vernale)*	White Bryony (*Bryonia alba*)
Musk thistle (*Carduus nutans)*	Whitetop (*Cardaria draba*)
Orange hawkweed (*Heiracium aurantiacum)*	Yellow Devil Hawkweed *(Hieracium glomeratum*)

Oxeye Daisy (*Chrysanthemum leucanthemum)*	Yellow Hawkweed *(Hieracium caespitosum*)
Parrotfeather Milfoil (*Myriophyllum aquaticum)*	Yellow starthistle (*Centaura solstitialis)*
	Yellow toadflax (*Linaria vulgaris)*

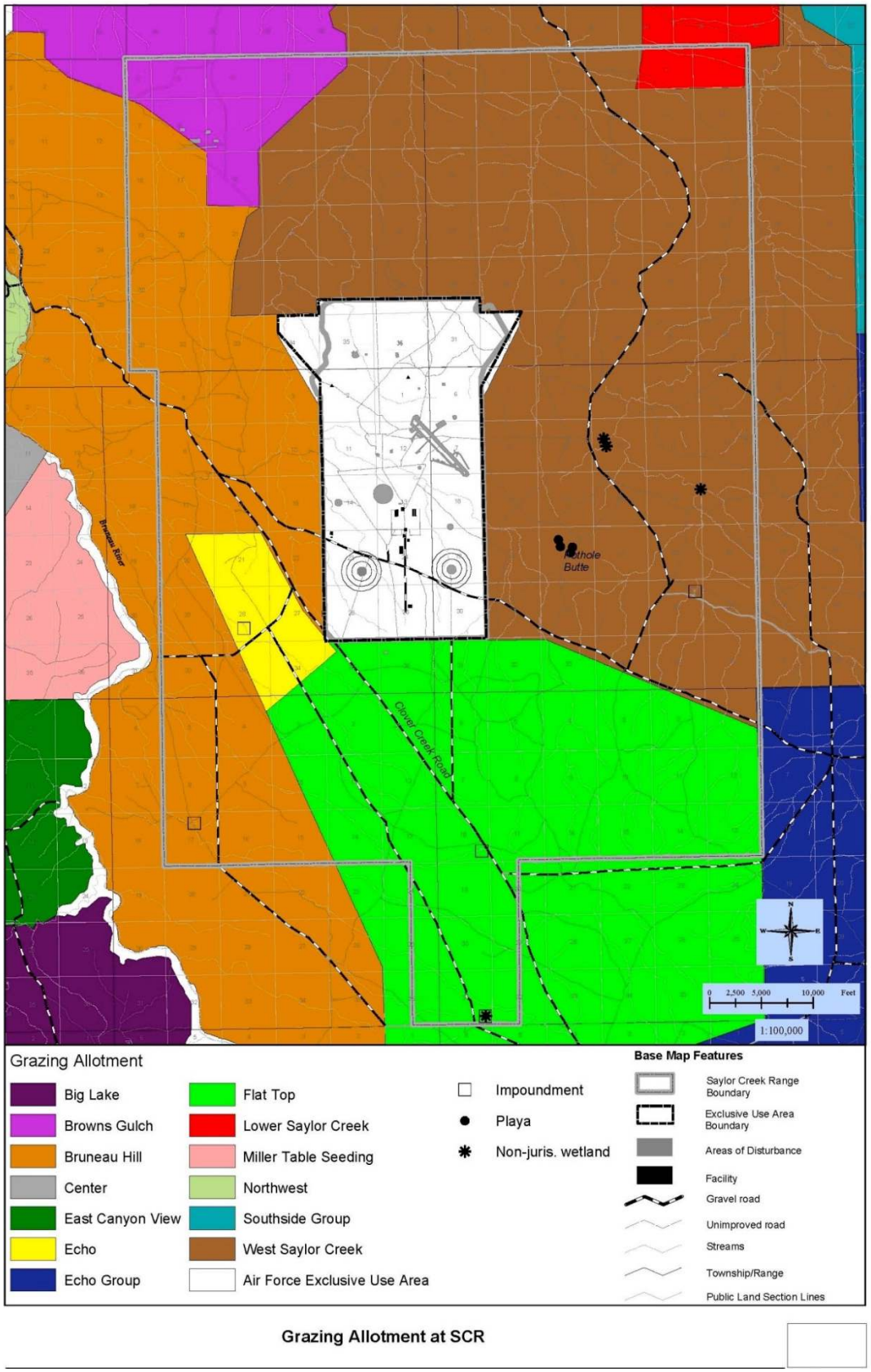
Appendix J. Special Status Plant and Animal Species in Elmore and Owyhee Counties, Idaho

Source: Idaho Species Diversity Database (2018)

Available at:

https://idfg.idaho.gov/species/taxa/county-lists

Appendix K. Grazing Allotments and Animal Unit Months (AUMs) on Saylor Creek Range



Grazing Allotment at SCR

Appendix L. Soils Descriptions for MHAFB, SAR, SCR, JBR, Emitters, and ND Sites

SOIL DESCRIPTIONS FOR MHAFB, SAR, AND SCR

CODE	DESCRIPTION	% COMP*	ACRES	SLOPE %	EROSION POTENTIAL WATER	EROSION POTENTIAL WIND	RUNOFF	DRAINAGE CLASS	DEPTH CLASS	PERMEABILITY	DEPTH TO HARDPAN
31	Colthorp stony silt loam		2754	0-8	Mod	N/A	S or M	Wd	Sh	Ms	10-20in
32	Colthorp-Chilcott silt loams		4194	0-8							
	Colthorp	50			Mod	Mod	S or M	Wd	Sh	Ms	10-20in
	Chilcott	40			Mod	Mod	S or M	Wd	Md	S	20-40in
33	Colthorp-Kunaton complex		347								
	Colthorp	40			Mod	Mod	S or M	Wd	Sh	Ms	10-20in
	Kunaton	40			Mod	Mod	S or M	Wd	Sh	S	10-20in
46	Davey-Buko complex		599	1-12							
	Davey	45			Sl	Sv	S	Ex	Vd	Mr	N/A
	Buko	30			Mod	Mod	S or M	Wd	Vd	Ms (20-40in)	20-40in
48	Davey-Quincy complex		2204	1-12							
	Davey	40			Sl	Sv	S	Ex	Vd	Mr	N/A
	Quincy	35			Sl	Sv	S	Ex	Vd	R	N/A
51	Dors gravelly fine sandy loam		49	4-12	Mod	Mod	S or M	Wd	Vd	Mr (20-40in)	20-40in
74	Greenleaf-Shano complex		1379	4-12							
	Greenleaf	50			Mod	Mod	S or M	Wd	Vd	Ms	12-40in
	Shano	25			Mod	Mod	S or M	Wd	Vd	Mod	N/A
79	Hawsley loamy sand		22	0-12	Sl	Sv	S	Ex	Vd	Vr	N/A
85	Jacquith loamy fine sand		804	1-8	Sl	Sv	S or M	Wd	Md	R	20-40in
86	Jacquith-Quincy loamy sands		734	0-12		Sv					
	Jacquith	45			Sl	Sv	S	Wd	Vd	R	20-40in
	Quincy	30			Sl	Sv	s	Ex	Vd	R	N/A
102	McKeeth gravelly loam		71	2-12	Mod	Mod	S or M	Ex	Vd	Mod	13-40in
103	Minidoka-Minveno silt loams		104	0-4							
	Minidoka	60			Sl	Mod	S	Wd	Md	Mod	20-40in
	Minveno	20			Mod	Mod	S or M	Wd	Sh	Mod	10-20in
113	Owsel-Purdam complex		12941	1-12							
	Owsel	45			Mod	Mod	S or M	Wd	Vd	Ms	N/A
	Purdam	35			Mod	Mod	S or M	Wd	Md	Ms	20-40in
120	Purdam silt loam		28556	0-4	Sl	Mod	S	Wd	Md	Ms	20-40in
122	Purdam-Sebree-Owsel complex		10609	0-8							
	Purdam	40			Mod	Mod	S or M	Wd	Md	Ms	20-40in
	Sebree	25			Sl	N/A	S	Wd	Md	S	20-30in
	Owsel	20			Mod	Mod	S or M	Wd	Vd	Ms	N/A
124	Quincy fine sand		1094	0-12	Sl	N/A	S	Ex	Vd	R	N/A
125	Quincy loamy fine sand		64	12-30	Sl	Sv	S	Ex	Vd	R	N/A
133	Royal fine sandy loam		158	0-4	Sl	Mod	S	Wd	Vd	Mod	N/A

Composition of Dominate Soil Types

SOIL DESCRIPTIONS FOR MHAFB, SAR, AND SCR

CODE	DESCRIPTION	% COMP*	ACRES	SLOPE %	EROSION POTENTIAL WATER	EROSION POTENTIAL WIND	RUNOFF	DRAINAGE CLASS	DEPTH CLASS
134	Royal fine sandy loam		913	4-12	Mod	Mod	S or M	Wd	Vd
135	Royal-Davey complex		2385	0-12					
	Royal	45			Mod	Mod	M	Wd	Vd
	Davey	30			Mod	Sv	M	Ex	Vd
136	Royal-Davey complex		2132	12-40					
	Royal	40			Mod	Mod	M	Wd	Vd
	Davey	35			Mod	Sv	M	Ex	Vd
138	Royal-Truesdale fine sandy loam		13	0-4					
	Royal	45			Mod	Mod	M	Wd	Vd
	Truesdale	35			Sl	Mod	S	Wd	Md
141	Scism silt loam		258	0-4	Sl	Mod	S	Wd	Md
142	Scoon very fine sandy loam		631	0-4	Sl	Mod	S	Wd	Sh
143	Shano loam		1287	1-12	Mod	Mod	S or M	Wd	Vd
144	Shano-Owsel complex		2098	0-12					
	Shano	40			Mod	Mod	S or M	Wd	Vd
	Owsel	35			Mod	Mod	S or M	Wd	Vd
145	Shano-Truesdale fine sandy loams		11718	0-12					
	Shano	50			Mod	Mod	S or M	Wd	Vd
	Truesdale	40			Sl	Mod	S	Wd	Md
158	Trevino-Minidoka complex		503	8-30					
	Trevino	50			Mod	Mod	M or R	Wd	Sh
	Minidoka	40			Mod	Mod	M	Wd	Md
161	Truesdale fine sandy loam		2835	0-4	Sl	Mod	S	Wd	Md
162	Truesdale fine sandy loam		1519	4-12	Mod	Mod	S or M	Wd	Md
170	Vining very stony fine sandy loam		509	0-8	Mod	Mod	S or M	Wd	Md
172	Xeric Torriorthents-Xerollic								
	Cambrothids complex		9377	20-70					
	Xeric Torriorthents				Mod	Mod	M	Ex	Vd
	Xerollic Cambrothids		75		Mod	Mod	M	Ex	Vd
173	Xeric Torriorthents and Xerollic								
	Camborthids		2259	8-20					
	Xeric Torriorthents	40			Sv	Mod	N/A	Wd	Vd
	Xerollic Camborthids	35			Sv	Mod	M or R	Ex	Vd

*** Composition of Dominate Soil Types**

Erosion: Slight (Sl), Moderate (Mod), or Severe (Sv)
Runoff: Slow (S), Medium (M), or Rapid (R)
Drainage class: Well drained (Wd) or Excessive (Ex)

Depth class: Shallow (Sh), Moderately deep (Md), or Very deep (Vd
Permeability: Slow (S), Moderately slow (Ms),
Moderate (Mod), Moderately rapid (Mr), Rapid (R), or
Source: USDA SCS Elmore County Soil Survey (1985)

Soils Within Juniper Butte and Associated Emitters and No-Drop Sites (Page 1 of 3)						
Site	*Map Unit*	*Soil Name*	*Percent Slope*	*Water Erosion Hazard*	*Wind Erosion Hazard*	*Shrink-Swell Potential*
Juniper Butte						
	188	Vickery-Snowmore Complex	1-5	moderate	moderate	moderate
	5	Arbidge-Chilcott Silt Loams	1-8	moderate	moderate	moderate-high
	81	Heckison-Bigflat Silt Loams	1-10	moderate	moderate	moderate-high
	82	Heckison-Freshwater Complex	1-20	moderate	moderate	moderate
	80	Haw-Renslow Association	0-4	low	moderate	moderate
	3	Alzola-Troughs-Bigflat Stony Loams	5-35	low-high	moderate	moderate-high
	147	Scism Silt Loam	5-20	low-moderate	high	-
	182	Troughs-Sugarcreek Association	2-15	low	moderate	moderate
	30	Bruncan-Minveno Complex	2-15	low-high	low-moderate	moderate
One-quarter-acre Emitter Sites						
AA	148	Sidlake-Bruncan Complex	1-8	moderate	moderate	low-moderate
AB	144	Purdam-Owlsel-Shano Complex	gentle	moderate	moderate	low-moderate
AC	144	Purdam-Owlsel-Shano Complex	0-12	moderate	moderate	low-moderate
AD	75	Hardtrigger-Snowmore-Vickery Complex	1-5	low-moderate	moderate	moderate
AE	31	Bruncan-Snowmore-Silt Loams	1-8	low-moderate	moderate	moderate
AF	75	Hardtrigger-Snowmore-Vickery Complex	1-5	low-moderate	moderate	moderate

Table 4.4-1. Soils Within Juniper Butte and Associated Emitters and No-Drop Sites (Page 2 of 3)

Site	*Map Unit*	*Soil Name*	*Percent Slope*	*Water Erosion Hazard*	*Wind Erosion Hazard*	*Shrink-Swell Potential*
AG	75	Hardtrigger-Snowmore-Vickery Complex	1-5	low-moderate	moderate	moderate
AH	120	Purdam Silt Loam	0-4	low	moderate	low-moderate
AI	113	Owsel-Purdam Complex	1-12	moderate	moderate	low-moderate
AJ	35	Colthorp-Minveno Stony Silt Loams	0-8	moderate	moderate	low
AK	135	Royal-Davey Complex	0-12	low-moderate	moderate-high	low
AL	146	Shoofly Loam	0-4	low	moderate	low-high
AM	182	Troughs-Sugarcreek Association	2-15	low	moderate	moderate
AN	210	Willhill-Cottle Association	3-35	low-moderate	moderate	low-moderate
AO	210	Willhill-Cottle Association	3-35	low-moderate	moderate	low-moderate
AP	210	Willhill-Cottle Association	3-35	low-moderate	moderate	low-moderate
AQ	32	Bruncan-Troughs Very Stony Loams	1-10	low	low	moderate
AT	100	McKeeth-Veta Gravelly Loams	2-15	low	moderate	moderate
AU	204	Wickahoney-Monasterio-Yatahoney Association	1-20	low-moderate	moderate	moderate-high
AV	204	Wickahoney-Monasterio-Yatahoney Association	1-20	low-moderate	moderate	moderate-high
One-acre Emitter Sites						
BA	35	Colthorp-Minveno Stony Silt Loams	0-8	moderate	very low-low	low
BB	31	Colthorp Stony Silt Loam	0-8	moderate	very low	low

Soils Within Juniper Butte and Associated Emitters and No-Drop Sites (Page 3 of 3)						
Site	*Map Unit*	*Soil Name*	*Percent Slope*	*Water Erosion Hazard*	*Wind Erosion Hazard*	*Shrink-Swell Potential*
BC	75	Hardtrigger-Snowmore-Vickery Complex	1-5	low-moderate	moderate	moderate
BD	23	Brace-Freshwater Complex	1-15	low-high	low-moderate	moderate
BE	82	Heckison-Freshwater Complex	1-20	moderate	moderate	moderate
BF	158	Trevino-Minidoka Complex	8-30	moderate	moderate	low
BG	181	Troughs-Owsel Complex	1-10	low	low	moderate
BI	27	Bruncan-Hardtrigger-Buncelvoir Complex	1-8	moderate	moderate	moderate-high
BJ	82	Heckison-Freshwater Complex	1-20	moderate	moderate	moderate
BK	113	Owsel-Purdham Complex	1-12	moderate	moderate	low-moderate
No-drop Target Areas						
ND-1	146	Shoofly Loam	0-4	low	moderate	low-high
	158	Trevino-Minidoka Complex	8-30	moderate	moderate	low
ND-4	204	Wickahoney-Monasterio-Yatahoney Association	1-20	low-moderate	moderate	moderate-high
ND-5	27	Bruncan-Hardtrigger-Buncelvoir Complex	1-8	moderate	moderate	moderate-high
ND-7	75	Hardtrigger-Snowmore-Vickery Complex	1-5	low-moderate	moderate	moderate
ND-8	207	Wickahoney-Zecanyon Complex	3-45	low-high	moderate	high
ND-9	TBD	TBD	TBD	TBD	TBD	TBD

Appendix M. Emitter Sites and No-Drop Site Vegetation Types

MHRC Emitter Sites Surrounding Site Vegetation Types	
Emitter	**Description**
AA	Vegetation at AA is composed of seeded grassland. The dominant plant species are crested wheatgrass and cheatgrass. Wyoming big sagebrush, rabbitbrush, and Sandberg's bluegrass are present in lower densities. At least seven forb species exist as well as a ground cover of mosses and lichens. Disturbance is moderate.
AB	Vegetation at AB consists primarily of annual and seeded grasslands. The dominant plant species is cheatgrass. Other plant species include crested wheatgrass, Sandberg's bluegrass, and tumble mustard. The site is moderately disturbed due to livestock grazing.
AC	Vegetation on the right-of-way at AC consists of drill-seeded crested wheatgrass. Other species present include cheatgrass, tumble mustard, and phlox (*Phlox* sp.). The site is disturbed.
AD	Vegetation at AD is mainly seeded crested wheatgrass. Other species present include Sandberg's bluegrass, cheatgrass, green rabbitbrush (*Chrysothamnus viscidiflorus),* and Wyoming big sagebrush. The area burned before a 1996 survey and was subsequently seeded. The site is moderately disturbed.
AE	Vegetation at AE is primarily crested wheatgrass and cheatgrass. Other species present include tumble mustard, clasping peppergrass, and sagebrush. The site is moderately disturbed.
AF	Vegetation at AF is primarily annual grassland. Dominant plant species include cheatgrass and Sandberg's bluegrass. Other species present include clasping pepperweed, sagebrush buttercup (*Ranunculus glaberrimus),* and bluebunch wheatgrass. Wyoming big sagebrush is present in the northeast section and appears to have been abundant prior to a somewhat recent burn as evidenced by burned stumps. The site is rocky and disturbance is moderately high due to nearby livestock grazing and exotic species invasion.
AG	Vegetation at AG is dominated by drill-seeded crested wheatgrass and clasping peppergrass. Tumble mustard, cheatgrass, flax (*Linum* sp.), and Sandberg's bluegrass are also present in the area. The site has been disturbed due to livestock grazing.

MHRC Emitter Sites Surrounding Site Vegetation Types	
Emitter	**Description**
AH	Vegetation at AH is weedy. Dominant species include tumble mustard, cheatgrass, and clasping peppergrass. Other species include crested wheatgrass, sagebrush, and gray rabbitbrush (*Chrysothamnus nauseousus).* The site is rocky.
AI	Vegetation at AI is dominated by Wyoming big sagebrush, Sandberg's bluegrass, cheatgrass, crested wheatgrass, and phlox. The site is moderately disturbed by livestock grazing.
AJ	Vegetation at AJ is primarily weedy grassland. Dominant species include Sandberg's bluegrass, cheatgrass, and salsify (*Tragopogon dubius).* Other species present include phlox, green rabbitbrush, and tumble mustard. The site is slightly disturbed by livestock grazing.
AK	Vegetation at AK is predominantly annual grassland. Dominant species include cheatgrass, Sandberg's bluegrass, and Wyoming big sagebrush. Other species include tumble mustard, crested wheatgrass, and saltbush (*Atriplex* sp.). The site is composed of gravelly soils and is disturbed from livestock grazing.
AM	Vegetation at AM is primarily annual and seeded grassland. Dominant plant species include cheatgrass and crested wheatgrass. Wyoming big sagebrush, tumble mustard, and Sandberg's bluegrass occur at lower densities. A 3-mile stretch of sagebrush is present between the turnoff from Highway 51 and the emitter site. The area is generally weedy. The soil is disturbed from livestock grazing.
AN	Vegetation at AN is shrubland and annual grassland. Other species include Wyoming big sagebrush, rabbitbrush, cheatgrass, and Sandberg's bluegrass.

MHRC No-Drop Sites Surrounding Site Vegetation Types	
No-Drop	**Description**
BI	Vegetation at BI is shrubland and seeded grassland. Dominant species include crested wheatgrass up to three-quarters of a mile east of ND-5 and Wyoming big sagebrush in the remaining stretches. Other species include Sandberg's bluegrass, bluebunch wheatgrass, wild onion (*Ahhium* sp.), and phlox.
BJ	Vegetation at BJ is primarily a mix of shrubland and grassland. Dominant species include Wyoming big sagebrush and rabbitbrush, interspersed with grasses, including bluebunch wheatgrass and Sandberg's bluegrass. A few slickspots exist; however, no rare plants were found.
BK	BK is a developed, Pershing Missile site.
ND-1	Vegetation at ND-1 is primarily annual and seeded grassland. Dominant species are cheatgrass and crested wheatgrass. Other species present include tumble mustard, Sandberg's bluegrass, and halogeton. The site is weedy and the soil is disturbed.
ND-4	Vegetation at ND-4 is primarily shrubland. The dominant species is low sagebrush. Other species in the area include Idaho fescue, Sandberg's bluegrass, and bulbiferous prairiestar. A wide variety of forbs are present. The site is minimally disturbed.
ND-5	Vegetation at ND-5 is shrubland and seeded grassland. Dominant species include crested wheatgrass up to three-quarters of a mile east of ND-5 and Wyoming big sagebrush in the remaining stretches. Other species include Sandberg's bluegrass, bluebunch wheatgrass, wild onion, and phlox.
ND-7	Vegetation at ND-7 consists of both shrubland and seeded grassland. Dominant species in the shrubland habitat are Wyoming big sagebrush and Sandberg's bluegrass. The dominant species in the seeded grassland is crested wheatgrass.
ND-9	Private land, low-sage, forbs, bluebunch wheatgrass.
Source: 1996-1999 Field Notes.	

Appendix N. Literature Cited and GIS Data Used in Figures in the MHAFB INRMP

LITERATURE CITED

Bailey, R. G. and A. W. Kuchler. (1996). Potential Natural Vegetation of the United States. U.S. Geological Survey. Washington, DC.

Bald and Golden Eagle Protection Act of 1940, as amended. (1978). 16 U.S.C. §668-668d.

Bendixsen, S. (1994). Summary of Hydrologic Conditions in the Mountain Home and Cinder Cone Butte Areas. Idaho Department of Water Resources. Boise, Idaho.

Bent, A.C. (1926). Life Histories of North American Marsh Birds. U.S. National Museum Bulletin, 135.

_____. (1950). Life Histories of North American Wagtails, Shrikes, Vireos, and Their Allies. U.S. Natl. Mus. Bull., 197.

Benton, N., J.D. Ripley, and F. Powledge, eds. (2008).Conserving Biodiversity on Military Lands: A Guide for Natural Resources Managers. Available at http://www.dodbiodiversity.org. Arlington, Virginia: NatureServe. 2008.

Betts, B.J. (1997). Microclimate in Hell's Canyon Mines Used by Maternity Colonies of Myotis yumanensis. Journal of Mammalogy, 78, 1240-1250.

Blake, S. (2015). 2014 Slickspot Peppergrass (*Lepidium papilliferum*) Monitoring Permanent Transects Juniper Butte Range. Mountain Home Air Force Base Report prepared for USAF Environmental Management 366 CES/CEIE. Mountain Home Air Force Base, Idaho. January 2015. 29 pp. + figures and appendices.

Bonnell, M.L. (1967). Emergence and Foraging Behavior in Small Populations of Idaho Bats. Master's Thesis. University of Idaho, Moscow.

Burt, W.H., and R.P. Grosenheider. (1964). A Field Guide to the Mammals. The Peterson Field Guide Series. Houghton Mifflin Company, Boston.

Casey, Bill. (1999). District Fire Management Officer. Bureau of Land Management, Lower Snake River District Office, Idaho. Personal communication. 1999.

CH2M HILL. (2001). Vegetation Trend Monitoring. Enhanced Training in Idaho, Juniper Butte Range. Unpublished report for USAF Mountain Home Air Force Base, Idaho. 7p. plus appendices.

_____. (2002c). Slickspot peppergrass (*Lepidium papilliferum*) survey. Enhanced Training in Idaho, Juniper Butte Range. Mountain Home Air Force Base Report. 11 p. plus appendices.

_____. (2003a). Mountain Home Air Force Base Water Master Plan. Mountain Home Air Force Base, Idaho.

_____. (2003b). Slickspot peppergrass (*Lepidium papilliferum*) survey. Enhanced Training in Idaho. Juniper Butte Range and Saylor Creek Range. Mountain Home Air Force Base Report. September 2003. 67 p.

_____. (2004). (2005). (2006). (2007). (2008a). Slickspot peppergrass (*Lepidium papilliferum*) Permanent Monitoring Plots Juniper Butte Range. Mountain Home Air Force Base Reports prepared for USAF Environmental Management 366 CES/CEVA. Mountain Home Air Force Base, Idaho.

_____. (2008b). 2008 Sage Grouse, Raptor, Breeding Bird Survey Results for Mountain Home Air Force Base Facilities. Prepared for 366 CES/CEANCEIE. Mountain Home AFB, Idaho.

Chapman, J., and George Feldhamer, editors. (1982). Wild Mammals of North America. The Johns Hopkins University Press, Baltimore.

Chase, M.K. and B.A. Carlson. (2002). Sage Sparrow (*Amphispiza belli*). In The Coastal Scrub and Chaparral Bird Conservation Plan: A Strategy for Protecting and Managing Coastal Scrub and Chaparral Habitats and Associated Birds in California. California Partners in Flight.

Clean Water Act. (1977). Federal Water Pollution Control Act of 1972, as amended. 33 U.S.C. §1251 et seq.

Colket, B., S. Cooke, and M. Mancuso. (2006). Element occurrence review and update for slickspot peppergrass (*Lepidium papilliferum*). Idaho Department of Fish and Game, Idaho conservation Data Center, Boise, Idaho.

Conley, J. (2017). 2016 Slickspot Peppergrass (*Lepidium papilliferum*) Monitoring of Permanent Transects at Juniper Butte Range. Mountain Home Air Force Base Report prepared for USAF Environmental Management 366 CES/CEIE. Mountain Home Air Force Base, Idaho. March 2017. 47 pp. + appendices.

Connelly, J.W., S.T. Knick, M.A. Schroeder, and S.J. Stiver. (2004). Conservation Assessment of Greater Sage-Grouse and Sagebrush Habitats. Western Association of Fish and Wildlife Agencies. Cheyenne, Wyoming.

Cowardin, L.M., Carter, V., Golet, F.C., and LaRoe, E.T. (1979). Classification of Wetlands and Deepwater Habitats of the United States. FWS/OBS79/31. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, D.C.

Daubenmire, D. (1988). Steppe Vegetation of Washington. Bulletin EB 1446. Washington State University Cooperative Extension, Pullman, Washington, USA.

Daubenmire, R. (1970). Plant Communities: A Textbook of Plant Synecology. Harper and Row. New York, New York.

DeBolt, A. (1999). Botanist. Bureau of Land Management, Lower Snake River District Office, Idaho. Personal communication. 1999.

Defense Base Closure and Realignment Act of 1990. (2005). P.L. 101-510 Available at http://www.brac.gov/docs/BRAC05Legislation.pdf

DoD. (1978). DoD Directive 5031.41 Oil and Hazardous Substance Pollution Prevention and Contingency Program. Available at http://www.dtic.mil/whs/directives/

_____. (1994). Implementation of Ecosystem Management in the DoD. Memorandum from Office of the Under Secretary of Defense, Environmental Security. Washington, DC.

_____. (1996b). DoDI 4715.04. Pollution Prevention. Available at http://www.dtic.mil/whs/directives/

_____. (1997). DoD Manual 4160.21-M. Defense Materiel Disposition Manual. Available at http://www.dtic.mil/whs/directives/

_____. (2008). DoDI 4150.07. DOD Pest Management Program. Available at http://www.dtic.mil/whs/directives/

_____. (2011). DoDI 4715.03. Natural Resources Conservation ProgramEnvironmental Conservation Program. Available at http://www.dtic.mil/whs/directives/

_____. (2013) DoDM 4715.03. Integrated Natural Resources Management Plan (INRMP) Implementation Manual. Available at http://www.dtic.mil/whs/directives/

DoD PIF. (2010). List of Priority Species for the Great Basin, 7 December 2010 [Data file].

Doering, R. and B. Keller. (1998). A Survey of Bat Species of the Bruneau-Jarbidge River Area of Southwestern Idaho with Special Reference to the Occurrence of the Spotted Bat (*Euderma maculatum*). Technical Bulletin No. 98-18. Idaho Bureau of Land Management, 29.

Endangered Species Act of 1973, as amended. (1988). 16 U.S.C. §1531-1543

Eriksen, C. and B. Denton. (1999). Fairy Shrimp of California's Puddles, Pools, and Playas. Mad River Press, Inc. and Eureka Printing Company, Inc. Eureka, CA. p. 196.

ERO. (2008). Final Survey and Mapping Report for Slickspot Habitat and *Lepidium Papilliferum* Inventor Owyhee County, Idaho; ERO Project #3184. Prepared for USFWS, Boise, Idaho.

Evers, D.C. (1994). Birds: Species accounts. Pp. 85-221 in D.C. Evers, Ed. Endangered and Threatened Wildlife of Michigan. Univ. of Mich. Press, Ann Arbor, MI.

Executive Order 11988. 42 FR 26951. (1977). Floodplain Management.

_____. 11990. 42 FR 26961. (1977). Protection of Wetlands. Amended by EO 12608. 52 FR 34617 (1987)

_____. 12088. 43 FR 47707. (1978). Federal Compliance with Pollution Control Standards. Amended by 12580. 52 FR 2923 (1987).

_____. 13112. 64 FR 6183. (1999). Invasive Species. Amended by EO 13286. 68 FR 10619 (2003).

_____. 13186. 66 FR 3853. (2001). Responsibilities of Federal Agencies to Protect Migratory Birds.

Federal Emergency Management Agency (FEMA). (1988). Flood Insurance Rate maps for the City of Mountain Home. Washington, DC.

Ferguson, J. L. S. (2001). The potential effectiveness of prescribed burning to restore shrub-grass openings in a Douglas-fir/steppe ecotone. M.S. Thesis. University of Idaho. 81 p.

Fidell Associates, Inc. (2003). Monitoring of Aircraft Noise in the Owyhee and Jarbidge MOAs. Prepared for Mountain Home AFB, Idaho.

Gillerman, V. S. and B. Bonnichsen. (1990). Geology and Mineral Resources of the Saylor Creek Bombing Range and Eastern Owyhee County. Idaho Geological Survey GeoNote 12.

Golightly, R.T., Jr. (1981). The Comparative Energetics of Two Desert Canids; the Coyote and the Kit Fox. Ph.D. Dissertation, Arizona State University, Tempe. 174 pp.

Haak, B.A., & Oelrich, K. (2009). Autumn Movements of Radio-marked Raptors in Southwest Idaho, 2008. Idaho Department of Fish and Game, Southwest Region, Nampa, Idaho.

ISDD. (2018). Idaho Species Diversity Database, Idaho. Idaho Department of Fish and Game, Boise. Accessed November 14, 2018. Available at https://idfg.idaho.gov/species/taxa/county-lists

Idaho Code. (1997). Title 22. Agriculture and Horticulture. Boise, Idaho.

Idaho Bird Observatory. (2007). Fall Migration Monitoring of Raptors and Songbirds, Boise Ridge, Idaho; Annual Report, Fall 2007. Available at: http://www.idahobirdobservatory.org

Idaho Invasive Species Council. (2009a). Idaho's 64 Noxious Weeds. Available at: http://www.agri.state.id.us/Categories/PlantsInsects/NoxiousWeeds/watchlist.php

Idaho Invasive Species Council. (2009b). Idaho Invasive Species List. Available at: http://www.agri.state.id.us/Categories/Environment/InvasiveSpeciesCouncil/InvSppList.php

Idaho Department of Commerce. (2008). Retrieved December 15, 2008 from http://commerce.idaho.gov/business/economic-indicators/

IDARNG. (1998). LEPA (*Lepidium papilliferum*) Booklet. Natural Resources Group, Environmental Management Office. Boise, Idaho.

IDFG. (2005). Idaho Comprehensive Wildlife Conservation Strategy. Available at http://fishgame.idaho.gov/cms/tech/CDC/cwcs_table_of_contents.cfm

_____. (2010a). Idaho Sage-grouse Leks [Data File]. Idaho Department of Fish and Game, Boise, Idaho.

_____. (2010b). Bighorn Sheep Management Plan 2010. Idaho Department of Fish and Game, Boise, Idaho.

_____. (2015). Idaho State Wildlife Action Plan. Available at: https://idfg.idaho.gov/swap

_____. (2016). Assessment of *Lepidium papilliferum* (Slickspot Peppergrass) Element Occurrences. Idaho Natural Heritage Program. Report completed by C.L. Kinter and J.J. Miller. 71 pp. + appendices.

Idaho Native Plant Society. (2008 and 2016). http://www.idahonativeplants.org/

Idaho Sage-grouse Advisory Committee. (2006). Conservation Plan for the Greater Sage-grouse in Idaho. Available at http://fishandgame.idaho.gov/cms/hunt/grouse/conserve_plan/

Jarbidge Sage-grouse Local Working Group. (2007). Jarbidge Sage-grouse Conservation Plan. Available at http://fishandgame.idaho.gov/hunt/grouse/conserve_plan/local_workgroups.cfm

Jirik, S. (1999). Fuels Management Specialist, BLM. Personal Communication 1999.

Johnson, M.J., C. Van Riper III, and K.M. Pearson. (2002). Black-throated Sparrow (*Amphispiza bilineata*). In The Birds of North America, No. 637 (A. Poole and F. Gill, eds.). The Birds of North America, Inc., Philadelphia, PA.

Juniper Butte Range Withdrawal Act of 1998. (1998). Pub. L. 105-261

Keller, B.L. (1987). Analysis of the bat species present in Idaho, with special attention to the spotted bat, *Euderma maculatum*. Dept. Biol. Sciences, Idaho St. Univ., Pocatello. 25pp.

Kendall, T. (2009). Water program manager, Mountain Home Air Force Base. Personal communication 15 January 2009.

Keppler, D. (2008). Programming Flight Civil Engineer, Mountain Home Air Force Base. Personal communication 30 October 2008.

Knick, S.T. and J.T. Rotenberry. (1995). Landscape Characteristics of Fragmented Shrubsteppe Habitats and Breeding Passerine Birds. Conservation Biology, 9, 1059-1071.

Lehman, B. (2000). USGS Raptor Research Center, Boise, Idaho. Personal communication. 2000.

Little, J.M. (1991). Loggerhead shrike *Lanius ludovicianus* species account. Pp.368-369 In: Brewer, R., G.A. McPeek, and R.J. Adams Jr., eds. 1991. The Atlas of Breeding Birds of Michigan. Mich. State Univ. Press, East Lansing, MI. 650p.

Livingston, R.L., et al., (2000). Distribution of the Balsam Woolly Adelgid in Idaho. Western Journal of Applied Forestry. Vol 15 No. 4 pp 227-231(5).

Lowe, B. and M. Commons-Kemner. (2009). Raptor and Sage-grouse Study at Mountain Home Range Complex (MHRC) Sites FY2008. Idaho Department of Fish and Game, Jerome, Idaho.

Malde, H. E. (1991). Quaternary Geology and Structural History of the Snake River Plain, Idaho and Oregon. In R.B. Morrison Ed. Quaternary Nonglacial Geology: Coterminous U.S.; The Geology of North America. Vol. K-2. Geological Society of America. Boulder, Colorado.

Manci, K.M., D.N. Gladwin, R. Villella and M.G. Cavendish. (1988). Effects of aircraft noise and sonic booms on domestic animals and wildlife: A literature synthesis. U.S. Fish and Wildlife Service. National Ecology Research Center, Ft. Collins, Colorado. NERC-88/29.

Mancuso, M. and R. K. Moseley. (1998). An Ecological Integrity Index to Assess and Monitor *Lepidium Papilliferum* (Slickspot Peppergrass) Habitat in Southwestern Idaho. Idaho Conservation Data Center. Idaho Fish and Wildlife Service. Prepared for State of Idaho, Military Division.

Manning, R. W., & J. K. Jones. (1989). *Myotis evotis*. Mammalian Species, 329, 1-5.

Martin, J.W., and B.A. Carlson. (1998). Sage Sparrow (*Amphispiza belli*). In A. Poole and F. Gill, editors. The Birds of North America, No. 326. The Birds of North America, Inc., Philadelphia, PA.

Migratory Bird Treaty act of 1918, as amended. (1998). 16 U.S.C. §703-712; Ch. 128; 40 Stat. 755.

Monsen, S.B., R. Steven, and N.L. Shaw, comps. (2004). Restoring Western Ranges and Wildlands. Vol. 1-3. Gen. Tech. Rep. RMRS-GTR-136. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station.

Moseley, R. K. (1994). Report on the Conservation Status of *Lepidium Papilliferum*. Idaho Conservation Data Center. Idaho Fish and Wildlife Service. Prepared for Idaho Department of Park and Recreation.

_____ . (1995). Report on the Conservation Status of *Lepidium davisii*. Idaho Conservation Data Center, Idaho Department of Fish and Game. Boise, Idaho.

MHAFB. (1998). Mountain Home AFB 1998 AICUZ Report. Mountain Home Air Force Base, Idaho.

_____. (2000). Urban Forest Management Plan, Survey Report. Mountain Home Air Force Base, Idaho.

_____. (2004). MHAFBI 31-202. Control of Animals. Available at http://www.e-publishing.af.mil

_____. (2006). Wildlife Data Summary Report for Mountain Home Air Force Base and Mountain Home Range Complex. Mountain Home Air Force Base, Idaho.

_____. (2007a). 366 FW Plan 3211-07. Installation Pest Management Plan. Mountain Home Air Force Base, Idaho.

_____. (2007b). Environmental Assessment: Employment of the 2.75-Inch Rocket at Saylor Creek Air Force Range. Mountain Home AFB, Idaho.

_____. (2007c). Final Environmental Assessment for Phase 8 of Military Family Housing, Mountain Home Air Force Base, Idaho. Mountain Home AFB, Idaho.

_____. (2007d). Lek and Raptor Surveys for Mountain Home Range Complex and Juniper Butte Range. Mountain Home Air Force Base report prepared by 366 CES/CEVA, Mountain Home Air Force Base, Idaho. April 2007.

_____. (2007e). Memorandum of Understanding between Owyhee, Elmore, and Twin Falls County Sherriff's Offices and 366th Security Forces Squadron for Response to MHAFB Range Complex. Mountain Home Air Force Base, Idaho.

_____. (2007f). Mountain Home Air Force Base Wetland Delineation and Request for Jurisdictional Determination. Prepared by CH2M Hill on Behalf of USAF Environmental Management, 366 CES/CEVA. MHAFB, Idaho. 151p.

_____. (2007g). Wildland Fire Management Plan (WFMP), Mountain Home Air Force Base and Mountain Home Range Complex. Mountain Home Air Force Base, Idaho.

_____. (2008a). 366 FW Plan 3208-08. Hazardous Waste Management Plan. Mountain Home Air Force Base, Idaho.

_____. (2008b). Environmental Assessment for Proposed Airspace Changes for Paradise East and Paradise West Military Operations Areas (MOAs) at Mountain Home AFB (MHAFB) Idaho. Mountain Home AFB, Idaho.

_____. (2008c). Support Agreement Between The United States Air Force, 366th Fighter Wing, Mountain Home Air Force Base, Idaho and the United States Department of Interior, Bureau of Land Management, Twin Falls District. Mountain Home Air Force Base, Idaho.

_____. (2009a). 366 FW Plan 9102-09. Bird and Wildlife Strike Hazard Reduction Plan. Mountain Home Air Force Base, Idaho.

_____. (2009b). Storm Water Pollution Prevention Plan. Mountain Home Air Force Base, Idaho.

_____. (2010a). 366 FW Plan 3209-10. Hazardous Material Emergency Response Planning and Response Program. Mountain Home Air Force Base, Idaho.

_____. (2010b). 366 FW Plan 3202-10. Integrated Contingency Plan for Oil Spill Prevention Response Plan. Mountain Home Air Force Base, Idaho.

_____. (2010c). 366 FW Plan 3205-10. Solid Waste Management Plan. Mountain Home Air Force Base, Idaho.

_____. (2010d). Comprehensive Range Plan, Mountain Home Range Complex. Mountain Home Air Force Base, Idaho.

_____. (2010e). MHAFBI 32-7003. Range Standard Operating Procedures. Available at http://www.e-publishing.af.mil

_____. (2010f). Mountain Home Air Force Base General Plan. Mountain Home Air Force Base, Idaho.

_____. (2010g). Record of Decision Amendment, Operable Units 1, 3, 5, and 6 with a Proposed Remedy for Site ST-11. Mountain Home Air Force Base, Idaho.

_____. (2010h). Slickspot Peppergrass (*Lepidium papilliferum*) Biological Assessment for Juniper Butte Range. Mountain Home Air Force Base, Idaho.

_____. (2010i). Draft Comprehensive Range Plan. Mountain Home Air Force Base, Idaho.

_____. (2011). Integrated Cultural Resources Management Plan. Mountain Home Air Force Base, Idaho.

_____. (2013a). Grazing Utilization Report, Juniper Butte Range. Mountain Home Air Force Base, Idaho.

_____. (2013b). Juniper Butte Range Long-Term Monitoring. Mountain Home Air Force Base, Idaho.

MHAFB, USFWS and IDFG. (1993). Cooperative Agreement for the protection, development and management of fish and wildlife resources at Saylor Creek Air Force Range.

Murie, O.A. (1974). A Field Guide to Animal Tracks. The Peterson Field Guide Series. Houghton Mifflin Company, Boston.

NRCS. 1998. National Environmental Policy Act [NEPA] of 1969, as amended (1982). 42 U.S.C. §4321-4347

National Defense Authorization Act of 2004. (2004). Pub. L. 108-136, Sec 318.

National Oceanic and Atmospheric Administration. (1996). Climatological Data. 30-year survey for Mountain Home, Idaho.

NatureServe. (2009). NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1 NatureServe, Arlington, Virginia. Retrieved February 25, 2009 from http://www.natureserve.org/explorer.

Omnibus Public Land Management Act of 2009. (2009). Pub. L. 111-11

Orloff, S., F. Hall, and L. Spiegel. (1986). Distribution and Habitat Requirements of the San Joaquin Kit Fox in the Northern Extreme of Their Range. Trans. West. Sect. Wildl. Soc., 22, 60-70.

Owyhee County Sage-Grouse Local Working Group (OCSGLWG). (2004). Sage Grouse Management Plan. Available at http://fishandgame.idaho.gov/hunt/grouse/conserve_plan/local_workgroups.cfm

Paige, C. and S. A. Ritter. (1999). Birds in a sagebrush sea: managing sagebrush habitats for bird communities. Partners in Flight Western Working Group, Boise, Idaho. 47 p.

Peterson, K. L. and L. B. Best. (1985). Brewer's Sparrow Nest-Site Characteristics in a Sagebrush Community. Journal of Field Ornithology, Vol 56 (No.1), pgs 23-27.

Plant Conservation Alliance. 2015. National Seed Strategy for Restoration and Rehabilitation. 2015 – 2020. 50 pp. Available online at: http://www.blm.gov/style/medialib/blm/wo/Planning_and_Renewable_Resources/fish__wildlife_and/plants/seedstrategy.Par.66250.File.dat/SeedStrategy081215.pdf

Poole, L. D. (1992). Reproductive success and nesting habitat of loggerhead shrikes in shrub-steppe communities. M.S. Thesis. Oregon State University, Corvallis, Oregon. 69 p.

Public Land Order 1027. (1954). Withdrawing Public Lands for Use of Department of the Air Force in Connection with Saylor Creek Bombing and Gunnery Range. 43 U.S.C. Chapter 1, Appendix C.

_____ 3192. (1963). Partially Revoking Public Land Order No. 1027 of November 2, 1954; Saylor Creek Bombing and Gunnery Range. 43 U.S.C. Chapter 1, Appendix C.

_____ 4902. (1970). Modifying and Partially Revoking Public Land Order No. 1027 of November 2 1954; Withdrawing Additional Public Lands for Use of the Department of the Air Force in Connection With the Saylor Creek Air Force Range. 43 U.S.C. Chapter 1, Appendix C.

Reynolds T. D. and T. D. Rich. (1978). Reproductive Ecology of the Sage Thrasher (*Orescoptus montanus*) on the Snake River Plain in Southern-central Idaho. The Auk 95: 580-582.

Rich, T. (1980). Nest Placement in Sage Thrashers, Sage Sparrows, and Brewer's Sparrows. Wilson Bulletin, 92, 362-368.

Rotenberry, J.T., M.A. Patten, and K. L. Preston. (1999). Brewer's Sparrow (*Spizella breweri*). The Birds of North America, No 390, pg 24.

Ryser, F.A. (1985). Birds of the Great Basin: A Natural History. University of Nevada Press, Reno, Nevada, USA.

Saab, V. A. and T. D. Rich. (1997). Large-scale conservation assessment for neotropical migratory land birds in the Interior Columbia River Basin. USDA For. Ser. Gen. Tech. Rep. PNW-399. 56 p.

Sheppard, W. (2009). Public Works Director, City of Mountain Home, Idaho. Personal communication. 20 January 2009.

Schroeder, M. A., J. R. Young, and C. E. Braun. (1999). Sage-grouse (*Centrocercus urophasianus*). Pages 1-28 in A. Poole and F. Gill, editors. The Birds of North America No. 425. Philadelphia, Pennsylvania.

Sibley, D. A. (2000). The Sibley Guide to Birds. (ISBN 0-679-45122-6).

Sikes Act of 1960, as amended. (201304). 16 U.S.C. §670a-670f, 74 Stat. 1052.

Soil Conservation Service (SCS). (1991). Soil Survey of Elmore County Area, Idaho, Parts of Elmore, Owyhee and Ada Counties. U.S. Government Printing Office, Washington, DC.

Texas Parks and Wildlife Department (TPWD) (2005). Migration and The Migratory Birds of Texas: Who They Are And Where They Are Going.

Trent, T. (2000). Idaho Department of Fish and Game. Personal communication. 2000.

USACE. (1987). Corps of Engineers Wetlands Delineation Manual. Environmental Laboratory. Vicksburg, Mississippi: U.S. Army Engineer Waterways Experiment Station. Technical Report Y-87-1.

_____. (2006). Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region. http://www.usace.army.mil/Pages/SearchResults.aspx?k=civil%20works&s=All%20Sites

USAF. (1994). Air Force Policy Directive 32-70. Environmental Quality. Available at http://www.e-publishing.af.mil

_____. (1995). AFI 32-7043. Hazardous Waste Management Guide. Available at http://www.e-publishing.af.mil

_____. (1998). Enhanced Training in Idaho Final Environmental Impact Statement. Mountain Home Air Force Base, Idaho

_____. (1999a). Creation of Permanent Points for Long-Term Monitoring of Vegetation at the Juniper Butte Training Range June-July 1998. Mountain Home Air Force Base, Idaho.

_____. (1999b). Final Report. Juniper Butte Rare Plant Survey. Mountain Home Air Force Base, Idaho.

_____. (2004). AFI 32-7064. Integrated Natural Resources Management. Available at http://www.e-publishing.af.mil

_____. (2005a). AFI 32-7063. Air Installation Compatible Use Zone Program. Available at http://www.e-publishing.af.mil

_____. (2005b). AFI 90-801. Environment, Safety, and Occupational Health Councils. Available at http://www.e-publishing.af.mil

_____. (2007a). AFI 10-2501. Air Force Emergency Management Program Planning and Operations. Available at http://www.e-publishing.af.mil

_____. (2007b). AFI 13-212. Range Planning and Operations. Available at http://www.e-publishing.af.mil

_____. (2007c). AFI 32-7040. Air Quality Compliance and Resource Management. Available at http://www.e-publishing.af.mil

_____. (2009a). AFI 32-1053. Integrated Pest Management Program. Available at http://www.e-publishing.af.mil

_____. (2009b). AFI 32-7086. Hazardous Materials Management. Available at http://www.e-publishing.af.mil

_____. (2009c). AFI 32-7042. Waste Management. Available at http://www.e-publishing.af.mil

_____. (2010a). AFI 91-202, Sec 7.11. The US Air Force Mishap Prevention Program; Bird Aircraft Strike Hazard (BASH) Program. Available at http://www.e-publishing.af.mil

_____. (2010b). United States Air Force Bird Avoidance Model. Available at http://www.usahas.com/bam/

USAF ACC. (1996). Final Environmental Assessment for the Proposed Relocation of the 34th Bomb Squadron to Mountain Home AFB, Idaho. Mountain Home AFB, Idaho.

_____. (2004). Conservation Program Manual. HQ ACC/CEVP, Langley AFB, Virginia.

_____. (2006a). AF Form 813 #2006051002: BRAC Realignment, MHAFB. Mountain Home AFB, Idaho.

_____. (2006b). Non-Time Critical Removal Action Engineering Evaluation/Cost Analysis, Acc 4-Base PBC, Mountain Home AFB, Idaho. Mountain Home AFB, Idaho.

_____. (2007a). Environmental Assessment for Republic of Singapore Air Force F-15SG Beddown, Mountain Home AFB, Idaho. Mountain Home AFB, Idaho

U.S. Census. (2016). Population Estimates, Idaho [Data file]. Retrieved from http://www.census.gov/popest/cities/SUB-EST2007-4.html

USFWS. (2007). Migratory Bird Permits; Take of Migratory Birds by the Armed Forces. Federal Register 72:39 (February 28, 2007) p. 8931.

_____. (2008). Birds of Conservation Concern 2008. United States Department of Interior, Fish and Wildlife Service, Division of Migratory Bird Management, Arlington, Virginia. 85 pp. Available online at: https://www.fws.gov/birds/index.php.

_____. (2009). Endangered and Threatened Wildlife and Plants. Listing *Lepidium papilliferum* (Slickspot Peppergrass) as a Threatened Species Throughout Its Range: Final Rule. Federal Register 74:194 (October 8, 2009) p. 52014-52064.

_____. (2010a). Biological Opinion on the effects of U.S. Air Force ongoing actions at Juniper Butte Range and in Owyhee County, Idaho on the slickspot peppergrass (*Lepidium papilliferum*). 14420-2010-F-0405.

_____. (2010b). Endangered and Threatened Wildlife and Plants; 12-Month Findings for Petitions to List the Greater Sage-Grouse (*Centrocercus urophasianus*) as Threatened or Endangered. Federal Register 75:55 (March 23, 2010) p. 13910-14014.

_____. (2015a). Endangered and Threatened Wildlife and Plants; 12-Month Finding on a Petition to List Greater Sage-Grouse (*Centrocercus urophasianus*) as Threatened or Endangered. Federal Register 80:191 (October 2, 2015) p. 59858-59942.

_____. (2015b). Final Report. 2015 Grazing Utilization Juniper Butte Range. Report prepared for Mountain Home Air Force Base by U.S. Fish and Wildlife Service, Mid-Columbia River National Wildlife Refuge Complex dated December 10, 2015. 33 pp. + appendices.

_____. (2016a). Endangered and Threatened Wildlife and Plants; Threatened Status for *Lepidium papilliferum* (Slickspot Peppergrass) Throughout Its Range: Final Rule. Federal Register 81:159 (August 17, 2016) p. 55058-55084.

_____. (2016b). Final Report. 2015 Slickspot Peppergrass (*Lepidium papilliferum*) Monitoring Permanent Transects Juniper Butte Range. Report prepared for Mountain Home Air Force Base by U.S. Fish and Wildlife Service, Mid-Columbia River National Wildlife Refuge Complex dated January 2016. 41 pp. + appendices.

_____. (2016c). Strategic Habitat Conservation in Idaho. Landscape Conservation Strategy. Idaho Fish and Wildlife Office. April 2016. 8 pp. + appendices. Available online at: https://www.fws.gov/idaho/documents/SHC/IFWOstrategicframework_20April2016compressed.pdf.

_____. (2017). Final Report Draft. 2016 Slickspot Peppergrass (*Lepidium papilliferum*) Monitoring of Permanent Transects at Juniper Butte Range. Final Draft report prepared for Mountain Home Air Force Base by U.S. Fish and Wildlife Service, Mid-Columbia River National Wildlife Refuge Complex. Final Draft dated January 2017. 45 pp. + appendices.

USFWS and National Marine Fisheries Service (2000). Environmental Impact Statement and Native Fish Habitat Conservation Plan: Proposed permit for taking of federally protected native fish species on Plum Creek timber company lands. Vol. 2, Ch. 8. Adaptive Management and Monitoring Commitments. Author: Boise, Idaho.

USGS. (1991). Soil Survey of Elmore County Area, Idaho, Parts of Elmore, Owyhee, and Ada Counties.

Watchable Wildlife MOU. (1990). Available at http://www.watchablewildlife.org/about/mou.htm

Western Regional Climate Center. (2010). Western U.S. Climate Historical Summaries; Period of Record Monthly Climate Summary; Bruneau, Mountain Home, & Three Creek, Idaho. Retrieved November 19, 2010 from. http://www.wrcc.dri.edu

Wik, P. A. (2002). Ecology of Greater Sage-Grouse in South-Central Owyhee County, Idaho. Master's Thesis. University of Idaho, Moscow, Idaho.

Wild and Scenic Rivers Act of 1968, as amended. (2009). 16 U.S.C. §1274a stat 182.

Yosef, R. (1996). Loggerhead shrike (*Lanius ludovicianus*). In: Poole A. and F. Gill, eds. 1996. The Birds of North America, No. 231. The Academy of Natural Sciences, Philadelphia, and The American Ornithologists' Union, Washington, D.C.

GIS Data Used In Figures

BLM. (2000) Herd Management Areas Nevada (poly) [Data File]. Available at http://www.blm.gov/nv/st/en/prog/more_programs/geographic_sciences/gis/geospatial_data.html

_____. (2003). Herd Management Areas (HMAs) of Idaho [Data File]. Available at http://www.insideidaho.org

_____. (2004a). Public Land Survey System (PLSS) Sections for Idaho, GCDB-based [Data File]. Available at http://www.insideidaho.org

_____. (2004b). Public Land Survey System (PLSS) Townships for Idaho, GCDB-based [Data File]. Available at http://www.insideidaho.org

_____. (2005). ID Statewide Range Allotments [Data File]. Available at http://www.insideidaho.org

_____. (2006). Bureau of Land Management Areas of Critical Environmental concern (ACECs), Research Natural Areas (RNAs), and Outstanding Natural Areas (ONAs) of Idaho [Data File]. Available at http://www.insideidaho.org

_____. (2008a). Oregon BLM Wild Horse and Burrow Herd Management Areas polygon [Data File]. Available at http://www.blm.gov/or/gis/data.php

_____. (2008b). Snake River Birds of Prey National Conservation Area Boundary [Data File]. Available at http://www.insideidaho.org

_____. (2008c). Wildfire Perimeters [1937-2008] on or Adjacent to Bureau of Land Management Administered Lands in Idaho [Data File]. Available at http://www.insideidaho.org

_____. (2009a). Bureau of Land Management Wilderness Boundaries of Idaho [Data File]. Available at http://www.insideidaho.org

_____. (2009b). Sage-grouse Habitat in Idaho 2009 [Data File]. Available at http://www.insideidaho.org

_____. (2009c). Wilderness Study Areas (WSA) for Idaho BLM (Polygons), 24D statewide [Data File]. Available at http://www.insideidaho.org

_____. (2010). BLM Idaho Surface Management Agency [Data File]. Available at http://www.insideidaho.org

Environmental Systems Research Institute (ESRI). (2008). ESRI® Data and Maps 9.3 [DVD-ROMs]. Redlands, CA.

IDSDD. (2018). Aug09LepaRem; At-risk Plant Element Occurrences, Slickspot Peppergrass [Data File]. Retrieved from Idaho Fish and Wildlife Information System.

_____. (2010b). Idaho Sage-grouse Planning Areas [Data File]. Retrieved from Idaho Department of Fish and Game.

IDWR. (2003). Idaho Watersheds 5th and 6th field units [Data File]. Available at http://www.insideidaho.org

MHAFB. (2010i). MHAFB Installation Geospatial Information and Services (IGI&S) Database. Elmore, Owyhee, and Twin Falls Counties, Idaho. [Data File]. Mountain Home AFB, Idaho.

NRCS, USDA. (2005a). Soil Survey Geographic (SSURGO) database for Elmore County Area, Idaho, Parts of Elmore, Owyhee, and Ada Counties [Data File]. Available at: http://SoilDataMart.nrcs.usda.gov/

_____. (2005b). Soil Survey Geographic (SSURGO) database for Owyhee County Area, Idaho, [Data File]. Available at: http://SoilDataMart.nrcs.usda.gov/

USGS. (1995). Major Lithologic Units [Data File]. Available at http://www.idwr.idaho.gov/GeographicInfo/gisdata/contents.htm

15.0 ASSOCIATED PLANS

Wildfire Management Plan

Located on the following network drive:

\\gyzh-fs-01pv\MountainHome_366FW_MDG_WS\A6-7\A7I- Installation Management\A7IE-Environmental\Natural\Fire\Wildland Fire Mgt Plan

Tab 2 – Bird/Wildlife Aircraft Strike Hazard (BASH) Plan

Located on the 366 FW Sharepoint Site:

https://cs2.eis.af.mil/sites/12342/SEF/SitePages/Home.aspx

Tab 3 – Integrated Cultural Resources Management Plan

Located on the following network drive:

\\gyzh-fs-01pv\MountainHome_366FW_MDG_WS \A6-7\A7I- Installation Management\A7IE-Environmental\CULTURAL\ICRMP

Tab 4 – Integrated Pest Management

Located on the following network drive:

\\gyzh-fs-01pv\MountainHome_366FW_MSG_WS\CEOIE