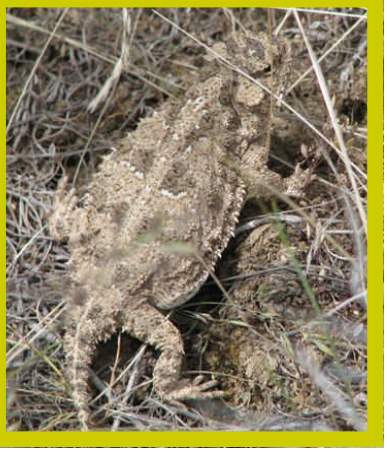
INTEGRATED NATURAL RESOURCES MANAGEMENT PLAN

for Mountain Home Air Force Base, Small Arms Range, Saylor Creek Air Force Range, Juniper Butte Range, and other Mountain Home Range Complex Sites

Final
June 2012



Final

Integrated Natural Resources Management Plan

Prepared for
Mountain Home Air Force Base
Mountain Home, Idaho

June 2012

Mountain Home Air Force Base
366th Fighter Wing

The 2012 - 2017 Mountain Home Air Force Base (MHAFB) Integrated Natural Resources Management Plan (INRMP) for MHAFB, Small Arms Range, Saylor Creek Range, Juniper Butte Range, and Mountain Home Training Range Complex Sites meets the requirements of the Sikes Act (16 USC 670a *et seq.*) and Sikes Act Improvement Act, Air Force Instruction (AFI) 32-7064, and applicable Department of Defense directives. The INRMP also complies with all applicable state and federal regulatory requirements. The INRMP sets appropriate and adequate guidelines for conserving and protecting the natural resources to the maximum extent practicable, without unduly limiting or restricting military training activities and opportunities at MHAFB and its properties.

The Sikes Act provides that the "... Secretary of Defense shall carry out a program to provide for the conservation and rehabilitation of natural resources on military installations..." and that an INRMP is to be prepared to facilitate implementation of that program [16 U.S.C. 670a (a) (1) (A) and (B)]. The Act also specifies that:

- Consistent with the use of military installations to ensure the preparedness of the Armed Forces, the Secretaries of the military departments shall carry out [the aforementioned program] to provide for—
  - the conservation and rehabilitation of natural resources on military installations;
  - the sustainable multipurpose use of the resources, which shall include hunting, fishing, trapping and non-consumptive uses; and
  - subject to safety requirements and military security, public access to military installations to facilitate the use [16 U.S.C. 670a (a) (3)].

Christopher M. Short, Colonel, USAF
Commander, 366th Fighter Wing

7 JUN 12
Date

For Robyn Thorson, Regional Director, Pacific Region
U.S. Fish and Wildlife Service

23 July 2012
Date

Cal Groen, Director
Idaho Department of Fish and Game

7/7/12
Date

INTEGRATED NATURAL RESOURCES MANAGEMENT PLAN
MOUNTAIN HOME AIR FORCE BASE, IDAHO
2012 – 2017
ANNUAL REVIEW AND COORDINATION

Having performed the annual review and coordination of the Integrated Natural Resources Management Plan (INRMP) for Mountain Home Air Force Base, Idaho, I hereby agree with aspects of the Plan which are within the scope of authority of the U.S. Air Force concerning conservation, protection and management of all natural resources.

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EXECUTIVE SUMMARY

The primary mission of Mountain Home Air Force Base (MHAFB) is to support the Air Force's mission in providing 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 Integrated Natural Resources Management Plan (INRMP) is the principal tool for managing military installation natural resources. INRMPs are prepared to assist the installation commander with the conservation and rehabilitation of natural resources consistent with the use of the installation to ensure the readiness of the Armed Forces. The INRMP will reflect the mutual agreement of the US Fish and Wildlife Service and the Idaho Department of Fish and Game concerning the conservation, protection, and management of fish and wildlife resources and federally listed threatened and endangered species. (AFI 32-7064)

The 2012 INRMP provides management of the natural resources at MHAFB and the Mountain Home Range Complex (MHRC) through fiscal year 2016. This INRMP has been prepared in accordance with the Sikes Act Improvement Act (16 U.S.C. 670a et seq.), U.S. Air Force Instruction 32-7064, and Department of Defense (DoD) Instruction 4715.03 (Natural Resource3s Conservation Program), and state and federal laws and regulations for natural resources management. It addresses the interrelationships among the natural resources managed by the Air Force and the military mission. Without effective and proactive natural resources management, components of the military mission could be jeopardized.

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 at MHAFB, including controlling invasive species, maintaining and restoring vegetative communities, reducing the risk of wildfire, managing threatened, endangered and special status species, and applying appropriate livestock grazing practices. Specific management strategies are proposed to meet the goals and objectives.

The INRMP directly supports the mission of MHAFB by improving and maintaining ecosystems that provide the realistic training opportunities required by Air Force units and other military users while conserving natural resources.

PURPOSE OF AND NEED FOR THE PROPOSED ACTION

The purpose of the INRMP is to guide MHAFB in managing the natural resources on MHAFB and the MHRC. The 2012 INRMP is needed to help MHAFB sustain the military mission and maintain the integrity of the ecosystems and ecological processes. The INRMP would ensure that natural resources conservation measures and military training activities at MHAFB are integrated and consistent with federal, state, Department of Defense, and Air Force stewardship requirements. The INRMP is required by the Natural Resources Management on Military Lands Act of 1960 (commonly known as the Sikes Act), the Sikes Act Improvement Act of 1997 and its amendments, and DoD and Air Force policy. The Sikes Act compliance table is shown on the last page to this Executive Summary in Table ES-1; this table references the chapters and paragraphs in the INRMP which are cross referenced to the 13 criteria points required by this Act.

The INRMP provides an adaptive ecosystem management framework to integrate various management programs. It is Air Force policy to incorporate ecosystem management as the basis for planning and managing lands used by the Air Force by taking a long-term view of human activities, including military uses, and biological resources. The INRMP also is required to meet the requirements of the November 1, 2004, Assistant Under Secretary of Defense memorandum, entitled "Implementation of Sikes Act Improvement Amendments: Supplemental Guidance concerning INRMP Reviews." The goals are to enhance ecosystem integrity and to sustain both biological diversity and continued availability of natural resources for military and other human uses.

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 2012 INRMP for MHAFB, and the Mountain Home Range Complex (MHRC) which includes; Small Arms Range, Saylor Creek Range, Juniper Butte Range, 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.

MANAGEMENT GOALS AND OBJECTIVES

Natural resources management goals and objectives are described in Section 4 of the INRMP. Section 4 also lists specific projects that will be implemented to achieve those goals and objectives.

PUBLIC INVOLVEMENT, AGENCY COORDINATION, AND TRIBAL CONSULTATION

Coordination with appropriate federal, state, and tribal governments was conducted in preparing the 2012 INRMP. Representatives from federal and state resource management agencies, and tribal governments were invited to review the draft INRMP. The draft INRMP was submitted to the public for review and comment.

TABLE ES-1
Sikes Act Compliance Table

Required Sikes Act Criteria	Location in INRMP
1. No net loss in the capability of military installation lands to support the military mission of the installation.	Section 5.2
2. Establishment of specific natural resource management goals, objectives, and periods for proposed action.	Section 4
3. Integration of, and consistency among, the various activities conducted under the plan.	Section 1.8
4. Fish and wildlife management, land management, forest management, and fish and wildlife oriented recreation.	Section 4.4
5. Fish and wildlife habitat enhancement or modification.	Section 4.4
6. Provisions for spending hunting and fishing permit fees exclusively for the protection, conservation, and management of fish and wildlife, including habitat improvement, and related activities in accordance with Integrated Natural Resources Management Plan.	Section 4.13
7. Wetland protection, enhancement, and restoration, where necessary for support of fish and wildlife.	Section 4.2
8. Public access to the military installation that is necessary or appropriate for sustainable use of natural resources by the public to the extent that such use is consistent with the military mission and the needs of fish and wildlife resources, subject to requirements necessary to ensure safety and military security.	Section 3.5
9. Sustainable use by the public of natural resources to the extent such use is not inconsistent with the needs of fish and wildlife resources management.	Section 3.1
10. Enforcement of applicable natural resource laws and regulations.	Section 4.3
11. Exemption from procurement of services under Office of Management and Budget Circular A-76 and any of its successor circulars.	N/A
12. Priority for contracts involving implementation of this Integrated Natural Resources Management Plan to state and federal agencies having responsibility for conservation of fish and wildlife.	Section 5.4
13. Review of this Integrated Natural Resources Management Plan and its effects every five years.	Section 1.1

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1.0 OVERVIEW

1.1 PURPOSE

The purpose of the Integrated Natural Resources Management Plan (INRMP) is to provide a foundation or "road map" for United States Air Force (Air Force) actions in order to promote the conservation and management of the natural resources on Mountain Home Air Force Base (MHAFB) and its properties. The INRMP integrates an interdisciplinary approach to ecosystem management with planning for the military mission. It is to be used by base personnel when making decisions about natural resource management and future base activities including development.

It is the policy of the Department of Defense (DoD) to manage natural resources that are under the control of the DoD to support the military mission, while practicing the principles of multiple uses and sustained yield. DoD directives state that the conservation of natural resources and the military mission need not be mutually exclusive. The Air Force implements this policy through the requirement for integrated natural resources management planning, as defined in Air Force Instruction (AFI) 32-7064 (USAF, 2004).

All Air Force installations with significant natural resources are directed to develop an INRMP to provide effective management of natural resources on Air Force property. Natural resources include plants, animals, land, water, and air. This INRMP outlines and assigns responsibilities, identifies concerns, and establishes standard operating procedures for the management of significant natural resources at MHAFB including the Small Arms Range (SAR), and Mountain Home Range Complex (MHRC) which includes Saylor Creek Range (SCR), Juniper Butte Range (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.

The goal of this INRMP is to support the Air Force's mission while providing sound natural resource management practices. This plan will address the interrelationship between individual resources, mission activities, and adjacent land uses.

This plan 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 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. The INRMP is the principle tool for managing natural resources on Air Force installations (USAF, 2004).

The INRMP has been coordinated with MHAFB Range functions and the Range Manager, who is responsible for producing the Comprehensive Range Plan (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).

The MHAFB INRMP has been approved by the MHAFB natural resources manager, the 366th Fighter Wing Commander and Environmental, Safety, and Occupational Health Council (ESOHC), the Idaho Fish and Game Department (IDFG), and the U.S. Fish and Wildlife Service (USFWS). The INRMP was coordinated with various MHAFB base organizations, Headquarters Air Combat Command (ACC)/A7AN, Headquarters ACC/A3A, and complies with AFI 32-7064 and AFI 13-212, which states that Major Commands (MAJCOM) review and coordinate on INRMPs and approve CRPs (USAF, 2004 and USAF, 2007b).

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.

1.2 SCOPE

The scope of the INRMP includes all properties associated with MHAFB, which include SAR, as well as Rattlesnake Radar Station, Middle Marker, and C.J. Strike Dam Recreation Annex (C.J. SDRA). The MHRC includes the following properties: SCR, JBR, no-drop (ND) targets, emitter sites, and Grasmere Electronic Combat (EC) site.

1.3 GOALS AND OBJECTIVES

1.3.1 ISSUES AND CONCERNS

This chapter focuses on issues and concerns associated with natural resource constraints to range planning and missions. Conserving Biodiversity on Military Lands - A Handbook for Natural Resource Managers (Benton, Ripley, and Powledge, 2008) identifies numerous natural resource management issues and concerns, including concerns associated with grazing out-leasing, special status species, wildlife, and vegetation management.

This chapter includes a discussion of issues and concerns that pose a constraint to installation planning or conducting the military training mission on MHAFB (including SAR), and the MHRC (including SCR, JBR, emitter sites, ND targets, and EC site).

1.3.2 GOALS AND OBJECTIVES SUMMARY

This chapter also summarizes the goals and objectives for each natural resource issue or concern. Goals are overarching, broad, achievable desired conditions or purposes to be achieved. Objectives are the means or strategies to help achieve the goal. Implementation and Monitoring statements are the specific projects or actions that will help implement strategies in the objectives.

Table 1-1 summarizes the natural resources management issues and concerns for all areas. Table 1-2 lists the Natural Resource Goals for each resource issue and concern listed in Table 1-1.

TABLE 1-1
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
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

Resource	MHAFB	SCR	JBR	SAR
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

TABLE 1-2
Natural Resource Goals

Resource	MHAFB	SCR	JBR	SAR
Vegetation (See Appendices 2 and 9)	• Conserve Davis' peppergrass habitat • Improve vegetation communities basewide • Protect sagebrush	• Create a realistic training environment that maintains and enhances biodiversity • Reduce fine fuels that contribute to wildfires • Maintain vegetation quality • Protect sagebrush	• Create a realistic training environment that maintains and enhances biodiversity • Reduce fine fuels that contribute to wildfires • Maintain vegetation quality • Provide protection or recovery of special status species • Monitor LEPA habitat and populations • Conduct firefighting in a manner consistent with slickspot conservation • Utilize "LEPA friendly" rehabilitation practices • Provide a grounds maintenance program that is compatible to the military mission as well as LEPA • Prevent noxious and invasive weed establishment	• Conserve Davis' peppergrass habitat
Vegetation (See Appendices 2 and 9)			• Avoid grazing impacts to LEPA • Avoid off-road	

Resource	MHAFB	SCR	JBR	SAR
			driving impacts to LEPA • Minimize impacts to slickspots and LEPA during range clearance • Protect sagebrush	
Wetlands	• Avoid impacts to Davis' peppergrass populations	• Protect known wetlands		• Avoid impacts to Davis' peppergrass populations
Watershed Protection	• Protect water quality of surface and groundwater	• Prevent erosion through vegetation restoration	• Protect quality of surface and groundwater • Reduce land treatment maintenance costs	• Prevent erosion through vegetation restoration
Fish and Wildlife Management (See Appendices 2 and 13)	• Restore and enhance wildlife habitats • Protect ground nesting birds • Provide protection for special status species • Continue BASH program	• Restore and enhance wildlife habitats • Avoid disturbance to special status species • Protect wetlands • Protect and enhance sagebrush communities • Avoid developing raptor nesting /roosting substrate on Exclusive Use Area (EUA)	• Restore and enhance wildlife habitats • Avoid disturbance to special status species • Provide protection or recover of special status species • Avoid ferruginous hawk nest sites • Support sage-grouse and maintain and enhance sage-grouse habitat • Continue mitigation for bighorn sheep (refer to Appendix 13)	
Grounds Maintenance/Pest Control (See Appendix 23)	• Use pesticides and soil sterilant applications	• Control exotic/noxious weed invasion • Fire	• Control exotic/noxious weed invasion • Fire	• Control exotic/noxious weed invasion

Resource	MHAFB	SCR	JBR	SAR
	appropriately • Control exotic/noxious weed invasion • Increase water conservation • Use xeriscaping in practical locations	management through fuels removal and post-fire rehabilitation	management through fuels removal and post-fire rehabilitation	
Outdoor Recreation	• Protect natural resources through education of personnel • Protect Davis' peppergrass through education of personnel	• Protect natural resources through education of personnel		• Protect Davis' peppergrass through education of personnel
Grazing Out-leasing (See Appendices 2, 13 and 17)		• Develop cooperative management plan with BLM • Protect wetlands and other sensitive areas • Increase biodiversity and ecosystem health • Control exotic/noxious weed invasion	• Implement grazing in coordination with training requirements, fire prevention, and LEPA habitat. • Implement grazing management for the greater sage-grouse.	• Coordinate USAF activities with lessees

1.4 RESPONSIBILITIES

1.4.1 INSTALLATION STAKEHOLDERS

INSTALLATION STAKEHOLDER RESPONSIBILITIES

MHAFB is responsible for ensuring its activities and operations comply with applicable federal, state, and local environmental laws and regulations, as well as DoD, Air Force, and ACC policy, regulations, and implementing guidance. Consequently, MHAFB has the primary role and responsibility for directing the implementation of this INRMP. The MHAFB maintenance staff, together with the Base Commander, the Base Civil Engineer, and natural resources staff is responsible for the daily management and oversight of the base's natural resources management program. AFI 32-7076 part 2.11.1 and AFI 90-801 dictates that integrated natural resources management and INRMP revisions are coordinated through the ESOHC (USAF, 2004 and USAF, 2005b). The responsibilities of USAF organizations on MHAFB are shown in Table 1-3.

TABLE 1-3
General Responsibilities of Internal Stakeholders Regarding Implementation of the INRMP

Organization	Base	Range	Responsibilities
366th Fighter Wing Commander	✓	✓	• Approves the INRMP; • Certifies the annual review of the INRMP as valid and current; or delegates the certification of the annual INRMP review to the appropriate designee; • Provides appropriate funding and staffing to ensure implementation of the INRMP; • Controls access to and use of installation natural resources.
366th Civil Engineering Squadron (CES):	✓	✓	• Overall responsibility for development and implementation of INRMP; • Update and revise the INRMP; • Coordinate draft plans and projects prior to execution; • Integrate the INRMP with General Plan, BASH Plan, Integrated Cultural Resources Management Plan, and Installation Pest Management Plan; • Develop and implement measurement and monitoring procedures; • Coordinate consultation with other agencies and stakeholders; • Ensure that MHAFB and properties adhere to state and federal regulations pertaining to natural resources; • Coordinate natural resource management with MHAFB offices, USFWS, and IDFG.

Organization	Base	Range	Responsibilities
MHAFB ESOHC	✓	✓	• Review proposed projects/management actions for EIAP potential.
266th RANS		✓	• 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; • Review and coordinate with 366 CES Commander on proposed INRMP projects to ensure that military mission objectives are not affected.
Morale, Welfare, Recreation and Services	✓		• Maintain recreation area on MHAFB; • Provide data management input to BCE for INRMP updates.
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 Integrated Natural Resources Management Plans (INRMPs); • Conduct comprehensive range planning; • Review and approve all unit Comprehensive Range Plans (CRPs); • Develop policy, advocate for resources, and manage the oversight of MAJCOM ranges.
366th OG and 366th OSS	✓	✓	• Implement INRMP strategies in day-to-day operations; • Schedule and coordinate logistics for natural resource management activities on ranges; • Review and coordinate with 366 CES Commander on proposed INRMP projects to ensure that military mission objectives are not affected; • 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 CES

Organization	Base	Range	Responsibilities
			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.

1.4.2 EXTERNAL STAKEHOLDERS RESPONSIBILITY

Table 1-4 identifies the responsibilities of external stakeholders, such as the IDFG, the Bureau of Land Management (BLM), and the USFWS.

TABLE 1-4
General Responsibilities of External Stakeholders Regarding Implementation of the INRMP

Organization	Base	Range	Responsibilities
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; • Provide data and management input regarding wildlife management; • Assist in protection and conservation of state listed species of concern; • Control of predatory animals.
BLM		✓	• Management of livestock grazing on Saylor Creek Range.
USFWS	✓	✓	• Review and concur with INRMP and actions relating to T/E species; • Provide data and management input regarding the plant species LEPA; • 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;
State of Idaho	✓ (SAR)		• Administers grazing on SAR.

1.5 AUTHORITY

Preparation and implementation of the INRMP are required by the DoD and Air Force. In addition, this plan helps ensure that MHAFB complies with other federal and state natural resources laws.

This plan was developed and implemented under the authority of the Sikes Act and Amendments, Department of Defense Instruction (DoDI) 4715.3 (Environmental Conservation Program), Air Force Policy Directive 32-70 (Environmental Quality), and AFI 32-7064 (Integrated Natural Resources Management) (DoD, 2011; Sikes Act, 2004; USAF 1994, USAF, 2004).

Additional governing laws include the Endangered Species Act, Clean Water Act, the Migratory Bird Treaty Act, and the Bald and Golden Eagle Protection Act.

Table 1-5 shows the natural resource management authority documents and topics.

TABLE 1-5
Natural Resource Management Authority Documents and Topics

Resource	Authority Document	Document Topic
Fish and Wildlife	Sikes Act	Professionally trained personnel required to administer fish and wildlife management programs
	AFI 32-7064	Integrated Natural Resources Management
	Watchable Wildlife MOU	Conservation organizations and Federal agencies, including Air Force, agree to develop program
	AFI 91-202	BASH Program
	AFI 32-7064	Integrated Natural Resources Management
	Air Force Policy Directive 32-70	Installations maintain species and habitat inventory
	Executive Order 11990: Protection of Wetlands 1977	Federal agencies protect wetlands
Listed and Sensitive Species	Endangered Species Act	Protection of Federally-listed species
	AFI 32-7064	Protection of sensitive and listed species
	Bald and Golden Eagle Protection Act	Protects Bald and Golden Eagles their parts and their nests.
	Migratory Bird Treaty Act	Prohibits take of migratory birds
	Executive Order 13186: Responsibilities of Federal Agencies to Protect Migratory Birds	Protection of migratory birds
	Executive Order 13112: Invasive Species	Identify, prevent, control, and monitor invasive species

1.6 STEWARDSHIP AND COMPLIANCE DISCUSSION

This INRMP is an integral part of MHAFB's overall land management process. Continued implementation of the INRMP will help ensure that MHAFB and MHRC lands continue to support present and future mission requirements while preserving, improving, and enhancing ecosystem integrity. Over the long term, implementation of this and future INRMP updates will help guide in maintaining and improving the sustainability and biological diversity of terrestrial ecosystems at MHAFB and MHRC while supporting sustainable economies, human use, and the environment required for realistic military training operations.

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.

1.7 REVIEW AND REVISION PROCESS

This plan covers calendar years 2012 through 2017 and is to be comprehensively reviewed and updated as necessary at least once every 5 years. This process will allow the plan to remain up to date and effective in managing natural resources at MHAFB and its properties. Plan revisions will include consultation with the appropriate state and federal agencies, Native American tribes, and local community. Prior to the scheduled revision, it may be necessary to amend the plan to reflect management changes. Changes are likely because adaptive management is part of the plan. A change in the installation's mission, such as a realignment, may require an update earlier than five years. Proposed amendments will be drafted into a letter or other appropriate document and mailed to the appropriate state and federal agencies, Native American tribes, and interested parties for review and comments. If no comments are received, or no substantial issues are raised, the amendment will be adopted into the plan. Table 1-6 provides master lists for updating the INRMP.

Because natural resources are spatial in nature, continuous management and maintenance of spatial data is imperative. The INRMP relies upon GeoBase to produce maps and other products. GeoBase manages the geographic (spatial) data necessary for making informed, timely management decisions. In order to further enhance the plan's effectiveness, GeoBase should be kept up to date with relevant resource information. The Environmental Flight (and Planning element) needs access to GeoBase to use the maps for environmental reviews and other decision making. Several groups within the 366 CES/CEAN will be using GeoBase, and its maintenance and expansion will further enhance planning for and management of natural resources at MHAFB and its properties.

TABLE 1-6
INRMP Master List for Updating INRMP, 2012 - 2017

Report Number	Date Created	INRMP Section	Page	Project/Action
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				

Report Number _____ Type of Update: ___, *Supplement* Existing Project or Action ____

INRMP Section _____, Page _____, *Remove* Existing Project or Action ____

Prepared by _____, *Create* New Project or Action ____

1. Project or Action.					
2. Goal / objective for the project or action.					
3. Related projects. List relevant INRMP sections and pages. Indicate if these projects are contingent on completion of project or action listed in 1 above.					
4. Anticipated start / end dates. Indicate whether one-time (e.g., survey) or routine (e.g., monitoring).					
5. Resources needed.					
Initial Costs (+) / Savings (-): $			Yearly Costs (+) / Savings (-): $		
Installation Labor:		Volunteer Labor:		Contractor Labor:	
	hours		hours		hours
Equipment:					
Training:					
IT/Information Management:					

6. Coordination requirements. Include estimated timeline/schedule.
Installation Offices/Programs:
Local Authorities:
State Agencies:
Federal Agencies:
7. Compliance requirements. List appropriate regulations, documentation, permits.
Service/Installation:
State:
Federal:
8. Briefly describe reason for update.
NOTE: Use this INRMP master update list and the INRMP update reports to keep your INRMP current. Consolidate forms from each staff member when completing annual or 5-year INRMP updates. Log each INRMP update report on this INRMP master update list. Complete this form electronically or in hard copy, and insert into the INRMP. Create more pages as necessary.

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1.8 MANAGEMENT STRATEGY

1.8.1 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
- 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.

1.8.2 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."

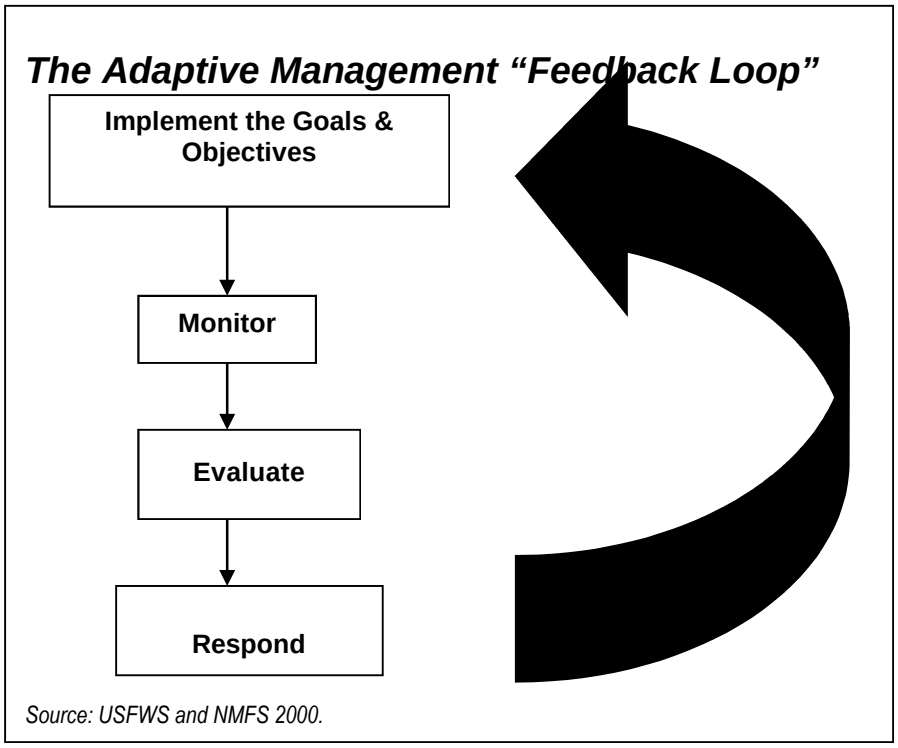
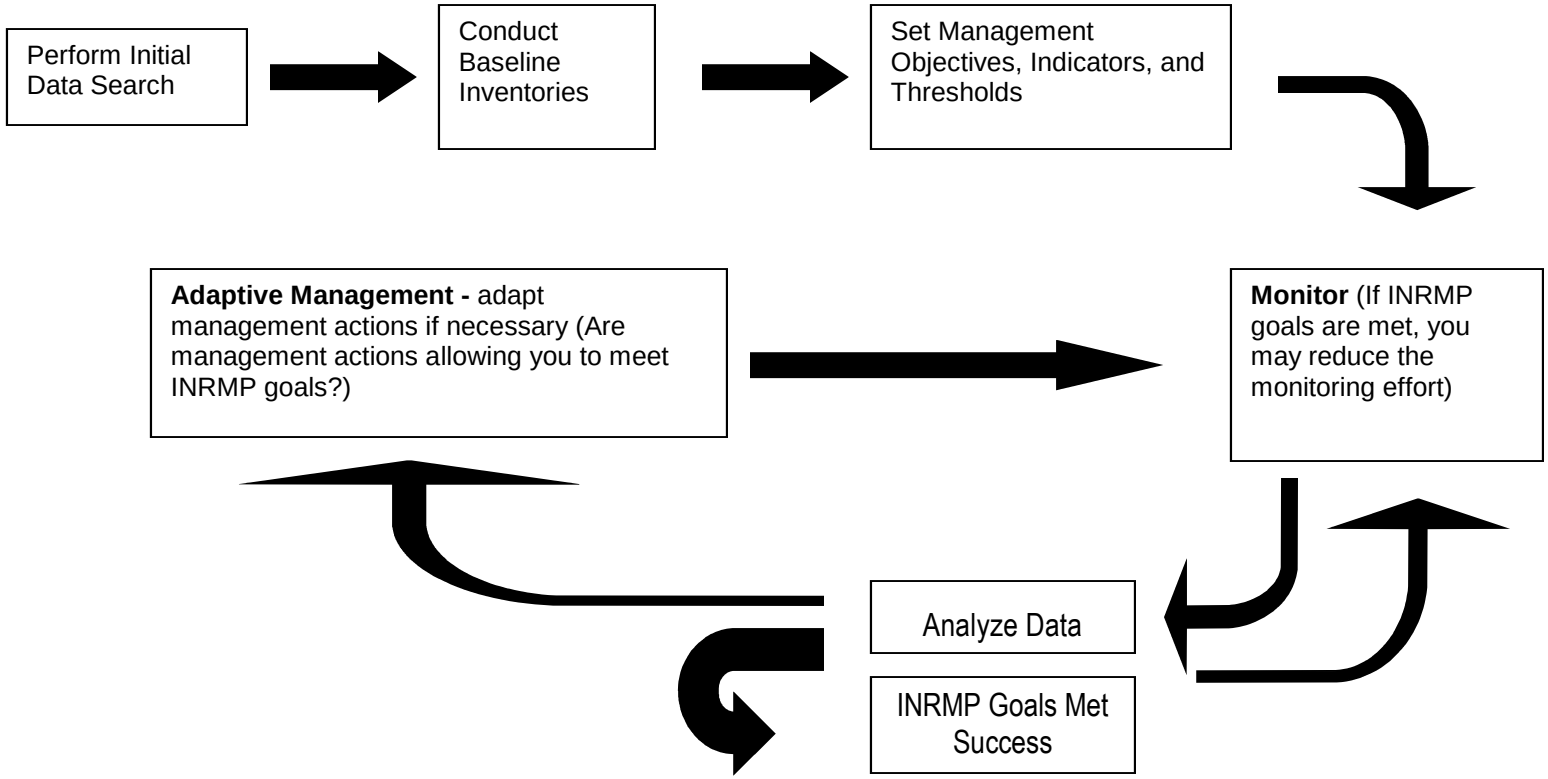


FIGURE 1-1
Adaptive Management "Feedback Loop"

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



Source: Resources for INRMP Implementation: *A Handbook for the DoD Natural Resources Manager, 2002*

FIGURE 1-2
Adaptive Management Cyclic Process

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Therefore, 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.

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.

1.9 OTHER PLAN INTEGRATION

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.

The 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, 2010d)
- 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, 2009a)
- the Installation Pest Management Plan (MHAFB, 2007a)
- the Wildland Fire Management Plan, (MHAFB, 2007g)
- 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)

Each of these plans and their relationship to the INRMP are summarized below.

Comprehensive Range Plan

The Comprehensive Range Plan (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). AFI 13-212 provides guidance for commanders to operate their ranges safely, effectively, and efficiently to meet operational needs while taking appropriate account of potential effects on the environment and the surrounding communities. Comprehensive Range Planning is accomplished to identify shortfalls in current and projected capabilities and guide sustainable range development to close the shortfalls. Each CRP addresses ten range investment areas, including, land, airspace, environmental, unexploded ordnance, physical plant, scoring systems, communications systems, integrated air defense/counter-air defense systems, targets, and management. Environmental includes natural infrastructure on the range and its short- and long-term effect on the military value of the range. Management practices and implementation of applicable regulations and policy are included when they interface with military operations. Each CRP will assess the current state of the ranges and airspace and any funded improvements; communicate future capabilities and priorities directed by higher level plans anticipated to accommodate changing missions, modified tactics and new weapons systems; and formulate a strategy that will provide the specific direction to attain the vision and over-arching goals (USAF 2007b).

Mountain Home Air Force Base General Plan

The Mountain Home Air Force Base 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 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
- proposed capital improvement program.

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

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.

Bird/Wildlife Aircraft Strike Hazard Plan

In an effort to provide the safest flying conditions possible, DoD continually implements and improves aviation safety programs. One of these programs is the Bird/Wildlife Aircraft Strike Hazards (BASH) prevention program. Throughout the military, personnel from air operations, aviation safety, and natural resources work together to reduce the risk of bird and wildlife strikes through the Operational Risk Management (ORM) process (USAF, 2010a).

Computer models use radar data, historic weather conditions, Christmas Bird Count data, bird strike reports, and other historical data to help predict spatial and temporal patterns of bird movements. One model, a predictive Bird Avoidance Model (BAM), was developed using geographic information system (GIS) technology as a key tool for analysis and correlation of bird habitat, migration, and breeding characteristics, combined with key environmental and geospatial data (USAF, 2010b).

MHAFB has a BASH Plan, which is discussed in Section 4.14 and is provided in Appendix 22 (MHAFB, 2009a).

Integrated Pest Management Plan

An Integrated Pest Management Plan for MHAFB was completed 1 April 2007 (MHAFB, 2007a). This plan is designed to provide safe, effective, and economic control of pest problems at MHAFB. The Integrated Pest Management Plan is reviewed annually by the ACC Pest Management Professional, and updated requirements are incorporated as necessary.

Wildland Fire Management Plan

Naturally occurring and human caused wildland fires on military installations present a serious risk to people, infrastructure, quality training areas, and the natural environment. MHAFB has a Wildland Fire Management Plan, as shown in Section 4.15 of the INRMP and in Appendix 21 (MHAFB, 2007e).

Air Installation Compatible Use Zone Study

AICUZ is a program concerning people, their comfort, safety, and protection (MHAFB, 1998). 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. MHAFB's AICUZ program is discussed in Section 4.21.

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 PM and is a comprehensive guide that addresses typical duties and situations.

MHAFB Instruction 32-7003, Range Standard Operating Procedure

This 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).

2.0 CURRENT CONDITIONS AND USE

2.1 INSTALLATION INFORMATION

2.1.1 GENERAL DESCRIPTION

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.

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.

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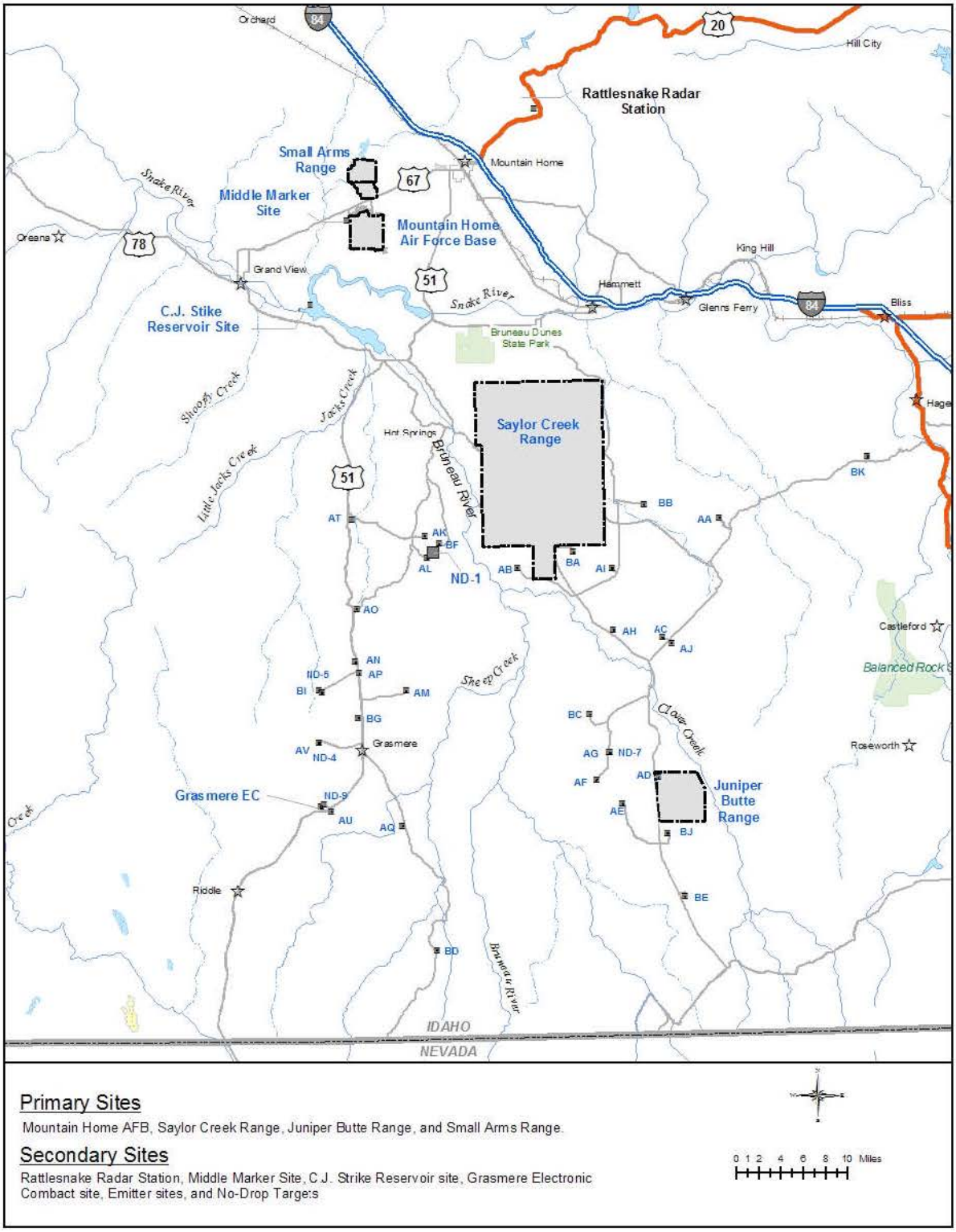

Figure 2-1
Site Location Map

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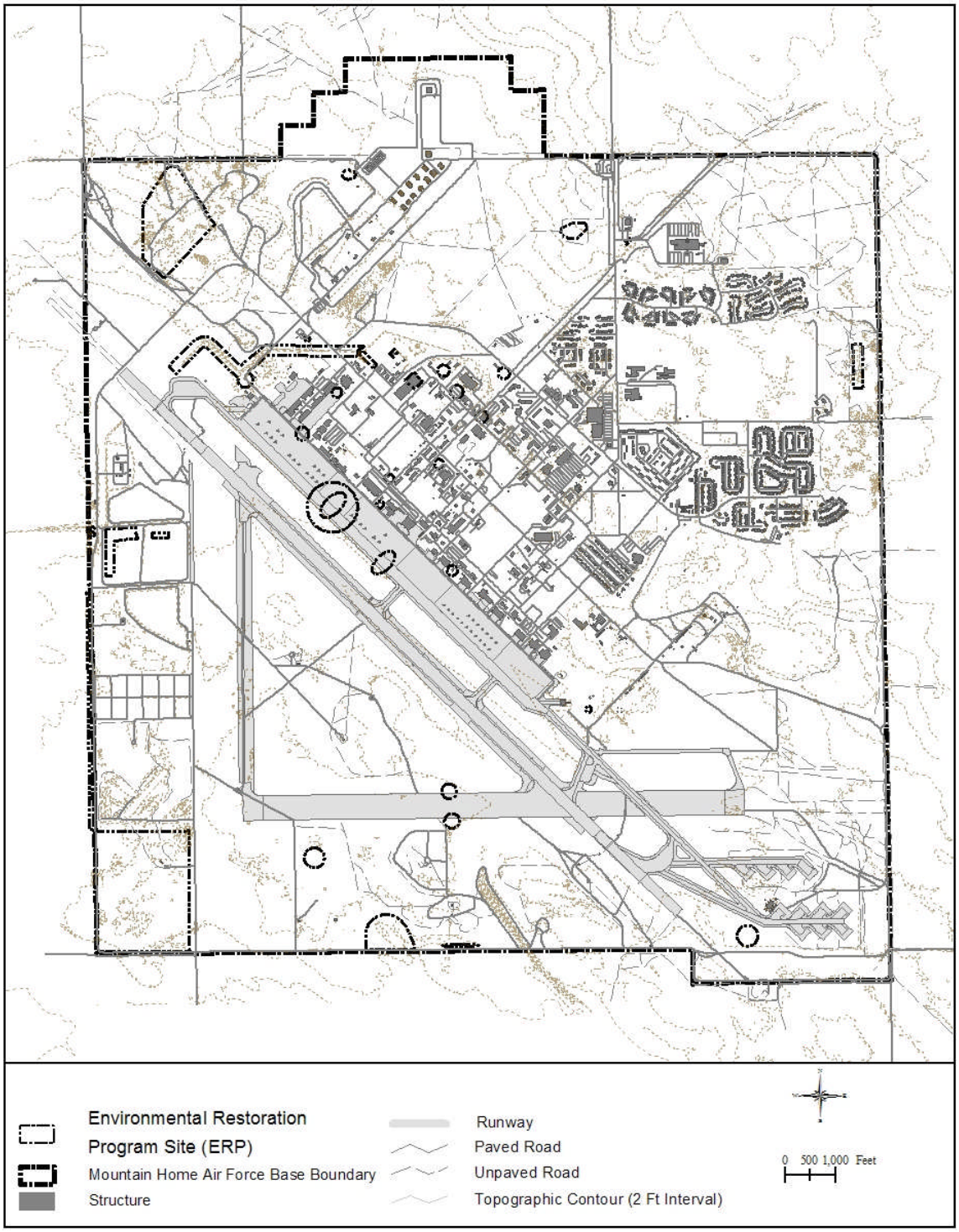

Figure 2-2
Mountain Home Air Force Base (MHAFB)

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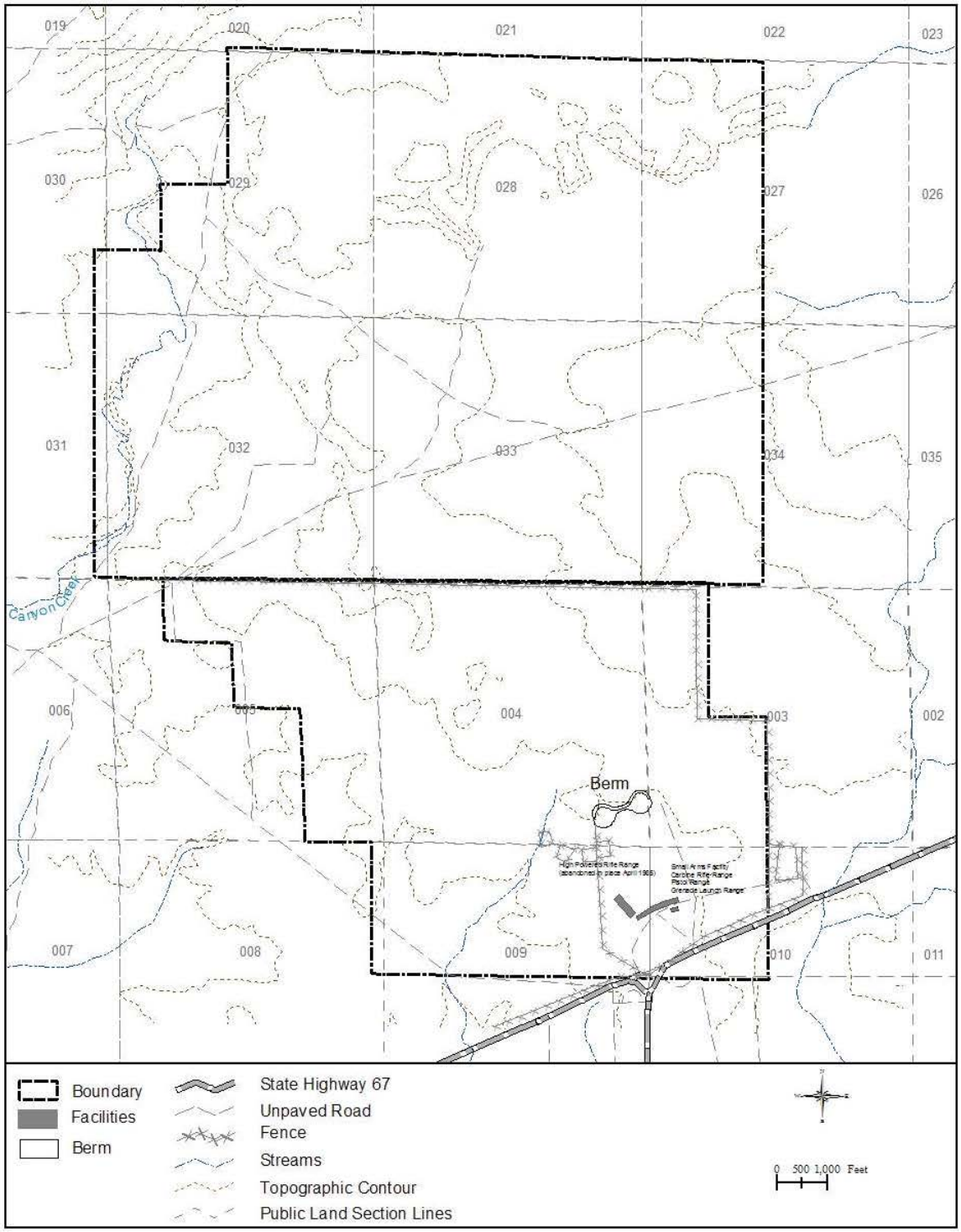

Figure 2-3
Small Arms Range (SAR)

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REMOTE SITES

Remote sites are small offsite locations operated by MHAFB. These sites are Rattlesnake Radar Station, Middle Marker, and 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 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. It 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 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.

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.

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.

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 (Figure 2-7).

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, 2-6 and 2-7.

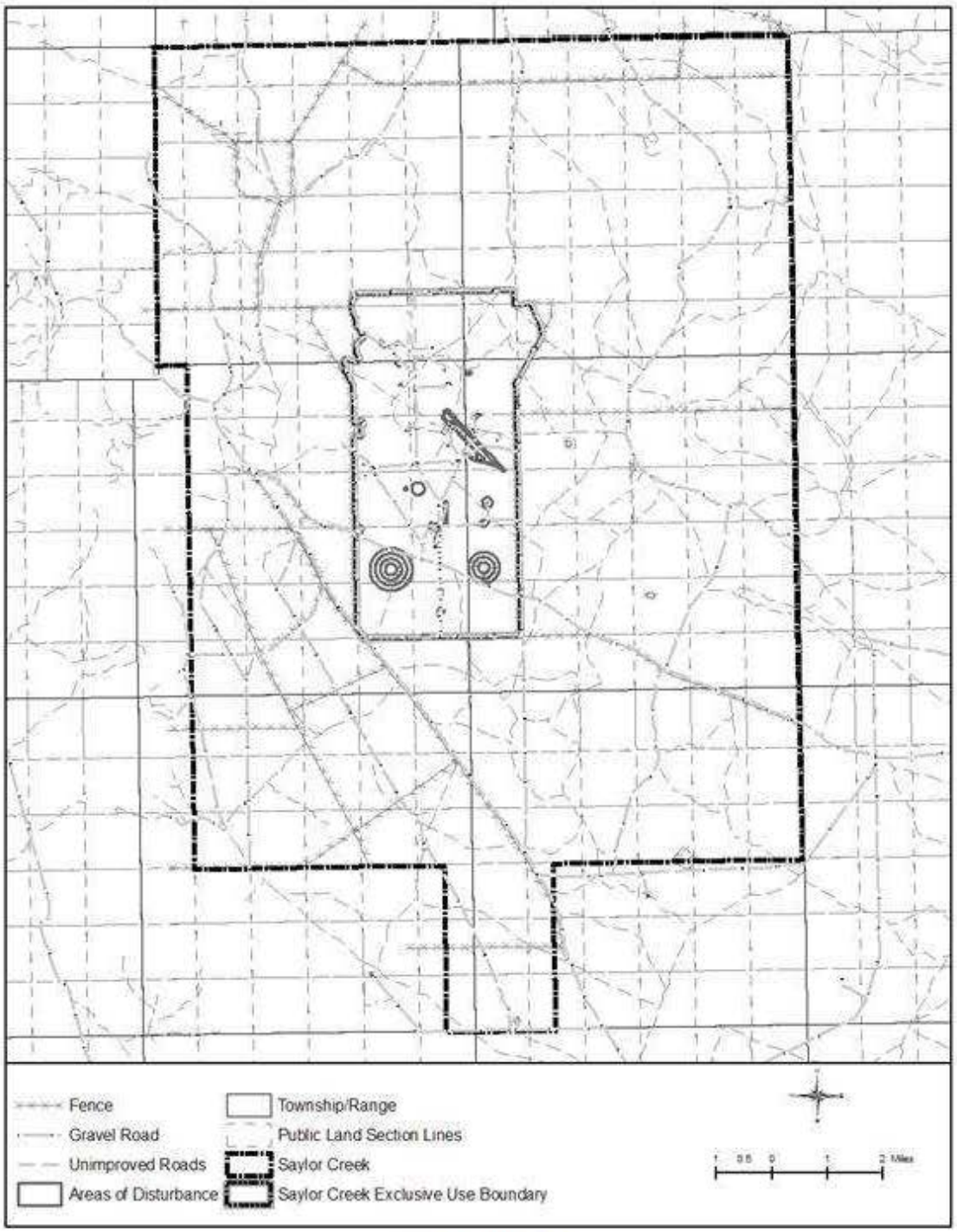

Figure 2-4
Saylor Creek Range (SCR)

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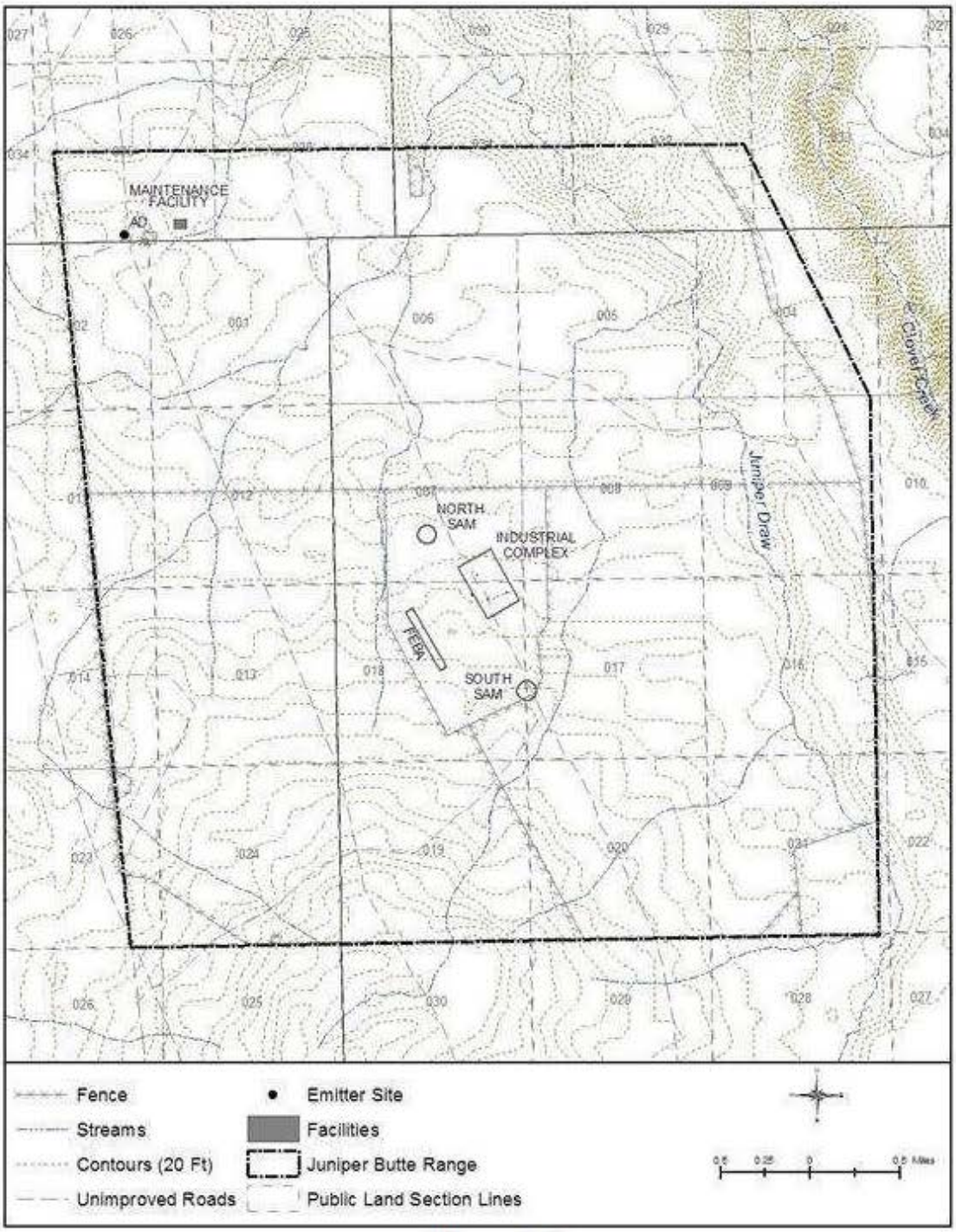

Figure 2-5
Juniper Butte Range

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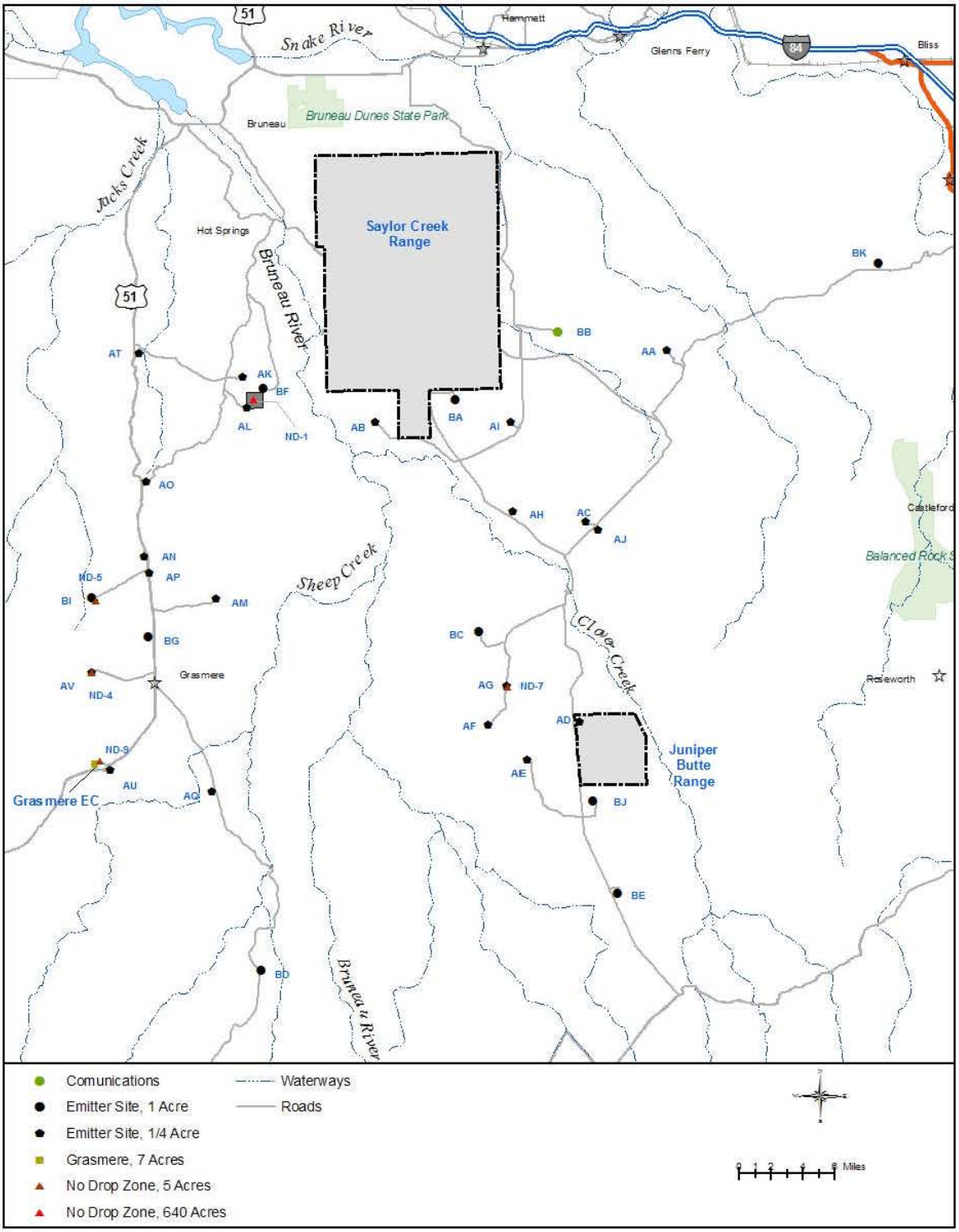

Figure 2-6
Regional Location of Juniper Butte Range, No Drop Targets, & Emitter Sites

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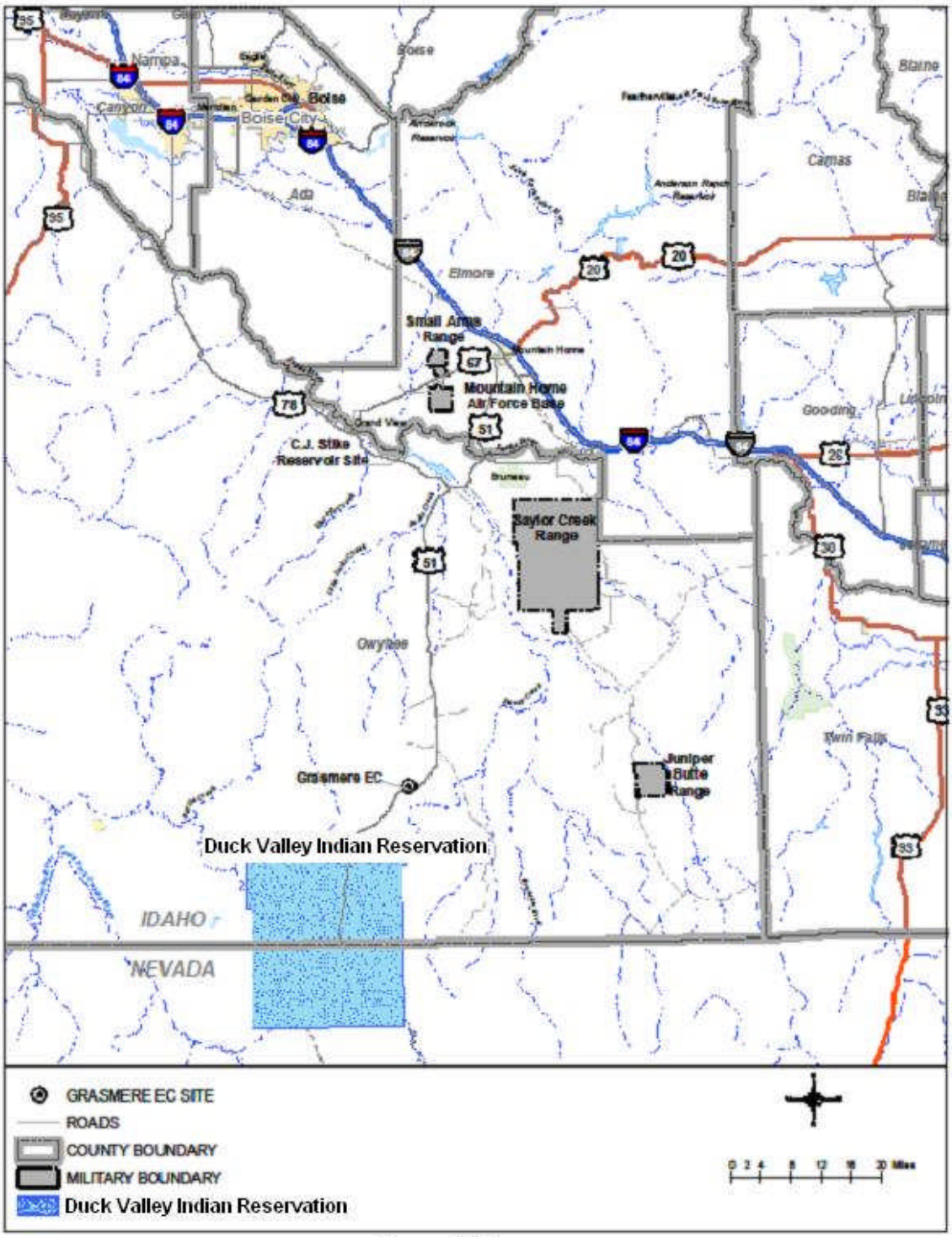

Figure 2-7
Regional Location of MHAFB, SCR, JBR, and Grasmere Electronic Site

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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	T 13 S., R. 4 E., Sec 14	Grasmere Reservoir Quad	5,740

Notes:
*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 1-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 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
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

2.1.2 REGIONAL LAND USES

2.1.2.1 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). 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 3 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 Bruneau hot springsnail. 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 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).

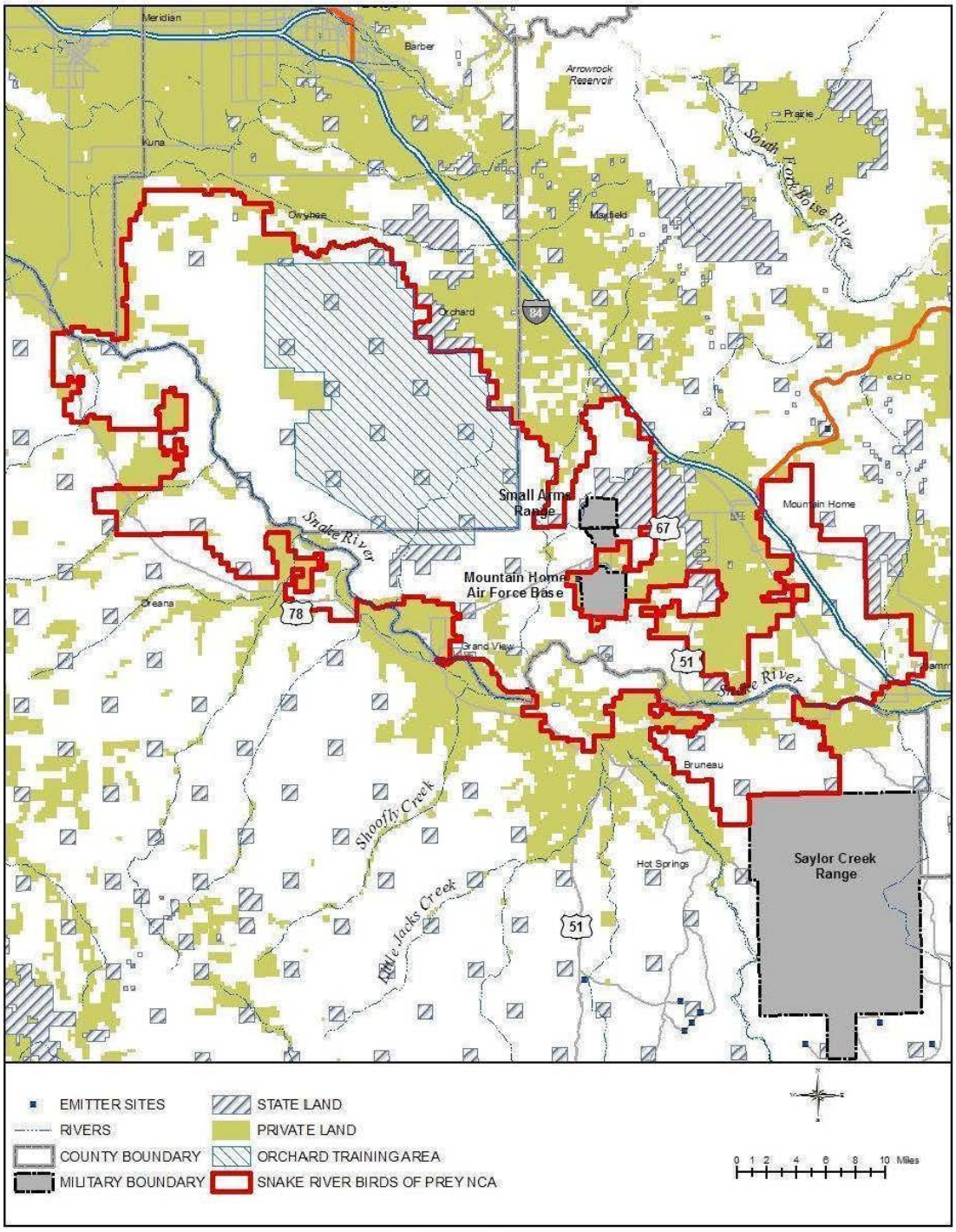

Figure 2-8
Snake River Birds of Prey National Conservation Area

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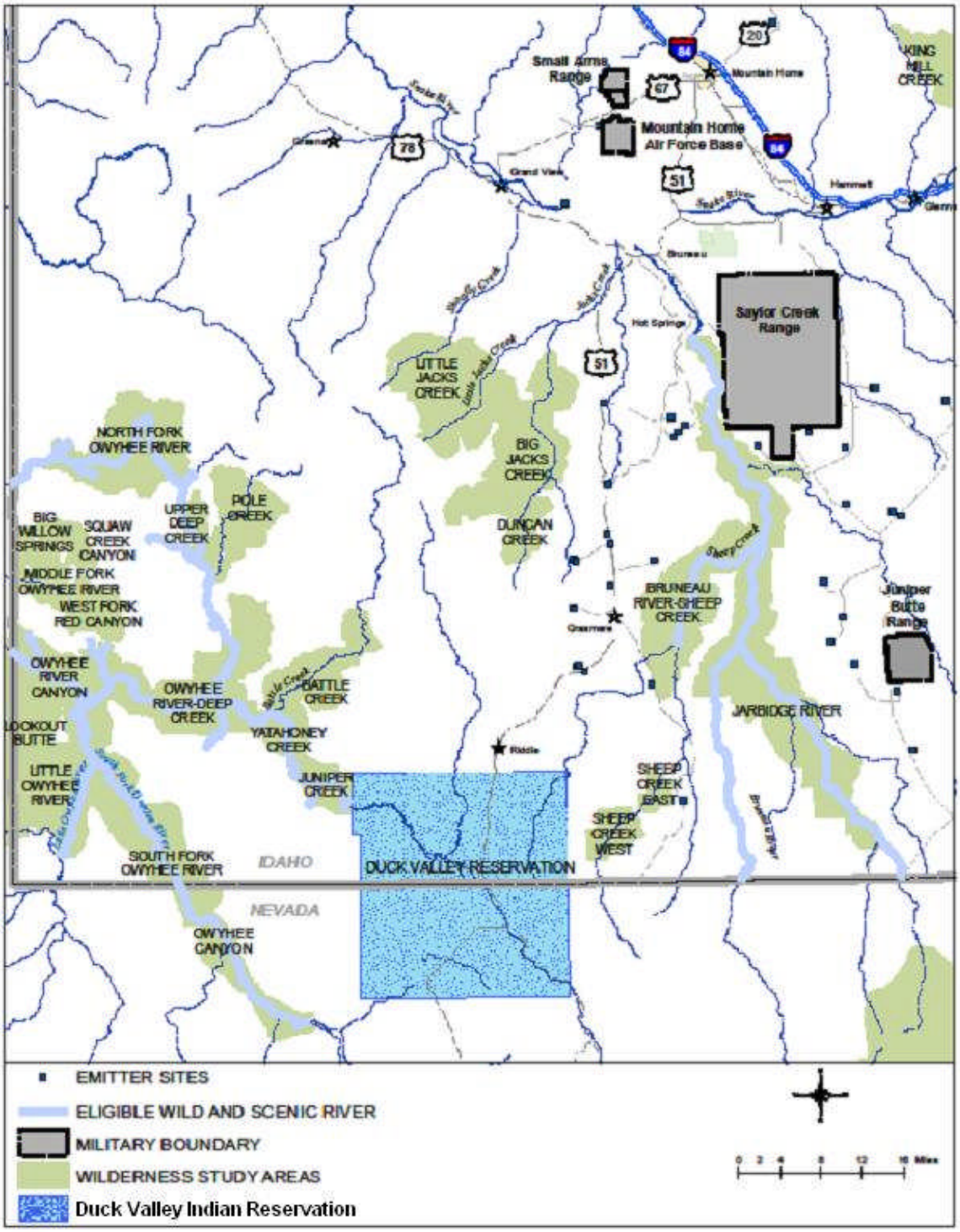

Figure 2-9
Wilderness Study Areas and Wild & Scenic Rivers in the Region

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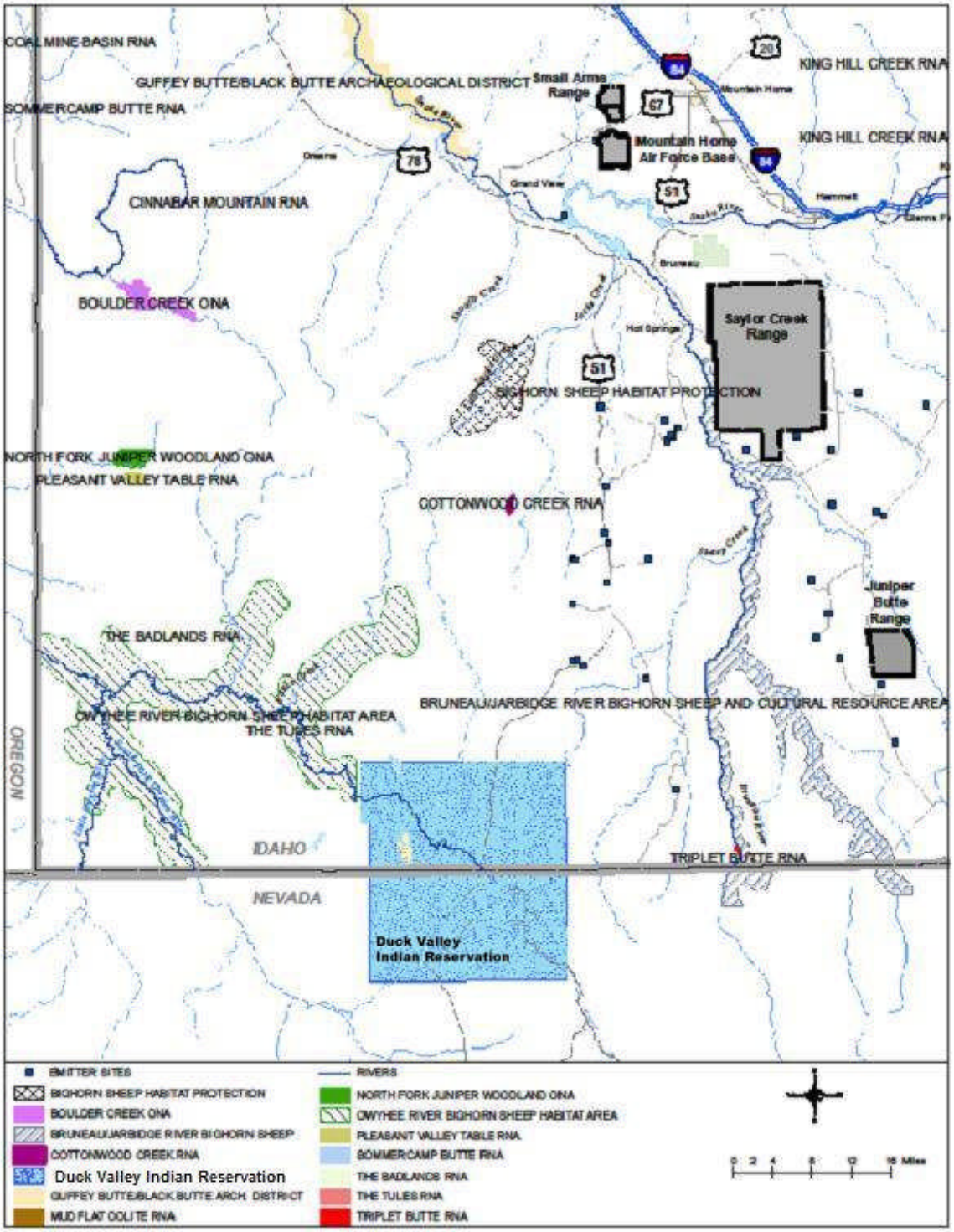

Figure 2-10
Areas of Critical and Environmental Concern and Outstanding Natural Areas in the Region

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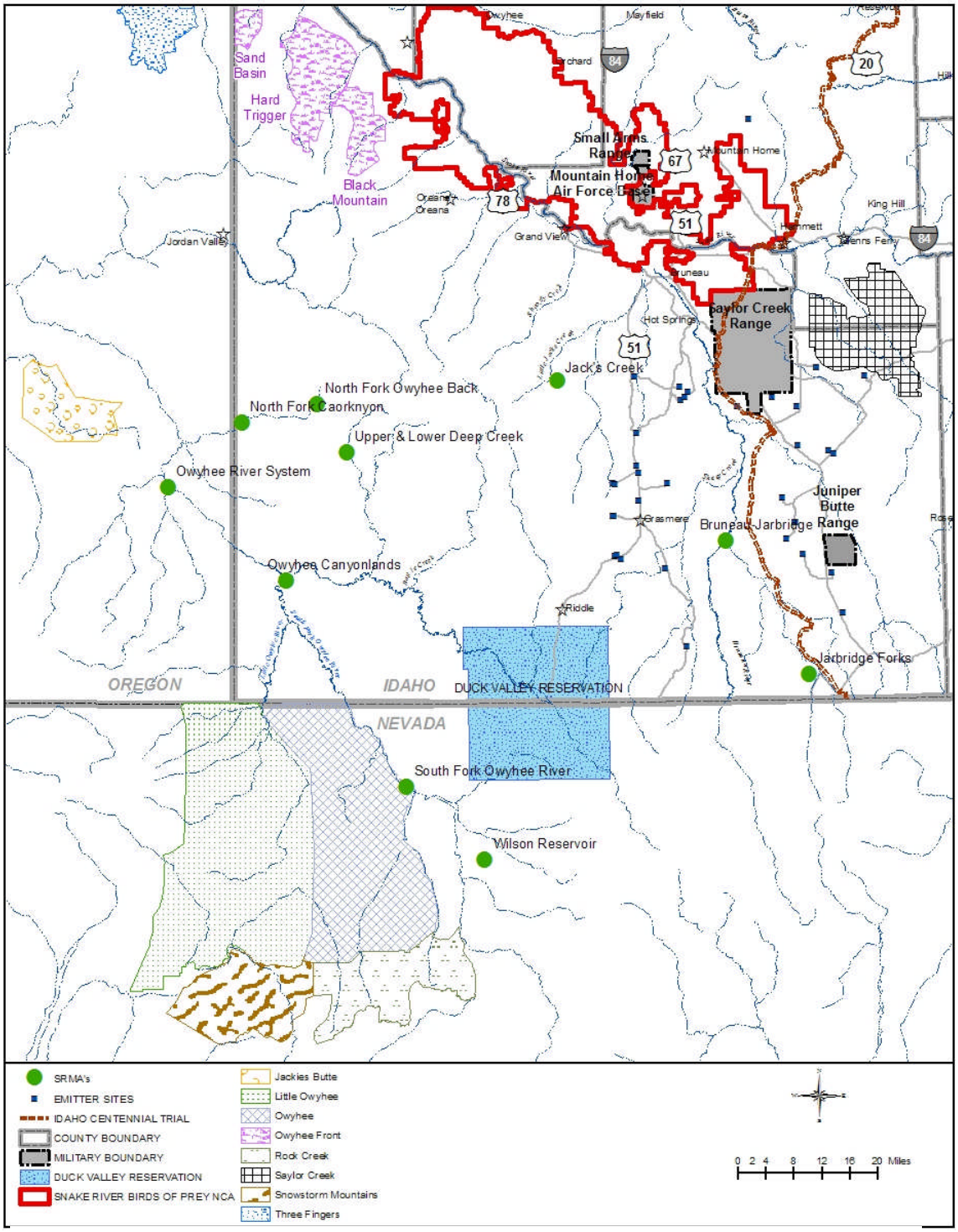

Figure 2-11
Special Recreation Management Areas, Wild Horse Herd Management Areas, Snake River Birds of Prey Natural Conservation Area, and the Idaho Centennial Trail

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2.1.2.2 LOCAL 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 12,236 as of July 2007 (U.S. Census, 2008). The annual unemployment rate for Elmore County was 4.1 percent in 2007 (Idaho Department of Commerce, 2008). 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 202,832 residents in July 2007 (U.S. Census, 2008). 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 2.7 percent in 2007 (Idaho Department of Commerce, 2008). Nestled against the Boise Front Range and flanking the Boise River, outdoor recreation opportunities exist in every season.

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 2007, only 10,835 people were estimated to be living in the 7,697 square miles of Owyhee County (U.S. Census, 2008). This is approximately 1.4 persons per square mile.

2.1.3 ABBREVIATED HISTORY AND PRE-MILITARY LAND USE

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.

MHRC

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 are what is now 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 Appendix 10) 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.

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.

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 1-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 1-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 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.

2.1.4 MILITARY MISSION

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, ID. 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 2-3). 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.

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 1-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.

2.1.5 OPERATIONS AND ACTIVITIES

The current impacts on the local environment from the military activities at MHAFB (including the SAR), the MHRC, and the remote sites potentially include air pollution, noise pollution, groundwater depletion, water pollution, hazardous materials, and pesticide use.

Potential future impacts at MHAFB include construction of additional housing and facilities to accommodate the Air Force mission and change as needed over time. These impacts are discussed below. Additionally, as discussed in the *ETI Final EIS* (USAF, 1998), other potential environmental consequences specific to SCR and JBR and related project elements may occur due to ground activities and ordnance delivery. Range operations consist of periodic emitter site use and ongoing site maintenance for all locations. Only those impacts considered relevant for natural resources are noted and discussed below.

TABLE 2-3
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.
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.

2.1.5.1 CURRENT MAJOR IMPACTS

2.1.5.1.1 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 (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter equal to or less than ten micrometers in diameter (PM_{10}), 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 NOx and 160 tons per year of CO based on the 2007 Title V renewal application from stationary sources located on MHAFB.

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.

2.1.5.1.2 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. 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.

2.1.5.1.3 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 2-12, 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.

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.

2.1.5.1.4 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. MHAFB generates more than 2,200 pounds of hazardous wastes per month. 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.

Figure 2-12
Wastewater and Stormwater Discharge

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Figure 2-13
Environmental Restoration Program Sites

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2.1.5.1.5 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.

2.1.5.1.6 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.

2.1.5.1.7 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.

2.1.5.1.8 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.

2.1.5.2 POTENTIAL FUTURE MISSION IMPACTS

2.1.5.2.1 MOST RECENT CHANGES

MHAFB

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 to allow land application of wastewater on approximately 100 acres of the Golf Course 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 are not in compliance with current USAF housing standards and/or that are structurally deteriorated beyond economical repair, are being demolished and replaced. When the program is complete, the end state on housing will be 1324 units, most of which will be new (Keppler, 2008). A number of military family housing units and dorms have been renovated recently including 60 brick (Eagle View) housing units. A new temporary living facility (TLF) has also been constructed.

Most of the housing units that were replaced were demolished and the new housing was built within the existing footprint. 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 2-4
Military Family Housing Changes

Year Finished	Phase	Units Built	Units Demo'd
1997	1	52	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
2018*	Privatization	263	439 + TLF
Total		1055	1461

*estimated completion date (subject to change)

The final housing phase, which will be constructed under Privatization, will bring military family housing up to current standards. The 439 housing units to be demolished under Privatization are not in compliance with current USAF housing standards and/or are structurally deteriorated beyond economical repair. The 263 housing units are being constructed under Privatization to replace units constructed from 1959 through 1971. Three of the structures to be demolished are eligible for the National Register of Historic Places because they were designed by architect Richard J. Neutra. These structures have been mitigated and will be demolished under Privatization (MHAFB, 2007c).

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

SCR

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

JBR

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

OTHER MHRC COMPONENTS

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.
- 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). A map of the new airspace boundaries can be found in Appendix 11.

2.1.5.2.2 POTENTIAL CHANGES

MHAFB

HQ/ACC is producing an Environmental Impact Statement (EIS) to analyze the potential environmental consequences of a United States (U.S.) Air Force proposal to beddown and operate F-35A Lightning II aircraft at one or more Air Combat Command (ACC) or Air National Guard (ANG) bases over the period from 2013 through 2019. The proposed action considers the beddown of F-35A aircraft and replacing legacy fighter aircraft at: Burlington Air Guard Station (AGS), Vermont; Hill Air Force Base (AFB), Utah; Jacksonville AGS, Florida; McEntire Joint National Guard Base (JNGB), South Carolina; and Shaw AFB, South Carolina. At Mountain Home AFB, the proposed action would add F-35A aircraft to an existing air-to-ground tactical fighter unit; no

aircraft would be drawn down. The proposed action also includes basing of the personnel needed to operate and maintain the F-35A, and construction and/or modification of facilities on the proposed bases to support the F-35A operational aircraft. F-35A aircraft would conduct training flights from the base and in existing military airspace associated with each alternative location.

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.

Military family housing continues to be a top priority for replacement and upgrading. New military family housing standards have been developed by higher headquarters to standardize accommodations for families across all military service branches. New military family housing on MHAFB will bring updated accommodations and greater quality of life to Base residents. Most of the housing slated to be replaced will be demolished and the new housing will be built within the existing footprint. Some new housing is being constructed in areas previously not developed. These new units will be much more energy efficient than the old housing, so the overall resource consumption (water, electricity, gas) by residents on the Base will decrease. This new housing also incorporates more low-water use landscapes than were previously utilized on the Base.

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.

2.1.6 CONSTRAINTS AND OPPORTUNITIES MAP

Figure 2-14 is a Composite Constraints and Opportunities Map from MHAFB's General Plan.

2.2 GENERAL PHYSICAL ENVIRONMENT AND ECOSYSTEMS

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.

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.

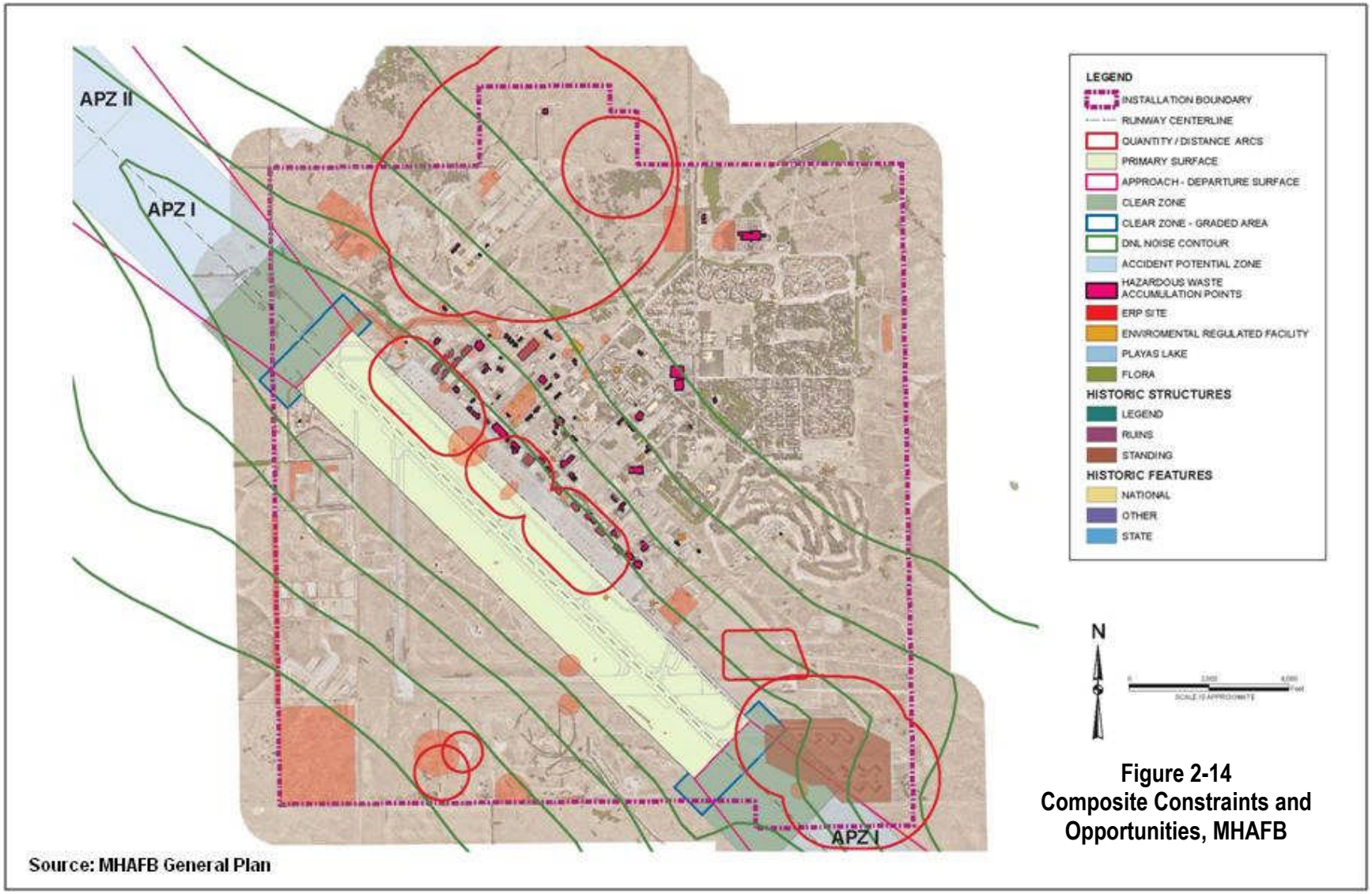

Figure 2-14
Composite Constraints and Opportunities, MHAFB

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TABLE 2-5
Mountain Home, Idaho (106174) Period of Record Monthly Climate Summary
Period of Record: 8/1/1948 to 10/31/2007

	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.

TABLE 2-6
Bruneau, Idaho (101195) Period of Record Monthly Climate Summary
Period of Record: 12/1/1937 to 7/31/2010

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	40.8	48.5	58.2	66.5	75.5	83.9	93.4	91.8	81.6	68.4	51.7	41.2	66.8
Average Min. Temperature (F)	23.2	26.6	31.0	36.6	44.1	51.1	56.9	54.8	45.7	36.9	29.1	23.1	38.3
Average Total Precipitation (in.)	0.86	0.58	0.72	0.83	0.85	0.84	0.18	0.23	0.43	0.53	0.89	0.75	7.70
Average Total Snowfall (in.)	1.8	0.7	0.2	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 TOPOGRAPHY

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 2-15). 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 2.16 and 2.17, respectively. Within MHAFB and the SAR, 11 different soil types have been identified. Detailed soil descriptions are included in table format in Appendix 18.

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 2-18.

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).

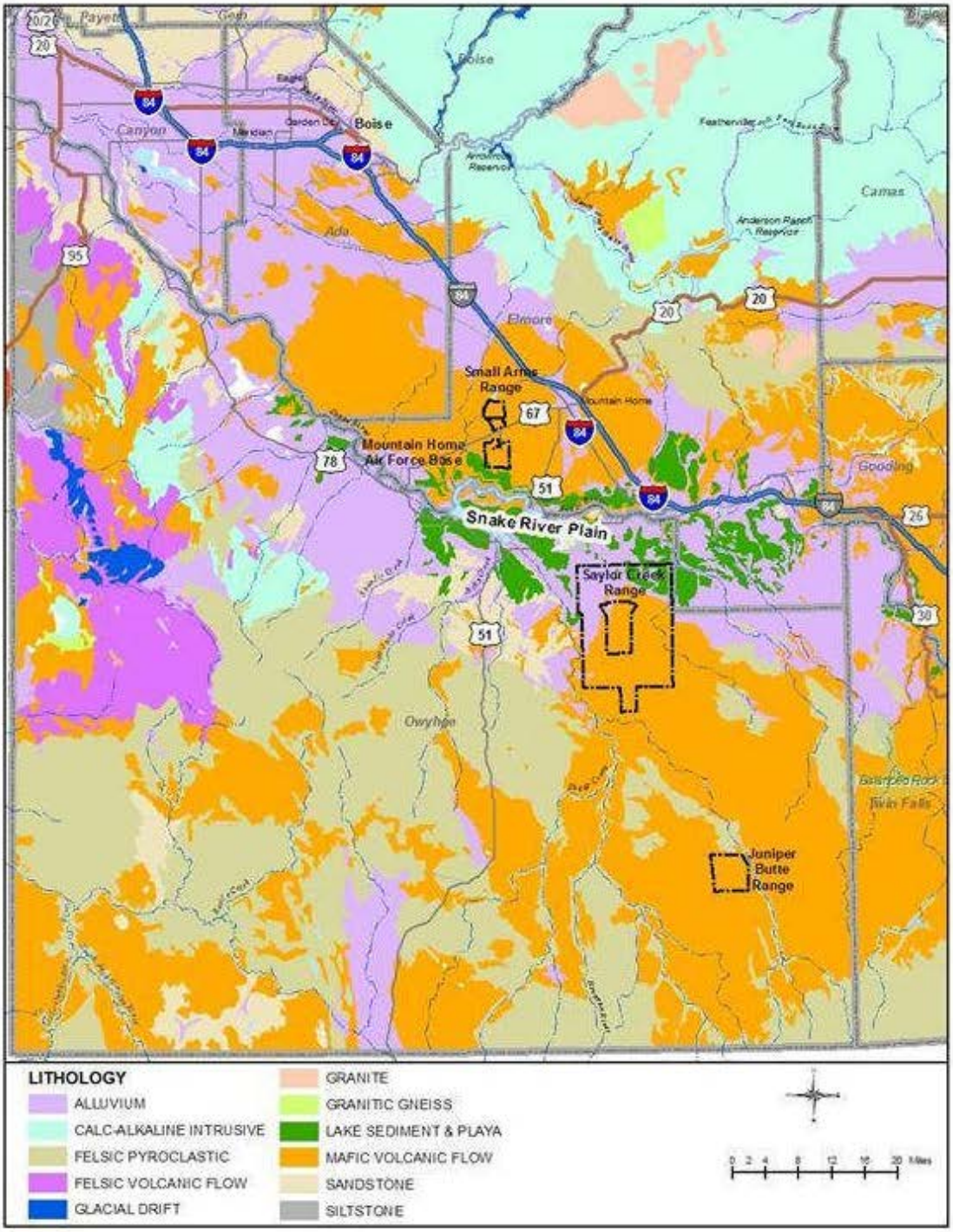

Figure 2-15
Geologic Map of Southern Idaho

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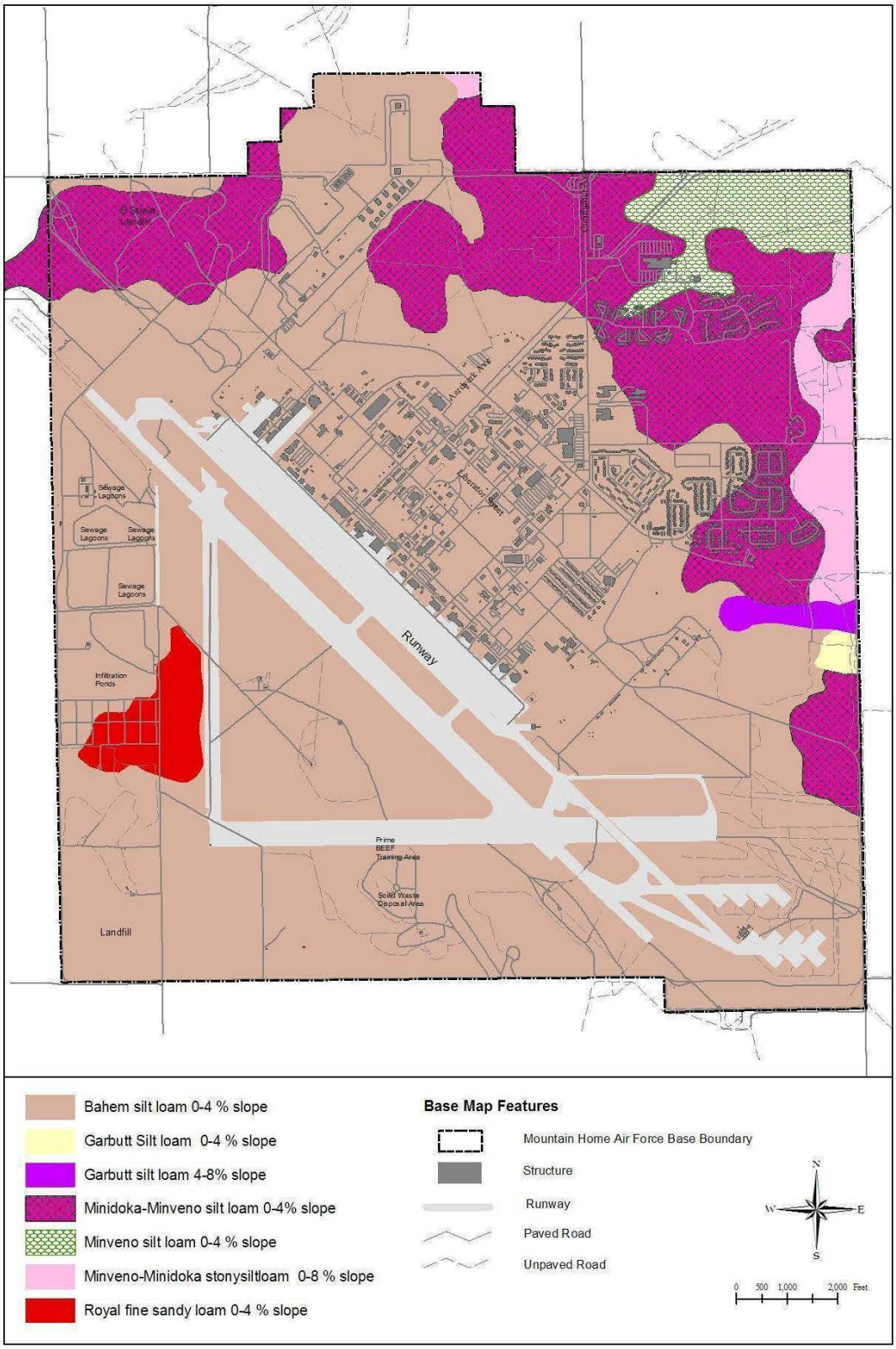

Figure 2-16
Soil Types Located on MHAFB

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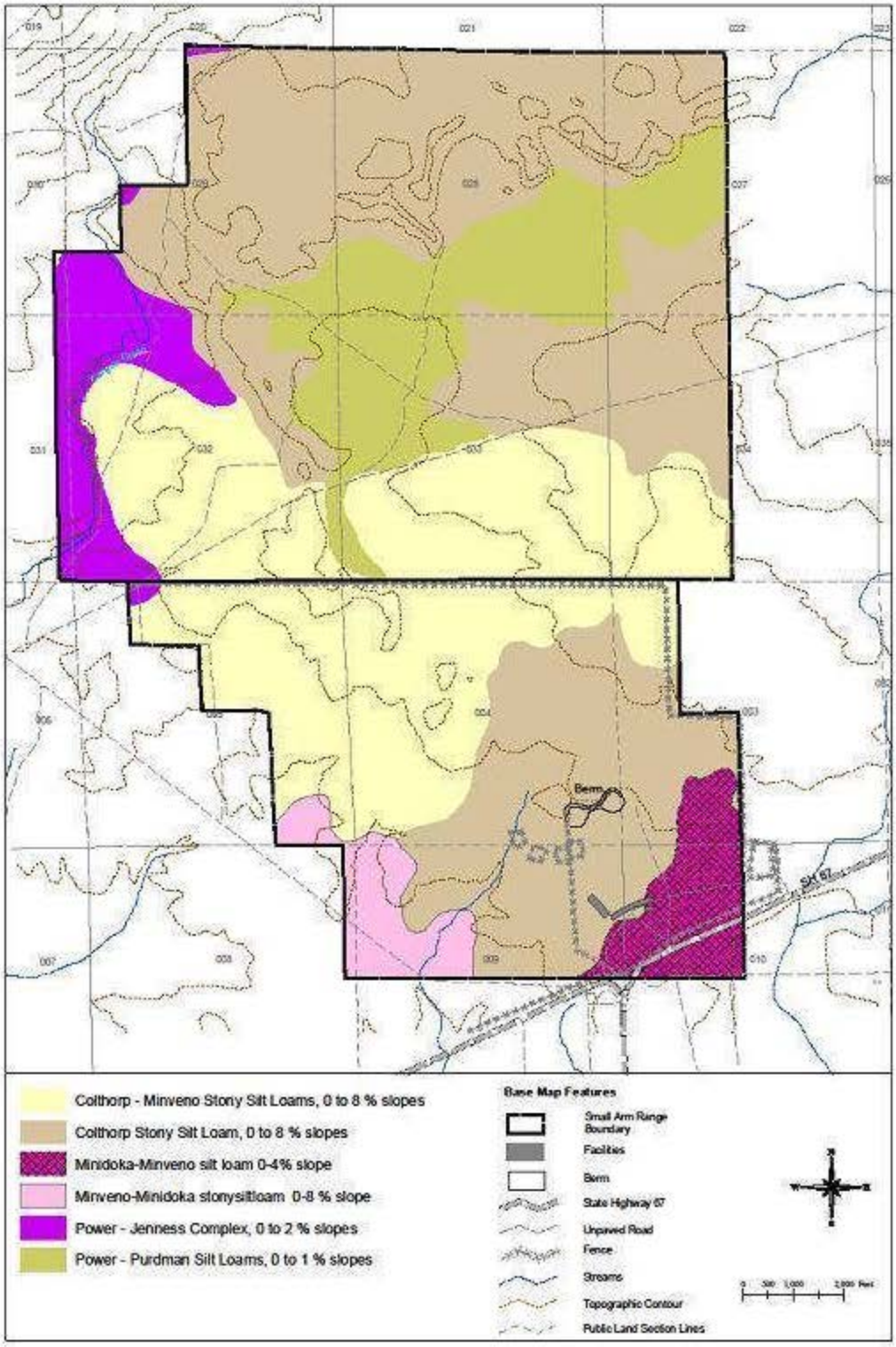

Figure 2-17
Soil Types Located on SAR

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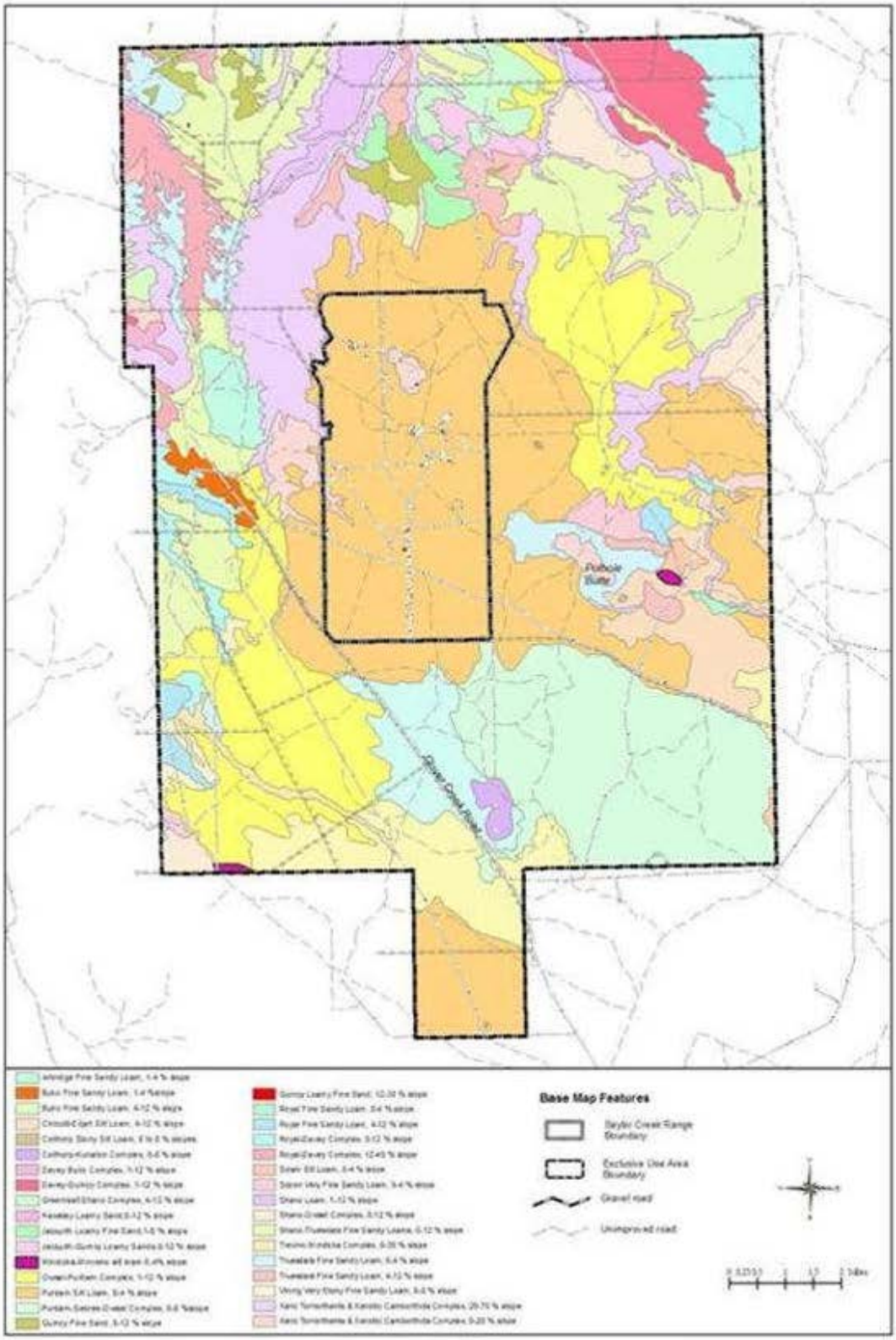

Figure 2-18
Soil Types Located on SCR

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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.

Appendix 18 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 2-19 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. Appendix 18 contains the soil types for emitters and ND targets.

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 runoff 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 Appendix 18. 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.

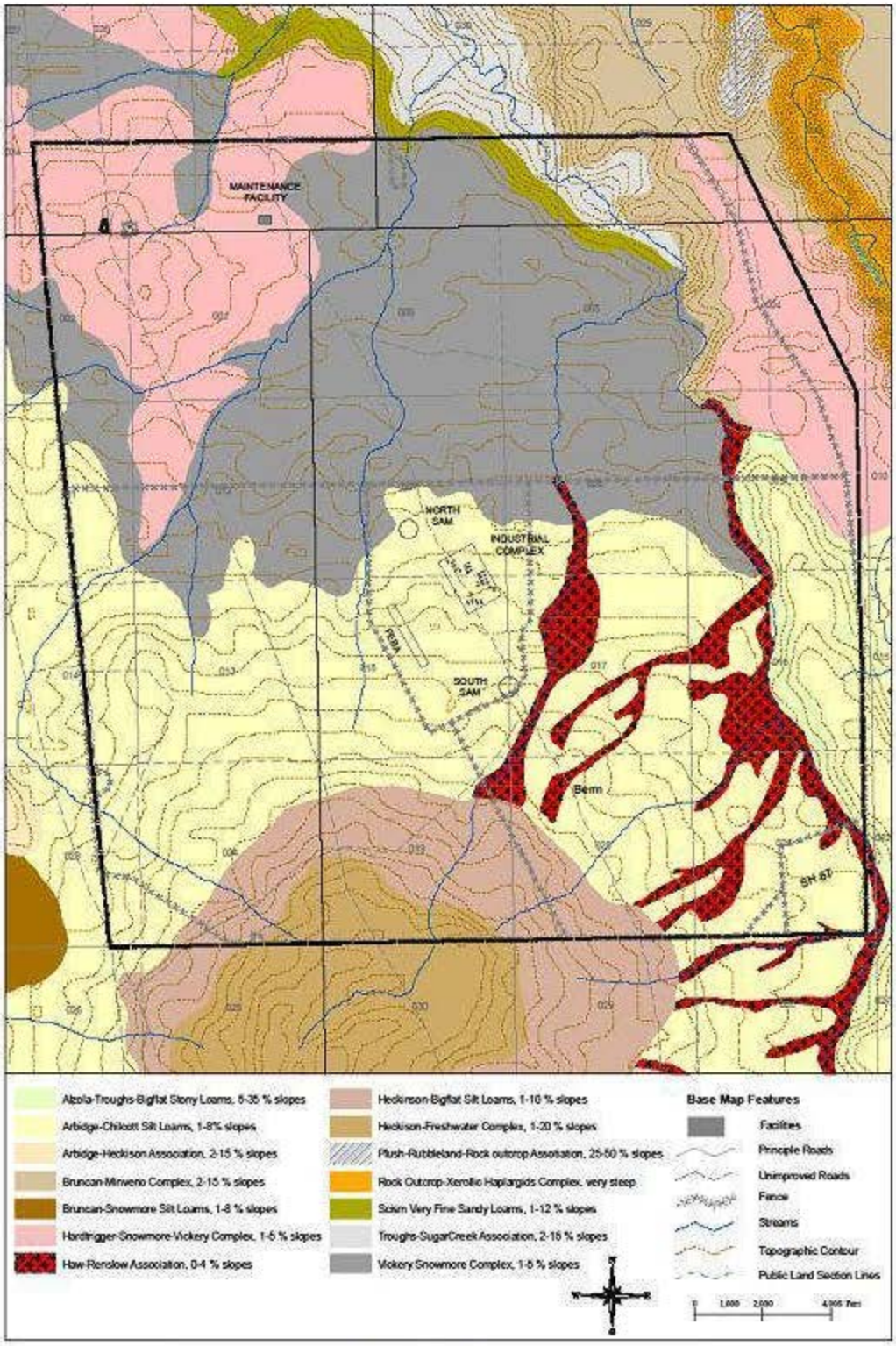

Figure 2-19
Soil Types Located on JBR

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2.2.4 WATERSHEDS AND DRAINAGE PATTERNS

2.2.4.1 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 WWTP to irrigate the Golf Course and the grounds of the WWTP each year.

Located within the C.J. SDRA Watershed (Figure 2-20), 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.

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 2-21), 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

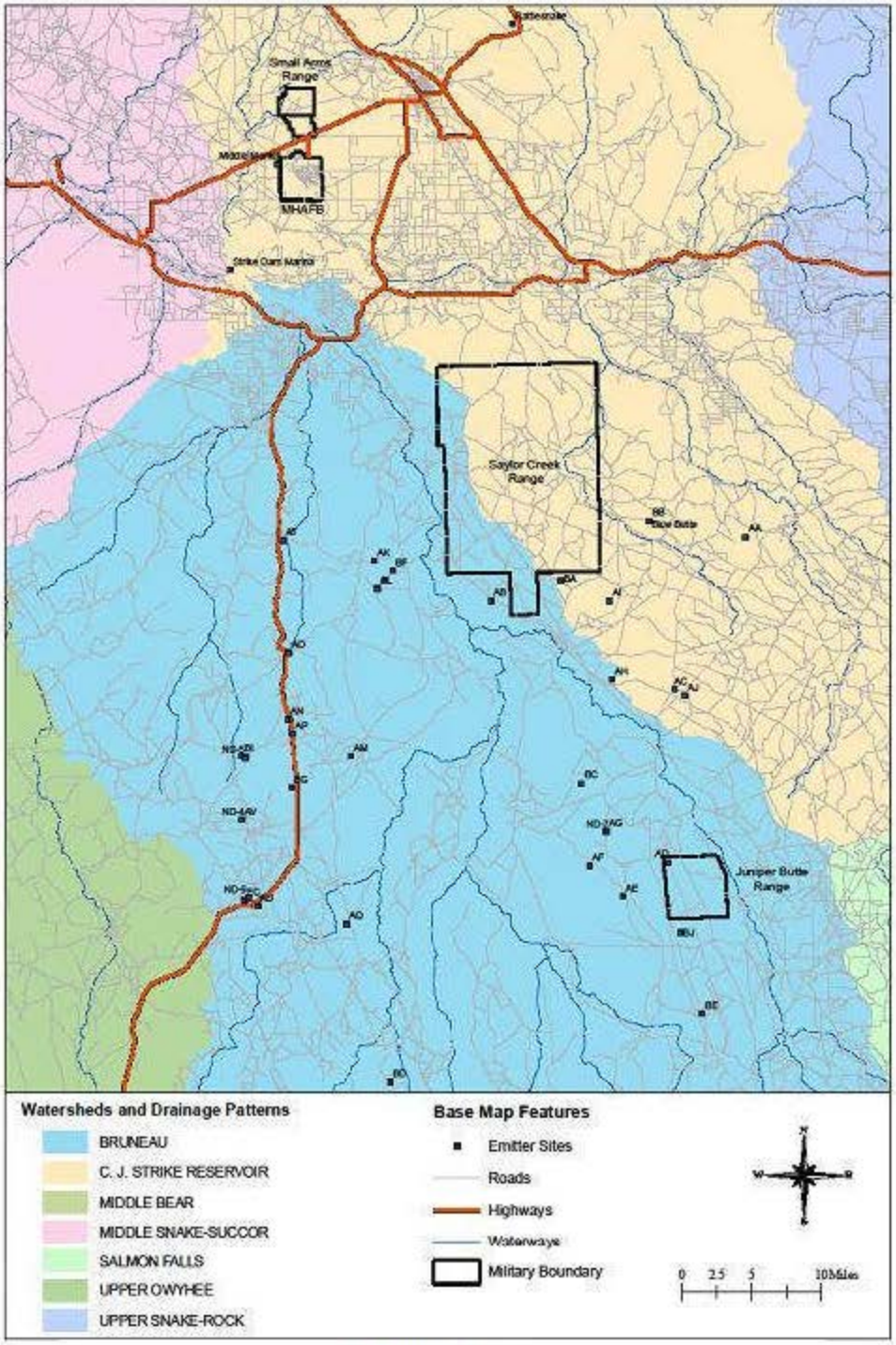

Figure 2-20
Watershed Drainage Patterns on MHAFB, SCR, SAR, JBR, and Emitter Sites

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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.

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 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 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 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 Section 4.20.

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).

2.2.4.2 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 the 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 2-21 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.

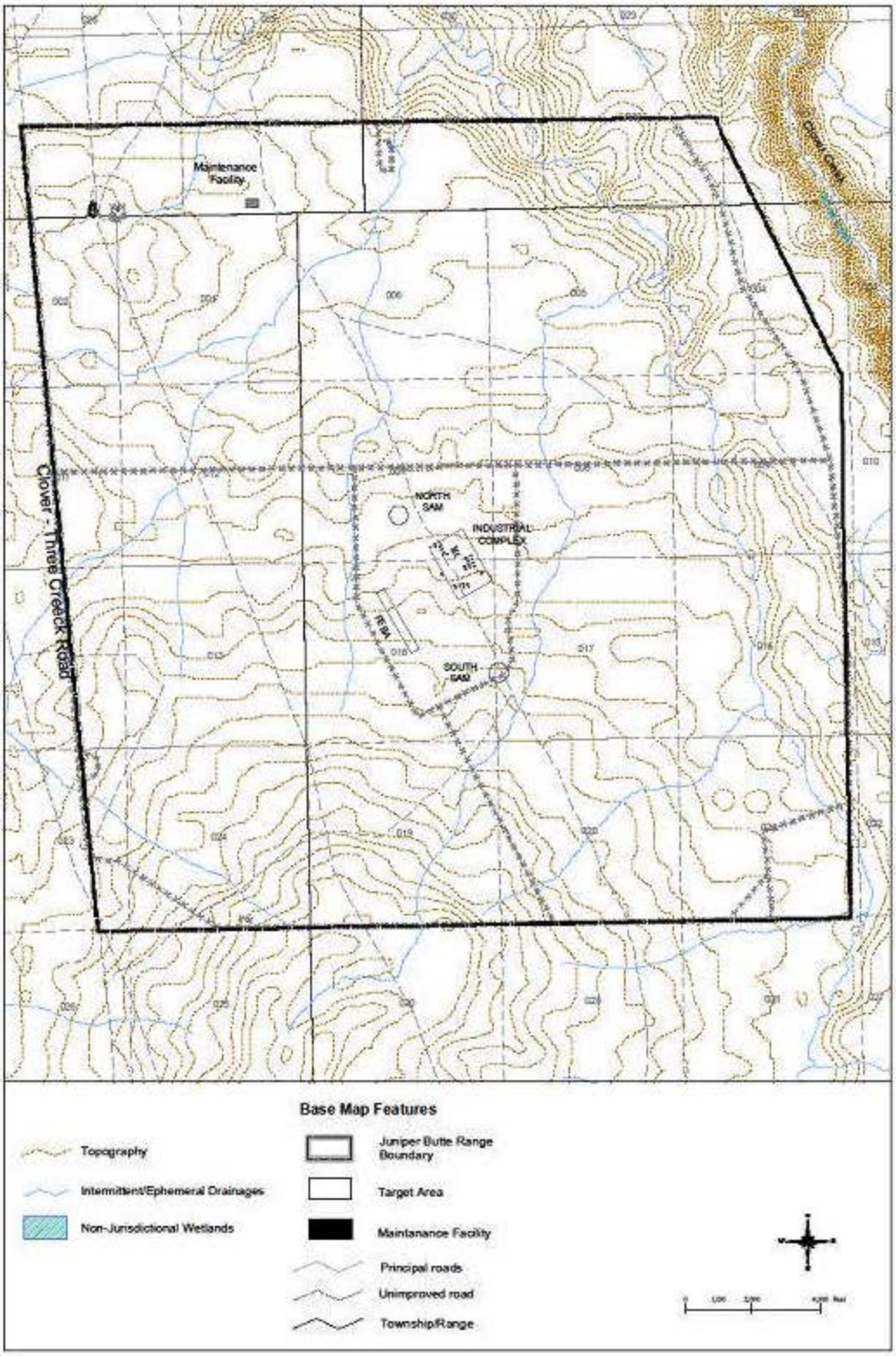

Figure 2-21
Drainages and Wetlands at Juniper Butte Range

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2.3 GENERAL BIOTIC ENVIRONMENT

2.3.1 THREATENED AND ENDANGERED (T&E) SPECIES AND SPECIES OF CONCERN

There is one threatened species on Air Force land in Idaho. Slickspot peppergrass (hereinafter abbreviated LEPA) was listed as threatened on December 7, 2009 (USFWS, 2009). LEPA occurs on JBR.

The Air Force provides protection to candidate species as if they were listed "when practical" (AFI32-7064 Sec 7.1.1). The greater sage-grouse (*Centrocercus urophasianus*) (hereafter sage-grouse) is a Candidate Species. The 12-Month Finding for the greater sage-grouse found that listing the species was warranted, but precluded (USFWS, 2010b). Sage-grouse can be found across the MHRC. See Section 4, Program Elements, for Issues and Concerns, Goals, Objectives, and Implementation and Monitoring Strategies.

2.3.1.1 SLICKSPOT PEPPERGRASS

The following information on distribution, habitat requirements, and biology is summarized from Moseley (1994) and Mancuso and Moseley (1998). LEPA is a small annual or biennial species with small white flowers. When LEPA 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. LEPA 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*). LEPA is occasionally found outside of slickspots, usually in openings very close to slickspots. The known range for LEPA is Idaho's western Snake River Plain and neighboring foothills in Owyhee, Payette, Gem, Canyon, Ada, and Elmore Counties.

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).

An element occurrence 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) element occurrences of LEPA are currently known to exist (USFWS 2010a). Ninety Eight percent of LEPA, excluding those with high spatial uncertainty, occurs on federal lands. Private and state lands comprise 0.4% and 1.6% of LEPA element occurrences respectively (Colket, Cooke and Mancuso, 2006). This land ownership information is representative of the total acreage of the element occurrences, not the percentage of occupied habitat or the percentage of LEPA genets.

The population 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 (IDARNG, 1998). Therefore, a single-year survey for LEPA may not provide an accurate representation of a population's viability or success.

Assessing habitat quality of both the slickspots and the surrounding vegetation may provide a long-term monitoring tool for LEPA. The ICDC followed range-wide monitoring of LEPA 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).

The initial 1996 rare plant survey of the 660-acre Juniper Butte primary impact area found a population of LEPA 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 LEPA. A partial resurvey of the primary impact area was included to identify potential habitat and 1998 population occurrences. LEPA 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.

Results of the 1998 survey show slickspots and LEPA 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 LEPA plants were found in 2,531 slickspots. The total amount of potential LEPA 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 LEPA plants. The southeast corner of the range contained the highest density of plants at the time of these surveys.

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 in 2007, 2008, 2009, and 2010. Excerpts from the survey reports are included below. The LEPA monitoring reports can be found in their entirety in Appendix 4.

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 LEPA plants. These areas have fewer LEPA than the previous year although both the FEBA and exclosure transects had a higher average of LEPA plants per slickspot than the previous year. Since it is unknown what the seedbank contains in the way of LEPA seeds, it is unknown whether these factors are the reason for smaller average number of LEPA 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 LEPA population fluctuations (CH2M Hill, 2004).

Surveys in 2005, 2006 and 2007 continued to report that the habitat integrity as evidenced by native shrubs is similar across all sites and appears to be improving on all sites while bare ground estimates continued to be higher and biotic crust estimates lower in all three years in the grazed sites. In 2005, higher precipitation in late winter and spring 2005 was recorded and average LEPA plant numbers seemed to have improved over previous years on Target Area and Pasture sites and remained about the same on exclosure transects. In 2006, LEPA numbers were low, including the numbers in the exclosure and although adequate moisture was received, the precipitation data do not currently correlate well with LEPA numbers. The 2007 survey conclusions indicated that the overall numbers of LEPA were still below historical maximum numbers for all areas, which may have been partially the result of low precipitation in March. The survey also notes that the 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).

The survey conducted on JBR in 2008 demonstrated the exclosure continues to have the highest number of LEPA plants per slickspot, but the pasture had the highest total number of plants. Although total plant counts in 2008 appear to be adequate, the data obtained show that the majority of the plants were rosettes and not the mature, flowering plants that are more likely to produce future seed stores. Overall numbers were still below the maximum numbers observed in 2004 and 2005 for all areas (CH2M Hill, 2008a).

In 2009 and 2010, results were similar. Exclosure transects had the highest numbers of LEPA plants and the highest average number of LEPA per slickspot, but the total number of LEPA plants in transects were much lower than in 2008. In 2009, 74 LEPA plants were found across all transects; in 2010, 66 LEPA plants were found across all transects. This is a decrease from the 378 LEPA plants found across all transects in 2008, and 533 LEPA plants found across all transects in 2005.

Since environmental conditions heavily influence yearly populations, simple aboveground plant counts may underestimate the potential population of LEPA or occupied slickspots. This is why long-term monitoring goals are so important. LEPA habitat locations on JBR are depicted in Figure 2-22.

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. These occurrences, combined with the existence of the species within the 12,000 acres, indicate that the potential is high for LEPA to occur in adjoining, previously unsurveyed areas. A slickspot habitat and LEPA 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 Appendix 4 (ERO, 2008).

JBR contains a portion of Element Occurrence (EO) 16 (Figure 2-23). EO 16 is composed of multiple subEO's including subEO 704. JBR, which 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.

Monitoring methods on JBR follows the protocol described in *Slickspot Peppergrass Monitoring of Permanent Plots* (Appendix 2). 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).

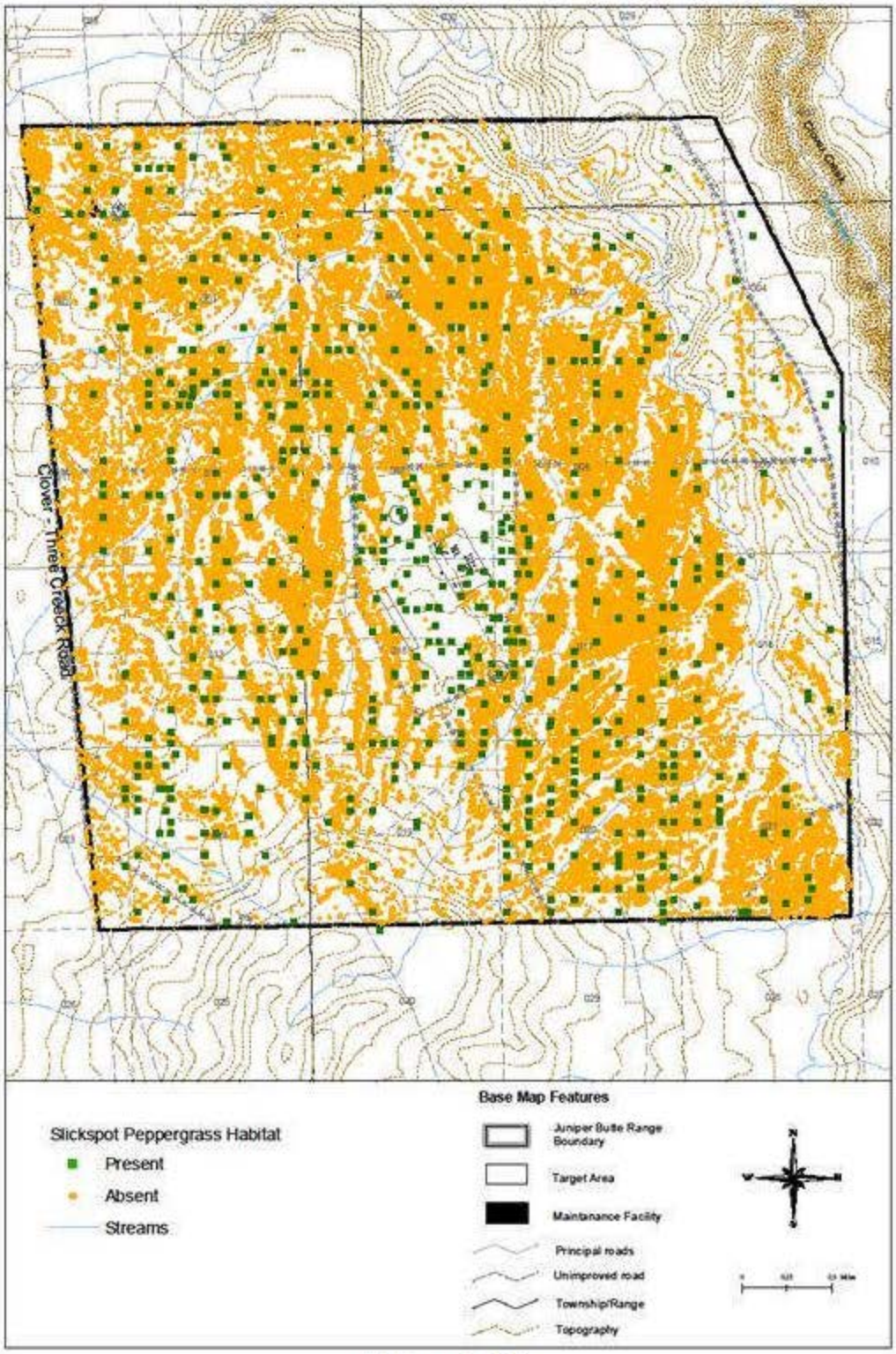

Figure 2-22
Slickspot Peppergrass Habitat at Juniper Butte Range

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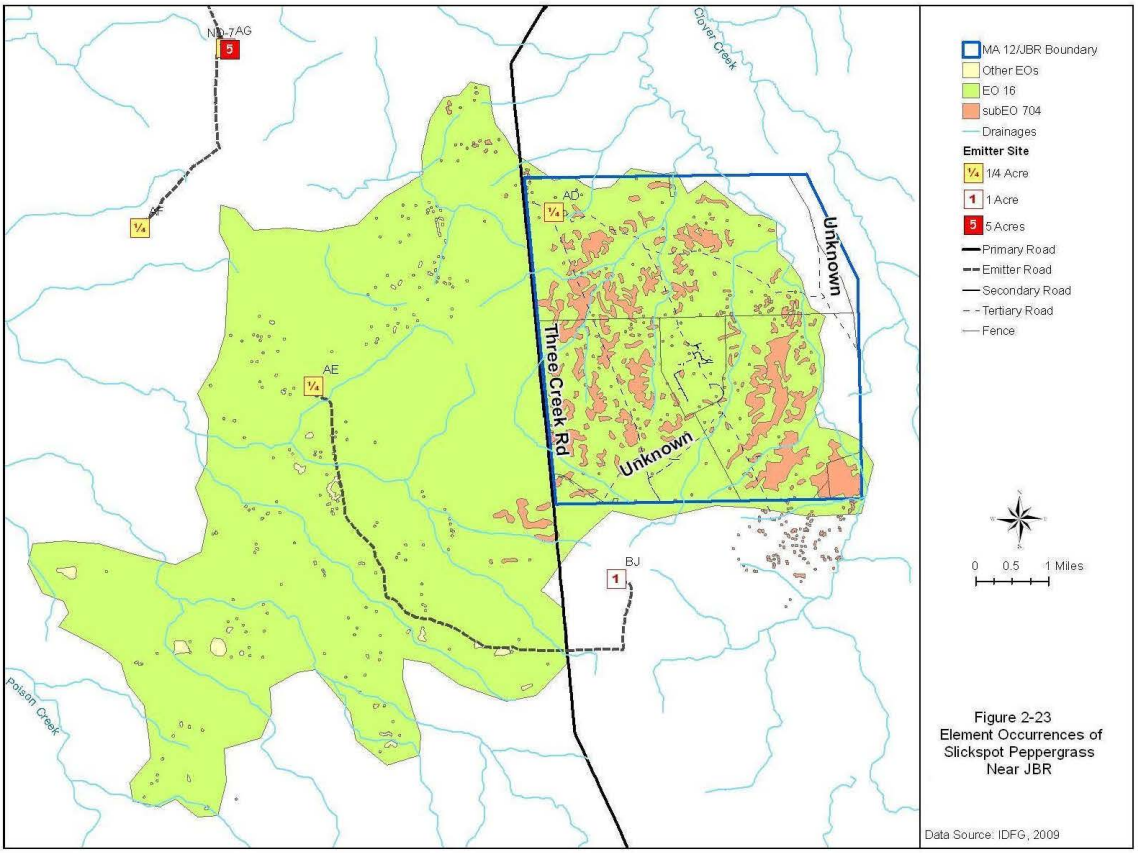

Figure 2-23
Element Occurrences of Slickspot Peppergrass Near JBR

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2.3.1.2 GREATER SAGE-GROUSE

The Greater Sage-Grouse is a Candidate Species. The 12-Month Finding for the sage-grouse found that listing the species was warranted, but precluded (USFWS, 2010b; Appendix 9). Sage-grouse is a BLM Type 2 Sensitive Species and an Idaho Game Species of Concern (ICDC, 2009; Nature Serve, 2009). 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.

The IDFG considers wildfire, infrastructure development, annual grasslands, livestock impacts, and human disturbance to be among the top threats to 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 2-23). 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.

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.

The 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 (Figure 2-24; BLM, 2009b).

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, 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. 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.

Sage-grouse are not known to currently occur on MHAFB or SAR.

According to IDFG data from 2010, SCR contains five 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 sage-grouse habitat or transit areas (Figure 2-25). Sage-grouse have been seen in most sagebrush-covered areas. This species will also occasionally use crested wheatgrass dominated habitats seasonally. The sage-grouse has been observed near water. Use patterns on SCR are not well known at this time.

Sage-grouse are frequently observed on JBR during all seasons but little is known about the seasonal movements and habitat use of sage-grouse in the area.

Wintering Season (*Approximately December 15 to February 15).* IDFG investigated all emitter sites for wintering habitat and use by sage-grouse. 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. 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 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).* 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.

Active 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 Appendix 4.

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

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 p3-10).

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.

2.3.2 WETLANDS AND DEEP WATER HABITATS

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.

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 2-26 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 utilized 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 2-27, 2-28 and 2-29 show the location of all wetlands and playas located on MHAFB and MHRC. Table 2-8 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).

TABLE 2-8
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.

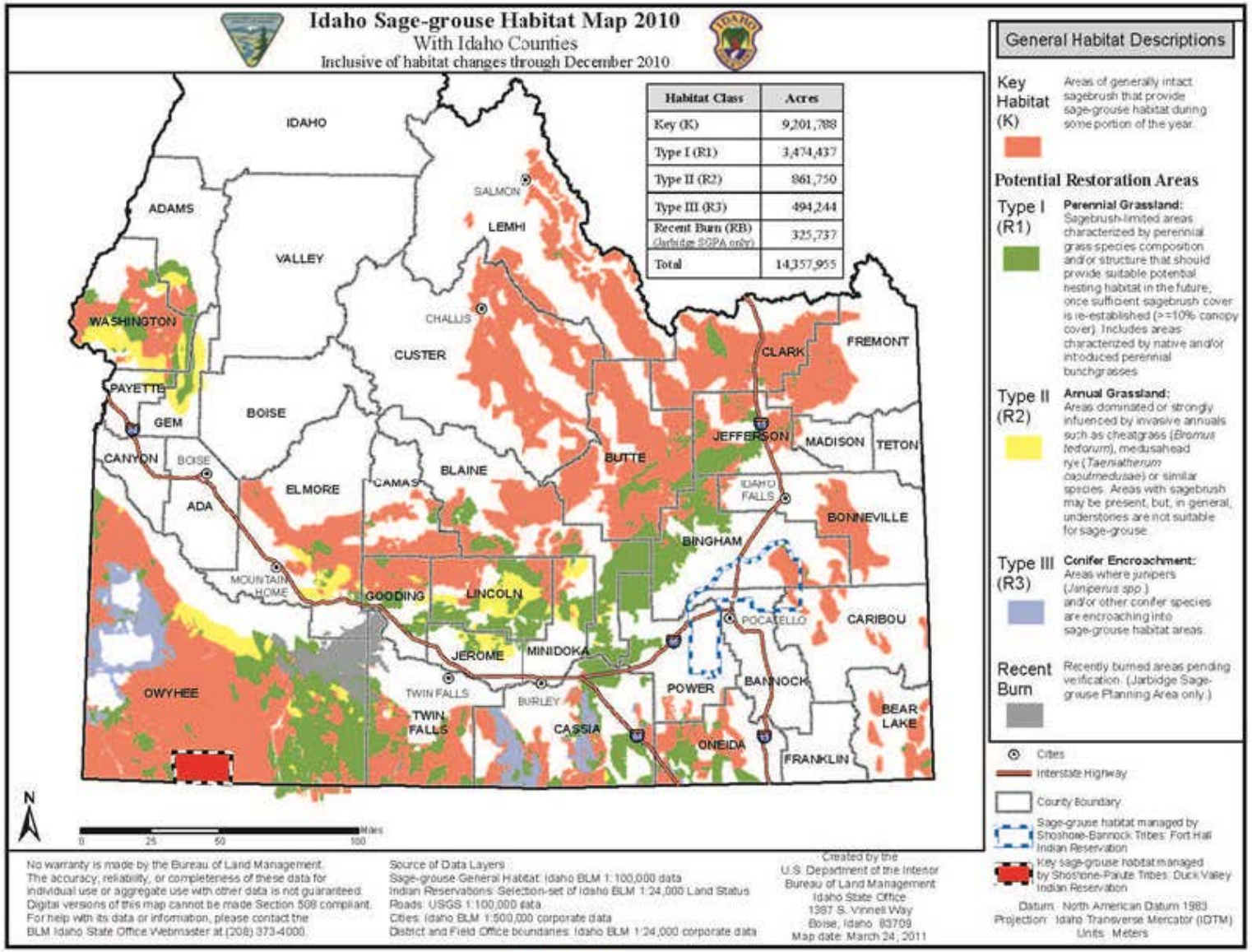

Figure 2-24
Sage-Grouse Habitat Map

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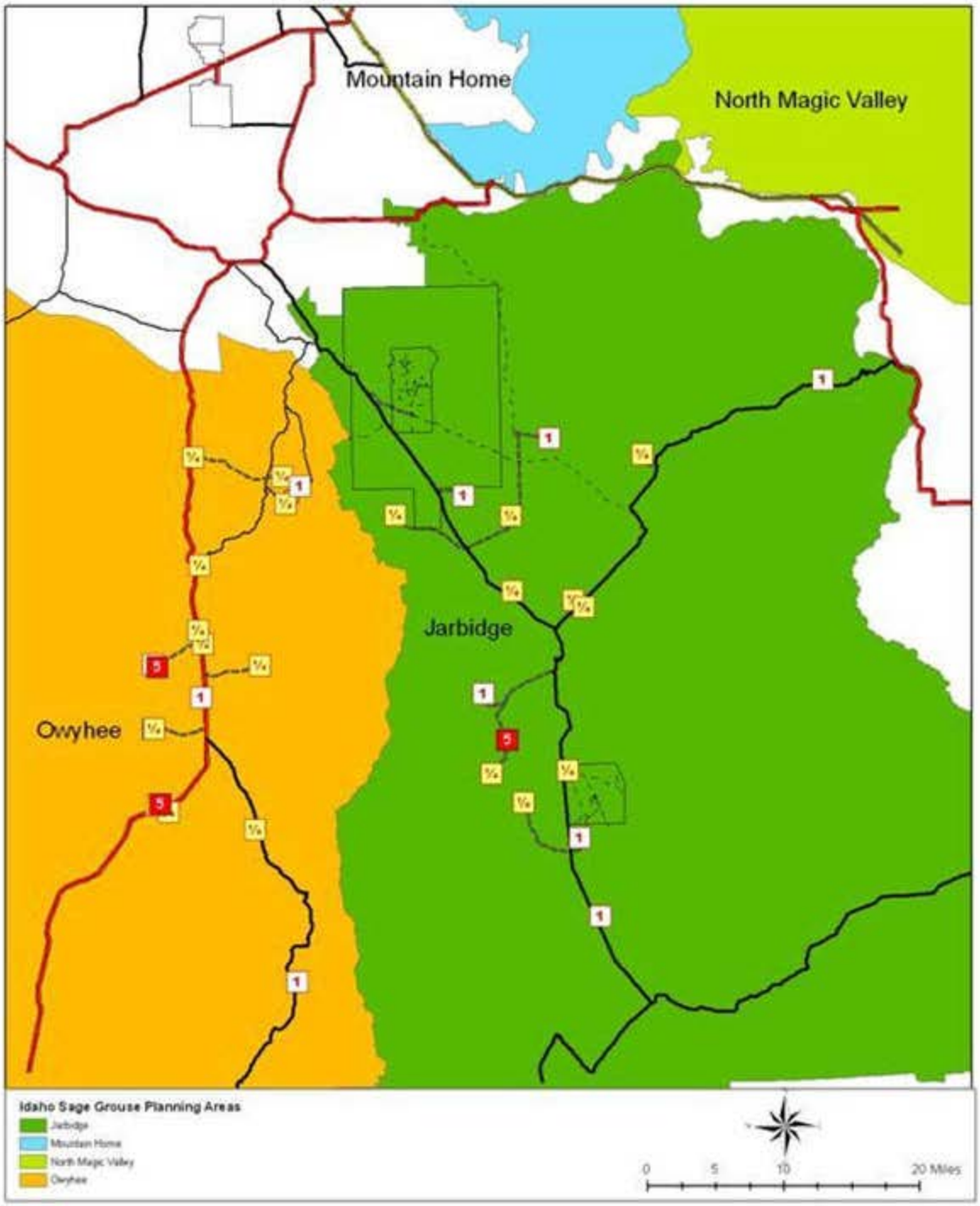

Data Source: IDFG, 2010

Figure 2-25
Sage-Grouse Planning Areas

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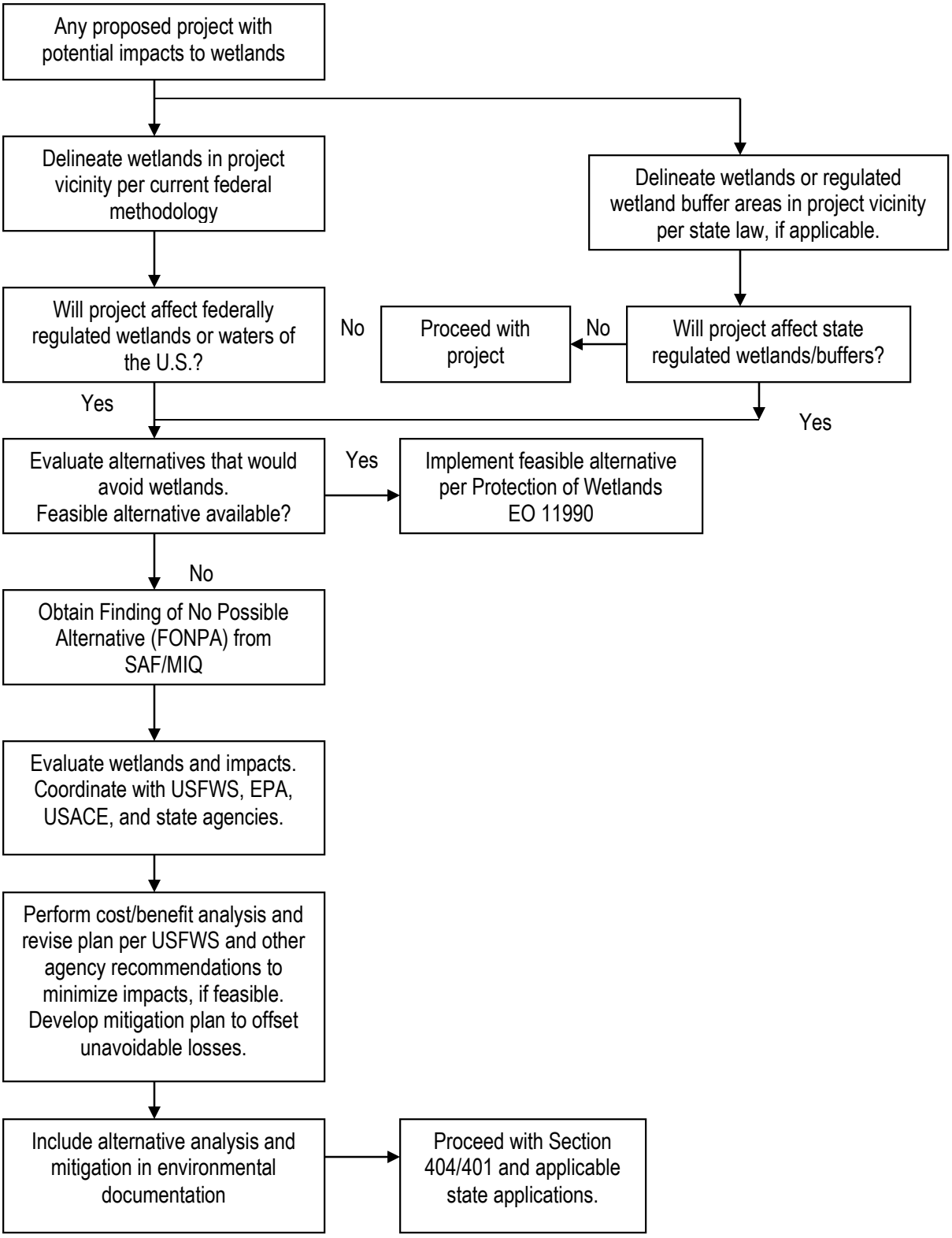

Figure 2-26.
Wetland Permitting Flowchart According to AFI 32-7064

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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 2-27.

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 Small Arms Range along the northern outer perimeter of MHAFB. This playa and six additional very small playas are shown in Figure 2-20.

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 2-21). 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 (0.03acres) 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 2-21.

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.

2.3.3 FAUNA

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.

2.3.3.1 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 (Appendix 4).

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.

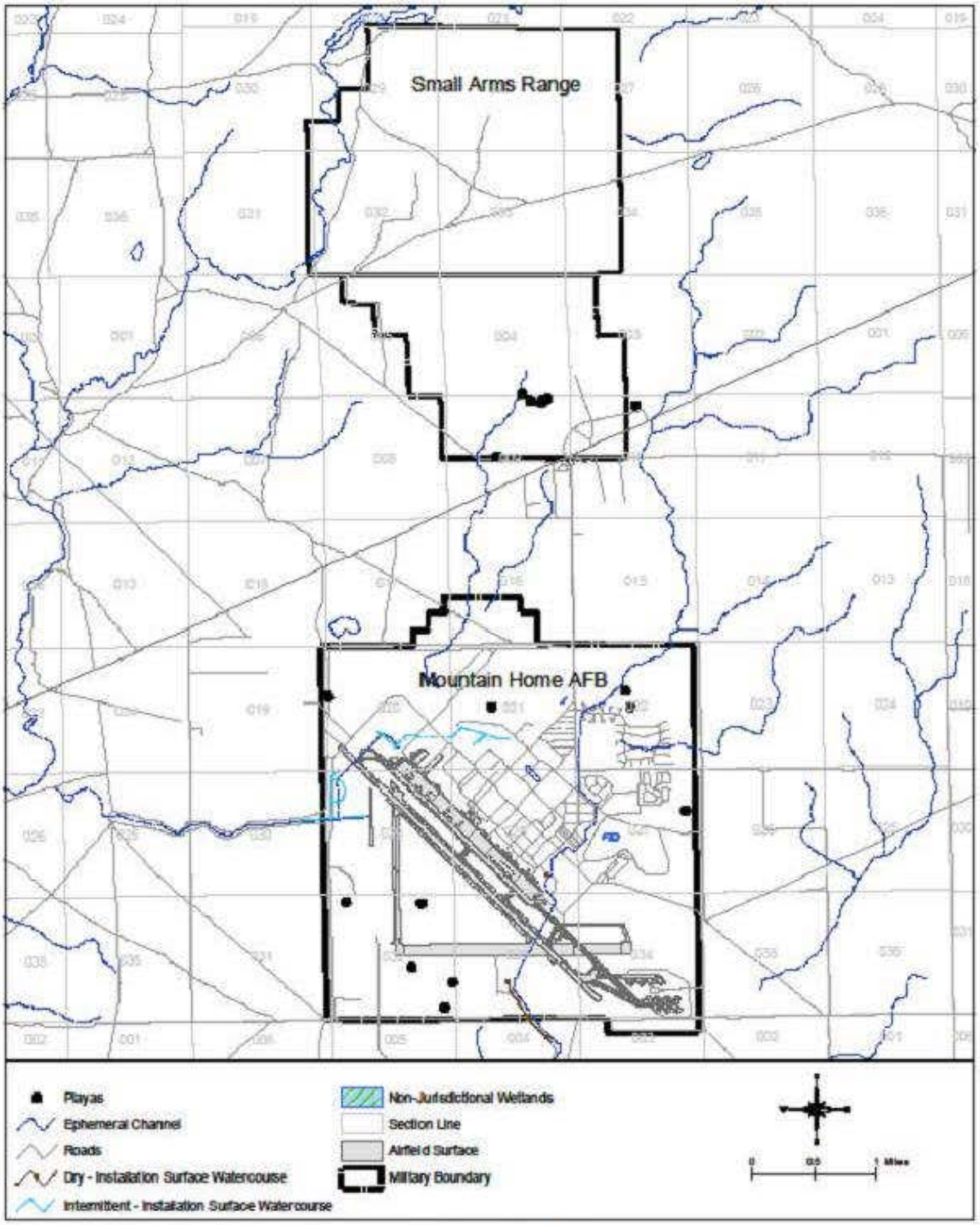

Figure 2-27
Wetlands, Streams, and Impoundments on MHAFB and SAR

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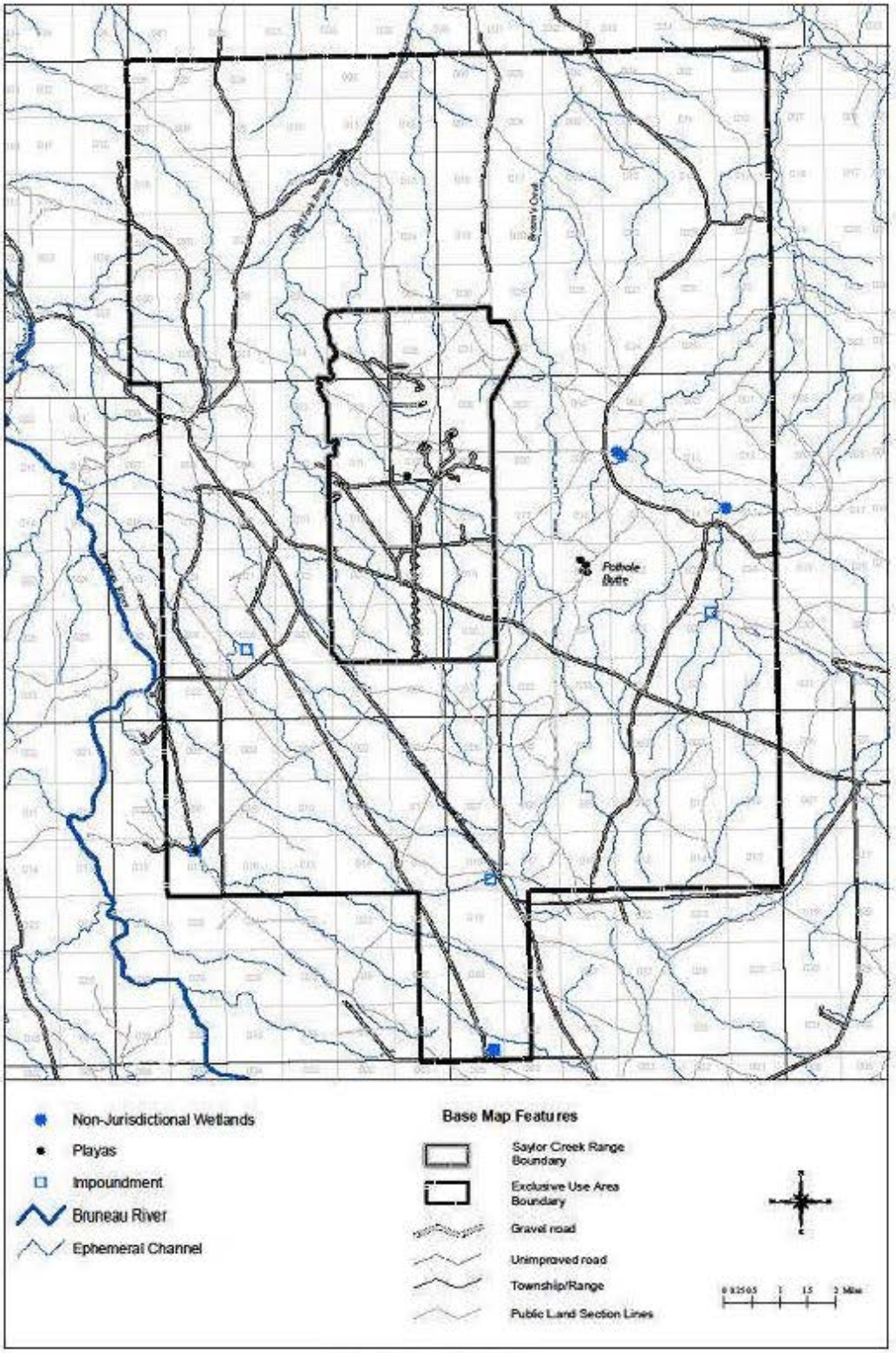

Figure 2-28
Wetlands, Streams, and Impoundments on SCR

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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 sage-grouse and raptor activities. Beginning in 2000, annual surveys have been conducted for sage-grouse (*Centrocercus urophasianus*) 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 Appendix 4.

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

- 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;
- 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 Appendix 4.

2.3.3.2 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 (Appendix 16; ICDC, 2009). Species of concern are addressed by the location in which they occur. Table 2-9 shows species of concern found on lands managed by MHAFB.

Species of concern generally include those federally listed as threatened or endangered (Appendix 9), those listed as species of greatest conservation need in Idaho by the IDFG, DoD Partners in Flight (DoD PIF) birds of conservation concern, BLM Sensitive species, etc (Appendix 16; DoD PIF, 2010; ICDC, 2009). Laws protecting wildlife include, but are not limited to, the Bald and Golden Eagle Protection Act of 1940, which protects eagles, the Migratory Bird Treaty Act of 1918 (Section 4.7.1 and Appendix 6), which protects all migrant birds including neo-tropical migrant birds, and the ESA. Bald and Golden Eagles are also a Species of Concern due to their designation under the Bald and Golden Eagle Protection Act of 1940 and Migratory Bird Treaty Act.

Species with special status found on Air Force lands are listed below.

TABLE 2-9
Species of Concern that Occur on Air Force Lands

Common Name	Scientific Name	Location
Sage sparrow	*Amphispiza belli*	Emitter Sites, MHAFB, JBR, SCR
Black-throated sparrow	*Amphispiza bilineata*	Emitter Site AI
Golden Eagle	*Aquila chrysaetos*	Emitter Sites, MHAFB, JBR, SAR, SCR
Western burrowing owl	*Athene cunicularia*	Emitter Sites, MHAFB, JBR, SCR
Ferruginous hawk	*Buteo regalis*	Emitter Sites, SCR, JBR
Greater sage-grouse	*Centrocercus urophasianus*	Emitter Sites, SCR, JBR
Townsend's big-eared bat	*Corynorhinus townsendii*	Possibly SCR
Bald Eagle	*Haliaeetus leucocephalus*	MHAFB
Loggerhead shrike	*Lanius ludovicianus*	Emitter Sites, MHAFB, JBR, SCR
California gull	*Larus californicus*	MHAFB
Western small-footed myotis	*Myotis ciliolabrum*	SCR, JBR
Long-eared myotis	*Myotis evotis*	MHAFB, SCR
Yuma myotis	*Myotis yumanensis*	MHAFB, SCR
Long-billed curlew	*Numenius americanus*	MHAFB, SCR
Sage thrasher	*Oreoscoptes montanus*	Emitter Sites, MHAFB, JBR, SCR
American white pelican	*Pelecanus erythrorhynchos*	MHAFB

Common Name	Scientific Name	Location
Western pipistrelle	*Pipistrellus hesperus*	SCR, JBR
White-faced ibis	*Plegadis chihi*	MHAFB
Brewer's sparrow	*Spizella breweri*	Emitter Sites, MHAFB, JBR, SCR
Kit fox	*Vulpes macrotis*	Emitter Sites, JBR

Source: Idaho Fish and Game and Appendix 16; ICDC 2009.

Sage 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).

Sage sparrows are a USFWS Trust Species, DoD PIF Priority Species, and a Special Status Species in Owyhee County, Idaho (DoD PIF, 2010; ICDC, 2009; Nature Serve, 2009). They are found on MHAFB, SCR, JBR, and RTS (Appendix 4; 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 sage 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 USFWS Trust Species and a Special Status Species in Owyhee and Elmore Counties, Idaho (ICDC, 2009; Nature Serve, 2009). This bird has been observed in the spring at emitter site AI in sagebrush/Sandberg's bluegrass habitat (Appendix 4; 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 Trust Species and a DOD PIF Priority Species. 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 Trust Species, a BLM Type 5 Sensitive Species, DoD PIF Priority Species, and an Idaho Protected Nongame Species (DoD PIF, 2010; ICDC, 2009; Nature Serve, 2009). 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 Trust Species, a BLM Type 3 Sensitive Species, IDFG Special Status species in Elmore and Owyhee Counties, and an Idaho Protected Nongame Species (ICDC, 2009; Nature Serve, 2009). 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 section 2.3.1.2.

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(ICDC, 2009; Nature Serve, 2009). 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 Trust Species that was observed in March 2010 on the golf course at MHAFB, presumably hunting ground squirrels. 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 Trust Species, DoD PIF Priority Species, and a Special Status Species in Owyhee and Elmore Counties, Idaho (DoD PIF, 2010; ICDC, 2009; Nature Serve, 2009). 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 a USFWS Trust Species and an Idaho Protected Nongame Species (ICDC, 2009; Nature Serve, 2009). 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 (ICDC, 2009). 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 (ICDC, 2009). 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 (ICDC, 2009). A desiccated Yuma myotis carcass was found in Building 1296 on MHAFB (Appendix 4; 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 Trust Species, a BLM Type 5 Sensitive Species, DoD PIF Priority Species, and an Idaho Protected Non-Game species (DoD PIF, 2010; ICDC, 2009; Nature Serve, 2009). 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 Trust Species, DoD PIF Priority Species, and a Special Status Species in Owyhee County, Idaho (DoD PIF, 2010; ICDC, 2009; Nature Serve, 2009). 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 USFWS Trust Species, a Type 2 BLM Sensitive Species, and an Idaho Protected Nongame Species (ICDC, 2009; Nature Serve, 2009). 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 an USFWS Trust Species, a Type 4 BLM Sensitive Species, and an Idaho Protected Nongame Species (ICDC, 2009; Nature Serve, 2009). 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 Trust Species, a Type 3 BLM Sensitive Species, DoD PIF Priority Species, and an Idaho Protected Nongame Species (DoD PIF,

2010; ICDC, 2009; Nature Serve, 2009). 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 (ICDC, 2009; Nature Serve, 2009). They have been recorded by calls, scat, and tracks at four emitter sites and visually identified once at site AF (Appendix 4; 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).

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.

2.3.3.3 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 (Figures 2.23-2.26):

- 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 (Appendix 4). 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 sage-grouse. However, many smaller mammals, reptiles, and birds have adapted to urban areas and human disturbance.

SPECIAL STATUS SPECIES

No habitat for federally listed threatened or endangered species is present on MHAFB.

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 the Technical Memorandum within Appendix 4 and
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.

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; Appendix 23). 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 (Appendix 22). 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 (Appendix 23).

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 (Appendix 22). A birding checklist for MHAFB is available on the DoD Partners in Flight website (www.dodpif.org).

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 (Appendix 4), 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 (Appendix 4) 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.

2.3.3.4 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).

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.

2.3.3.5 MHRC

2.3.3.5.1 SCR

Status of Inventories and Current Conditions. On SCR, the State of Idaho, the BLM, and MHAFB all participate in managing habitat (Figure 2-24). 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 (Appendix 17). Permits administered by the BLM per public land order (Appendix 10) 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.

SPECIAL STATUS SPECIES

The ICDC tracks rare animals in Idaho (ICDC, 2009). No federally listed threatened or endangered species have been found on SCR.

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.

Game Birds.

According to IDFG data from 2010, SCR contains five 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 sage-grouse habitat or transit areas (Figure 2-22). Sage-grouse have been seen in most sagebrush-covered areas. This species will also occasionally use crested wheatgrass dominated habitats seasonally. The sage-grouse has been observed near water. Use patterns on SCR are not well known at this time.

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.

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.

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 (Appendix 4; MHAFB, 2006) lists all species that were seen within SCR in 2006.

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.

REPTILES

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.

2.3.3.5.2 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 sage-grouse on JBR. Wildlife observations are also noted during the course of LEPA and grazing monitoring.

Since 2003, 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 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 (Figure 2-26).

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 (Figure 4-8). 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.

SPECIAL STATUS SPECIES

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.

Raptors.

Ferruginous hawks have been seen in a variety of habitats within JBR (Appendix 4; 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 Mountain Home Air Force Base Facilities" within Appendix 4.

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

Game Birds.

Sage-grouse is a sagebrush obligate species 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 sage-grouse movement and habitat use from 2009-2011

(Lowe & Commons-Kemner, 2009; Appendix 4).

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.

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 2008, 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 (Appendix 4; 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.

AMPHIBIANS

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

REPTILES

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.

2.3.3.5.3 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 (Figure 2-6). 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).

SPECIAL STATUS SPECIES

Active sage-grouse leks occur near some emitter sites. Some of the emitter sites are located near or within sage-grouse habitat. Active 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 Appendix 4.

Little is known about the seasonal movements and habitat use of 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 sage-grouse season and type of use. In addition, the Air Force and IDFG are conducting sage-grouse capture, collaring, and telemetric tracking to collect more data on sage-grouse movement and habitat use in 2009-2011.

Except where sage-grouse issues are identified, (refer to Section 4.4) 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.

2.3.3.5.4 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 FLORA

2.3.4.1 HISTORIC VEGETATION COVER

MHAFB AND SAR

MHAFB and SAR 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.

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 Appendix 14.

Several common grasses are associated with sagebrush communities:

- Bluebunch wheatgrass (*Pseudoroegneria spicata*), 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

JBR and the associated ND targets and emitter sites are located within the regional landform and vegetation classification known as the Intermountain Sagebrush Province/Sagebrush Steppe Ecosystem (Bailey & Kuckler, 1996). This ecosystem encompasses a wide range of landforms and vegetation types, ranging from large expanses of sagebrush-covered plateaus to rugged mountains blanketed with juniper woodlands and perennial grasslands. Historically, the most abundant vegetation type was shrub-steppe. 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 Appendix 14.

2.3.4.2 CURRENT VEGETATION

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 (Appendix 4). 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. 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 2-28). 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. 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 (*Ranunculus testiculatus*), 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 Appendix 15. Table 2-10 is a restoration seeding table that outlines the planning activities and seeding mixes that have been used on MHAFB lands.

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 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).

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 as dry as concrete in the summer.

Davis' peppergrass was located northeast of the 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

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. 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. When 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 Sandbergs 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.

Davis' Peppergrass. 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 2-20). 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.

TABLE 2-10
Restoration Seeding Table for Planting Activities and Seed Mixes Used on MHAFB Lands- Seeding rates are in Pure Live Seed (PLS) pounds per acre

Year	Location	Name	Acres	Wyoming Big	Bluebunch	Indian	Great Basin	Sandbergs	Bottlebrush	Gooseberryleaf	Globemallow	Lewis	Forage	Rangeland	Rabbitbrush	Russian	Siberian Wheatgrass	Crested Wheatgrass	Winterfat	Four-wing Saltbush	Annual Sunflowers	Endo Mycorrhizae	Total PLS (lbs)/ Acres
2001	SCR	Treatment 1	882			1.0		1.0	0.20			0.5			1.5	2.5							6.7
2001	SCR	Treatment 2	200									0.5	1.30			3.5							5.3
2001	SCR	Treatment 3	103			1.0	2.3	1.5				0.5											5.3
2002	SCR	Impact Area	4,000									1.0	0.20	1.0		6.0	1.5						9.7
2004	MHAFB	Habitat Improvement	600									1.0		2.0		2.0		4.0					9.0
2004	MHAFB	Road ROWs	200	0.25	7.0			1.0	2.00	0.50													10.8
2004	SCR	SW Corner of SCR	2,000	0.25	1.0			2.0				1.0				2.0		2.0					8.3
2004	SAR	Habitat Improvement	10									1.0		3.0				5.0				6.0	15.0
2005	MHAFB	Habitat Improvement	390									1.0		3.0				5.0				6.0	15.0
2005	SCR	Treatment 1	1,500	0.16	0.7		0.03					1.3		2.1		1.3						1.62	7.22
2005	SCR	Treatment 2	2,500	0.3	3.5	1.2		0.6				0.3		1.5		3.5						0.6	11.5
2006	MHAFB	Habitat Improvement	390									1.0		3.0				5.0				6.0	15.0

Year	Location	Name	Acres	Wyoming Big	Bluebunch	Indian	Great Basin	Sandbergs	Bottlebrush	Gooseberryleaf	Globemallow	Lewis	Forage	Rangeland	Rabbitbrush	Russian	Siberian Wheatgrass	Crested Wheatgrass	Winterfat	Four-wing Saltbush	Annual Sunflowers	Endo Mycorrhizae	Total PLS (lbs)/ Acres
2006	SAR	Habitat Improvement	10									1.0		3.0				5.0				6.0	15.0
2006	SCR	W and N of Clover Fire	2,000	0.25	1.0			1.0						1.0		1.25		2.0				6.0	12.5
2007	SCR	Skeletonweed Treatments	1,000	0.1				1.0				1.0		2.0		2.0		1.0				2.0	9.1
2007	MHAFB	Habitat Improvement	590									1.0		3.0			0.5	5.0				2.0	11.5
2007	SAR	Habitat Improvement	10									1.0		3.0				5.0				2.0	11.0
2008	SCR	Road to Brown's Gulch	1,000	0.1								0.5		2.0		2.5		2.0				2.0	9.1
2008	MHAFB	Habitat Improvement	600									0.5		2.0		2.5	0.5	4.0				2.0	11.5
2009	MHAFB	Habitat Improvement	300									0.5		2.0	0.5	2.5		4.0	0.5	0.5	1.0	2.0	13.5
2009	MHAFB	Grandview Gate-BLM	20					2.0		0.25							12.0					2.0	16.25
2009	SCR	Interseeding	550	0.1								0.5		2.0		2.5		2.0				2.0	9.1
2010	MHAFB	Habitat Improvement	300					4.0								4.0		6.0				3.0	17.0
2010	SCR	Black Butte Fire	1000	0.5	2.0							0.5		2.0		2.0		1.5				3.0	11.5
2010	MHAFB	Nox Weed Rehab	20															8.0				3.0	11.0

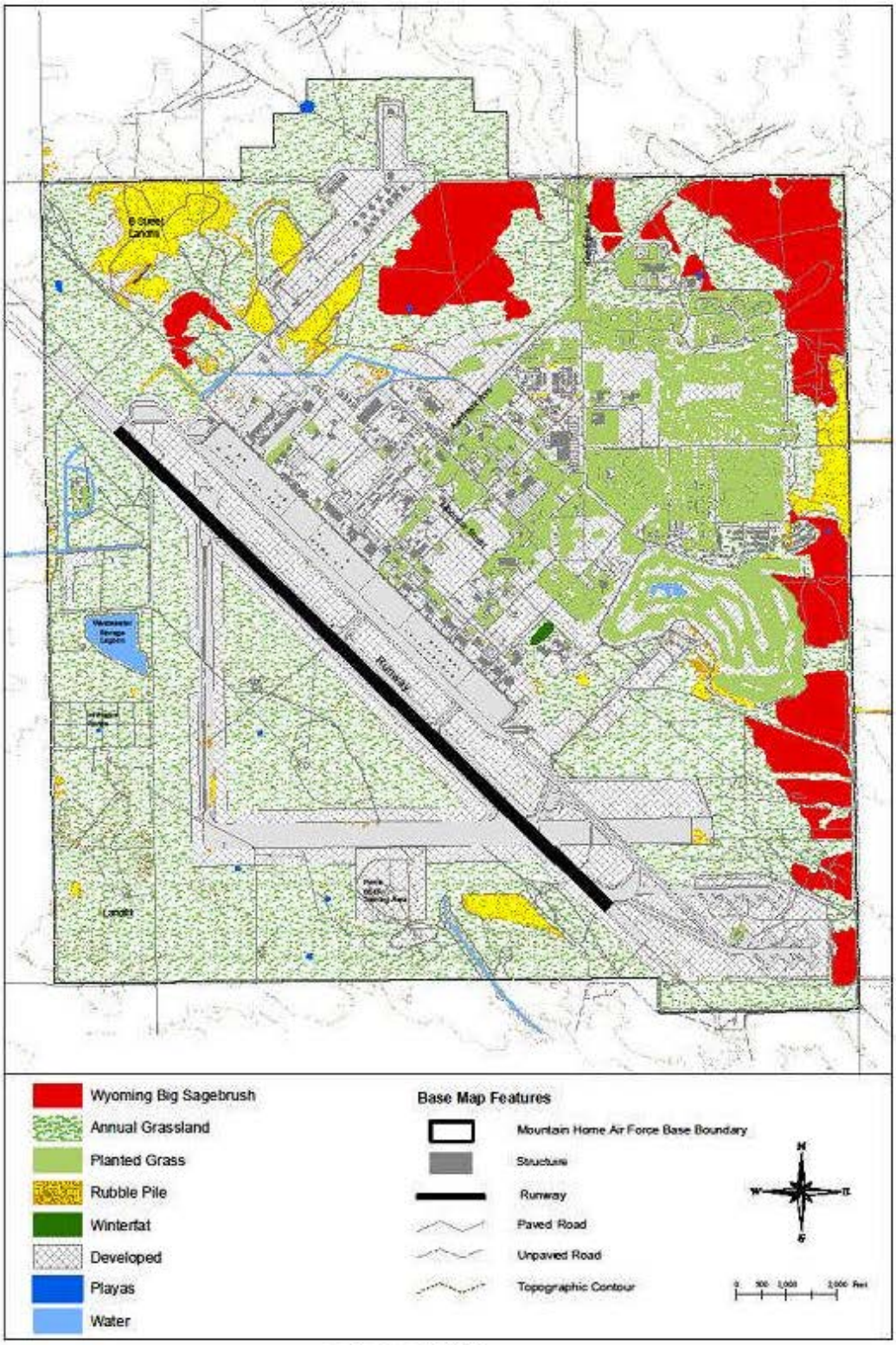

Figure 2-29
Vegetation on MHAFB

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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.

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 (Appendix 15), 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 2-25). Slickspots do occur within the EUA and outside the EUA in the public use areas. No LEPA has ever been found on SCR.

Plant communities were classified and mapped on SCR in the 1996 Ecosystem Survey (Appendix 4). 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. Sandbergs 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.

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. 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 2-24). 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, Sandbergs 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.*).

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. 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 2-26). 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. The 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 (Figure 2-26).

OTHER MHRC COMPONENTS

The vegetation at the emitters and ND target areas ranges from shrub-steppe vegetation to introduced annual grasslands (Appendix 19). 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.

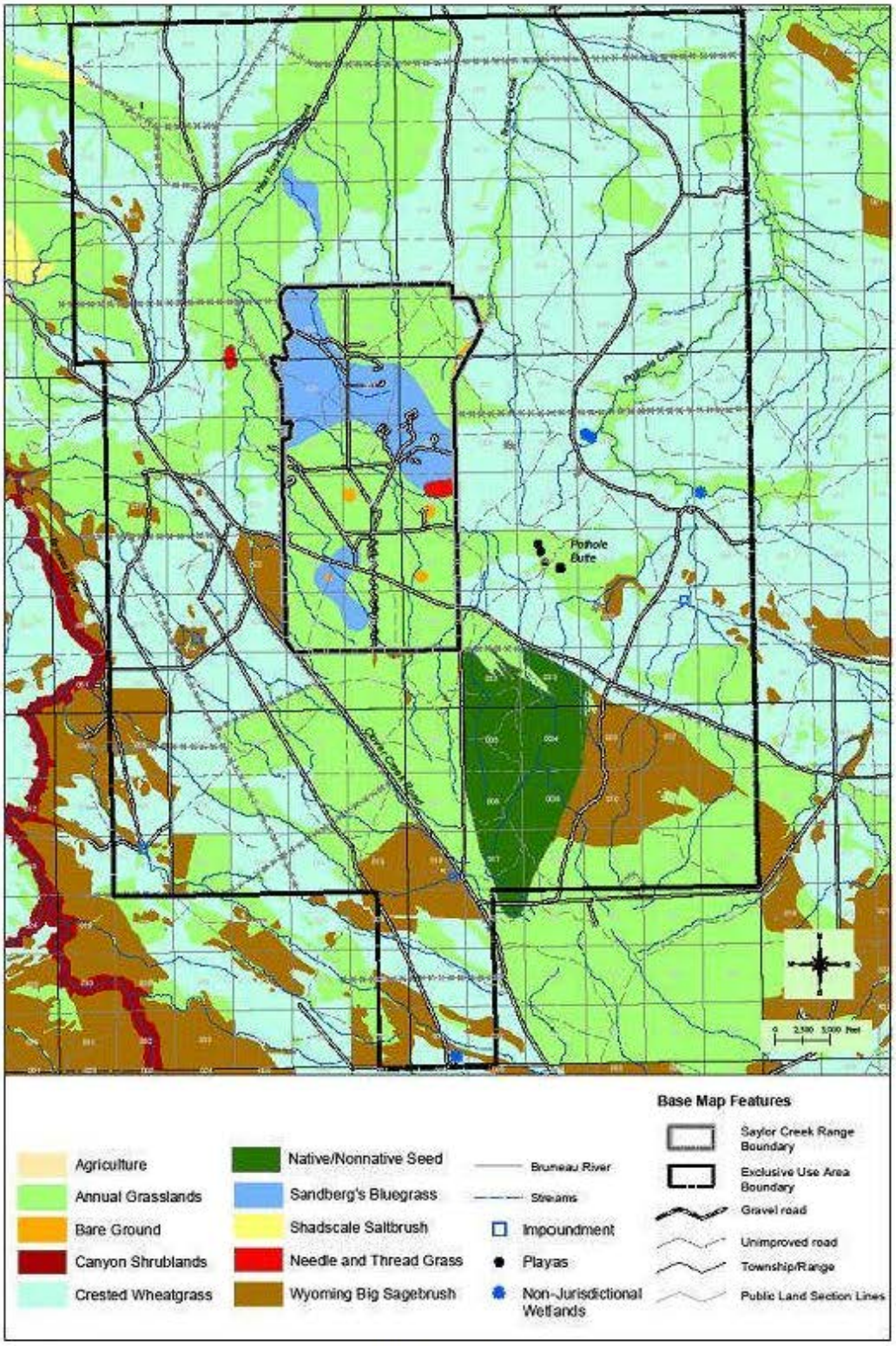

Figure 2-30
Vegetation on SCR

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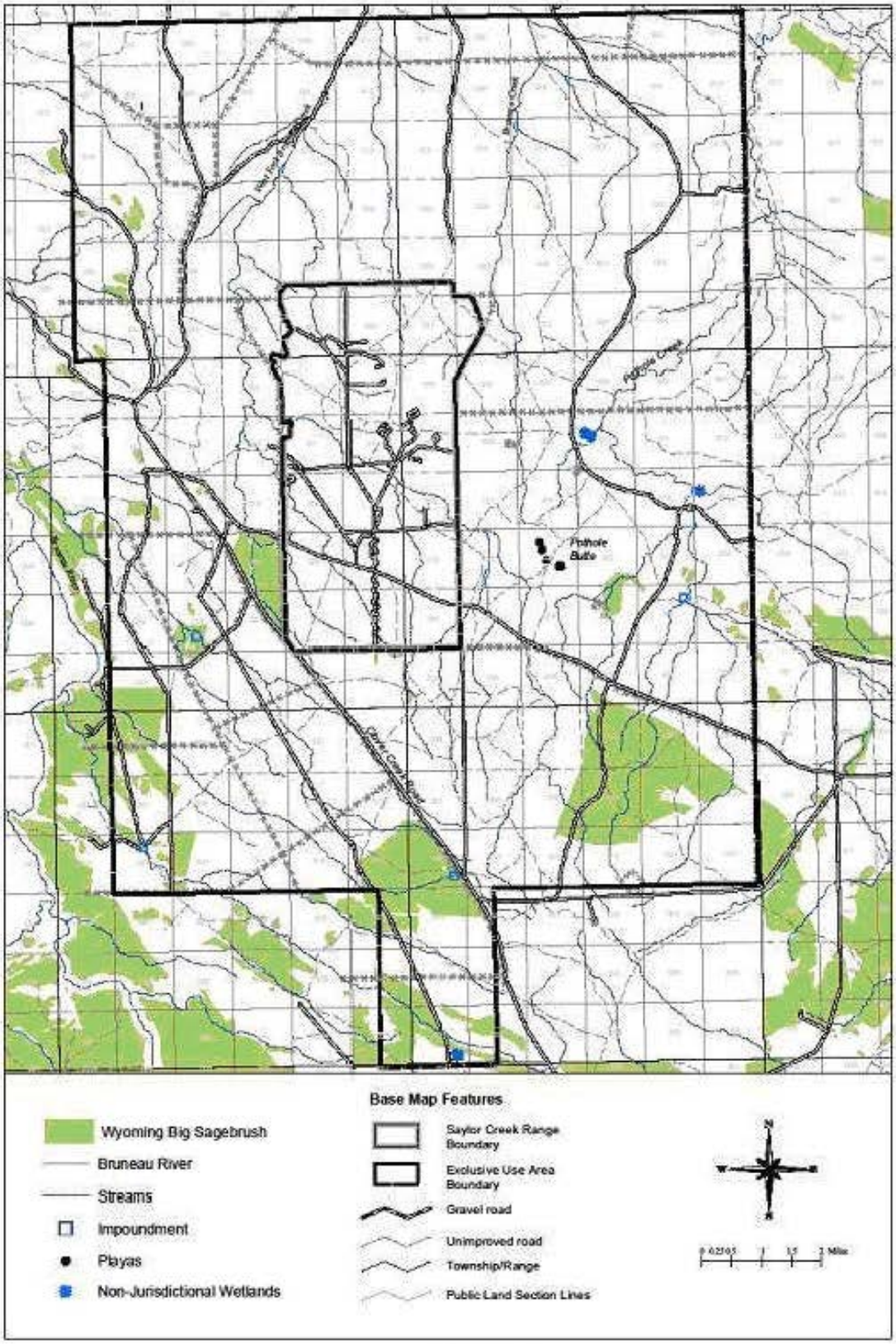

Figure 2-31
Sensitive Areas for SCR

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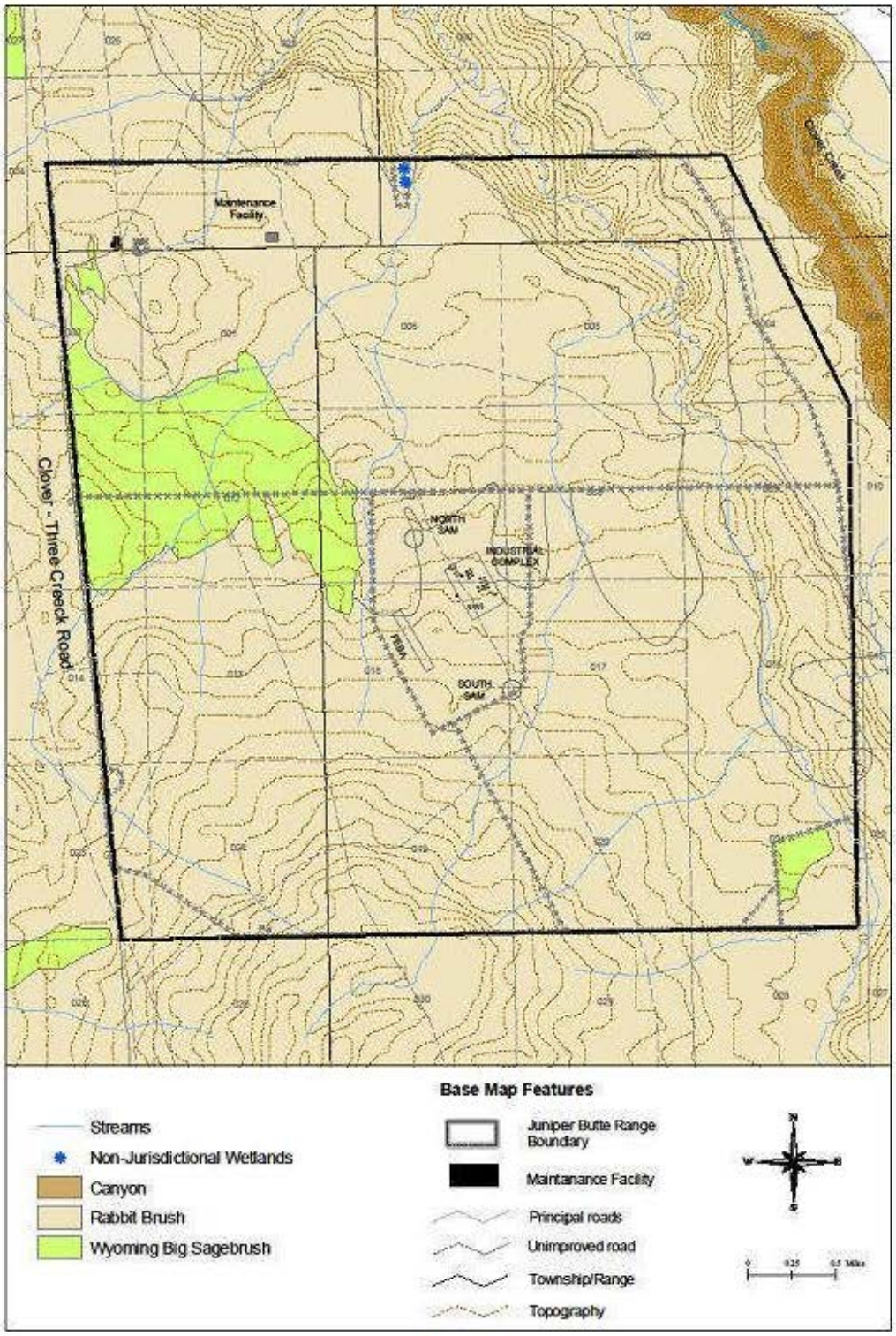

Figure 2-32
Course Scale Vegetation Types at JBR

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2.3.4.3 TURF AND LANDSCAPE

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 (Appendix 14) 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. Appendix 14 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.

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3.0 ENVIRONMENTAL MANAGEMENT STRATEGY AND MISSION SUSTAINABILITY

3.1 SUPPORTING SUSTAINABILITY OF THE MILITARY MISSION AND THE NATURAL ENVIRONMENT

One of the primary goals of the INRMP is to foster, develop, and implement the principles and performance objectives that provide compatible, responsible environmental management while enabling the military mission. Adaptive management is foremost in successfully combining these objectives. Ecosystem management emphasizes humans as part of the ecosystem, basing resource management decisions not only on "best science," but also on associated cultural values, improved communication with the public, and the establishment of partnerships with other government agencies, non-government entities, and other stakeholders. The interrelationship between military training and the INRMP objectives must be strictly maintained to allow for frequent, repeated use by military personnel and equipment to fulfill their mission activities, while concurrently fulfilling land management plan goals and complying with applicable law. The INRMP is developed and implemented in a manner that will assure continued support of Air Force training missions at MHAFB and associated ranges, ensure compliance with natural resource laws, and, to the extent practicable, integrate regional ecosystem management goals.

3.1.1 MILITARY MISSION AND SUSTAINABLE LAND USE

This INRMP is written with the intent of supporting both the military mission and land use sustainability at MHAFB and associated ranges. Full implementation of this plan is required to achieve that compatibility. For land use sustainability to be compatible with the military mission on an Air Force installation, the concept of ecosystem management must be fully conveyed.

Central to the ecosystem concept is the idea that living organisms are continually engaged in a set of relationships with every other element constituting the environment in which they exist. The Department of Defense goal with regard to ecosystem management is to ensure that military lands support present and future training and testing requirements while maintaining or restoring ecosystem integrity. Over the long term, that approach shall maintain and improve the sustainability and biological diversity of terrestrial and aquatic ecosystems while supporting sustainable economies, human use, and the environment required for realistic military training operations.

At MHAFB, it is critical to continue to fulfill the military mission requirements, while continuing to support ecologically sound land management practices. In reference to sustainable land use at MHAFB, we must adhere to the natural

resource stewardship goals, as defined in Section 1.3, Table 1-2, while enabling the military mission. All flying missions and training activities on the installation must be consistently handled with both mission and land use sustainability goals clearly upheld.

Objectives and guidelines for achieving these goals on MHAFB and range areas are to:

- Develop a vision of ecosystem health
- Develop priorities and reconcile conflicts in land use decisions
- Maintain and improve the sustainability and native diversity of ecosystems
- Administer with consideration of ecological units and evolutionary time frames
- Support sustainable human activities
- Develop and implement coordinated approaches to work toward ecosystem health
- Use benchmarks to monitor and evaluate outcomes
- Implement thorough installation plans and programs
- Support the military mission
- Use joint planning between natural resources managers and military operations personnel
- Involve internal and external stakeholders up front
- Emphasize the regional (ecosystem) context
- Involve scientists and use the best science
- Concentrate on results

3.1.2 IMPACT TO THE MILITARY MISSION

At MHAFB, implementing the military mission while sustaining the natural environment must continue to be evaluated. The primary goal of environmental sustainability is to minimize environmental degradation. The natural resource goals, both current and long term, must be viewed in accordance with best use for the area, while simultaneously attaining compatibility in support of flying and training mission activities.

Section 101(b) (1) (G) of the Sikes Act states that each INRMP shall provide, to the extent appropriate, public access to military installations for "sustainable use by the public of natural resources to the extent that the use is not inconsistent with the needs of fish and wildlife resources" and "subject to requirements necessary to ensure safety and military security."

Stringent care must be taken to see that there is enforcement of natural resource laws and regulations, with no net loss in the capability of military installation lands to support the military mission of the installation. Stakeholders, internal and external, must constantly work as partners in obtaining common goals.

3.1.3 RELATIONSHIP TO RANGE COMPLEX MANAGEMENT PLAN OR OTHER OPERATIONAL AREA PLANS

The MHAFB INRMP is not intended to replace existing Base Comprehensive Plans, policy, CRP, or other military management plans. Rather, the purpose of the INRMP is to document and assist, as required, in the development, integration, and coordination of natural resources management with other Base plans and programs. Where natural resource programs are currently not documented through formal planning efforts, the INRMP may serve as the means to formally establish such programs. Moreover, the INRMP is intended to facilitate the integration of existing natural resource management actions (plans and programs) with the primary military mission of MHAFB: military training and support.

Section 101(b) (2) of the Sikes Act [16 U.S.C. 670a (b) (2)] states that each INRMP "must be reviewed as to operation and effect by the parties thereto on a regular basis, but not less often than every 5 years." The requirement to "review" the INRMPs "on a regular basis, but not less often than every 5 years" does not mean that the INRMP necessarily needs to be revised and republished every 5 years. The Sikes Act specifically directs that the INRMPs be reviewed "as to operation and effect," emphasizing that the review is intended to determine whether existing INRMPs are current and are being implemented to meet the requirements of the Sikes Act and contribute to the conservation and rehabilitation of natural resources on military installations.

INRMPs and revisions must be coordinated through the installation ESOHC and BASH working group. The INRMP, ICRMP, BASH Plan, Comprehensive Range Plan, Integrated Pest Management Plan and the AICUZ studies should be mutually supportive and not in conflict.

All of the ranges, annexes and all other properties of MHAFB are components to this INRMP and are therefore individually identified and evaluated. In addition, goals and objectives for properties with significant resources, or with significant resources on surrounding lands are also provided.

3.2 NATURAL RESOURCES CONSULTATION REQUIREMENTS

The legal basis for natural resources management on Air Force lands is the Sikes Act of 1960, as amended (16 United States Code (U.S.C.) Section 670, et seq.). This act authorizes the Secretary of Defense to conduct a program coordinating natural resources management through cooperation with federal and state agencies. The Air Force implements the Sikes Act with Air Force Instruction 32-7064, *Integrated Natural Resources Management.*

A focus of integrated natural resources management is the consultation and coordination of a wide array of scientific disciplines, multiple resource types,

and the federal and state agencies that have the primary responsibility for managing these resources. Air Force Instruction 32-7060, *Interagency and Intergovernmental Coordination for Environmental Planning*, provides an outline of interagency cooperation as well as the legal requirements under the Intergovernmental Coordination Act of 1968. Each agency has its own focus and mission relative to natural resources management, which can create challenges, but also ensures that regional resources are protected.

Consultation and coordination are required from both internal and external stakeholders in natural resource and ecosystem management. MHAFB personnel are responsible for ensuring its activities and operations comply with applicable federal, state, and local environmental laws and regulations.

COOPERATIVE PREPARATION

AFI 32-7064 requires the INRMP, including revisions, be prepared in cooperation with the USFWS and IDFG. The USFWS and IDFG must be invited to participate in the scoping, design, and preparation of the INRMP. AFI 32-7064, Attachment 3, specifies the required coordination and approval process and timeline for cooperative INRMP preparation. In addition the 1993 Cooperative Agreement between the Air Force, USFWS, and IDFG outlines the responsibilities of the agencies on SCR. The 1993 CA should be reviewed by the agencies and modified as necessary in light of the more recent Tripartite MOU, Sikes Act and amendments, and assigned INRMP responsibilities.

Opportunity for the public to review a draft INRMP document and provide comments will be provided. Public notification must be made when a draft INRMP is available for comment.

The USFWS, IDFG must be given the opportunity to review all public comments received on an INRMP. The INRMP will reflect the mutual agreement of the USFWS and IDFG concerning the conservation, protection, and management of fish and wildlife resources and federally listed threatened and endangered species. Mutual agreement will be the preferred outcome with respect to the entire INRMP. However, mutual agreement is required only with respect to those elements of the INRMP that are subject to the jurisdictional authority of the USFWS (e.g. Endangered Species Act), or the inherent rights of the state to conserve, protect, and manage fish and wildlife resources.

Mutual agreement, with respect to those elements of the INRMP concerning the jurisdictional authority of the USFWS and IDFG will be considered attained only upon receipt of signature or written concurrence from all of the following persons:

- Installation or wing commander,
- Regional Director for the USFWS, and
- Director, IDFG

In cases where the USFWS or IDFG withholds its agreement with an INRMP based on objections to elements of the INRMP that are clearly not within the scope of the particular agency's authority, MHAFB may, notwithstanding the objections, finalize the INRMP and proceed to manage its natural resources in accordance with the terms of the plan.

The installation or wing commander approves and signs the INRMP. The Regional Director of the USFWS and the Director of the IDFG sign the INRMP to reflect mutual agreement on those portions of the INRMP within the scope of the agency's authority. Coordination of each agency must be documented on the INRMP approval page. A final copy of a completed INRMP or revision will be sent to the USFWS and IDFG.

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 or wing commander, or designee. The annual review will verify that:

- All "must fund" projects and activities have been budgeted for and implementation is on schedule.
- All required trained natural resources positions are filled or are in the process of being filled.
- Projects and activities for the upcoming year have been identified and included in the INRMP.
- An updated project list does not necessitate revising the INRMP 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.

Section 1.4, Table 1-4 of this document identifies the responsibilities of other concerned stakeholders. Consultation with these agencies must continue to be conducted to ensure coordination of all natural resource and land use planning activities and sustainability efforts.

In addition to the USFWS and Idaho State Fish and Game Office, other external stakeholders may include the U.S. Environmental Protection Agency, U.S. Geological Service, U.S. Department of Agriculture, Bureau of Land Management, Natural Resources Conservation Service, Idaho State Water Quality Offices, State Historic Preservation Office, local governmental agencies, agricultural lessees, environmental advocacy groups, outdoor recreational groups, neighboring landowners, and interested citizens.

3.3 NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) REQUIREMENTS

Of vital importance in the goal of sustainability of the military mission and the natural environment at MHAFB is the adherence to the National Environmental Policy Act (NEPA) of 1969. NEPA requires that federal agencies consider the potential impacts of major federal actions on the quality of the environment. In accordance with NEPA, this INRMP for MHAFB seeks to "encourage productive and enjoyable harmony between man and his environment; to promote efforts which will prevent or eliminate damage to the environment . . . and to enrich the understanding of the ecosystem and natural resources important to the Nation." With this understanding, it is the purpose of the INRMP for MHAFB to attain the objectives of NEPA as follows:

- to fulfill the responsibility of each generation as trustee of the environment for succeeding generations;
- to assure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings;
- to attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences;
- to preserve important historic, cultural, and natural aspects of our national heritage, and maintain, wherever possible, an environment which supports diversity, and variety of individual choice;
- to achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities; and
- to enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

Integrated natural resource management in the Air Force implements the Environmental Impact Analysis Process (EIAP), as required by NEPA. The EIAP is a powerful tool in natural resources management because it uses a tiered approach to investigating environmental impacts with increasing complexity and effort at each stage. Using this information, possible mitigation strategies can be evaluated.

NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) PROCESS

NEPA procedures require that environmental information is made available to public officials and citizens before decisions are made and actions are taken.

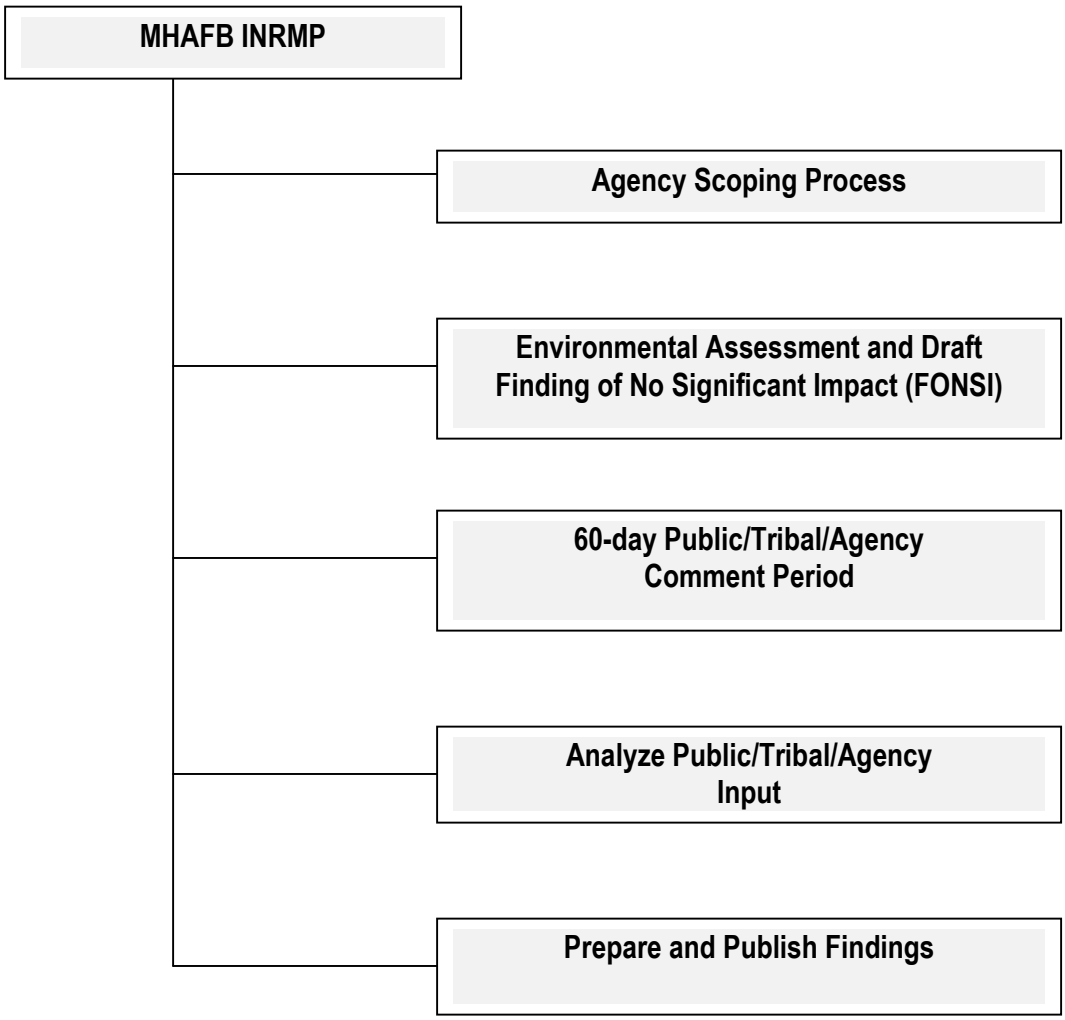

Figure 3-1. NEPA Process for INRMP.

AFI 32-7064, *Integrated Natural Resources Management*, states that actions proposed in an INRMP may constitute a major federal action under the National Environmental Policy Act, (42 U.S.C. 4321 *et seq*. (NEPA). Major federal actions, as defined in Title 40, Code of Federal Regulations, Part, 1508.18 (b) (2) *Major Federal Action*, must be evaluated for potential environmental effects in accordance with Title 32, Code of Federal Regulations, Part 989, *Environmental Impact Analysis Process (EIAP)*.

The EIAP process itself is fairly straightforward. Agencies must include in every recommendation or report regarding proposals for legislation and other major federal actions significantly affecting the quality of the human environment, a "detailed statement" by the responsible official on:

- the environmental impact of the proposed action,
- any adverse environmental effects which cannot be avoided should the proposal be implemented,
- alternatives to the proposed action,
- the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and
- any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented.

The NEPA process is summarized in the preceding page.

3.4 BENEFICIAL PARTNERSHIPS AND COLLABORATIVE RESOURCE PLANNING

3.4.1 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.

3.4.1.1 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 Department of Defense 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.

3.4.1.2 STATE AND LOCAL AGENCIES

MHAFB must also collaborate with a number of state agencies with technical expertise in natural resources management. Installation commanders must provide installation access, subject to safety requirements and military security, to designated Idaho Department of Fish and Game or conservation officials at such times and under such conditions as mutually agreed upon.

3.5 PUBLIC ACCESS AND OUTREACH

3.5.1 PUBLIC ACCESS AND OUTDOOR RECREATION

The principal purpose of Air Force lands and waters is to support mission-related activities. Those lands and waters shall be made available to the public for educational or recreational use of natural and cultural resources when such access is compatible with military mission activities, ecosystem sustainability, and with other considerations such as security, safety, and fiscal soundness. Opportunities for such access shall be equitably and impartially allocated.

The Outdoor Recreation Program at MHAFB serves a large community of active duty and retired military, DoD civilian employees and their dependents. MHAFB, situated on the northern edge of the Great Basin in southwest Idaho, is located on the Snake River Plateau and surrounded by a desert plain. A few miles north of the base lie rolling foothills that lead to peaks towering more than 10,000 feet; south of the base the topography changes with the mighty Snake River carving a channel through southern Idaho. The plain receives an average of nine inches of precipitation annually and is a shrubsteppe or high desert with few trees and vast basalt fields. The easily accessible mountains have large snowfalls that provide excellent ski conditions in winter and some of the country's best whitewater rivers from spring runoff through the summer months.

The following facilities offer public access and outdoor recreation at MHAFB:

- The Outdoor Adventure Program specializes in conducting high adventure activities in the local area. Trips involving rafting, kayaking, rock climbing, backpacking, skiing, snowmobiling, and a variety of other recreational programs are available through the Outdoor Recreation Program. This program is available for base personnel only.
- All of SCR, with the exception of the EUA is open for public uses, such as for hunting (under IDFG rules).
- OHV use occurs on SCR, but not JBR or MHAFB. OHVs are restricted to established roads and trails.
- The Idaho Centennial Trail crosses SCR and is open to all forms of travel—foot, horseback, bicycle, and OHV.
- The Trap and Skeet Range, and Archery Range, on MHAFB offers sportsmen and hunting enthusiasts shooting opportunities and a quality resale operation.
- The C. J. SDRA, an off-base recreation site located at C.J. Strike Reservoir on the Snake River, is a waterfront operation offering sailing, fishing, and a variety of boat rentals including ski boats, pleasure boats, and jet skis for active duty and retired military personnel.
- The Recreation Supply service provides rental equipment for all recreational needs including boating, skiing, camping, and hunting.
- The FAM CAMP on-base facility offers full hookup camping facilities, year-round, for tent and recreational vehicle camping for active duty and retired military personnel.
- The Yellowstone Country Trailers (13 trailers) located around Yellowstone National Park offer an inexpensive way for visitors to see the local area.
- The on-base "Area 366" Paintball facility offers speedball with inflatable bunkers and a five-acre wooded field.
- The Silver Sage Golf Course offers a challenging 18-hole par 72 layout, putting green, driving range, a pro-shop and a snack bar. Course sponsored golf tournaments are conducted throughout the season. Natural areas are identified and protected on the golf course for the protection of wildlife such as burrowing owls.

Employing the use of these programs and areas at MHAFB illustrates the beneficial use of our federal and surrounding areas to support sustainable land use goals, while being mindful of the military mission and personnel.

3.5.2 PUBLIC OUTREACH

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.

At MHAFB, current outreach efforts include:

- Displays and kiosks in the Environmental Flight Office, the main Civil Engineering office, Base Library, Silver Sage Golf Course, base housing, and Wing Headquarters' Building
- Xeriscape demonstration project at building 1297
- Monthly "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

3.6 ENCROACHMENT 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.

3.7 STATE COMPREHENSIVE WILDLIFE PLAN

The IDFG has developed their comprehensive wildlife plan into a document known as the Idaho Comprehensive Wildlife Conservation Strategy (ICWCS). This plan allows an opportunity for IDFG to provide effective and visionary leadership in wildlife conservation. The ICWCS 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, 2005).

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.

The focus and scope of the ICWCS is based on “best science”, “best management practices,” and ”adaptive management”, with measurable goals, objectives, strategies, approaches, and activities that are complete, realistic, feasible, logical, and achievable. Its basis is to integrate and address wildlife-related issues statewide, across jurisdictions and interests.

Adherence to the ICWCS 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.

The Sikes Act, as amended in November 1997, requires an INRMP to include (where applicable):

- Fish and wildlife management, land management, forest management, and fish and wildlife-oriented recreation.
- Fish and wildlife habitat enhancement or modifications.
- Wetland protection, enhancement, and restoration where necessary for support of fish, wildlife, or plants.
- Integration of, and consistency among, the various activities conducted under the plan.
- Establishment of specific natural resources management goals and objectives, and time frames for proposed action.
- Sustainable use by the public of natural resources to the extent that the use is not inconsistent with the needs of fish and wildlife resources.
- Public access to the military installation that is necessary or appropriate for the use of natural resources, subject to requirements necessary to ensure safety and military security.
- Enforcement of applicable natural resource laws.
- No net loss in the capability of military installations lands to support the military mission.
- Other activities as the Secretary of Defense determines appropriate.

In summary, the purpose of the ICWCS 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.

It is with this intent that the Integrated Natural Resources Management Plan 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.

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4.0 PROGRAM ELEMENTS

The following sections provide program elements with goals and objectives for each resource at MHAFB and the MHRC, as they relate to species with conservation status, wetlands, watershed protection, fish and wildlife management, ground maintenance and pest management, vegetation, recreation and public access, grazing, GIS, hazardous materials, and fire management.

4.1 THREATENED OR ENDANGERED SPECIES MANAGEMENT AND SPECIES BENEFIT, CRITICAL HABITAT, AND SPECIES OF CONCERN MANAGEMENT

There is one threatened species on Air Force land in Idaho. LEPA was listed as threatened on December 7, 2009 (USFWS, 2009). LEPA can be found on JBR.

The Air Force provides protection to candidate species as if they were listed "when practical" (AFI32-7064, Sec 7.1.1). The Greater Sage-Grouse (*Centrocercus urophasianus*) is a Candidate Species. The 12-Month Finding for the Greater Sage-Grouse found that listing the species was warranted, but precluded (USFWS, 2010b). Greater Sage-grouse can be found across the MHRC. See Section 2.3, General Biotic Environment, for information on the natural history of these species.

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

4.1.1 SLICKSPOT PEPPERGRASS

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 Juniper Butte Range and in Owyhee County, Idaho on the slickspot peppergrass (*Lepidium papilliferum*)" (MHAFB, 2010h; USFWS, 2010a). These are included in Appendix 9.

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, 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).

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 4-1
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

Goal: Provide conservation of special status species.

Objectives:

- Provide annual Natural and Cultural Resource Awareness Training to all personnel using the range.
- Restore native habitat with initial 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 shrubsteppe 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."

Implementation and Monitoring Strategies. To meet the goals and objectives listed above for slickspot peppergrass on JBR, the Air Force will implement the Mitigation Strategies listed below.

Goal: Prevent fire ignition.

Objectives:

- 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.

Implementation and Monitoring Strategies. To meet the goals and objectives listed above for slickspot peppergrass on JBR, the Air Force will implement the Mitigation Strategies listed below.

Goal: Conduct firefighting in a manner consistent with slickspot conservation.

Objectives:

- 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.

Implementation and Monitoring Strategy. To meet the goals and objectives listed above for slickspot peppergrass on JBR, the Air Force will implement the Mitigation Strategies listed below.

Goal: Utilize "slickspot peppergrass friendly" rehabilitation practices.

Objectives:

- 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.

Implementation and Monitoring Strategy. To meet the goals and objectives listed above for slickspot peppergrass on JBR, the Air Force will implement the Mitigation Strategies listed below.

Goal: Provide a grounds maintenance program that is compatible to the military mission as well as slickspot peppergrass.

Objectives:

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

Implementation and Monitoring Strategies. To meet the goals and objectives listed above for slickspot peppergrass on JBR, the Air Force will implement the Mitigation Strategies listed below.

Goal: Prevent noxious and invasive weed establishment.

Objectives:

- 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.

Implementation and Monitoring Strategies. To meet the goals and objectives listed above for slickspot peppergrass on JBR, the Air Force will implement the Mitigation Strategies listed below.

Goal: Avoid off-road driving impacts to slickspot peppergrass.

Objectives:

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

Implementation and Monitoring Strategies. To meet the goals and objectives listed above for slickspot peppergrass on JBR, the Air Force will implement the Mitigation Strategies listed below.

Goal: Minimize impacts to slickspots and slickspot peppergrass on Juniper Butte during Range Clearance.

Objectives:

- 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.

Implementation and Monitoring Strategies. To meet the goals and objectives listed above for slickspot peppergrass on JBR, the Air Force will implement the Mitigation Strategies listed below.

4.1.1.1 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 area 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.

Mitigation Measures

1. Use cold spot or no spot ordnance to reduce risk of fires.
2. Use simulated ordnance dropping during high fire risk times.
3. Use fire ratings and restrictions to reduce the risk of fires.
4. Provide ordnance cleanup to reduce the likelihood of ordnance striking ordnance and creating sparks.
5. 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.

Mitigation Measures

1. Restrict the use of incendiary devices according to fire ratings.
2. Require all incendiary devices allowed for exercise to be deployed in clear areas such as graveled roads or the target complex.
3. Require all vehicles to remain on existing roads.
4. Require avoidance of slickspots and sagebrush during overland foot travel.
5. Require helicopters to land in roads, the target complex, or maintenance complex.
6. Require all exercise personnel to have annual Natural and Cultural Resource Awareness training prior to participating in exercises.
7. Brief all personnel to stay out of slickspots and avoid slickspots during overland foot travel.
8. 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 Effects:** 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.

Mitigation Measures:

1. Elevate flare release altitudes during declared fire season according to fire ratings.
2. Provide ordnance cleanup to reduce the likelihood unconsumed flares from starting a fire.
3. 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.

Mitigation Measures:

1. Use ATVs and "MULES" for mobility off road and to avoid slickspots and decrease ground disturbance.
2. Provide range clearance in late spring and early summer to avoid wet slickspots and fire season to the maximum extent practicable.
3. Move UXO and unconsumed flares to a designated blow location that does not contain slickspots.
4. Use fire ratings and restrictions to reduce the risk of fires.
5. Provide ordnance cleanup to reduce the likelihood of ordnance striking ordnance and creating sparks.
6. 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.

Mitigation Measures:

1. Maintain firefighters on site during declared fire season.
2. Disc or blade the least possible area to subdue a fire.
3. Disc or blade to avoid slickspots as much as possible, if conditions will support such caution.
4. Use existing roads as firebreaks. Use natural barriers and previously disturbed areas to the maximum extent practicable to establish firelines.
5. Maintain the ISSA with BLM for firefighting support.
6. Provide annual Natural and Cultural Resource Awareness Training to all contractor and firefighting personnel.
7. Maintain slickspot maps for firefighting personnel to show the areas of least slickspots for use in cutting in emergency firelines.
8. 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.

Mitigation Measures:

1. Perform maintenance activities in previously disturbed areas to avoid impacts to slickspots.
2. Control undesirable vegetation in disturbed areas to limit weed encroachment and spread. Target cheatgrass and Russian thistle. Eliminate any noxious weeds found.
3. Reseed disturbed areas to increase desirable vegetation.
4. Perform maintenance tasks when soils are drier, but prior to fire season to the maximum extent practicable.
5. 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 will have no effect on 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.

Herbicides may have both a positive and negative effect on LEPA. Herbicides are applied according to prescriptions in Appendix 2 under Project 2 and 3. 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.

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.

Mitigation Measures:

1. Mow fuelbreaks to reduce fire spread potential.
2. Mow or use herbicides to reduce vegetation around targets and down two-track road centers.
3. 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.
4. Apply herbicides in accordance with law to reduce or eliminate undesirable species in disturbed areas.
5. Use prescribed burns to eliminate tumbleweed buildup which could contribute to hotter fires, and eliminate seed source.
6. Accomplish seedings in disturbed areas to remove undesirable vegetation.

GRAZING- GRAZING; FENCING; PIPELINE REPAIR OR REPLACEMENT

Grazing might affect sage-grouse. 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. 167 slickspots occur within 10′ of a fence. 7 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.

Mitigation Measures

1. Use the slickspot wetness protocol to determine when grazing turn-in can begin between 15 April and 15 May.
2. Push back grazing season window start from 1 April to 15 April to take advantage of drier, warmer weather.
3. Utilize no more than 50% of seeded species and 40% of native species in any pasture.
4. Do not gather and trail cattle during wet periods.
5. 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.
6. Turn troughs on-off to draw cattle to different areas of the pastures for more even biomass removal.
7. Gather utilization data within one week of livestock removal from a pasture and again at the end of the growing season.
8. Utilize yearling heifers as many years as possible to avoid the extreme congregating that occurs with cow-calf pairs. Heifers are also lighter and do less damage to wet soils.
9. 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 will have no effect on LEPA. 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 Appendix 2.

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.

4.1.2 GREATER SAGE-GROUSE

Sage-grouse and sage-grouse habitat are present on the MHRC. Sage-grouse and sage-grouse habitat are not present on MHAFB, SAR, Rattlesnake Radar Site, or CJ SDRA (Figure 2-24).

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 (see Appendix 3).

MHAFB continues to implement the conservation measures for sage-grouse outlined in the JBWA, Settlement Agreement (SA), ROD, and SROD.

Goal: Support sage grouse and maintain and enhance sage grouse habitat.

Objectives:

- 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 sage grouse use areas.
- Enhance and protect wildlife habitat through weed, fire, and grazing management.

Implementation and Monitoring Strategies. Implementation and monitoring to support the above wildlife resources across all sites are included in the following Mitigation Strategies:

4.1.2.1 ACTIVITY EFFECTS DESCRIPTIONS

MILITARY TRAINING- AIRCRAFT OVERFLIGHT, ORDNANCE DROPPING, COMBAT LASER USE

Aircraft overflight might affect 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 4-2). 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 Appendix 11).

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. 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 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 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 sage-grouse. Noise from low-level flights may increase stress in sage-grouse. Fire caused by ordnance sparking rocks or targets within the target area on SCR and JBR may degrade 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.

Mitigation Measures

1. Use cold spot or no spot ordnance to reduce risk of fires on JBR and during fire season on SCR.
2. Use simulated ordnance dropping during high fire risk times.
3. Use fire ratings and restrictions to reduce the risk of fires.
4. Provide ordnance cleanup to reduce the likelihood of ordnance striking ordnance and creating sparks.
5. Employ firefighters on range during declared fire season to provide immediate initial response for fires.
6. Flight activities are dispersed across MOA airspace to reduce associated noise.

MILITARY TRAINING- GROUND OPERATIONS, CSAR, SERE, CAS, JTAC

On the ground training might affect sage-grouse.

Direct disturbance of individual s 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 my disturb sage-grouse. There is also the remote chance that a 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 4-2
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
Power Saw (Chain Saw)	110	1 minute risks permanent hearing
Jackhammer	110	loss (over 100 dB)
Snowmobile	105	
Jet Fly-over (1000 Ft.)	103	
Electric Furnace Area	100	No more than 15 minutes of
Garbage Truck/Cement Mixer	100	unprotected exposure
Farm Tractor	98	recommended (90-100 dB)
Newspaper Press	97	
Subway, Motorcycle (25 Ft)	88	Very annoying
Lawnmower, Food Blender	85-90	Level at which hearing damage (8
Recreational Vehicles, TV	70-90	hrs.) begins (85dB)
Diesel Truck (40 Mph, 50 Ft.)	84	
Average City Traffic Noise	80	Annoying; interferes with
Garbage Disposal	80	conversation; constant exposure
Washing Machine	78	may cause damage
Dishwasher	75	
Vacuum Cleaner	70	Intrusive; interferes with telephone
Hair Dryer	70	conversation
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)

Mitigation Measures

1. Implement Emitter Site Avoidance Actions (See Below)
2. Restrict the use of incendiary devices according to fire ratings.
3. Require all incendiary devices allowed for exercise to be deployed in clear areas such as graveled roads or the target complex.

4. Except where unavoidable, require all vehicles to remain on existing roads, avoid destroying habitat, avoid driving over or breaking sagebrush.
5. Conduct off-road driving only when requirements set forth in MHAFB Instruction 32-7003 have been met.
6. Report sage grouse observations to Environmental Flight (208-828-6351).
7. Require helicopters to land in roads, the target complex, or maintenance complex.
8. Require all exercise personnel to have annual Natural and Cultural Resource Awareness training prior to participating in exercises.

Emitter Site Avoidance Actions. The Air Force has and continues to take steps to limit its disturbance of 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 sage grouse as explained below (Table 4-3).

Wintering Season (*Approximately December 15 to February 15).* Use of emitter sites (except AV/ND-4) during winter should not greatly affect sage grouse because the sites are in or adjacent to large stands (1 square mile or greater) of 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 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 4-3. 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 (Appendix 4).

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 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 sage grouse, the Air Force should limit ground emitter crew activity, during the nesting season, as outlined in Table 4-3.

Table 4-3
Emitter Site Avoidance Actions

Season	Dates	Time	Sites*
Wintering	December 15 to February 15	24 hours a day	AV/ND-4

Season	Dates	Time	Sites*
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
**AI removed from breeding restrictions due to wildfire

MILITARY TRAINING- AIRCRAFT USE OF FLARES AND CHAFF

Use of chaff will have no effect on sage-grouse.

Use of flares might affect 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 Actions:** 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.

Mitigation Measures:

1. Elevate flare release altitudes during declared fire season according to fire ratings.
2. Provide ordnance cleanup to reduce the likelihood unconsumed flares from starting a fire.
3. Employ firefighters on range during declared fire season to provide immediate initial response for fires.

RANGE CLEARANCE

Range clearance might affect 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 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 sage-grouse habitat. Nesting in the affected area on SCR is unlikely due to the absence of sage brush. 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 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.

Mitigation Measures:

1. All personnel receive Natural and Cultural Awareness Training annually.
2. Driving on sage brush is not allowed where avoidable.
3. Use ATVs and "MULES" for mobility off road and to decrease ground disturbance on JBR.
4. Provide range clearance in late spring and early summer to avoid fire season and take advantage of peak ground visibility.
5. Keep the duration of range clearance operations as short as possible.
6. Move UXO and unconsumed flares to a designated blow location.
7. Use fire ratings and restrictions to reduce the risk of fires.
8. Provide ordnance cleanup to reduce the likelihood of ordnance striking ordnance and creating sparks.
9. Employ firefighters on range during declared fire season to provide immediate initial response for fires.
10. Keep vehicles clean to avoid spreading weed seeds.

FIRE SUPPRESSION – FIREFIGHTING

Overall, fire suppression positively affects sage-grouse.

Similarly, not employing fire suppression is also a management action that negatively affects sage-grouse.

Wildfire is the dominant threat to sage-grouse in southeast Owyhee County (OCSGLWG, 2004). Water trucks off roads, discing or blading firelines, or hand cutting firelines might affect 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.

Mitigation Measures:

1. Maintain firefighters on SCR and JBR during declared fire season.
2. Disc or blade the least possible area to subdue a fire.
3. Use existing roads as firebreaks. Use natural barriers and previously disturbed areas to the maximum extent practicable to establish firelines.
4. Maintain the ISSA with BLM for firefighting support.
5. Provide annual Natural and Cultural Resource Awareness Training to all contractor and firefighting personnel.
6. 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.
7. Reseed perennial grasses, forbs, and shrubs to restore areas after fire and prevent 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 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 Actions:** 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.

Mitigation Measures:

1. Perform maintenance activities in previously disturbed areas to avoid impacts sage-grouse habitat.
2. Control undesirable vegetation in disturbed areas to limit weed encroachment and spread. Target cheatgrass and Russian thistle. Eliminate any noxious weeds found.
3. Reseed disturbed areas to increase desirable vegetation.
4. 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 sage-grouse.

Drill and broadcast seeding will positively affect 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 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 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 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.

Mitigation Measures:

1. Mow fuelbreaks to reduce fire spread potential on JBR.
2. Mow or use herbicides to reduce vegetation around targets and down two-track road centers.
3. Apply herbicides in accordance with law to reduce or eliminate undesirable species in disturbed areas.
4. Use prescribed burns to eliminate tumbleweed buildup which could contribute to hotter fires, and eliminate seed source.
5. 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 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 sage-grouse. Establishing new pipelines and other livestock water infrastructure would be done outside of sage-grouse habitat to the maximum extent practicable.

1. **Direct Effects:** Ground disturbance in 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 Actions:** 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 might affect sage-grouse.

SCR Specific Actions

Livestock grazing and its connected actions might affect 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 sage-grouse habitat except immediately adjacent to water facilities and trails. Sheep grazing might affect forbs.

Mitigation Measures for SCR if MHAFB Administered Grazing

1. Manage grazing utilization rates in sage-grouse habitat to provide adequate cover for nesting and brood rearing
2. Utilize no more than 50% of seeded species and 40% of native species in any pasture.
3. Turn troughs on-off to draw cattle to different areas of the pastures for more even biomass removal.
4. Gather utilization data within one week of livestock removal from a pasture and again at the end of the growing season.
5. Avoid off-road driving during fence repair and other grazing support activities to the maximum extent practical.

JBR Specific Actions

Livestock grazing and its connected actions might affect sage-grouse on JBR.

Mitigation Measures

1. Manage grazing utilization rates in sage-grouse habitat to provide adequate cover for nesting and brood rearing
2. Utilize no more than 50% of seeded species and 40% of native species in any pasture.
3. 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.

4. Turn troughs on-off to draw cattle to different areas of the pastures for more even biomass removal.
5. Gather utilization data within one week of livestock removal from a pasture and again at the end of the growing season.
6. Utilize yearling heifers as many years as possible to avoid the extreme congregating that occurs with cow-calf pairs. Heifers are also lighter which compacts soils less.
7. 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 sage-grouse will have an effect on sage-grouse. Counting sage-grouse on leks and from emitter sites is done in a manner that will not disturb sage-grouse. All other studies and monitoring will not affect sage-grouse. Ongoing studies are non-destructive and require no commitment of natural resources. Scientific studies involving sage-grouse may have an overall positive effect on 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 sage-grouse numbers.

1. **Direct Effects:** Study activities may flush 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:** 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.

4.1.3 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 bald or golden eagle is spotted 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.

4.2 WETLANDS AND DEEP WATER HABITATS MANAGEMENT

4.2.1 MHAFB

Issues and Concerns. Impacts to playas from off-road driving, fires, sedimentation, or other disturbance that could negatively impact Davis' Peppergrass population. There are no deep water habitats at MHAFB. There are no Jurisdictional Wetlands on MHAFB.

Goal: Avoid impacts to Davis' Peppergrass populations

Objectives:

- Maintain signs around playas.
- Prevent fires.

Goal: Achieve a "no net loss" with regard to the type and quantity of wetlands.

Objectives:

- 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.

Goal: Prevent creation of man-made wetlands near flightline.

Objectives:

- Use strategies for stormwater management which do not create wetlands.

Implementation and Monitoring Strategy. To attain the above goal and objectives, the Air Force will:

- Obtain a CWA Section 404 permit from the USACE prior to discharging any material into waters of the U.S.

4.2.2 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.

Goal: Avoid impacts to Davis' Peppergrass populations

Objectives:

- Maintain signs and fences around playas.
- Prevent fires.

Goal: Achieve a "no net loss" with regard to the type and quantity of wetlands.

Objectives:

- 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.

Implementation and Monitoring Strategy. To attain the above goal and objectives, the Air Force will:

- 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.

4.2.3 MHRC

4.2.3.1 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.

Goal: Avoid impacts to wetlands on SCR.

Objective:

- Work collaboratively with BLM to provide wetland protection.

Goal: Achieve a "no net loss" with regard to the type and quantity of wetlands.

Objectives:

- 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.

Implementation and Monitoring Strategy. To attain the above goal and objectives, the Air Force will:

- Obtain a CWA Section 404 permit the USACE prior to discharging any material into waters of the U.S.

4.2.3.2 JBR and Associated Sites

Issues and Concerns. Protection of identified wetlands on JBR. There are no Jurisdictional Wetlands on JBR.

Goal: Avoid impacts to wetlands on JBR.

Objective:

- Provide wetland protection.

Goal: Achieve a "no net loss" with regard to the type and quantity of wetlands**.**

Objectives:

- 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.

Implementation and Monitoring Strategy. To attain the above goal and objectives, the Air Force will:

- Obtain a CWA Section 404 permit from the USACE prior to discharging any material into waters of the U.S.

4.3 LAW ENFORCEMENT OF NATURAL RESOURCES LAWS AND REGULATIONS

The IDFG and the Elmore and Owyhee County Sheriff's offices are responsible for all law enforcement located on MHRC (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.

4.4 FISH AND WILDLIFE MANAGEMENT

All wildlife, including fish, are owned by the state of Idaho and are managed through regulations under the IDFG. MHAFB has responsibility for managing habitat on lands under its jurisdiction. The C.J. SDRA is the only area that has fish resources or habitat. For each parcel, wildlife species and available habitat is discussed in conjunction with the management issues and concerns.

See also Section 4.7, Migratory Birds Management.

4.4.1 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.

Goal: Restore and enhance wildlife habitats to increase biological diversity.

Objectives:

- 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.

Implementation and Monitoring Strategy. Implementation and monitoring to support the above wildlife resources across all sites will include other strategies identified in this Section of the INRMP.

Goal: Avoid ground nesting birds.

Objective:

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

Goal: Provide protection for special status species.

Objectives:

- Prevent harassment of burrowing owls
- Avoid use of pesticides near burrowing owls.
- Reduce the BASH potential for raptors.

Implementation and Monitoring Strategies. In order to support the above goal and objectives, the following strategies are recommended:

- 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.

4.4.2 SAR

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

Goal: Restore and enhance wildlife habitats to increase biological diversity.

Objectives:

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

4.4.3 MHRC

See also Section 4.2.1 Greater Sage-Grouse.

4.4.3.1 SCR

Issues and Concerns. Primary concerns are fires 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, 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 sage grouse, mule deer, pronghorn, sage thrasher, sage sparrow, loggerhead shrike, and Brewer's sparrow.

Goal: Restore and enhance wildlife habitats to increase biological diversity.

Objectives:

- 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 bird ladders in stock tanks.
- Properly use prescribed fires used to control fine fuel accumulation.
- Enhance and protect wildlife habitat through weed, fire, and grazing management.

Goal: Avoid disturbance to special status species**.**

Objective:

- Avoid burrowing owls, ferruginous hawks, long-billed curlews, and sage grouse to the maximum extent practicable.

Implementation and Monitoring Strategies. Implementation and monitoring to support the above wildlife resources on SCR will include the following strategies:

- Complete appropriate environmental training by all range personnel. This will 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, 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 and fire management programs.
- Request all range personnel to report any uncommon wildlife, such as sage grouse, ferruginous hawks, to the Natural Resource Manager (208-828-6351).

4.4.3.2 JBR and Associated Sites

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. Appendix 4 contains past studies concentrating on California bighorn sheep issues. The Natural Resources Section personnel are vigilant in the timely detection and migration of any conflict between Air Force operations and California bighorn sheep.

Goal: Restore and enhance wildlife habitats to increase biological diversity**.**

Objectives:

- 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 weed, fire, and grazing management.

Goal: Avoid disturbance to special status species.

Objective:

- Avoid burrowing owls, ferruginous hawks, long-billed curlews, and sage grouse to the maximum extent practicable.

Implementation and Monitoring Strategies. Implementation and monitoring to support the above wildlife resources across all sites will include the following strategies:

- Complete appropriate environmental training by all range personnel. This will 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, 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 to report any uncommon wildlife (such as sage grouse and ferruginous hawk) to the Natural Resource Manager (208-828-6351).

Goal: Provide conservation of special status species.

Objectives:

- Restore native habitat with initial emphasis on invasive and noxious species control and reduction of fine fuels and fire potential.
- Conserve sagebrush and known sage grouse use areas.
- Avoid developing raptor nesting and roosting substrate within the EUA.
- Avoid burrowing owls.

Implementation and Monitoring Strategies. In order to support the above goal and objectives, the following strategies are recommended:

- Use herbicide applications appropriately.
- Reseed areas with fire-resistant perennial species.
- Train personnel to identify and report sage grouse and ferruginous hawks.
- Apply fire prevention measures.

- Report burrowing owl, ferruginous hawk, and sage grouse observations to Environmental Flight (208-828-6351).

Goal: Continue mitigation for bighorn sheep as set forth in the ROD, SROD, and SA (refer to Appendix 11, and Appendix 13, Section 4.7.).

Objective:

- Participate with the cooperating agencies in coordination meetings as set forth in the ROD, SROD, and SA (refer to Appendix 11, and Appendix 13, Section 4.7.).

Goal: Avoid ferruginous hawk nest sites.

Objective:

- Establish implementation and monitoring strategies to ensure avoidance of critical ferruginous hawk habitat.

Implementation and Monitoring Strategies. The following strategies are prescribed for JBR:

- 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)

4.5 FORESTRY MANAGEMENT

Not Applicable. MHAFB has no forestry resources with their jurisdiction. If there were over 50 acres of forests MHAFB would prepare a Forest Plan and a NEPA document to identify and evaluate potential impacts to the implementation of the forest plan. Urban Forestry is described in section 4.10.3.

4.6 VEGETATIVE MANAGEMENT

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.

See also section 4.8, Invasive Species Management.

4.6.1 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.

Goal: Improve vegetation communities base wide.

Objectives:

- Reseed areas after disturbance.
- Provide educational materials for Base residents and personnel on appropriate plant species for projects.

Implementation and Monitoring Strategies. In order to support the above goal and objectives, the following strategies are recommended:

- 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.

Davis' Peppergrass

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.

Goal: Provide conservation of special status species.

Objective:

- Conserve Davis' peppergrass playas.

Implementation and Monitoring Strategies. In order to support the above goal and objectives, the following strategies are recommended:

- 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.

4.6.2 SAR

Davis' Peppergrass

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.

Goal: Provide conservation of special status species.

Objectives:

- Conserve Davis' peppergrass playas.
- Maintain fences around the populations.

Implementation and Monitoring Strategies. In order to support the above goal and objectives, the following strategies are recommended:

- 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.

4.6.3 MHRC

4.6.3.1 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 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.

Goal: Create a realistic training environment that maintains and enhances biodiversity.

Objectives:

- 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.

Goal: Reduce fine fuels that contribute to wildfires.

Objectives:

- 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.

Goal: Maintain vegetation quality.

Objective:

- Promote native plant species through fire reduction and rehabilitation of disturbed areas.

Implementation and Monitoring Strategies. To meet the above goals and objectives, the Air Force will:

- 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.

4.6.3.2 JBR and Associated Sites

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.

See also Section 4.1.1 Slickspot Peppergrass

Goal: Create a realistic training environment that maintains and enhances biodiversity.

Objectives:

- 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.

Goal: Reduce fine fuels that contribute to wildfires.

Objectives:

- 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.

Goal: Maintain vegetation quality.

Objectives:

- Promote native plant species through fire reduction and rehabilitation of disturbed areas.
- Control weed and fire spread at emitter sites and target areas.

Implementation and Monitoring Strategies. To meet the above goals and objectives, the Air Force will:

- 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. See Appendix 3, Project 1.

- 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) See Appendix 3, Project 1.

4.7 MIGRATORY BIRDS MANAGEMENT

4.7.1 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".

4.7.2 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, 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. Species are also ranked as Species of Greatest Conservation need by the IDFG's Comprehensive Wildlife Conservation Strategy (IDFG, 2005).

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 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

- Idaho Department of Fish and Game
- DoD Partners in Flight
- USGS Biological Research Division
- USDA Wildlife Services
- Ducks Unlimited
- Trumpeter Swan Society
- NRCS
- Wildlife Management Institute

MHAFB is located in the southwestern part of Idaho and is near a principal migratory route, as shown in the Pacific Flyway map above. 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/.

Maps of the central and pacific flyways are shown in Figures 4-1 and 4-2 respectively (TPWD 2005). Appendix 6 also includes a U.S. Fish and Wildlife Service listing of all birds protected by the Migratory Bird Treaty Act.

Goal: Restore and enhance wildlife habitats to increase biological diversity.

Objectives:

- 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.

Goal: Avoid ground nesting birds.

Objective:

- 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.

Goal: Provide protection for special status species.

Objectives:

- Reduce the BASH potential for raptors.

Implementation and Monitoring Strategies. In order to support the above goals and objectives, the following strategies are recommended:

- 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.

Goals Controlling birds that pose a Bird Aircraft Strike Hazard (BASH) problem.

4.8 INVASIVE SPECIES MANAGEMENT

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.

Goal: Identify and control invasive species, especially state and federally listed noxious species.

Objectives:

- 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 4-4.

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.

Section 4.6, Vegetative Management, and Section 4.9, Pest Management, provide goals, objectives, and implementation strategies for the control of invasive species at MHAFB.

Table 4-4
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 Idaho[1]	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

Name	Type	Origin	Extent	Damage
				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).

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Photo courtesy of Texas Parks and Wildlife Department © 2004

Figure 4-1
Central Flyway for Migratory Birds

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Photo courtesy of Texas Parks and Wildlife Department © 2004

Figure 4-2
Pacific Flyway for Migratory Birds

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4.9 PEST MANAGEMENT

Pest management on MHAFB is conducted according to the "Installation Pest Management Plan" (MHAFB, 2007a; Appendix 23). The primary objective of the program is to ensure effective control of insects, rodents, birds, weeds, etc.

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.

4.9.1 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 Roundup™ 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.

Goal: 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.

Objectives:

- 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.

Implementation and Monitoring Strategies. Implementation and monitoring to support the above goal and objectives will include the following strategies:

- Eliminate non-compliance by contractors performing maintenance and grounds duties.
- Follow the Installation Pest Management Plan.
- Provide information to base users on eDASH.

Goal: Prevent noxious weed establishment.

Objectives:

- 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.

Implementation and Monitoring Strategies. To support the above goal and objectives, the following will be implemented:

- If personnel observe noxious weeds, they should report location, type of noxious weed, and area of infestation to Environmental Flight (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.

4.9.2 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.

Goal: Conserve rare plants.

Objectives:

- Protect Davis peppergrass populations.

Implementation and Monitoring Strategies. Implementation and monitoring to support the above goal and objectives will include the following strategies:

- 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.

Goal: 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.

Objectives:

- Control annual exotic species that expand into natural and disturbed areas is an issue.

- Use herbicides, pesticides, and soil sterilants appropriately.

Implementation and Monitoring Strategies. Implementation and monitoring to support the above goal and objectives will include the following strategies:

- Control invasive annual grasses on and near the shooting range to prevent fire.
- Control wildfire.
- Follow the Base Integrated Pest Management Plan.

Goal: Prevent noxious weed establishment.

Objectives:

- 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.

Implementation and Monitoring Strategies. To support the above goal and objectives, the following will be implemented:

- If personnel observe noxious weeds, they should report location, type of noxious weed, and area of infestation to Environmental Flight (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.

4.9.3 MHRC

4.9.3.1 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.

Goal: 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.

Objectives:

- Limit ground disturbance to limit weed encroachment is suggested.
- Use herbicides, pesticides, and soil sterilants appropriately.

Implementation and Monitoring Strategies. Implementation and monitoring to support the above goal and objectives will include the following strategies:

- Eliminate non-compliance by contractors performing maintenance and grounds duties.
- Follow the Base Integrated Pest Management Plan.

Goal: Prevent noxious weed establishment.

Objectives:

- 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.

Implementation and Monitoring Strategies. To support the above goal and objectives, the following will be implemented:

- 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 Flight (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.

4.9.3.2 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.

Goal: Provide a grounds maintenance program that is compatible to the military mission as well as the natural resources that occur on the lands managed by MHAFB.

Objective:

- Use herbicides, pesticides, and soil sterilants appropriately.

Implementation and Monitoring Strategies. Implementation and monitoring to support the above goal and objectives will include the following strategies:

- Eliminate non-compliance by contractors performing maintenance and grounds duties.
- Follow the Base Integrated Pest Management Plan.

Goal: Prevent noxious weed establishment.

Objectives:

- 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.

Implementation and Monitoring Strategies. To support the above goal and objectives, the following will be implemented:

- 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.

4.10 LAND MANAGEMENT

Air Force land management activities must consider the protection and enhancement of desirable natural and man-made features in the landscape. Lands managed by MHAFB are classified and delineated into three mapping systems: ground categories, land use categories, and natural resources management units. Each of these three categories is defined and discussed

below. Additionally, the urban forest is an important part of land management on MHAFB.

4.10.1 GROUNDS CATEGORIES AND LAND USE CATEGORIES

4.10.1.1 MHAFB

Within the lands managed by MHAFB there are three grounds maintenance categories: improved, semi-improved, and unimproved (Figure 4-3).

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 4-4). 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 4-5 shows the acreage of ground categories on MHAFB and SAR.

TABLE 4-5
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**	

4.10.1.2 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.

4.10.1.3 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 4-6.

TABLE 4-6
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.

4.10.2 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.

4.10.2.1 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.

4.10.2.2 SAR

The following land management units were identified on the SAR: Davis' peppergrass habitat, annual grasslands, and weed control areas (Figure 4-5).

4.10.2.3 MHRC

SCR

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

JBR

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

4.10.3 Grounds Maintenance

Procedures and guidelines for maintaining installation lands are found in:

- Urban Forest Management Plan, (MHAFB, 2000; Appendix 24)
- 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.

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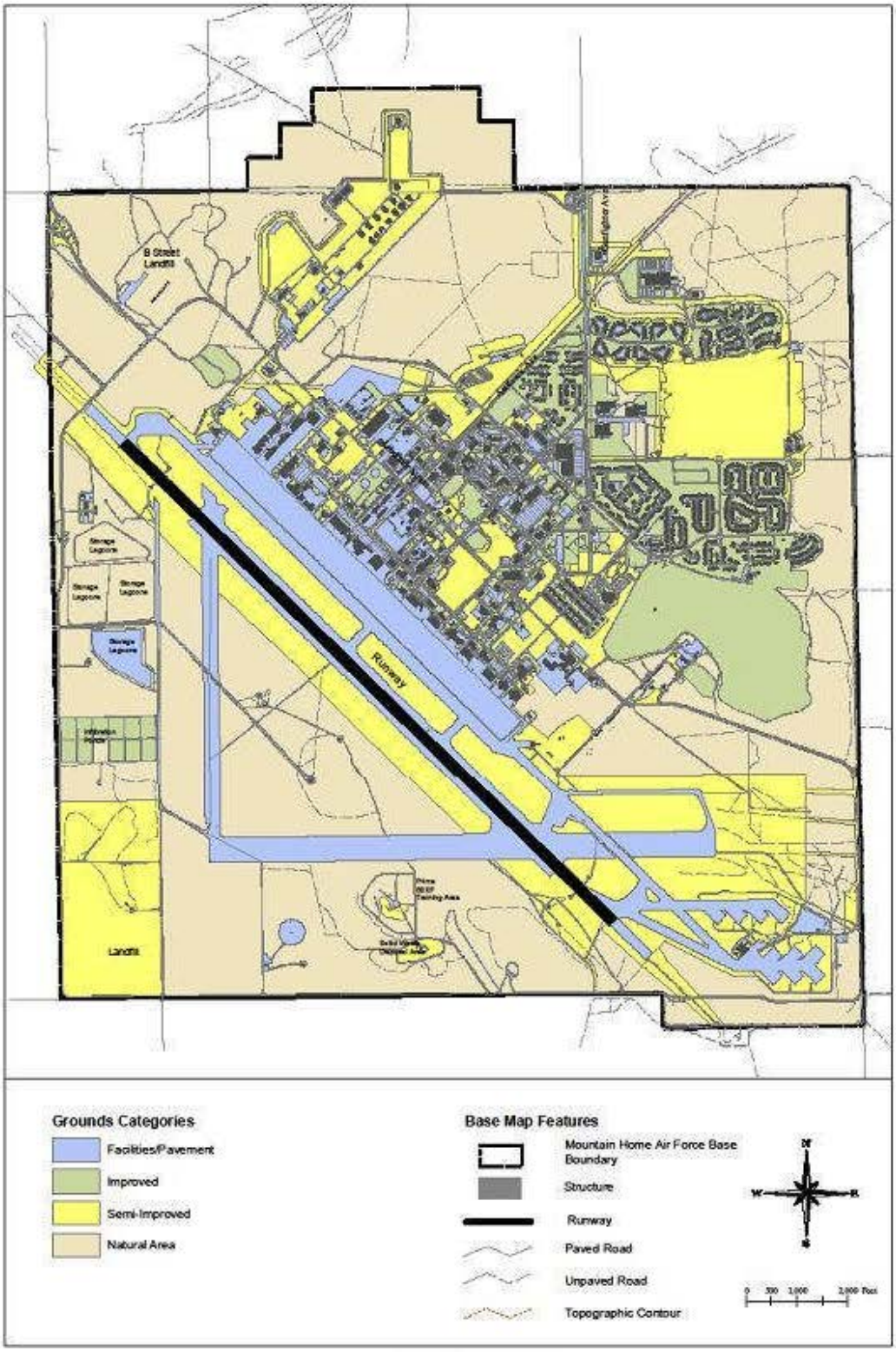

Figure 4-3
Grounds Categories at MHAFB

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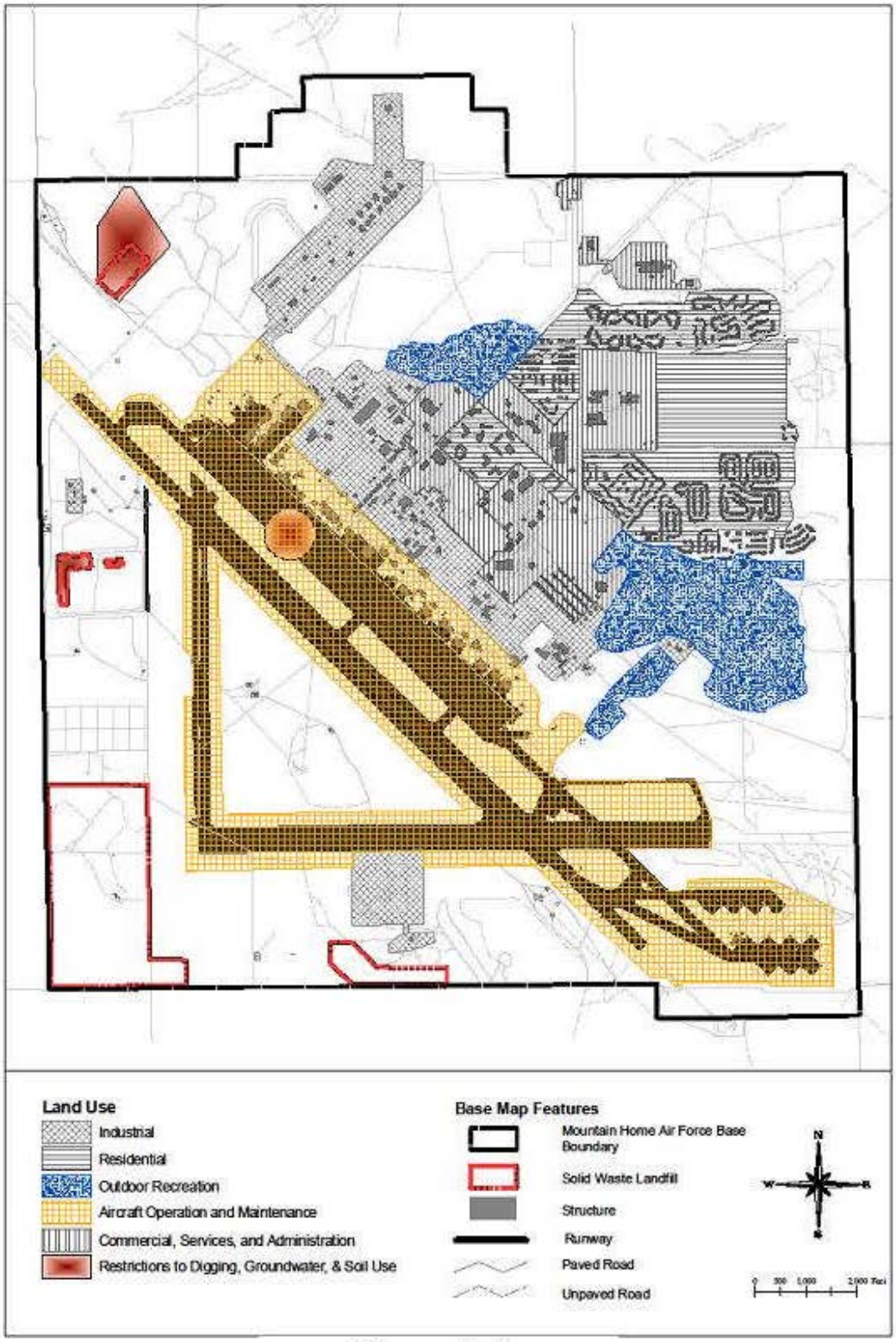

Figure 4-4
Land Use at MHAFB

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Status of Inventory and Current Conditions. MHAFB grounds maintenance issues focus around pest and pesticide management (see section 4.9), 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.

Goal: Reduce wind erosion on base.

Objectives:

- Use tree rows around housing areas to decrease windspeeds and dust.
- Revegetate bare areas and weedy areas to establish perennial vegetation, which reduces dust.

Water Conservation. 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.

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.

Solid wastes associated with grounds consist mainly of grass clippings and other vegetation. This is not a problem currently, as it is transported to an area where it is composted and reused as a soil amendment. Tree branches are chipped and used in landscaping.

Wastewater is treated and reclaimed for reused on the Silver Sage Golf Course. This system recycles between 5 & 7million gallons of water each year.

Goal: Conserve water on MHAFB.

Objectives:

- 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 Forest MHAFB has maintained a Tree City USA status since 1997. The Arbor Day ordinance and Urban Forest Management Plan are attached in Appendix 24.

Procedures and guidelines for maintaining installation lands are found in the Urban Forest Management Plan, Survey Report (MHAFB 2000; Appendix 24) 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. Construction contractors.

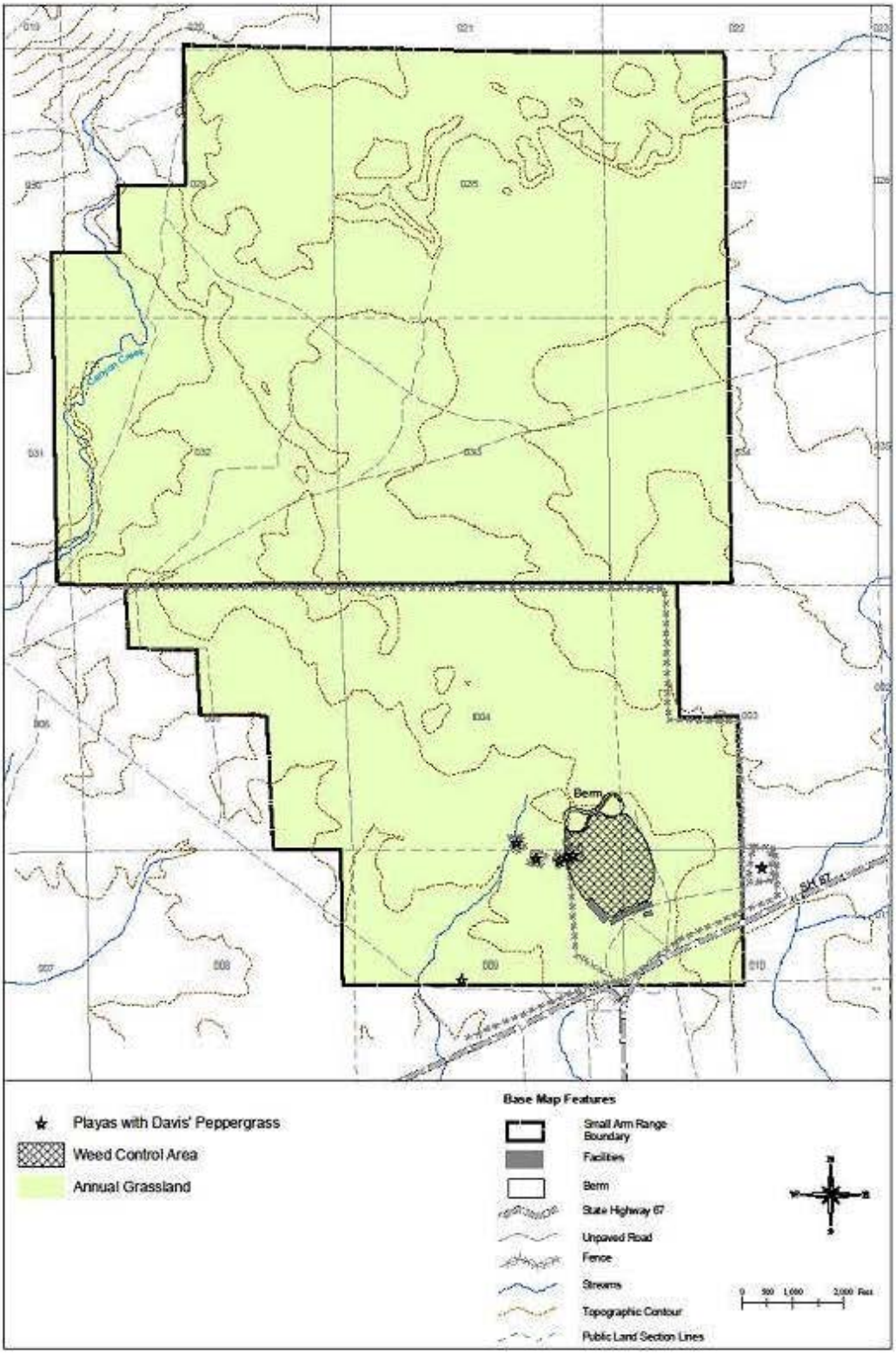

Figure 4-5
Land Management Categories at SAR

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Goal: Maintain MHAFB's Tree City USA status.

Objectives:

- Conserve trees during and after construction projects.
- Provide pruning and preventative maintenance to all trees every 3years 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.

4.11 AGRICULTURAL OUTLEASING

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.

The following sections provide grazing outleasing information throughout MHAFB properties.

4.11.1 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.

4.11.2 MHRC

4.11.2.1 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 (Appendix 10) 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 Appendix 17.

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.

4.11.2.2 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 past 10 years 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-weed period each spring.

Livestock grazing occurs on JBR as described in Appendix 2, Natural Resources Management Prescriptions, Project 5: Grazing. The plan addresses the Air Force interest in promoting balance among the following: fire prevention, biodiversity, forage utilization by livestock and wildlife, and avoiding impacts to sensitive species.

Issues and Concerns. Maintaining grazing with training requirements, fire prevention, and LEPA habitat conservation.

Goal: Provide a grazing program that is compatible with both the military mission and natural resource protection.

Objectives:

- Reduce fire risk.

- Reduce operations and maintenance costs.

Implementation and Monitoring Strategies. The following will be implemented to support the above goal and objectives:

- 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 is done annually, trend monitoring is done every 5 to 8 years) to identify trends in range health.

Goal: Avoid livestock trampling of slickspots and negative grazing impacts to vegetation quality and composition.

Objectives:

- 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.

Implementation and Monitoring Strategies. The following will be implemented to support the above goal and objectives:

- 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.

Goal: Prevent fire ignition.

Objectives:

- 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.

4.12 GEOGRAPHICAL INFORMATION SYSTEMS (GIS) MANAGEMENT, DATA INTEGRATION, ACCESS, AND REPORTING

All Sites

Status of Inventory and Current Conditions. GeoBase is the GIS program managed by the 366th Engineering Flight, 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 result 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 archeology, 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.

Goal: Provide an updated GIS database system.

Objectives:

- 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.

Implementation and Monitoring Strategies. The following will be implemented to support the above goal and objectives:

- 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.

4.13 OUTDOOR RECREATION AND PUBLIC ACCESS

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.

4.13.1 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, paintball area, golf course, swimming pool, and C.J. SDRA boat launch and pavilions. There is a nature trail by the FamCamp and a newly

constructed Fitness Trail near the Gunfighter Club. No hunting is allowed on the Base for safety reasons. Public access is restricted to MHAFB and its recreational facilities.

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.

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

Objectives:

- 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.

Implementation and Monitoring. Because of the availability of many outdoor recreation opportunities in the vicinity of MHAFB, major management emphasis is placed on natural resource conservation and protection.

4.13.2 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. Other recreation sensitive overflight restrictions are included in Appendix 13.

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

controlled by MHAFB.

4.13.2.1 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 manged 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.

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

Objectives:

- 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.

Implementation and Monitoring Strategies. The following will be implemented to support the above goal and objectives:

- 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.

Goal: Protect sensitive natural and cultural resources.

Objectives:

- Inform public of range use.
- Prevent OHV damage to sensitive resources.

Implementation and Monitoring Strategies. The following will be implemented to support the above goal and objectives:

- 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.

4.13.2.2 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.

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

Objectives:

- Inform public of range use.
- Implement mitigation measures as set forth in the ROD, SROD, and SA (refer to Appendix 11 and 13).
- 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.

Implementation and Monitoring Strategies. The following will be implemented to support the above goal and objectives:

- 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 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.

4.13.3 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.

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

Objective:

- 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.

Implementation and Monitoring. Because of the availability of many outdoor recreation opportunities in the vicinity of MHAFB, major management emphasis is placed on natural resource conservation and protection.

4.14 BIRD/WILDLIFE AIRCRAFT STRIKE HAZARD (BASH)

See also Section 4.7, Migratory Birds Management.

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 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; Appendix 22).

Raptors. 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 virgianus).* 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.

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 (including bird watching).

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 discors*), buffleheads (*Bucephala albeola*), 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.

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.

Goal: Reduce BASH potential.

Objective:

- 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.

4.15 WILDLAND FIRE MANAGEMENT

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, Mountain Home Air Force Base, and the Department of Interior Bureau of Land Management Lower Snake River District* (May 2008).

4.15.1 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 4-6 shows the history of range fires on MHAFB and the SAR from the 1980's through 2008.

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.

Goal: Prevent fire ignition.

Objectives:

- 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.

4.15.2 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. Only 9,374 acres of SCR vegetation has 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. On JBR, all but 60 acres burned in 1973. 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 disked 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, Mountain Home Air Force Base, and the Department of

Interior Bureau of Land Management 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 Juniper Butte 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 Table 2-3). 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 Table 2-3 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 4-7). At all times of the year, flare use occurs only above 2,000 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.

The MHAFB Wildland Fire Management Plan is provided in Appendix 21.

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. Fire fighting 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 fire fighting. The PTR contractor has a minimum of three personnel on duty at all times for fire fighting. 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. Fire fighting 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/CEAN 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 Lower Snake River 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 4-7). 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 4-7
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 never 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 windspeeds (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 windspeeds (5-10 knots) ▪ Green vegetation (9-15% Ten-Hour fuel moisture) ▪ Low LAL (3) ▪ 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 windspeeds (10-20 knots) ▪ Drying vegetation (7-8% Ten-Hour fuel moisture) ▪ Moderate LAL (4) ▪ Haines Index (4-Low Potential).

BLM Rating	MHAFB Rating	Hazard	Restrictions NOTE: Hot spots are never allowed on JBR	Factors that would incur this rating
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 1/2 hour after the last drop to ensure no fire starts are present.	▪ Very High temperatures (high 90s) ▪ Very low humidity (10-20%) ▪ High windspeeds (15-25 knots) ▪ Dry vegetation (5-6% Ten-Hour fuel moisture) ▪ High LAL (5) ▪ Haines Index (5-Moderate Potential).
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 windspeeds (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 in 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 everyday 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 : http://www.southidahofire.blm.gov/ 208-886-2373

2. Obtain Fire Danger Rating from the following websites: http://www.idahofireinfo.blm.gov/south/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: http://www.wfas.us/index.php?option=content&task=view&id=16

- 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, the BLM, Twin Falls District (MHAFB, 2008c), 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.

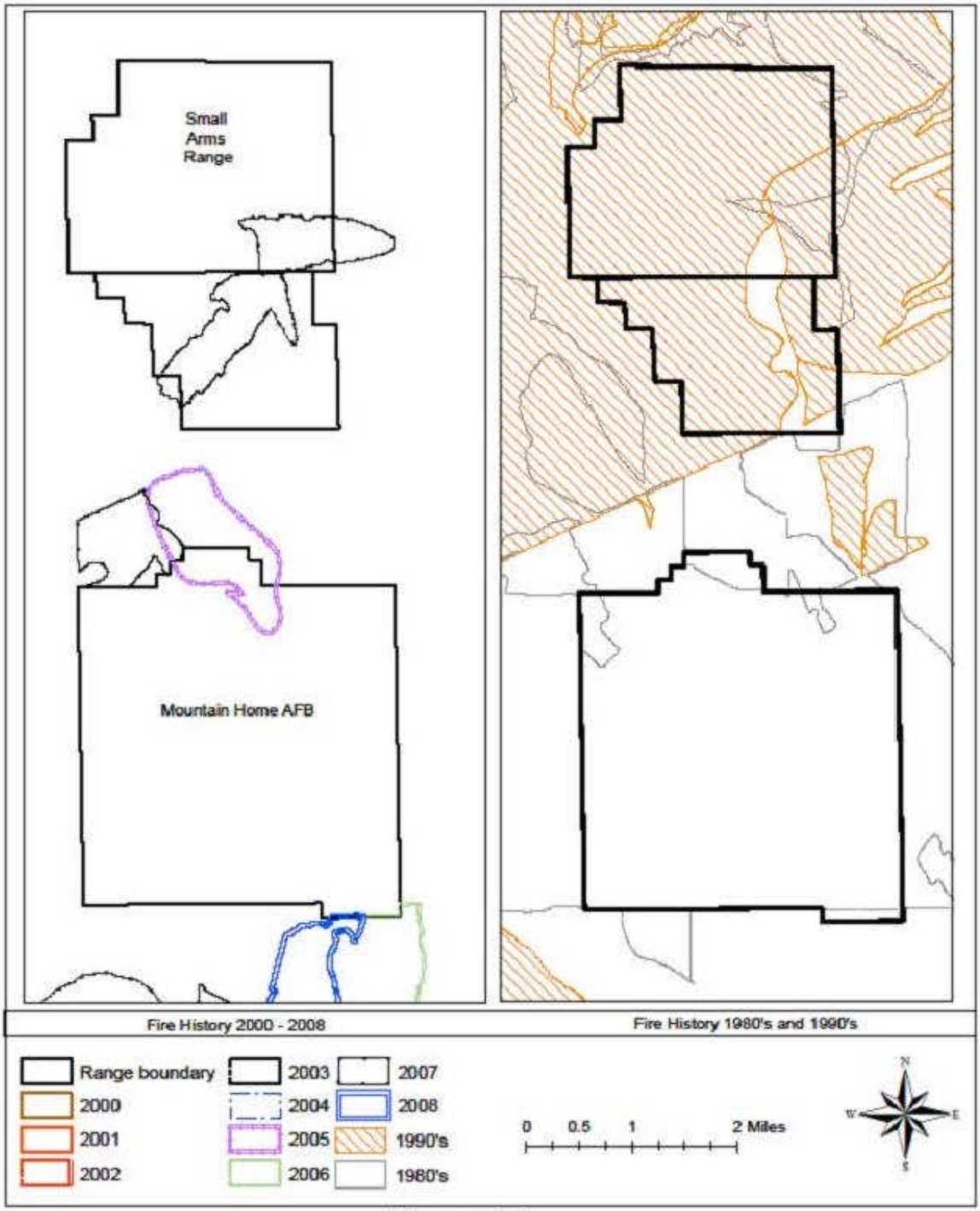

Figure 4-6
Fire History of MHAFB and SAR (1980-2008)

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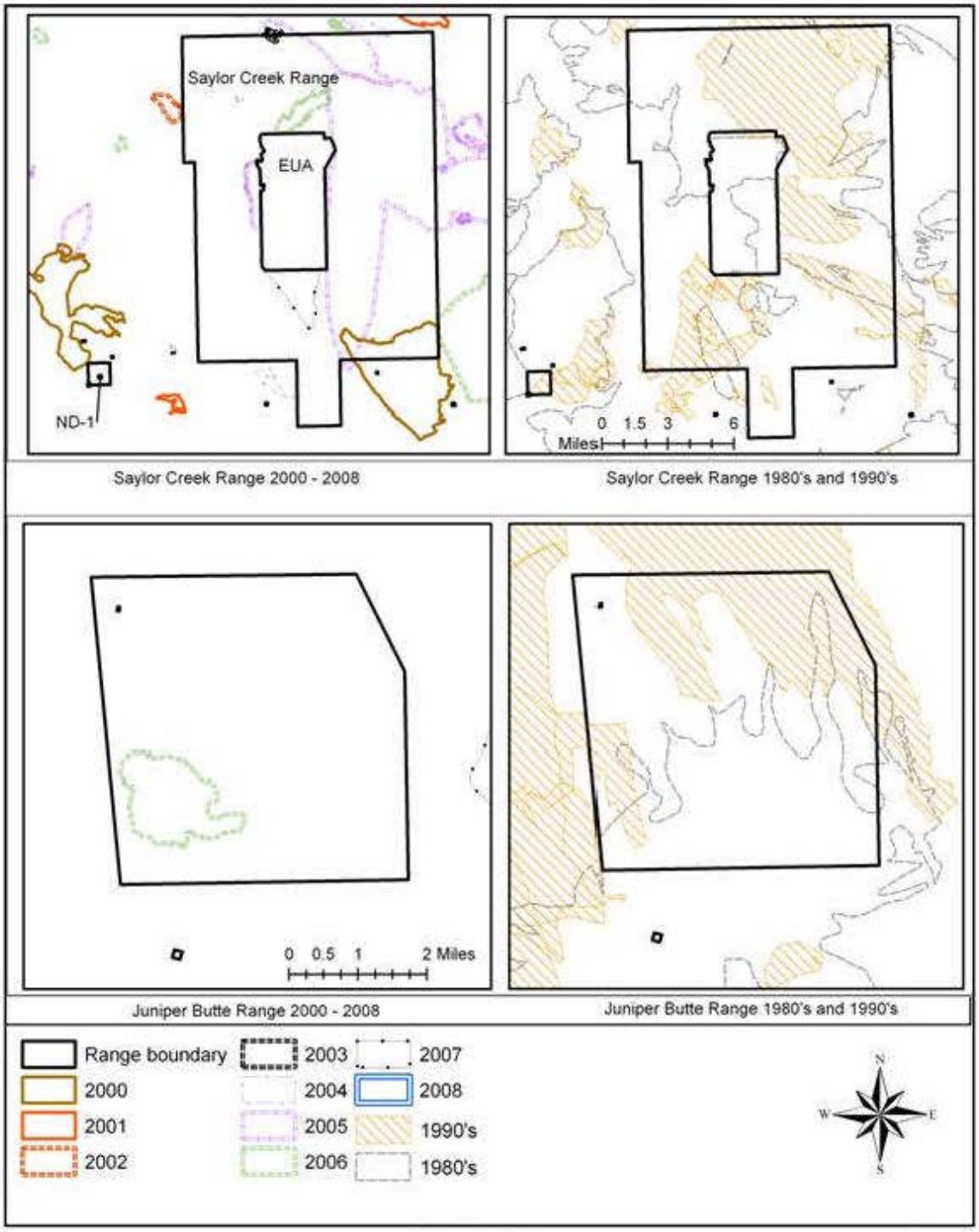

Figure 4-7
Fire History of SCR, JBR, and Surrounding Areas (1980-2008)

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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.

Goal: Prevent fire ignition.

Objectives:

- 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 clean up to lower risk of ordnance striking ordnance and creating sparks.

Implementation and Monitoring Strategies. The following will be implemented to support the above goal and objectives:

- 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 32-7008.
- 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.

Goal: Immediate fire suppression.

Objectives:

- 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.

Implementation and Monitoring Strategies. To meet the goals and objectives listed above, the Air Force will:

- Provide annual wildfire training to PTR contractor firefighters.
- Annually review fire procedures, including coordination, reporting, and assistance procedures prior to fire season.

Goal: Conduct firefighting in a manner consistent with LEPA conservation**.**

Objectives:

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

Implementation and Monitoring Strategies. To meet the goals and objectives listed above, the Air Force will:

- 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.

4.16 TRAINING OF NATURAL RESOURCE PERSONNEL

Interdisciplinary training is essential for DoD natural resource managers. The training is to address practical job disciplines, statutory compliance requirements, applicable DoD/Department of Air Force regulations, pertinent State and local laws, and current scientific and professional standards and research as related to the conservation of our nation's natural resources.

4.16.1 REQUIREMENTS

The natural resource training objective is to identify technical requirements as well as the resources (cooperative agreements, Legacy, Memorandum of Understandings, and so forth) available to implement and execute a successful and proactive program. The goal is to maintain and enhance the military mission, biodiversity, conservation stewardship, and the management of the total ecosystem from the practical standpoint of day to day operations as well as long term planning.

The Civil Engineering Squadron 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. Persons involved in Natural Resource Law Enforcement require special training to meet legal requirements and liability protection. Persons involved in natural resource protection and management should participate in training related to wetlands classification, mitigation, rehabilitation and protection. Wetland training courses are available from the Corps of Engineers. 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. Professional natural resource management personnel (agronomists, wildlife biologists, foresters, and range

conservationists) are encouraged to participate in continuing their educational opportunities at universities and professional society functions. This includes leadership, management and compliance training, certification, and professional development. All personnel engaged in a hazardous waste operation must fulfill the training requirements set forth in Title 40 Code of Federal Regulations Part 264.16.

Natural resources managers at Category I installations must take the course, *DoD Natural Resources Compliance*, developed by the DoD Interservice Environmental Education Review Board (ISEERB) and offered for all DoD Components by the Naval School, Civil Engineer Corps Officers School (CECOS). See the CECOS website https://www.netc.navy.mil/centers/csfe/cecos/ for schedules and registration information. Other DoD environmental management courses can be found at the Army Logistics Management College (http://www.almc.army.mil) and Air Force Institute of Technology (http://www.afit.edu/).

Installation natural resources managers should be encouraged to attend appropriate national, regional, and state conferences and training courses. The National Conservation Training Center managed by the USFWS (http://training.fws.gov/) and the Bureau of Land Management Training Center (http://www.ntc.blm.gov/) offer a wide range of appropriate natural resources professional courses suitable for USAF natural resources managers. Natural resource management personnel should also be encouraged to attain professional registration, certification, or licensing for their related fields.

All individuals enforcing fish, wildlife and natural resources laws on AF lands must receive specialized, professional training on the enforcement of fish, wildlife and natural resources in compliance with the Sikes Act. This training may be obtained by acquiring certification as a state fish and wildlife conservation law officer or by successfully completing the Natural Resources Police Training Program course at the Federal Law Enforcement Training Center (http://www.fletc.gov/). Tribal law enforcement certification is also appropriate within tribal jurisdiction. Correspondence courses and standard Security Forces training do not meet the requirements of the Sikes Act. MHAFB does not have natural or cultural resources law enforcement personnel, but has an MOU with Owyhee, Elmore, and Twin Falls Counties Sheriff's Offices for law enforcement response to the MHRC (23 March 2007). Enforcement of hunting regulations is accomplished by IDFG. Other fish and wildlife laws and regulations are enforced by the US Fish and Wildlife Service and BLM for areas under their jurisdiction.

Individuals participating in the capture and handling of sick, injured, or nuisance wildlife should receive appropriate training.

Natural resources personnel supporting the BASH program should receive flight line drivers training, training in identification of bird species occurring on airfields, and specialized training in the use of firearms and pyrotechnics as appropriate for their expected level of involvement.

The DoD supported publication *Conserving Biodiversity on Military Lands -- A Handbook for Natural Resources Managers 2008 edition* (Benton, N. et. al., eds.) provides information regarding the management of natural resources programs.

4.16.2 ACHIEVEMENTS AND OPPORTUNITIES

MHAFB has made many achievements in successfully managing their natural resources management program. Appendix 3 provides a Project List of ongoing studies, study reports for projects that were accomplished, and a spreadsheet showing all environmental operations and maintenance (O&M) and military contracted projects that have been programmed for funding.

4.17 COASTAL/MARINE MANAGEMENT

MHAFB, Idaho is located inland and has no coastal or marine resources.

4.18 FLOODPLAINS MANAGEMENT

Floodplains generally are areas of low, level ground present on one or both sides of a stream channel that are subject to either periodic or infrequent inundation by flood waters. Floodplains are typically the result of lateral erosion and deposition that occurs as a river valley is widened. The porous material that composes the floodplain is conducive to retaining water that enters the soil via flooding events and elevated groundwater tables. Inundation dangers associated with floodplains have prompted federal, state, and local legislation limiting the development in these areas to recreation, agriculture, and preservation activities. The EO 11988 (24 May 1977) provides guidance on floodplain management. This EO instructs federal agencies to amend existing regulations or procedures to ensure that the potential effects of any action the agency may take in a floodplain are evaluated and that the agency's planning programs and budget requests reflect consideration of flood hazards and floodplain management. The AFI 32-7064 provides guidance for floodplain management on Air Force properties as a subanalysis of the NEPA process.

Floodplains have not been identified on MHAFB properties.

4.19 OTHER LEASES

Other than agricultural outleasing, MHAFB has several other leases and outgrants as shown in Table 4-8.

Table 4-8.
MHAFB Outgrants and Leases.

Site	Lease type	With whom
MHAFB	Utilities	Various utility providers
SAR	Access and Use	IDFG for Hunter's 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 (see Section 4.11)

4.20 HAZARDOUS MATERIALS, HAZARDOUS WASTE, AND SOLID WASTE

Hazardous materials are substances with physical properties of ignitability, corrosivity, reactivity, or toxicity that may pose a threat to human health or the environment. These may include flammable and combustible liquids, compressed gasses, solvents, paints, paint thinners, pesticides, petroleum, oil, and lubricants (POLs), and other toxic chemicals including hazardous wastes. All known hazardous materials have Material Safety Data Sheets (MSDS) and each agency or shop using a hazardous material is responsible to have these MSDS readily available for all personnel using the products.

Hazardous wastes are any solid, liquid, contained gaseous, or semisolid waste, or any combination of wastes that pose a substantial present or potential hazard to human health or the environment. Hazardous wastes are generated from a variety of functions including corrosion control, painting, and vehicle maintenance. Hazardous wastes have characteristics of ignitability, corrosivity, reactivity, or toxicity.

Solid wastes are generally defined as any discarded material (including solids, liquids, and containerized gasses) that are considered no longer usable for their intended purpose. However, for discussion purposes in this document, the term solid waste will not include hazardous wastes. Non-hazardous solid wastes associated with JBR would include spent inert ordnance and targets at JBR.

Hazardous materials and wastes are federally and state regulated in accordance with the federal Environmental Protection and Community Right to Know Act (EPCRA), Water Pollution Control Act, CWA, Solid Waste Disposal Act (SWDA), Toxic Substances Control Act (TSCA), Resource Conservation and Recovery Act (RCRA), Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), and Clean Air Act (CAA). Pesticide application, storage, and use are regulated by the federal Insecticide,

Fungicide, and Rodenticide Act (FIFRA). Occupational Safety and Health Act (OSHA) regulates worker safety when dealing with use of hazardous materials and wastes. The federal government is also required to comply with the intent of the acts and with all applicable state laws and regulations under Executive Order (EO) 12088, Federal Compliance with Pollution Control Standards, AFI 32-1053, Integrated Pest Management, DoDI 4150.7,DOD Pest Management Program, DoDI 4715.4, Pollution Prevention, and DoD Manual 4160.21-M, Defense Materiel Disposition Manual.

This section is prepared in accordance with the guidance set forth in AFI 10-2501 Air Force Emergency Management Program and Operations (USAF, 2007a), 366 FW Plan 3209-10 Hazardous Material Emergency Response Planning and Response Program (MHAFB, 2010a); 366 FW Plan 3208-08 Hazardous Waste Management Plan (MHAFB, 2008a),DoD Directive 5031.41, Oil and Hazardous Substances Pollution Prevention and Contingency Program (DoD, 1978); AFI 32-7042, Waste Management (USAF, 2009c); AFI 32-7043 Hazardous Waste Management Guide (USAF, 1995), and AFI 32-7086, Hazardous Materials Management (USAF, 2009b). Contingency plans will append to the Hazardous Material Emergency Planning and Response Plan (MHAFB, 2010a) and Integrated Contingency Plan for Oil Spill Prevention Response Plan (MHAFB, 2010b) which meets the federal, state, and local requirements for hazardous material planning and response.

4.20.1 MHAFB

Status of Inventory and Current Conditions. Hazardous materials at MHAFB, and all of their associated properties, are managed under strict guidelines to ensure health and safety of people and the environment. Every hazardous material is purchased and tracked through the EESOH-MIS database and the Hazardous Materials Pharmacy (HAZMART) facility on the Base, which also maintains a manufacture specific MSDS for each of these materials. Any site having hazardous materials will also have a manufacture specific MSDS for each material onsite. The MSDS is used to determine potential health, fire, and pollution effects associated with the material. Hazardous materials currently stored at facilities are limited to the amount to be used at each facility in a 30-day period. A hazardous waste stream inventory for every hazardous material used or generated on the Base is also maintained by MHAFB.

Hazardous waste at MHAFB is managed within the following classifications: satellite accumulation points, 90-day accumulation point, and used oil accumulation points. Off-base properties of MHAFB include SCR, the Grasmere EC site, JBR, ND targets, and electronic emitter sites. Hazardous waste is not generated at ND targets or 1/4-acre emitter sites. Any site having hazardous material maintains a MSDS for each substance.

Generators of hazardous wastes are responsible for properly segregating, storing, characterizing, labeling, marking, packaging, and transferring all hazardous waste for disposal according to federal, state, local, and Air Force regulations. A hazardous waste stream inventory for every hazardous waste

stream generated on the Base is also maintained by MHAFB. Waste streams are tracked by assigning an individual waste stream identification number to each waste, at each site or facility.

The MHAFB Hazardous Material Emergency Response Planning and Response Program (MHAFB, 2010a) addresses storage locations and proper handling procedures of all hazardous materials to minimize potential spills and releases. The plan further outlines activities to be undertaken to minimize the adverse effects of a spill, including notification, containment, decontamination, and clean up of spilled materials.

MHAFB used to operate a solid waste landfill on the base. Solid waste is now disposed of off base in a permitted landfill by a contractor (MHAFB, 2010c). Solid wastes generated at JBR, ND targets, and emitter sites by Air Force personnel will be transported to the base, as appropriate, to be disposed of by the contractor. MHAFB recycles appropriate materials.

Issues and Concerns. Issues and concerns for hazardous materials, hazardous wastes, and solid wastes on MHAFB include ensuring the proper storage and documentation for all hazardous wastes and materials, compliance with all laws and regulations, proper reporting of spills, proper clean-up of spills, and protecting the Base landfill as a resource by utilizing recycling.

Goal: Prevent contamination of the environment through release of hazardous materials, POL, solid waste, and hazardous waste to the air, ground, or water.

Objectives:

- Comply with all federal, state, local, and Air Force regulations.
- Reduce the use of hazardous materials and generation of hazardous waste to the minimum amount necessary.
- Train all necessary personnel in the handling of hazardous substances and spill response procedures.
- Implement the MHAFB Spill Plan.

Implementation and Monitoring Strategy. The following will be implemented to support the above goal and objectives:

- All personnel will be required to implement the Hazardous Materials/Wastes Strategies in the 366 FW Plans 3208-10, Hazardous Waste Management Plan, and 3209-08, HAZMAT Emergency Planning and Response, or most current versions.

4.20.2 MHRC

Status of Inventory and Current Conditions. The facilities associated with the MHRC qualify as Conditionally Exempt Small Quantity Generators (CESQG). (A facility is a contiguous land and its structures.) Trace amounts of hazardous

substances may be stored at the sites associated with the MHRC. Most waste streams associated with the MHRC are recyclable, reusable, or non-recoverable solid wastes that are disposed of in a permitted landfill. Hazardous waste materials that may be generated include rags used to clean petroleum spills, antifreeze associated with radar units and the maintenance facility, and lead and silver solder residue. Potentially hazardous materials stored at SCR, JBR, and the one- acre emitter sites include diesel fuel, MOGAS (gasoline), oil, lead acid batteries, and propane.

Explosive Ordnance Disposal. Range clearance is conducted for the entire 12,000-acre EUA on SCR annually. The 660-acre JBR target area and a 1,000 foot buffer around the target area are cleared annually. No ordnance is delivered to any other sites associated with the MHRC. Range clearance operations are conducted by the MHAFB EOD Shop, 366 CES/CED. Ordnance is moved from the range to a fenced residue holding area where it is stored until it is recycled by the ACC range residue removal contractor. The PTR contractor provides support to move ordnance from the road to the residue holding area. In the past, range residue at SCR was buried in permitted pits, but in 2005 a range residue holding area was built which allows all range residue to be stored until recycled by the ACC range residue removal contractor. There is also a range residue holding area at JBR so range residue is not transported to SCR for storage. Range residue is demilitarized, certified, and transferred to recycling centers or permitted landfills by a range residue removal contract.

At SCR, large vehicles such as 2.5/5.0 ton trucks, dumptrucks and Humvees are used for clearance. During annual range clearance these vehicles sweep in a line and are driven slowly back and forth across the range. Vehicles stop when ordnance is found. Once EOD technicians determine a munition to be safe, it is put in the back of the vehicle for transportation to the SCR Residue Holding Area (RHA).

At JBR, annual clearance takes place between April and June to avoid wet slickspots and decrease the fire potential. Clearance usually coincides with grazing season and takes about three to five actual work days. The fenced off target area (662 acres) is cleaned annually and the surrounding pastures are cleared, as required, based on AFI 13-212 requirements. ATVs and MULE vehicles are authorized off road during clearance. For clearance of the 1,000-foot area around each target and the 100-foot area on either side of the roads, a front-end loader can be used to transport any unexploded ordnance (UXO). Non-mission essential off-road travel is authorized only in case of emergency. Range clearance can occur only when soil moisture is dry enough to permit driving on it without creating ruts. Slickspots and sagebrush are avoided to the maximum extent practical. Once determined safe, munitions at JBR are stored in a RHA located at JBR.

Munitions including practice bombs/rockets and Smokey SAM/AAA are now secured in separate RHA's at each range for recycling at a later date by the ACC range residue removal contractor. The IDEQ has granted the AF approval to store BDU-33s at SCR and JBR holding areas for a period up to five years, or until the area has reached 75 percent capacity, before recycling. In order to comply with all Clean Water Regulations, the secured residue holding

areas have a system to collect water run-off. Water run-off is allowed to evaporate naturally. Should the water have to be released into the ground, the water would first have to be tested by Bioenvironmental. The IDEQ has concurred with the AF that inspected and certified BDU-33s and BDU-50/56s are not considered solid waste and therefore are not required to follow Idaho's Solid Waste Management Rules for storage.

Prior to 2005, range residue was buried in munitions burial pits on state leased EUA land at SCR. Idaho DEQ issued the AF a conditional use permit that allows the AF to bury target and munitions residue on the state leased land in the SCR EUA. Although the site is currently open, munitions are no longer buried, IAW DoD policy. SCR has one active and one inactive burial disposal sites. The inactive site is located 7,500' north of the RCO tower and was approved on 10 Aug 77. The site which is about 5 acres in size contains about 10 burial pits. Munitions were last buried at this site in the 2000-2001 timeframe. The current active permitted burial site is located north of Pence Butte on State of Idaho land. This site was started on Temp permit 7020-1 on 5 Jul 88. On 21 Dec 93 it was combined with the current lease M-700011. (Lease includes land lease plus burial pits permit). The burial pits are monitored to ensure they meet state requirements. If the burial pits are used, a log must be kept listing the number of loads deposited into the burial pits. This log is updated annually until final closure. The conditional use permit from the State of Idaho requires the pits to be covered with four feet of overburden when covered. During post closure of the pits, the pits must be inspected bi-annually by 366 CES/CEAN (MHAFB Draft CRP 22 Dec 2010).

Issues and Concerns. Issues and concerns for hazardous materials, hazardous wastes, and solid wastes for the MHRC include proper storage and documentation for all hazardous wastes and materials, compliance with all laws and regulations, proper reporting of spills, proper clean-up of spills, and delayed response times for accidents due to the remote location of facilities.

Goal: Prevent contamination of the environment through release of hazardous materials, POL, solid waste, and hazardous waste to the air, ground, or water.

Objectives:

- Comply with all federal, state, local, and Air Force regulations.
- Reduce the use of hazardous materials and generation of hazardous waste to the minimum amount necessary.
- Train all personnel in the handling of hazardous substances and spill response procedures.
- Implement the MHAFB Spill Plan.

Implementation and Monitoring Strategy. The following will be implemented to support the above goal and objectives:

- All personnel will be required to implement the Hazardous Materials/Wastes Strategies in the 366 FW Plans 3208-10, Hazardous

Waste Management Plan, and 3209-08,HAZMAT Emergency Planning and Response, or most current versions.

Goal: Minimize impacts to the environment at Juniper Butte during range clearance.

Objectives:

- 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.

Environmental Protection. Conduct range clearance in a timely manner to minimize impacts to the environment. On JBR, equipment used to collect ordnance should stay on designated routes to the maximum extent practicable without compromising the mission. Range clearance will be conducted using trucks on designated routes to minimize disturbance to soils, vegetation, and archeological sites. The use of trucks will be limited to the target area and established roads. For clearance in the 1,000-foot area around the target and the 100-foot area on either side of the roads, a front-end loader will be used to safely transport any unexploded ordnance to the target area. ATVs with properly reinforced trailers may be used to transport ordnance. Clean up should occur only when soil moisture is dry enough to permit driving on it without creating tire ruts. Efforts should be made to minimize disturbance to vegetation. ATVs should drive around, rather than over, slickspots, and sagebrush. Range clearance will take place each year from April through June to avoid wet slickspots and the fire season, to the maximum extent practicable.

Implementation and Monitoring Strategies. The following will be implemented to support the above goal and objectives:

- All EOD personnel will be required to follow the Comprehensive Range Plan (MHAFB, 2010d), and the Range Standard Operating Procedures (MHAFB, 2010e).
- All EOD personnel will have an annual Natural and Cultural Resource Awareness Training prior to range cleanup. Training will focus on slickspot and LEPA identification and avoidance, sagebrush identification and avoidance, noxious and invasive weed identification and prevention, limiting disturbance, and off-road driving procedures.

4.21 AIR INSTALLATION COMPATIBLE USE ZONE (AICUZ)

The purpose of the AICUZ program is to promote compatible land development in areas subject to aircraft noise and accident potential. Elmore County prepared a Comprehensive Plan which incorporated AICUZ recommendations as an integral part of the comprehensive community planning process. Accident potential and aircraft noise are major considerations in their planning processes.

Air Force AICUZ land use guidelines reflect land use recommendations for clear zones, accident potential zones I and II, and four noise zones. These guidelines have been established on the basis of studies prepared and sponsored by several federal agencies, including the Department of Housing and Urban Development, Environmental Protection Agency, Air Force, and state and local agencies. The guidelines recommend land uses which are compatible with airfield operations while allowing maximum beneficial use of adjacent properties. The Air Force has no desire to recommend land use regulations which render property economically useless. It does, however, have an obligation to the inhabitants of the MHAFB environs and to the citizens of the United States to point out ways to protect the people in adjacent areas, as well as the public investment in the installation itself.

The AICUZ program uses the latest technology to define noise levels in areas near Air Force installations. An analysis of MHAFB's flying operations was performed, including types of aircraft, flight patterns utilized, variations in altitude, power settings, number of operations, and hours of operations. This information was used to develop the noise contours contained in this study. The Day-Night Average A-Weighted Sound Level (DNL) metric was used to define the noise zones for MHAFB (MHAFB, 1998).

Aircraft operational and maintenance data was obtained to derive average daily operations by runway and type of aircraft. This data is supplemented by flight track information (where we fly), flight profile information (how we fly), and ground runup information. After verification for accuracy, data was input into the NOISEMAP program and converted to Day-Night Average A-Weighted Sound Level (DNL) noise contours. Contours were plotted on an area map and overlaid with clear zone and accident potential zone areas. This information was updated in October 2010 to match the current conditions. Figure 4-8 shows the noise contours and land ownership around MHAFB. Figure 4-9 shows the MHRC baseline noise environment. Figure 4-10 shows the Accident Potential Zones and Clear Zones at MHAFB.

Sound levels from flight operations at MHAFB exceeding ambient background noise typically occur only beneath 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. The noise analysis identified baseline noise levels ranging from 65 DNL to greater than

85 DNL for the lands near MHAFB's runways and off-base vicinity. Table 4-9 presents the on-base and off-base acres affected by noise levels of 65 DNL and greater. Current noise levels of greater than 65 DNL affect approximately 25,086 acres at MHAFB, with the highest noise levels on and around the runway and flightline (Figure 4-10).

Table 4-9
Area Affected by Baseline Noise Contours, MHAFB

Area Affected by Baseline Noise Contours in the Vicinity of MHAFB			
Noise Contour (DNL)	***Acres Affected: On Base***	***Acres Affected: Off Base***	***Acres Affected: Total***
65-70	911	12,173	13,084
70-75	1,343	4,941	6,284
75-80	1,295	1,911	3,206
80-85	886	385	1,271
85+	1,240	1	1,241
Total	**5,675**	**19,411**	**25,086**

The AICUZ program is designed to provide Air Force bases and surrounding communities with guidelines to address safety and noise issues in land planning. As part of its AICUZ program, MHAFB has established a Clear Zone (CZ) and two Accident Potential Zones (APZs) at the end of each runway (Figure 4-11). The CZs, both of which extend off base, include neither housing nor other incompatible land uses. The Air Force also holds real property rights to off-base portions of CZs to prevent incompatible land uses.

Within APZs, dense residential development or other land uses that promote public assembly are discouraged. Land uses allowed within APZ I include a variety of industrial, open space, and agricultural uses whereas APZ II land uses include all of those listed for APZ I, as well as some additional commercial uses and services. Within APZs, as well as the portions of CZs that lie outside the base, agriculture (i.e., cultivation and grazing) forms the predominant land use. For APZs extending from the northwest end of the runway, the area consists of private lands (about 5 percent) and lands administered by the BLM (about 35 percent). To the southeast end of the runway, the area within the APZs is solely comprised of BLM lands.

Noise levels of 65 DNL or greater affect both on-base and off-base lands (refer to Table 4-9). Approximately 23 percent of the affected area lies within the base, with the remaining 77 percent of lands exposed to noise greater than 65 DNL either vacant or used for agricultural purposes. One private residence falls within the 65 DNL area.

In the area immediately surrounding the base, land ownership reflects a mixture of private, State of Idaho and BLM lands (Table 4-10). Land use consists primarily of agriculture and grazing, although scattered residences occur on private lands. Table 4-10 presents a list of land ownership within the vicinity of the base affected by existing noise contour levels of 65 DNL or

greater. None of the affected areas contain land uses incompatible with the noise levels.

Table 4-10
Land Uses Within the MHAFB Baseline 65 DNL Noise Contour

Land Use	Acres	Percentage
Private	3,114	12.4%
State of Idaho	327	1.3%
BLM	15,969	63.7%
MHAFB	5,676	22.6%
Total	**25,086**	**100.0%**

Elmore County's Zoning and Development Ordinance addresses zoning for all airports within Elmore County, including MHAFB. The Zoning and Development Ordinance is consistent with the recommendations contained in the MHAFB AICUZ report. The Ordinance established an Airport Hazard Zone for MHAFB which protects the base from incompatible land use encroachment. Sub zones were also created within the Airport Hazard Zone which limit and regulate structure heights and objects of natural growth. Commercial development along Airbase Road is within the Ordinance-designated Airport Commercial Zone.

Traditional land uses, such as farming and ranching continue to represent the most consistent economic type of use on lands underneath the airspace.

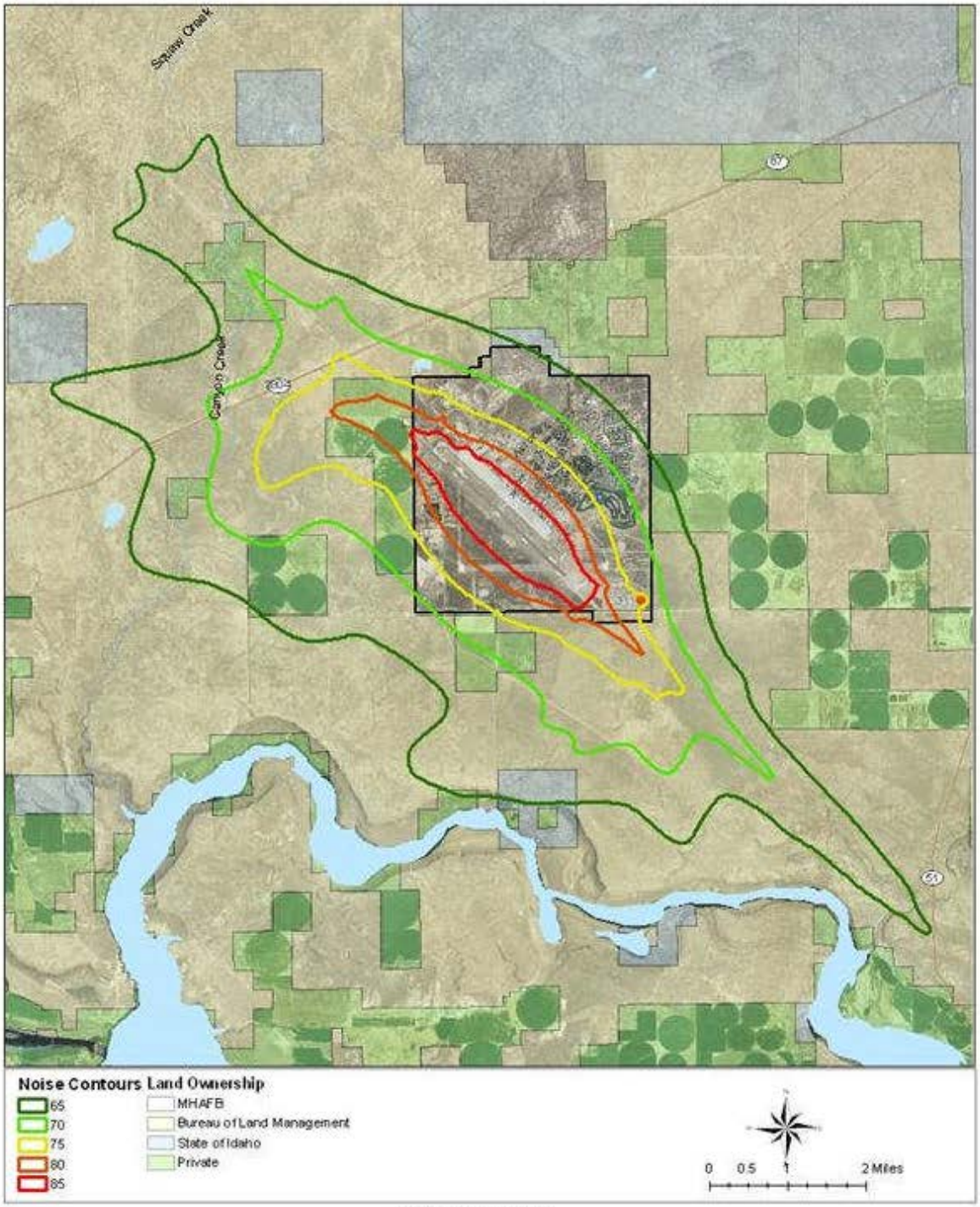

Figure 4-8
Noise Contours at MHAFB

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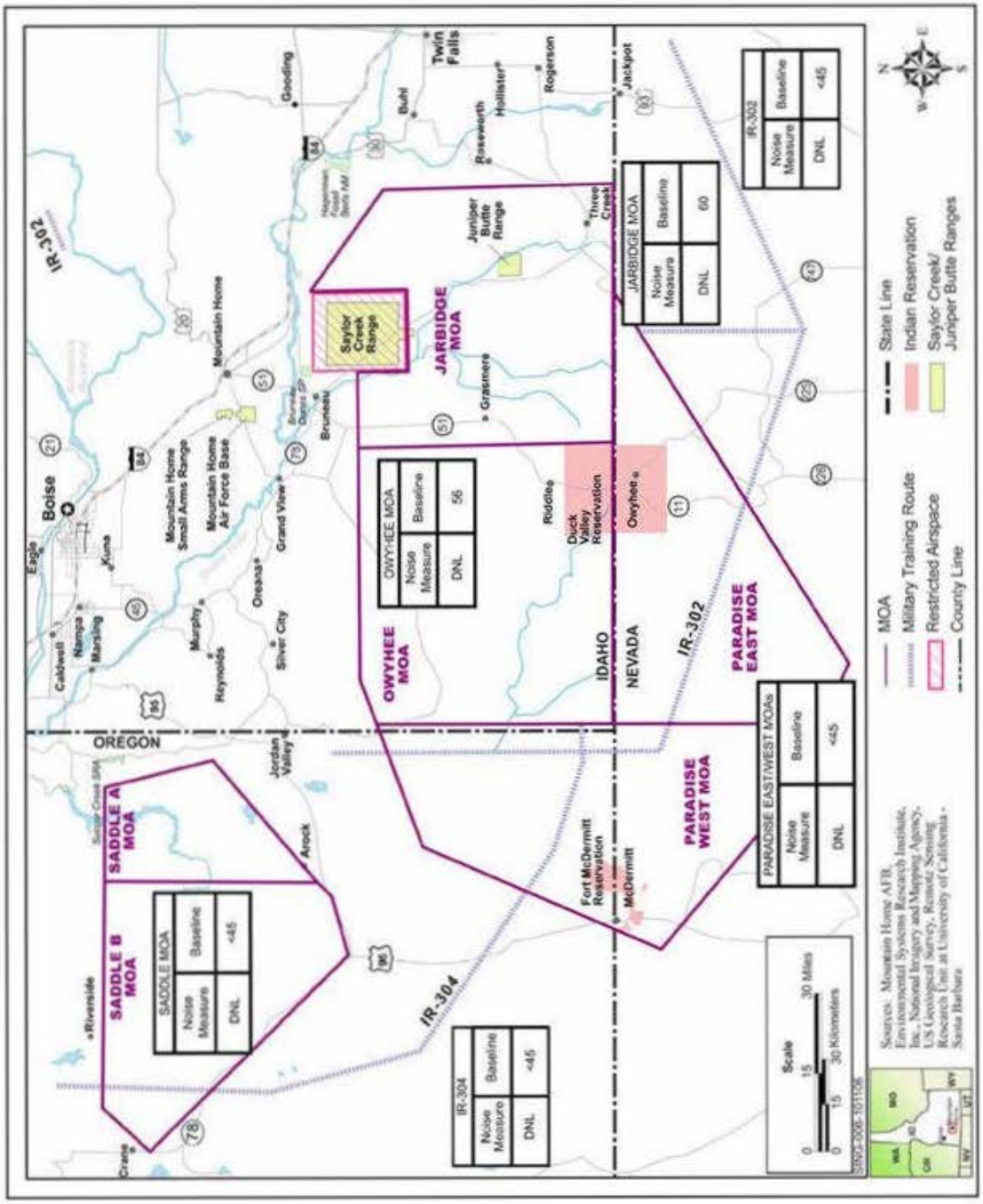

Source: EA for Republic of Singapore Air Force, F-15SG Beddown, (USAF ACC, 2007a)

Figure 4-9
MHRC Noise Environment

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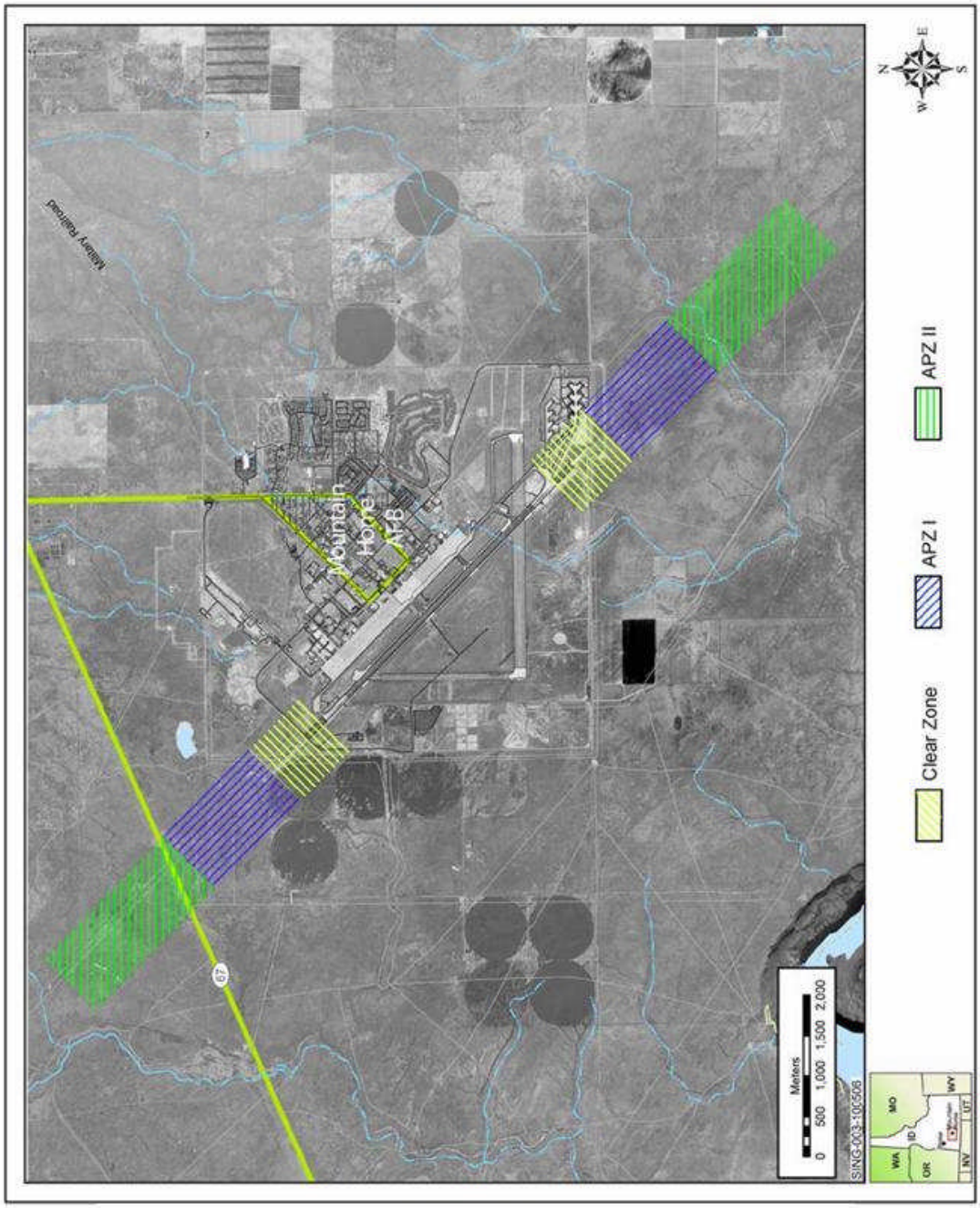

Source: EA for Republic of Singapore Air Force, F-15SG Beddown, (USAF ACC, 2007a)

Figure 4-10
Accident Potential Zones and Clear Zones, MHAFB

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4.22 Infrastructure Construction and Maintenance

Issues and Concerns. The Environmental Office must be involved early and often in the construction and maintenance project planning process. There are many issues and concerns that must be taken into account before infrastructure construction and maintenance can occur. These issues and concerns are described in detail above. The primary issues and concerns for construction and maintenance are described here.

- Protection of ESA listed species, candidate species, and rare species.
- Protection of MBTA listed species, particularly burrowing owls and nesting songbirds.
- Protection of wetlands (including playas).
- Prevent BASH hazards.
- Maintain and enhance the urban forest on MHAFB.
- Protect native habitat, including sagebrush.

Goal. Comply with ESA, NEPA, MBTA, CWA and all other environmental laws rules and regulations.

Objectives: Fulfill the requirements of laws, Executive Orders, and policies.

Goal. No net loss to military mission.

Objectives: Minimize or prevent impacts to natural resources while maintaining and enhancing the military mission.

Implementation and Monitoring Strategy. To attain the above goals and objectives, the Air Force will:

- Involve the Environmental Office early and often in the planning process.
- Project proponents will complete a form AF IMT 332 "Base Civil Engineer Work Request" or form AF IMT 813 "Request for Environmental Impact Analysis".
- Environmental Office will provide natural resources information on eDASH
- Site infrastructure and construction in an area that is the most appropriate for sustaining the military mission and protecting and enhancing natural resources.
- Utilize the minimum footprint for construction activities. This includes equipment and materials staging.
- Maintain the urban forest by keeping mature trees protected, watered, and alive during construction activities.

- Control weeds during and after construction activities. Reseed areas disturbed by construction activities with appropriate species.
- Design infrastructure near the flightline which discourages nesting and roosting.

5.0 IMPLEMENTATION

5.1 SUMMARY OF PROCESS OF PREPARING PRESCRIPTIONS THAT DRIVE PROJECTS

Natural resource management combines economics, policy, and science to study, manage, and restore natural resources and ecosystems. Natural Resource Managers help balance the needs of people and economy with the ability of ecosystems to support the military training mission, soil, water, forests, wildlife, fish, and recreational resources. Ideally, these professionals look for ways to make responsible natural resource management decisions which consider all stakeholders, including communities, agencies and business/industry.

A very simple process to follow in preparing prescriptions that will drive projects to implementation includes the following:

Create a database:

- Identify all natural resources at the installation;
- Create a database for these resources;
- Identify data gaps for these resources;
- Program funds for filling in the data gaps;
- Schedule the project (i.e., survey/monitoring/rehabilitation work/etc.);
- Prepare the study report, including the GIS database (in-house or contractor-prepared); and
- Incorporate the project results in the INRMP, to be updated annually and comprehensively every five years.

5.2 ACHIEVING NO NET LOSS

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

Mission requirements and priorities must be integrated with environmental requirements and policies. Natural resources should not be consumed by mission requirements, but sustained to support mission requirements. Matching the correct resources with the appropriate mission is paramount to resource sustainment and mission success. Not all lands are able to inherently support all types of training, based on physical factors such as topography or presence of wetlands, or the distribution of resources that must be conserved by law, such as special status species or cultural resource sites. The

implementation of "no net loss" necessitates accomplishing all required training on the lands available, on the lands that can best support that training.

5.3 USE OF COOPERATIVE AGREEMENTS

This INRMP was prepared in cooperation with the USFWS and the IDFG. These two agencies have participated in the preparation and review process of the INRMP. Cooperative Agreements are shown in Appendix 12.

A priority for partnering and accomplishing work to implement this plan is through cooperative agreements. AFI 32-7064 directs that where applicable, an installation should enter into Cooperative Agreements/Plan, in accordance with 16 USC 670a, with state and federal conservation agencies for the conservation and development of fish and wildlife, soil, outdoor recreation, and other resources.

In accordance with 16 USC 670a, the Fish and Wildlife Management Plan is that component of the INRMP that describes how the fish and wildlife resources at an installation will be managed. It is a tripartite agreement between MHAFB, U.S. Fish and Wildlife Service and the Idaho Department of Fish and Game. The cooperative plan provides a program of planning for, and the development, maintenance, and coordination of wildlife, fish, and game conservation.

Signature by the three agencies on the INRMP enacts the fish and wildlife management plan. The overarching tripartite agreement between the US Department of Defense, the US Fish and Wildlife Service, and the International Association of Fish and Wildlife Agencies (representing state fish and wildlife functions) is shown in Appendix 12.

A management plan will be adopted by the Wing Commander only after ensuring its compatibility with the rest of the INRMP, the Migratory Bird Treaty Act, and other applicable federal, state, and local laws and regulations. Agreement by all three parties regarding the fish and wildlife management plan for an installation makes that plan a cooperative plan pursuant to 16 USC 670a and the exclusive fish and wildlife component of the INRMP. Cooperative plans will be reviewed and updated annually to incorporate new findings and changes and revised at least every five years.

5.3.1 PUBLIC REVIEW

The general public has been provided an opportunity to review and comment on the draft INRMP. Public notification was made when a draft INRMP became available for comment. The USFWS and IDFG were given the opportunity to review all public comments received on an INRMP.

5.3.2 MUTUAL AGREEMENT

The INRMP reflects the mutual agreement of the USFWS and IDFG concerning the conservation, protection, and management of fish and wildlife resources. Mutual agreement is the goal with respect to the entire INRMP. Mutual agreement, with respect to those elements of the INRMP concerning the jurisdictional authority of the USFWS and IDFG is considered attained only upon receipt of signature or written concurrence from all of the following persons:

- Installation or Wing Commander
- Regional Director for the USFWS
- Director of the IDFG

5.4 FUNDING PROCESS AND INRMP IMPLEMENTATION

Implementation of the INRMP is subject to the availability of annual funding. The installation will make every effort to request funding through appropriate channels. Funding options for natural resources programs are discussed in the following subsections.

5.4.1 FUNDING

The intent of the funding section of this Integrated Natural Resources Management Plan is to link resources with the goals established. The funding section of this plan will therefore be used to develop and support environmental funding requirements. This INRMP will:

- Articulate the desired end state that individual plan goals seek to reach.
- Include a section in the plan (e.g., an appendix, chapter, etc) that lays out the funding required to achieve the established goals for each of the years covered.
- Be signed by the Base Commander.

Funding sources for MHAFB INRMP projects may include Operations and Maintenance Environmental funds and agricultural outleases.

MHAFB will implement the recommendations in this INRMP within the framework of regulatory compliance, national U.S. Air Force mission obligations, antiterrorism and force protection limitations, and funding constraints. Any requirement for obligation of funds for projects in this INRMP shall be subject to the availability of funds appropriated by Congress, and none of the proposed projects shall be interpreted to require obligation or payment of funds in violation of any applicable federal law, including the Anti-Deficiency Act, 31 U.S.C. 341, et seq.

Agricultural Outleasing Funds

Agricultural funds are derived from agricultural leases on installations. They are centrally controlled at both U.S. Department of Agriculture and Major Command levels with no specific requirements for spending where they were generated. AFI 32-7064 provides information for collection and spending these funds. They are primarily intended to offset costs of maintaining agricultural leases, but they are also available for preparing and implementing INRMPs. These are broadest use funds available exclusively to natural resources managers. They are exempt from certain limits on the purchase of equipment. However, MHAFB maintains only a grazing lease; thus, the major use of such funds, if available, would likely be for implementation of this INRMP.

Operations and Maintenance (O&M) Environmental Funds

Environmental funds are a special subcategory of O&M funds, and are controlled by the Environmental Program Requirements budget process. They are special in that they are restricted by the DoD solely for environmental purposes, but they are still subject to restrictions of O&M funds. Compliance with appropriate laws and regulations is the key to securing environmental funding. The program heavily favors funding high priority projects with a goal of achieving compliance with federal or state laws, especially if noncompliance is backed by a Notice of Violation or other enforcement agency action.

Other Funding Sources

The DoD Legacy Resource Management Program provides financial assistance to DoD efforts to preserve natural and cultural resources on federal lands. Legacy projects could include regional ecosystem management initiatives, habitat preservation efforts, archeological investigations, invasive species control, and/or flora or fauna surveys. Legacy funds are rewarded based on project proposals submitted to the program.

Cooperative agreements may be entered with states, local governments, nongovernmental organizations, and individuals for the improvement of natural resources or to benefit natural and historical research on federally-owned training sites. Since MHAFB is federally-owned property, funding through the Sikes Act is possible. Sikes Act funding is provided on a cost-matching basis. Upon written concurrence of the MHAFB INRMP by the USFWS and the IDFG, these agencies become signatory cooperators of this plan. As such, the potential for access to matching funds programs and services offered by these agencies will be available.

Program initiatives under the CWA provide funding through several sources. The EPA Office of Water sponsors those projects related to the CWA. Available funding may support programs such as cost-sharing for overall water-quality management (e.g., monitoring, permitting, and enforcement), lake water quality assessments and mitigation measures, and implementation of nonpoint source pollution control measures.

The DoD administers the grant program "Streamside Forests: Lifelines to Clean Water," a competitive grant program designed to help children and others learn about protecting resources by working with installation staff to help restore a streamside ecosystem in their own community. The DoD provides funds up to $5,000 to military installations working in partnership with local school and/or civic organizations to purchase locally native plant material for small streamside restoration projects.

The Natural Resource Conservation Service (NCRS) manages the Federal Domestic Assistance Program (Plant Materials for Conservation) that assembles, evaluates, selects, releases, and introduces into commerce and promotes the use of new and improved plant materials for soil, water, and related resource conservation and environmental improvement programs.

The Public Lands Day Program coordinates volunteers to improve the public lands they use for recreation, education, and enjoyment. The National Environmental Education & Training Foundation manages, coordinates, and generates financial support for the program.

5.4.2 PRIORITIES AND SCHEDULING

The Environmental Quality Conservation Compliance Classes define funding priority with regard to O&M funds. All projects in Classes 0, I, and II shall be funded consistent with timely execution to meet future deadlines (DoDI 4715.3). A description of each class follows. AFI 32-7001, Environmental Budgeting provides complete level definitions and additional information on programming and budgeting for environmental quality O&M requirements.

TABLE 5-1
Funding Priorities

Level 0 Requirements - Natural resources management requirements recurring on an annual or more frequent basis that are "must do" activities. Ongoing natural resources management activities identified in an approved INRMP are Level 0 requirements if they are essential for the successful implementation of the goals and objectives stated in the plan. Level 0 also includes any INRMP actions necessary to prevent natural resource degradation that may affect military readiness. Level 0 requirements include funding for personnel, travel, training, and supply costs, as well as recurring inventories, surveys, sampling, monitoring, reporting, and record keeping, payments, and fees required by a specific public law or compliance agreement (e.g. special management criteria for T/E species management).
Level 1 Requirements - A nonrecurring requirement, occurring only one time or less frequently than once a year, that corrects an out-of-compliance condition and references a valid statutory driver in the year programmed. Valid drivers include federal laws, regulatory mandates, and state laws applicable to federal activities. The principal legal drivers for natural resources requirements are the Sikes Act, Endangered Species Act, Clean Water Act, and National Environmental Policy Act. For installations on foreign property, the principal drivers are the Overseas Environmental Baseline Guidance Document (OEBGD) and the country-specific Final Governing Standards (FGS). Level 1 projects include the initial preparation and five-year revisions of an INRMP. Projects that implement an approved INRMP, to include requirements to manage species and habitats to prevent a listing of a candidate species (under authority of the Endangered Species Act), are Level 1 requirements if they are essential for the successful implementation of the goals and objectives stated in the plan. Mitigation measures required as a prerequisite for regulatory approval of proposed projects (e.g. T/E species surveys, jurisdictional wetland delineations) must be funded as part of the proponent's project cost and are not Level 1 environmental requirements.
Level 2 Requirements - A nonrecurring requirement for activities and projects programmed in a fiscal year, which is in advance of the year in which compliance is mandatory and necessary to prevent noncompliance beyond the program year. Legal drivers are the same as for Level 1.
Level 3 Requirements - Nonrecurring activities and projects that are not explicitly required by an applicable legal driver, but are needed to enhance the environment beyond statutory compliance.

Source: AFI 32-7064

Appendix 3 provides a table that identifies ongoing and new projects proposed by the INRMP for the years 2012 through 2017. As part of the annual update for the INRMP, this appendix will be completed by the Natural Resources Manager. The INRMP update will be reviewed by the MAJCOM (ACC) and provided to the USFWS and IDFG for their concurrence and files. Methods to improve implementation of the INRMP to meet its goals and objectives should be discussed at an annual meeting with these agencies or through a coordination process at the time of their review of the Preliminary Final INRMP.