ENVIRONMENTAL ASSESSMENT
FOR IMPLEMENTATION OF THE SCHRIEVER AIR FORCE BASE INTEGRATED NATURAL RESOURCES MANAGEMENT PLAN

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FINDING OF NO SIGNIFICANT IMPACT
ENVIRONMENTAL ASSESSMENT

INTEGRATED NATURAL RESOURCES MANAGEMENT PLAN IMPLEMENTATION

Schriever Air Force Base, Colorado

Background

The U.S. Air Force (USAF) proposes to implement the Schriever AFB Integrated Natural Resources Management Plan (INRMP), revised in 2006, by carrying out the projects recommended by the plan for conserving and protecting natural resources in support of the military mission for present and future generations. In November 1997, the Sikes Act, 16 U.S.C. § 670a et seq., was amended to require the Secretary of Defense to carry out a program to provide for the conservation and rehabilitation of natural resources on military installations. The amendments require the Secretaries of the military departments to prepare and implement INRMPs for each military installation in the United States, unless the absence of significant natural resources on a particular installation makes preparation of a plan for that installation inappropriate.

Implementation of the INRMP ensures compliance not only with the Sikes Act Improvement Act (SAIA) but also with Department of Defense Instruction (DoDI) 4715.3, *Environmental Conservation Program*; Air Force Policy Directive (AFPD) 32-70, *Environmental Quality* (July 20, 1994); and Air Force Instruction (AFI) 32-7064, *Integrated Natural Resources Management* (September 17, 2004). The principal use of military installations is to ensure the preparedness of the Armed Forces. The SAIA requires an ecosystem management approach, taking into account mission requirements and other land use activities affecting the installation.

Pursuant to the National Environmental Policy Act (NEPA) of 1969 (42 U.S.C. § 4231 et seq. as amended), the Council on Environmental Quality (CEQ) regulations (40 CFR § 1500-1508) implementing procedural provisions of NEPA, and 32 CFR 989 (*Air Force Environmental Impact Analysis Process*), the Department of Defense has prepared an environmental assessment (EA) for implementation of the INRMP and its associated projects. The EA is attached and incorporated by reference. This document serves as the Finding Of No Significant Impact (FONSI).

Proposed Action

The Proposed Action is to fully implement the Schriever AFB INRMP (revised in 2006) consistent with the military use of the property and the goals and objectives established in the SAIA. The INRMP is based on an interdisciplinary approach to ecosystem management that allows for sustainable use of Schriever AFB in support of its military mission. Ecosystem management includes (1) a shift from single species management to ecosystem management, (2) development of partnerships with stakeholders to achieve shared goals, (3) public involvement in decision making, (4) use of the best scientific information available in decision making, and (5) implementation of adaptive management techniques. Using this approach, actions proposed for implementation within the INRMP include initiation of a prescribed burn program that aims to

duplicate the historic wildfire frequencies, targeting approximately 100 acres per year outside the Secure Area for grassland management and habitat improvement; management of black-tailed prairie dogs (BTPD) to minimize conflicts with the military mission (removal of prairie dogs from areas of conflict, rehabilitation of removal areas, installation of visual barriers and predator perches, restriction of colony expansion, and provision of suitable habitat for prairie dogs on Base); noxious weed control using physical, biological, or chemical methods; protection and conservation of the globally rare plains ragweed and other sensitive species; minor construction projects to minimize soil erosion; as well as monitoring efforts to support adaptive management.

No Action Alternative

The No Action Alternative is the continued implementation of the natural resources management objectives and practices currently conducted at Schriever AFB. Existing natural resource management areas of emphasis include prevention of soil erosion, protection of wetland areas, watershed protection, maintenance of biodiversity within the shortgrass prairie, monitoring of BTPD populations, grazing, grounds maintenance, pest control, and urban forestry. Under the No Action Alternative, control of rapidly expanding BTPD populations that are encroaching on the Secure Area and initiation of prescribed burning in support of both minimizing the risk of wildland fire and enhancing natural resource management would not be implemented at Schriever AFB.

Limited Action Alternative

Small-scale, short-duration grazing in well-defined areas represents a limited action alternative to implementing a prescribed burn program for grassland management. The Base's shortgrass prairie historically supported livestock grazing. A review in January 2003 by the Natural Resources Conservation Service documented very low production as a result of drought conditions, declines in species diversity, and trends toward decreasing condition of vegetation with increased possibility of invasion by noxious weeds, other undesirable species, and increased erosion. As of 2004, livestock grazing ceased entirely. With increased precipitation levels, however, the rangeland may again accommodate small-scale grazing for control of noxious weeds in areas designated by the Natural Resource Manager where or during periods when prescribed burns may not be feasible.

Environmental Effects

The environmental effects of the Proposed Action, No Action, and Limited Action Alternatives are summarized in the following table. Resources evaluated in the Environmental Assessment include land use; air resources; geological resources (geology, topography, and soils); water resources (groundwater, surface water, and floodplain); and biological resources (vegetation, wildlife, threatened and endangered species [TES], wetlands, and noxious weeds).

Comparison of Alternatives

Resource	No Action	Proposed Action	Limited Action
Land Use	Continued expansion of BTPD would negatively impact current land use in developed areas of the Base and limit future land use for military housing.	Positive effects on the Installation's ability to sustain military land use.	Increased public access to the Base by individuals with leases for livestock grazing on range.
Air Resources	Baseline conditions would remain unchanged.	Prescribed burns (100 acres annually) would have short-term impacts on local air quality and visibility. Estimated emissions would not exceed the NAAQS or CAAQS within the relatively large area in which the emissions would occur and given dispersive meteorological conditions. By duplicating the historic wildfire frequencies of the shortgrass prairie, prescribed burns will create positive effects by increasing biodiversity and facilitating control of invasive species.	Baseline conditions would remain unchanged.
Geological Resources	Baseline conditions would remain unchanged.	Positive effects from avoiding construction activities in the soil types and on slopes identified as having severe constraints, maintaining a 100-foot buffer along the intermittent drainages, identifying and implementing erosion control measures, and installing a monitoring system to record storm events.	Small-scale, short-duration grazing in well-defined areas for grassland management is not likely to lead to further degradation of native vegetation and topsoil or an increased possibility of erosion. Soil water-retention capabilities also are unlikely to be impacted.
Water Resources	Baseline conditions would remain unchanged.	Positive effects from avoiding development in the 100-year floodplain, intermittent streams, and ephemeral streams as well as implementing other BMPs.	Small-scale, short-duration grazing is unlikely to impact soil water-retention capabilities.
Biological Resources	Shortgrass prairie may decline as options are more limited for management of noxious weeds.	<u>Vegetation</u>: Positive effects from implementing prescribed burns that aim to duplicate historic wildfire frequencies of the shortgrass prairie, a fire-adapted system, namely increasing native species' biodiversity and controlling invasive species. Until effects over subsequent growing seasons can be studied at the plot level, prescribed fire will be excluded from areas inhabited by the globally rare plains ragweed. Routine monitoring will facilitate knowledge of other TES that may become established.	Small-scale, short-duration grazing in well-defined areas may provide control for noxious weeds; however, such efforts must be carefully monitored to prevent declines in species diversity and trends toward decreasing condition of vegetation with increased possibility of invasion by noxious weeds, other undesirable species, and increased erosion.

		Wildlife: Management actions will maintain the integrity of wetland habitats for migratory birds and maintain urban forest habitat for other bird species. Populations will be enhanced by the sustainability and enhancement of native habitats. Prescribed burns will be conducted outside the nesting season for migratory birds to avoid impacts. While BTPD populations will be reduced in areas that conflict with the military mission, reductions are not significant to overall species populations. BTPD removal will be undertaken during a period when burrowing owls are not present. Nearly one-half of the Base will remain available for BTPD habitation and species associated with their burrows (e.g., burrowing owls). **TES:** As there are no threatened or endangered species known to exist on Schriever AFB, there will be no effect to TES.	

Finding Of No Significant Impact (FONSI)

Pursuant to the NEPA, CEQ regulations, and 32 CFR 989, I conclude that the environmental effects of the Proposed Action are not significant and, therefore, an environmental impact statement will not be prepared. An availability notice for public review was published in the Colorado Springs Gazette from January 23-25, 2007, for a 30-day review period. A hard copy of the EA and draft FONSI was placed in the East Library and Information Center, Penrose Library, and the Penrose Public Library Local History Desk in Colorado Springs, Colorado.

CARY C. CHUN
Colonel, USAF
Commander, 50th Space Wing

22 Jan 09
Date

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ACRONYMS AND ABBREVIATIONS

AFB	Air Force Base
AFI	Air Force Instruction
AFPD	Air Force Policy Directive
AFSPC	Air Force Space Command
AQCC	Air Quality Control Commission
BCC	Birds of Conservation Concern
BMP	Best Management Practice
CA	Cooperative Agreement
CAA	Clean Air Act
CDPHE	Colorado Department of Public Health and Environment
CDOW	Colorado Division of Wildlife
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CNHP	Colorado Natural Heritage Program
CO	Carbon Monoxide
COE	Corps of Engineers
DoD	Department of Defense
DoDI	Department of Defense Instruction
EA	Environmental Assessment
EIS	Environmental Impact Statement
EO	Executive Order
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FONSI	Finding of No Significant Impact
ICRMP	Integrated Cultural Resources Management Plan
INRMP	Integrated Natural Resources Management Plan
MBTA	Migratory Bird Treaty Act
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NWS	National Weather Service

SAIA	Sikes Act Improvement Act
SASEM	Simple Approach Smoke Emissions Model
SMP	Smoke Management Plan
SIP	State Implementation Plan
TES	Threatened and Endangered Species
TNC	The Nature Conservancy
USAF	United States Air Force
U.S.C.	United States Code
USFWS	U.S. Fish and Wildlife Service
WFMP	Wildland Fire Management Plan

1.0 PURPOSE AND NEED FOR ACTION

This section of the Environmental Assessment (EA) presents the purpose and need for implementation of the Integrated Natural Resources Management Plan (INRMP) for Schriever Air Force Base (AFB), Colorado. Following an introduction, the purpose and need for the proposed action is discussed with an overview of the regulatory framework and public review process.

1.1 INTRODUCTION

The U.S. Air Force (USAF) proposes to implement the Schriever AFB INRMP, revised in 2006, by carrying out the projects recommended by the plan for conserving and protecting natural resources in support of the military mission for present and future generations. The National Environmental Policy Act (NEPA) of 1969, 42 United States Code (U.S.C.) § 4231 et seq. as amended, requires federal agencies to take into consideration the potential environmental consequences of proposed actions in their decision-making process. The intent of NEPA is to protect the environment by providing an assessment of alternative actions and providing the opportunity for public comment on federal actions that have the potential to impact the environment. To implement and oversee federal policy in this process, the Council on Environmental Quality (CEQ) established under NEPA has issued *Regulations for Implementing Procedural Provisions of the National Environmental Policy Act* (40 Code of Federal Regulations [CFR] § 1500-1508). These regulations specify that an EA be prepared to (1) briefly provide sufficient evidence and analysis for determining whether to prepare an environmental impact statement (EIS) or a finding of no significant impact (FONSI); (2) aid in an agency's compliance with NEPA when no EIS is necessary; and (3) facilitate the preparation of an EIS when one is necessary. This EA adheres to procedures set forth in the CEQ regulations and in 32 CFR 989 (*Air Force Environmental Impact Analysis Process*), which provides the requirements used to ensure USAF compliance with the National Environmental Policy Act.

1.2 PURPOSE AND NEED FOR PROPOSED ACTION

The proposed action meets statutory requirements under the Sikes Act Improvement Act (SAIA) of 1997, U.S.C., Title 16, Conservation, § 670a et seq., Public Law 105-85, Div B. Title XXIX, November 18, 1997, 111 Stat 2017-2019, 2020-2022. In November 1997, the Sikes Act, 16 U.S.C. § 670a et seq., was amended to require the Secretary of Defense to carry out a program to provide for the conservation and rehabilitation of natural resources on military installations. To facilitate this program, the amendments require the Secretaries of the military departments to prepare and implement INRMPs for each military installation in the United States, unless the absence of significant natural resources on a particular installation makes preparation of a plan for that installation inappropriate. Implementation of the natural resources management activities addressed in the INRMP is required by the SAIA.

The INRMP ensures compliance not only with the SAIA but also with Department of Defense (DoD) Instruction (DoDI) 4715.3, *Environmental Conservation Program*; Air Force Policy Directive (AFPD) 32-70, *Environmental Quality* (July 20, 1994); and Air Force Instruction (AFI) 32-7064, *Integrated Natural Resources Management* (September 17, 2004). The principal use of military installations is to ensure the preparedness of the Armed Forces. The SAIA requires an ecosystem management approach, taking into account mission requirements and other land use activities affecting the installation. To the extent that they are consistent with mission requirements, the INRMP provides for the following management activities:

- conservation and rehabilitation of natural resources on the military installation;
- sustainable multipurpose use of the resources to include hunting, fishing, trapping, and non-consumptive uses;
- 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 resource management goals and objectives and timeframes 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 subject to the requirements necessary to ensure safety and military security;
- enforcement of applicable natural resource laws (including regulations); and
- no net loss in the capability of military installation lands to support the military mission.

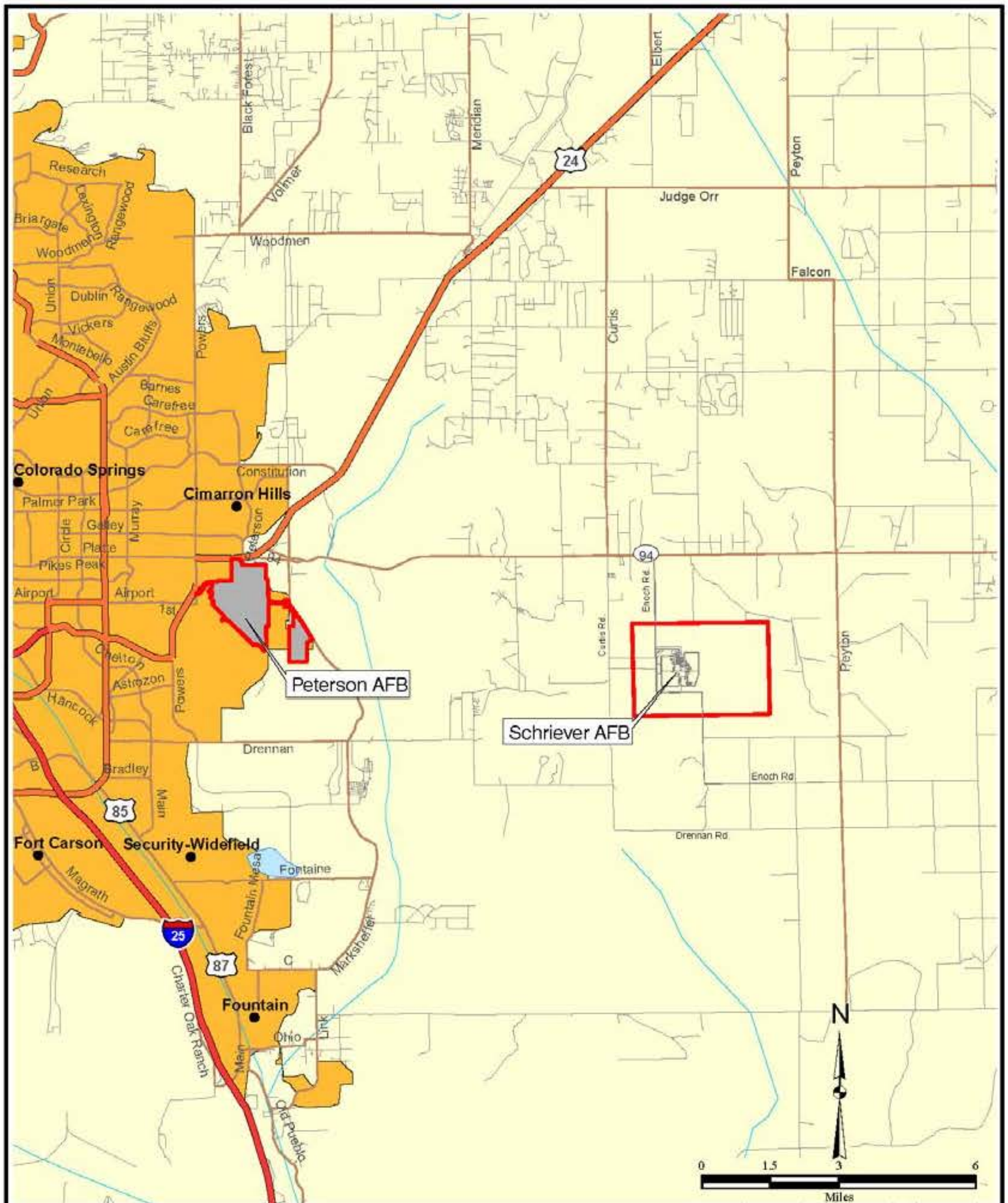
The 2001 Federal Wildland Fire Management Policy, to which DoD is a signatory agency, and AFI 32-7064 further require that Wildland Fire Management Plans (WFMP) be developed for Air Force installations with unimproved grounds that present a wildfire hazard as well as installations that use prescribed burns as a land management tool.

The purpose of the proposed action is to provide direction and focus for natural resources management at Schriever AFB, Colorado. The INRMP provides a comprehensive guide for protection, management, and development of the Base's natural resources and a means of coordinating natural resources management with other elements of the Base's planning processes. The INRMP is based on an interdisciplinary approach to ecosystem management that allows for sustainable use of Schriever AFB in support of its military mission. Ecosystem management includes (1) a shift from single species management to ecosystem management, (2) development of partnerships with stakeholders to achieve shared goals, (3) public involvement in decision making, (4) use of the best scientific information available in decision making, and (5) implementation of adaptive management techniques. Using this approach, actions proposed for implementation within the INRMP include prescribed burns for grassland management and habitat improvement, black-tailed prairie dog (BTPD) management, noxious weed control, plains ragweed and other sensitive species management, minor construction projects, as well as monitoring efforts. The INRMP will be reviewed annually to evaluate the effectiveness of management approaches and to propose modifications as necessary in support of adaptive management. A comprehensive review will be undertaken in 5 years.

In preparing the INRMP, as required by the SAIA, Schriever AFB has worked in cooperation with the U.S. Fish and Wildlife Service (USFWS) and the Colorado Division of Wildlife (CDOW) to ensure the plan reflects the mutual agreement of these parties concerning conservation, protection, and management of fish and wildlife resources on the Base. As required by the SAIA, the INRMP will be provided for public comment.

1.3 LOCATION OF THE PROPOSED ACTION

Schriever AFB occupies 3,840 acres in central El Paso County, Colorado. It is situated 10 miles east of Peterson AFB and approximately 16 miles east of downtown Colorado Springs, Colorado (Figure 1). Highway 94 provides primary access to the Base.



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Map Source: HydroGeoLogic, Inc.
GIS Database, 2004

HGL
HydroGeoLogic, Inc.

State of Colorado

Colorado Springs

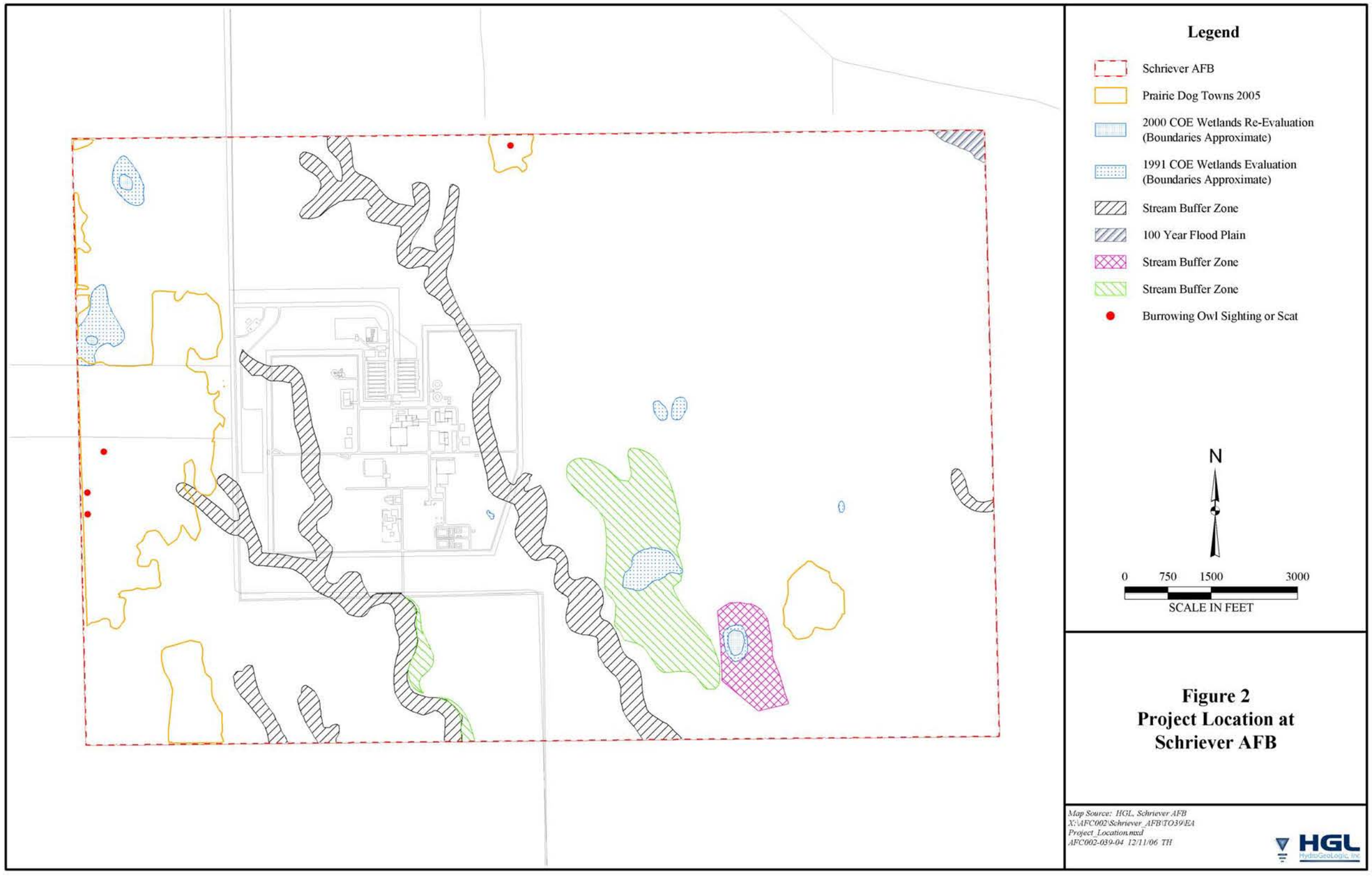
Figure 1
Vicinity Map
Schriever AFB, CO

Approximately 15 percent of the property at Schriever AFB has been developed in support of the military mission to operate a worldwide network of dedicated missile warning sensors and space surveillance sensors through the Air Force Space Command (AFSPC). The remaining 85 percent is used as a buffer for security of sensitive areas, separation between areas that have undesirable functional relationships, and reserves for future development. Due to the nature of mission activities, public access to the Base is restricted for security purposes.

The land comprising Schriever AFB contains two natural ecosystems—shortgrass prairie and wetlands. Species of primary concern include the black-tailed prairie dog (*Cynomys ludovicianus*) and burrowing owl (*Athene cunicularia*), which are associated with similar habitat, as well as the plains ragweed, a globally rare species, and migratory birds. Noxious plant species on Base are difficult to control and pose an invasive threat to the native vegetation. Land immediately surrounding the Base is largely used as rangeland for cattle grazing, but it also supports a variety of wildlife species such as desert cottontail (*Sylvilagus audubonii*), pronghorn (*Antilocapra americana*), western meadowlark (*Sturnella neglecta*), and lark bunting (*Calamospiza melanocorys*). The potential for wildfire is a concern (Figure 2).

In recent years, adjacent black-tailed prairie dog communities crossed the Base boundary and expanded rapidly. Three separate BTPD towns occupying approximately 62 acres were identified in 2002. Approximately 129 acres in five towns were occupied in 2004 (Young, 2005), and the most recent mapping shows approximately 275 acres are occupied in seven towns (Figure 3). Since 2005, BTPD populations have experienced more modest growth as a result of increased vegetation height limiting expansion and providing cover for natural predators.

As a species of state special concern, BTPD populations on Base must be managed not only to promote future viability of the species but also to prevent their expansion into the Secure Area, where problems for maintaining the security systems may arise, as well as encroachment into areas of high levels of human use to lessen the risk to human health in the event of a disease outbreak.


Legend
Schriever AFB
Prairie Dog Towns 2005
2000 COE Wetlands Re-Evaluation (Boundaries Approximate)
1991 COE Wetlands Evaluation (Boundaries Approximate)
Stream Buffer Zone
100 Year Flood Plain
Stream Buffer Zone
Stream Buffer Zone
Burrowing Owl Sighting or Scat
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SCALE IN FEET
Figure 2
Project Location at
Schriever AFB
Map Source: HGL, Schriever AFB
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- Schriever AFB
- Prairie Dog Towns 2002
- Prairie Dog Towns 2004
- Prairie Dog Towns 2005

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SCALE IN FEET

Figure 3
Black-Tailed Prairie Dog Expansion

Map Source: HGL, Schriever AFB, Prairie Ecosystems Research Group 2005
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2.0 DESCRIPTION OF ALTERNATIVES

This section of the EA describes the activities involved in implementing the Proposed Action, No Action Alternative, and Limited Action Alternative. Each alternative must integrate natural resources management with Schriever AFB's military mission in a manner that ensures military preparedness and meets the requirements of the SAIA and other conservation laws that regulate natural resources on federal lands. Management areas relevant to the natural resources program at Schriever AFB and potentially impacted by the proposed action, no action, and limited action alternatives include wildlife management; threatened and endangered species (TES) management; watershed management; wildland fire management; integrated pest management; and cultural resources management.

2.1 PROPOSED ACTION

The Proposed Action is to fully implement the Schriever AFB INRMP, revised in 2006, consistent with the military use of the property and the goals and objectives established in the SAIA. Through an ecosystem-based management approach, the INRMP allows for sustainable use of the Base's natural resources in support of its military mission while meeting stewardship and legal requirements. Eight goals guide natural resources planning and management at Schriever AFB. These goals as well as their associated objectives and projects are described in Appendix A. Some recommendations represent routine day-to-day duties for the conservation and protection of natural resources. Other recommendations represent specific projects to be implemented with the assistance of outside stakeholders or contractor personnel.

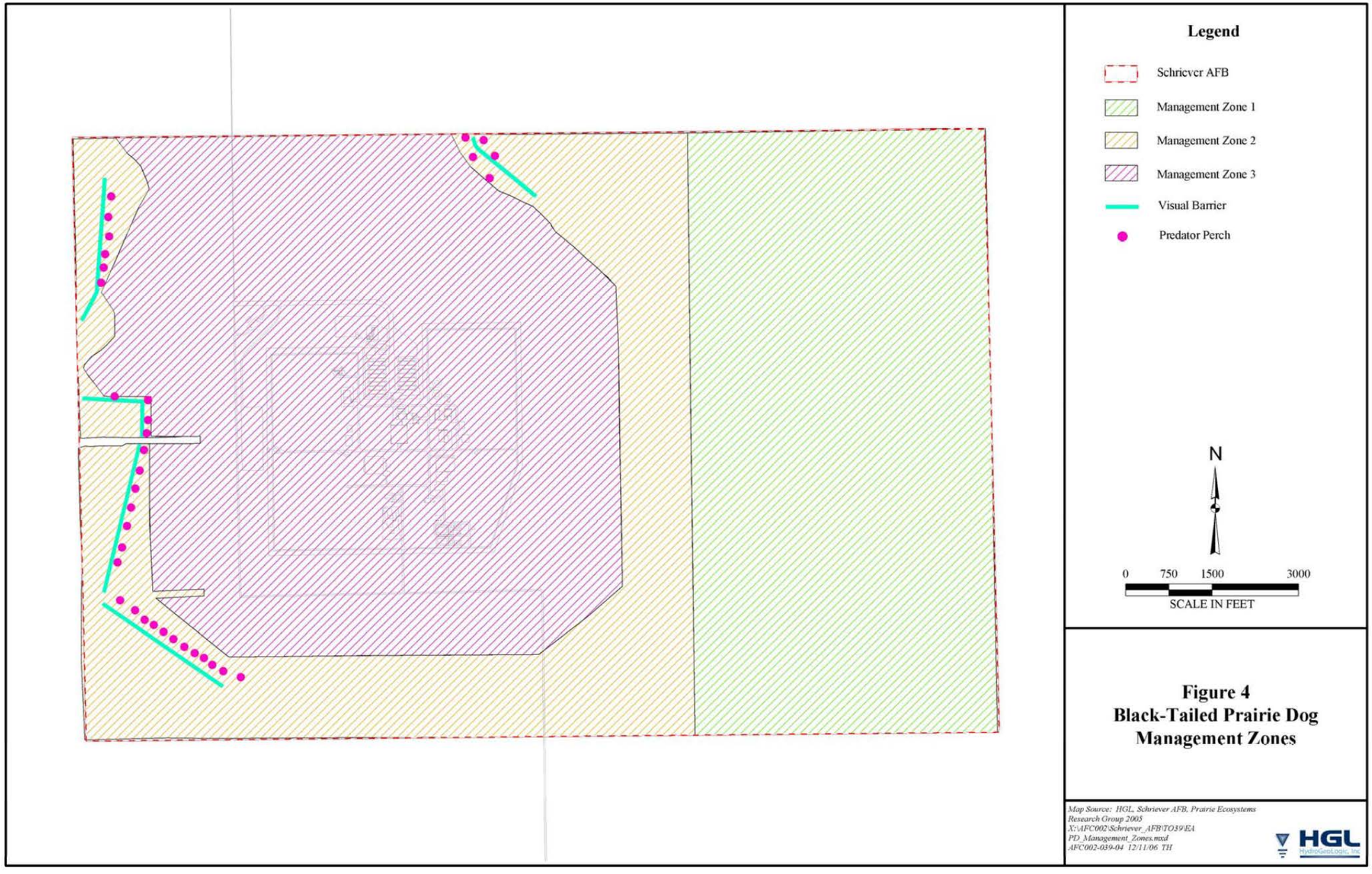
The Schriever AFB INRMP incorporates the following seven operational component plans:

- Fish and Wildlife Management Plan
- Wetlands and Floodplains Plan
- Regional Landscape and Water Conservation Plan
- Urban Forest Management Plan
- Integrated Pest Management Plan
- Invasive Species Control Plan
- Wildland Fire Management Plan

Primary issues addressed in the INRMP include black-tailed prairie dog management and grassland management using prescribed burns.

To manage black-tailed prairie dog populations in consideration of both the species and military mission, Schriever AFB has been divided into areas based on the following three levels of management: (1) maintain as BTPD habitat, (2) maintain as a buffer between active BTPD colonies and those areas where black-tailed prairie dogs are not desired, and (3) maintain as BTPD-free area (Figure 4). Management will prevent BTPD expansion into the Secure Area, as well as encroachment into areas of human habitation or high levels of human use to lessen human health risks in the event of a disease outbreak. Planned management efforts consist of removing prairie dogs from areas that conflict with the military mission, rehabilitation of removal areas, installation of visual barriers and predator perches, restriction of colony expansion, and provision of suitable habitat for prairie dogs.

Black-tailed prairie dog removal can be achieved by either lethal or non-lethal means. Lethal removal is most often achieved through poisoning campaigns using 2 percent zinc phosphide baits, which are ingested, or aluminum phosphide pellets and carbon monoxide (CO) gas cartridges placed in the burrows as fumigants. These three methods are legal in Colorado; however, zinc phosphide and aluminum phosphide are restricted use agents under Environmental Protection Agency (EPA) guidelines and must be applied by a certified


Legend
Schriever AFB
Management Zone 1
Management Zone 2
Management Zone 3
Visual Barrier
Predator Perch
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SCALE IN FEET
Figure 4
Black-Tailed Prairie Dog
Management Zones
Map Source: HGL, Schriever AFB, Prairie Ecosystems Research Group 2005
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technician. Fumigants are most effective when used in moist soils in early spring. Gas cartridges are general use toxicants. Use of handheld devices, including the Rodenator Pro™, designed to deliver into burrows and then ignite a mixture of gases to control animals through concussive force and collapsing of burrows is also allowed in the state of Colorado for controlling black-tailed prairie dog populations (CDOW, 2006). The collapsing of burrows achieved through this method also prevents another animal from reinvading the system. Control efforts on public lands must be undertaken between June 15 and February 28.

Non-lethal removal can be achieved by live trapping and relocation of animals. The relocation of prairie dogs in Colorado is regulated by the CDOW. In addition, Colorado State law (C.R.S. 35-7-203) provides that no person shall release prairie dogs into a county other than that from which they were taken unless such person has obtained prior approval of the CDOW and the board of commissioners of the receiving county. Trapping is usually carried out using traditional wire-mesh live traps; however, in some cases, the prairie dogs have been flooded out of their burrows using water and detergent, and caught by hand as they emerge, or have been sucked out of the burrow using a truck-mounted vacuum system. There have been very few studies to test methods of non-lethal control, either for complete removal of a population or to limit the size of an existing town (Young, 2005).

Similarly, to reduce threats to Base personnel and mission from wildfire potential as well as protect and enhance natural resources through prescribed burns, a Wildland Fire Management Plan has been developed (HGL, 2005). The WFMP establishes responsibilities and procedures for prescribed fire management and the prevention, preparedness, and suppression of grassland fires. It designates suppression priorities and prescribed fire emphases for the cantonment area (i.e., Secure Area), security emphasis areas (i.e., buffers and areas for potential base expansion), and natural resource management areas (i.e., undeveloped areas of Base) as illustrated in Figure 5.

The prescribed fire program will be the primary means of grassland management with some herbicide use and mowing in areas where fire is impractical or unsafe. Prescribed fire has the potential to increase biodiversity and facilitate control of invasive species. This program will aim to duplicate the historic wildfire frequencies of the shortgrass prairie (i.e., less than 35 years). Of the 3,840 total acres of Schriever AFB, approximately 3,200 acres are grassland vegetation. An average of 100 acres will be burned annually or, more realistically, 1,000 acres will be burned per decade since there may be years when prescribed burning is inadvisable or not possible due to drought conditions and bans. Permits will be secured from the Colorado Department of Public Health and Environment (CDPHE) as well as the El Paso County Department of Health and Environment before prescribed burns are carried out. Long-term monitoring will establish whether a more aggressive program is warranted.

As there is no documented information on the effects of fire on the plains ragweed, prescribed fire will be excluded from areas known to contain this species. An alternative to exclusion would be to burn a small plot to measure effects over subsequent growing seasons. Further, prescribed burns will be conducted outside the nesting season for migratory birds. As prescribed burns have the potential to increase prairie dog expansion due to reductions in vegetative cover, burn locations must be carefully considered until data on such effects can be obtained at Schriever AFB.

Other issues addressed in the INRMP include control of noxious weeds using physical, biological, or herbicide methods; protection and conservation of the globally rare plains ragweed and other sensitive species; minor construction

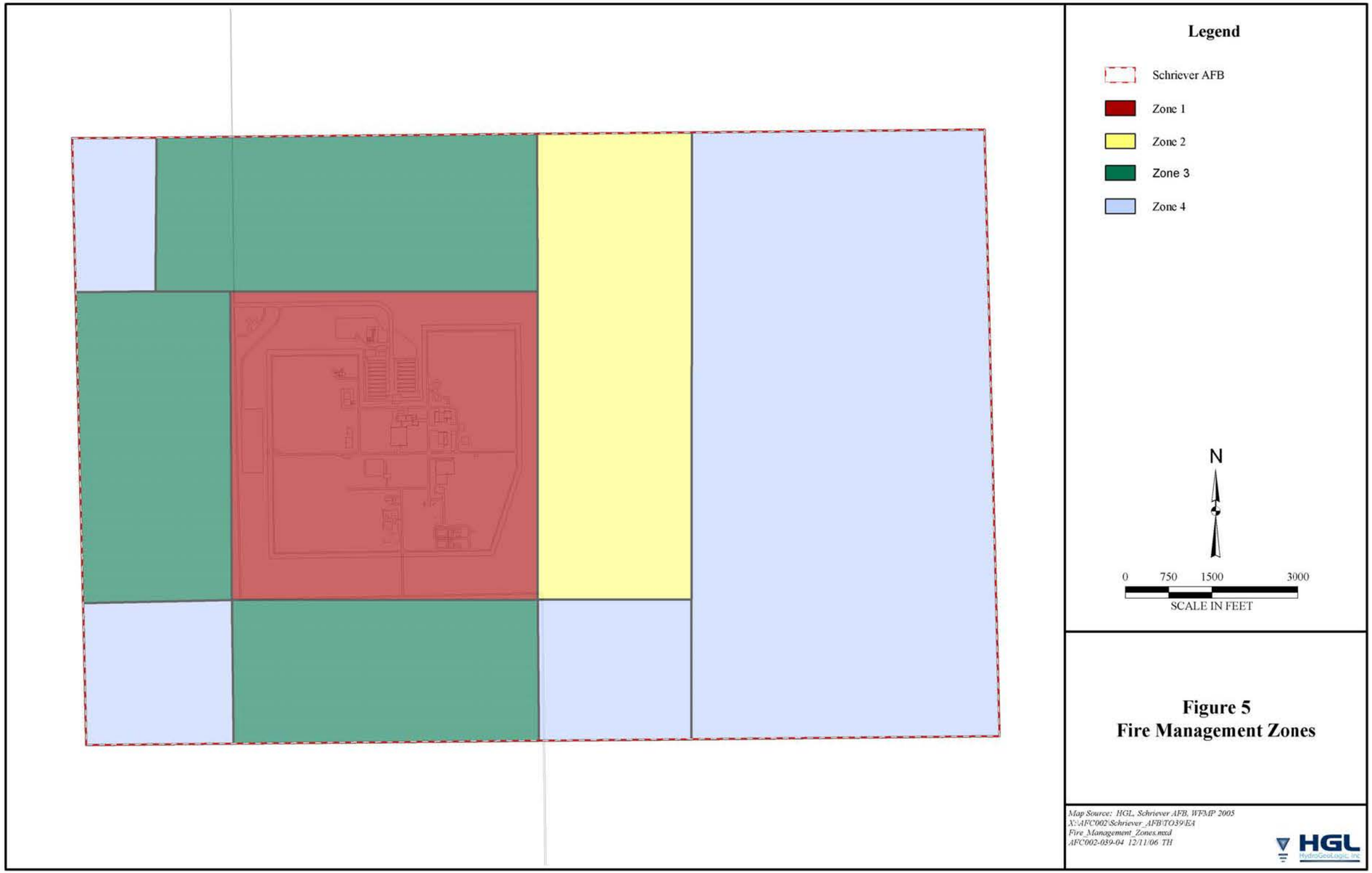
Legend
Schriever AFB
Zone 1
Zone 2
Zone 3
Zone 4
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Figure 5
Fire Management Zones
Map Source: HGL, Schriever AFB, WFMP 2005
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projects to minimize soil erosion; as well as monitoring efforts to support adaptive management.

2.2 NO ACTION ALTERNATIVE

The No Action Alternative is the continued implementation of the natural resources management objectives and practices currently conducted at Schriever AFB. Existing natural resource management areas of emphasis include prevention of soil erosion, protection of wetland areas, watershed protection, maintenance of biodiversity within the shortgrass prairie, monitoring of BTPD populations, grazing, grounds maintenance, pest control, and urban forestry. Under the No Action Alternative, control of BTPD populations that are encroaching on the Secure Area and prescribed burning in support of both wildland fire and natural resource management would not be implemented.

2.3 ALTERNATIVE ACTIONS CONSIDERED

Small-scale, short-duration grazing in well-defined areas represents a limited action alternative to implementing a prescribed burn program for grassland management.

Similar to prescribed burns, livestock grazing can reduce fuel loads, decreasing the potential for wildland fire, and control some noxious weeds. The shortgrass prairie at Schriever AFB historically supported livestock grazing. To accommodate the expansion of the Base's mission, a number of acres were removed from the grazing leases over the years. In 2000, the undeveloped land was divided into four tracts and leased to local ranchers for livestock grazing. The leases totaling 2,460 acres spanned a period of 5 years, beginning on 1 April 2000 and ending on 31 March 2005. A review of the grazing land at Schriever AFB in January 2003 by the Natural Resources Conservation Service documented very low production as a result of drought conditions, declines in species diversity, and trends toward decreasing condition of vegetation with increased possibility of invasion by noxious weeds, other undesirable species, and increased erosion. In consideration of these findings and sustained impacts, as well as installation of the perimeter fence for security purposes, use of rangeland ceased in tracts 2 and 3 in 2003 and in tracts 4 and 5 in 2004. Since livestock grazing has ceased, increases in the height of vegetation have the potential to limit the expansion of BTPD colonies through reduced visibility, increased cover for predators, and dispersal inhibition.

With increased precipitation levels in recent years, however, the rangeland comprising Schriever AFB may again accommodate small-scale grazing for control of noxious weeds in areas designated by the Natural Resource Manager where or during periods when prescribed burns may not be feasible. Small animals such as goats or sheep logistically would be more amenable to grazing on Base given the perimeter fence and limited access points.

3.0 AFFECTED ENVIRONMENT

This section of the EA presents the baseline against which potential environmental consequences from implementation of the Schriever AFB INRMP are assessed. Affected environment discussions are provided for five topics that are the subject of the impact assessment in Section 4.0. In compliance with guidelines contained in the NEPA and CEQ regulations, the topic areas were selected based on the potential to be impacted by implementation of the proposed action and alternatives described in Section 2.0.

Implementation of the proposed action or alternatives would not adversely impact environmental justice, noise, socioeconomics, visual resources, solid and hazardous waste, health and public safety, or cultural resources. None of the alternatives would impact minority or low-income populations; therefore, no impacts to environmental justice would be expected. Noise generated from natural resources management activities would not be above background levels. None of the alternatives would result in a long-term local or regional socioeconomic impact to population and income or employment. Smoke from prescribed burns has the potential to impact visual resources; however, because of the short-term nature of the impact, visual resources will not be further analyzed. None of the alternatives would impact solid and hazardous waste. Health and public safety issues associated with prescribed burns are addressed under Air Resources. There are no known cultural resources eligible for the National Register of Historic Places at Schriever AFB.

3.1 LAND USE

Land use at Schriever AFB is designated as improved, semi-improved, or unimproved. Of 3,840 total acres, there are approximately 340 acres of improved lands, 300 acres of semi-improved lands, and 3,200 acres of unimproved lands on the Base. The improved areas are located primarily within the restricted zone, and consist of office space, satellite tracking facilities, the Central Utilities Plant, and maintenance facilities. Improved areas outside the restricted zone include facilities that are not considered mission essential but that support base operations. These facilities include the visitors' center, the fitness center, administrative facilities, and warehouse buildings south of the restricted area. Semi-improved land is located both inside and outside the restricted zone. These areas provide space for vehicle parking and the athletic fields. The unimproved areas serve as a buffer for security of sensitive areas, separation between areas that have undesirable functional relationships, and reserves for future development. Due to the nature of mission activities, public access to the Base is restricted. Land immediately surrounding the Base is largely used as rangeland for livestock grazing. Approximately one-half mile west of Schriever AFB across Curtis Road, a 150-acre residential development is under construction.

3.2 AIR RESOURCES

The air quality of the affected environment is determined by the prevailing meteorological conditions, the types and amounts of pollutants emitted into the atmosphere, and the size of the topography of the air basin. Air quality standards also are discussed in this section.

3.2.1 Climate and Meteorology

Schriever AFB is located near the border of the Great Plains and the Front Range of the Rocky Mountains, which results in a moderate semi-arid climate. Average temperatures for winter and summer are 31.0 degrees Fahrenheit (ºF) and 68.4ºF, respectively. Annual precipitation averages 16.1 inches, with approximately 85 percent of the precipitation occurring between April and September during the growing season. The wettest and driest months are August and January, respectively. August averages 2.93

inches of precipitation, and January averages 0.30 inches of precipitation. In an average year, 40.7 inches of snow occurs (WRCC, 2006). Large snow drifts may occur when snow is accompanied by wind. Humidity is low with an annual average of 35 percent during the mid-afternoon and 63 percent at dawn. The prevailing wind is from the north at night, while south-southeast winds prevail during the day. Wind speeds range from 8 to 12 miles per hour, with the highest speeds occurring in the spring and the lowest in late summer and early fall. Approaching winter storms generally move either from north to south or from west to east. Severe thunderstorms occur in the late spring to summer months along the Front Range and can result in flash flood conditions (greatest potential in July and August) and occasional tornadoes (peak in June). Lightning from such storms as well as human activity are the primary causes of fire. The wildland fire season lasts from April through October, although fires can occur whenever snow is absent.

3.2.2 Air Quality Regulations and Authorities

The Clean Air Act (CAA) requires air pollutant emission sources to keep detailed records of emissions to aid the state in complying with National Ambient Air Quality Standards (NAAQS). NAAQS define the maximum allowable concentrations of pollutants that may be reached but not exceeded within a given time period. Criteria pollutants for which NAAQS have been developed include carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), lead (Pb), particulate matter (PM_{10} and $PM_{2.5}$), and sulfur dioxide (SO_2). All areas of the country are classified as attainment, nonattainment, or unclassifiable. Areas that meet the national primary and secondary ambient air quality standards are classified as attainment. Any area that does not meet (or that contributes to ambient air quality in a nearby area that does not meet) the national primary or secondary ambient air quality standard for any criteria pollutant is designated as nonattainment. Areas in nonattainment of ambient air quality standards must develop a Nonattainment Plan to achieve attainment. These plans are usually a revision of the State Implementation Plan (SIP) for achieving air quality standards.

3.2.3 Regional Air Quality

Colorado Springs is located in Colorado Air Quality Control Region 4, which includes El Paso, Park, and Teller Counties. Colorado Springs has been designated by the Environmental Protection Agency as "attainment" for meeting all federal NAAQS. It is, however, under a maintenance plan (effective October 25, 1999) for 10 years to demonstrate compliance with the carbon monoxide (CO) standard. Under this maintenance plan, the Colorado Springs Maintenance Area has a CO budget of 270 tons per day (98,550 tons per year) (CDPHE, 2003).

The ambient air quality of El Paso County varies with local meteorological conditions. During the winter months when temperature inversions and limited dispersion conditions occur, county air quality can be poor because of the higher CO concentrations associated with roadway traffic in the Colorado Springs area. Particulate impacts also can be higher in the winter, when soil moisture and ground cover are at a minimum, and high wind speeds generate windblown dust. Sand on roadways exacerbates this condition.

3.2.4 Emissions Sources at Schriever AFB

Activities with the potential to impact air quality at Schriever AFB include utilities or power generation (e.g., steam, hot water, natural gas, and emergency electrical power), fuel handling, hazardous chemical usage, vehicle emissions, fugitive dust from ground disturbances resulting from construction, and prescribed burning. Table 1 provides data from the air emissions inventory conducted at Schriever AFB for calendar year 2005 (ENSR, 2006). Actual emissions were calculated based on activity data, including

Table 1. 2005 Basewide Emissions Summary for Criteria Pollutants
(values in tons per year)[1]

Emissions	PM_{10}	SO_x	NO_x	VOCs	CO	HAPs
Stationary Sources, Actual	0.72	1.32	15.03	7.36	17.62	0.618
Stationary Sources, Potential	9.36	18.40	165.45	50.16	701.88	1.205

Source: ENSR, 2006

[1] These values include both permitted and non-permitted sources.

consumption of natural gas, propane, and diesel fuel. Potential to Emit emission estimates were based on existing federally enforceable permit limits. Emissions at the Base are well below the limits established for these sources.

The state Air Quality Division has determined that Schriever AFB is not a major source of hazardous air pollutants (HAP) and that the Base qualifies as a synthetic minor source due to self-imposed operational limits. This exempts Schriever AFB from Titles III and V of the federal CAA Amendments of 1990 (CDPHE, 2005a). The sources of air emissions covered under the synthetic-source air emissions permit, all considered stationary sources, include consumption of natural gas and diesel fuel in boilers and consumption of diesel fuel in generators. Smoke from prescribed fires will not affect the established limits in this permit.

The primary sources of air pollutants near the base are mobile exhaust sources (vehicular traffic) and fugitive dust (from agricultural and construction activities). There are currently no air permitting requirements for mobile sources at the Base. The regulations applicable to mobile sources are primarily state regulations intended to reduce emissions from roadway vehicles. All personal and government vehicles must comply with El Paso County annual emission testing requirements. For construction, demolition, and burning projects on Base, emission control plans must be developed and permits secured per the El Paso County Department of Health and Environment *Air Quality Regulations for Fugitive Particulate Matter, Demolition, Sandblasting, and Open Burning* (EPCDHE, 2001).

Prescribed burning at Schriever AFB is subject to air quality regulations of the Colorado Department of Public Health and Environment as well as the El Paso County Department of Health and Environment, and permits must be secured from each agency before prescribed burns may be carried out. Under the provisions of the Colorado Air Quality Control Commission (AQCC) Regulation No. 9 (*Open Burning, Prescribed Fire and Permitting*), Schriever AFB would not be considered a "significant user of prescribed fire" since less than 10,000 acres of grassland are managed. As such, a formal Planning Document is not required.

Permits for individual prescribed burns are required under the following scenario:

- One permit per year will be obtained even if several units will be burned.
- Colorado Smoke Management Plan (SMP) forms A, B, and C will be submitted by the Wildland Fire Program Manager at least 30 days before the burn is scheduled.
- The Simple Approach Smoke Emissions Model (SASEM) will be used to estimate emissions based on what will be done in one day and that information must be attached to the SMP forms.

- Form SMP D will be submitted by the Wildland Fire Program Manager the day of the scheduled burn at least 2 hours in advance.

- On the day of the burn, a spot weather forecast will be obtained by the Burn Boss or the Wildland Fire Program Manager from the National Weather Service (NWS) Office in Pueblo.

- When the burn is completed, Form SMP E is submitted by the Wildland Fire Program Manager.

- At the end of the year, Form SMP F is submitted to show the total acres burned for the year. The acres shown on Form SMP F should equal those shown in the total of all SMP E forms submitted for the year.

Permits for prescribed burning also must be obtained from the El Paso County Department of Health and Environment. An inspector from El Paso County must make a site visit before the burn can occur. Upon notification that a burn is to take place, the Department will determine if open burning will be allowed based on current air quality levels. A permit is good for 6 months but can be extended for a year. A copy of the SASEM run should be sent to the Department.

Prescribed burning of areas in excess of 5 acres for the purpose of forest management or wildfire hazard mitigation will be permitted under the following conditions (EPCDPHE, 2001):

- Each Open Burning permit will have a site evaluation prior to issuance of the permit to assess public health impacts. Burning will occur only on GOOD or FAIR days as determined by the Department.

- Ignition of prescribed burns may be conducted during the following times: two hours after sunrise until two hours before sunset, or during such periods of the day when a thermal inversion is not present.

- Prescribed burns will include only natural vegetation and organic debris generated during wild land mitigation.

- Feasible alternatives, other than burning, for disposal of the material do not exist.

- A detailed burn plan must be submitted and approved, including a smoke evaluation model (such as SASEM). No agency shall be required to complete a smoke evaluation model (SASEM) if they have submitted and received an Open Burn Permit approval from the Air Pollution Control Division under the terms of the SMP, Memorandum of Understanding. They are, however, required to obtain a local open burn permit from the Department.

- A Burn Boss must supervise Broadcast and Slash Pile burns.

3.3 GEOLOGICAL RESOURCES

Geological resources discussed in this section include geology, topography, and soils.

3.3.1 Geology and Topography

Schriever AFB is located at an elevation of approximately 6,200 feet above mean sea level and is situated on the western edge of the Denver Basin geologic formation. The underlying sediments consist of unconsolidated deposits eroded from the Rocky Mountains. The area is composed of sandy foothills and plains of low relief, and it is identified as the high plains of the Colorado Piedmont of the Great Plains Physiographic Province. The region is characterized by rolling grasslands that end at the eastern edge of the central Rocky Mountains.

Geologic hazards, such as landslides or active faults, are not known to exist in the vicinity of the Base. There is low to nonexistent risk of major damage from mass ground movement or seismic activity. Mineral resources are not known to exist in the area (EDAW, 1992), and it is not likely that they would be encountered during further development. Slopes greater than 10 percent pose a constraint to facility development as they are subject to severe soil erosion. Only small areas along a few drainages on the Base have slopes steeper than 10 percent.

3.3.2 Soils

Nine soil types consisting primarily of sandy loam, loamy sand, and silt loam textures have been identified at Schriever AFB. The Ascalon sandy loam is the predominant soil type, covering the southwestern two-thirds of the Base. The Bresser sandy loam is the second most abundant type, covering the majority of the northeastern one-third of the Base. Physical characteristics of each soil type are discussed in the Integrated Natural Resources Management Plan.

Two soil types pose moderate to severe constraints for building construction. The Ellicott loamy coarse sand located in an intermittent drainage south of the restricted area, is subject to flooding, and is therefore classified as having severe constraints for building development. The Keith silt loam is located southeast of the restricted zone near the center of the property and is classified as having a moderate constraint for building development due to frost action.

Windbreaks and other vegetation plantings are fairly well suited to the soils, but they must be protected from blowing sand and may require supplementary watering to become established due to the low water-holding capacity of the soil. The soil is rated as fair for wildlife habitat.

3.4 WATER RESOURCES

Water resources discussed in this section include groundwater, surface water, and floodplains.

3.4.1 Groundwater

The aquifers in the Schriever AFB region are shallow (from 25-100 feet below the surface) and consist of unconsolidated sediments with good water quality. Groundwater, in general, flows toward the south and east, beyond the Base.

The Base's water supply is provided by 12 wells in the Upper Black Squirrel Designated Groundwater Basin. These wells are owned and operated by the Cherokee Metropolitan Water District. The center of this aquifer is near the community of Ellicott, six miles east of the eastern base boundary. Groundwater in the central portion of this aquifer is suitable for all uses (USAF, 2002).

A second aquifer underlying the base is the Dawson aquifer. At a depth of 100 to 150 feet, it has not been extensively developed as a source of water. The aquifer's water quality is good and suitable for most uses. The capacity of the aquifer has been estimated at 38 million acre-feet of water in the upper 500 feet of saturated thickness. Small-scale usage of this water source has consisted of or consists of stock watering and domestic supply (EDAW, 1992). A number of wells on the Base are completed in the Dawson aquifer, but their use is limited.

3.4.2 Surface Water

Schriever AFB is located in a semi-arid environment and contains no perennial or intermittent streams. During or after precipitation or snowmelt, flow in the dry stream beds on Base is not predictable. These drainages have sandy bottoms, support little vegetation, and are highly susceptible to water erosion. Culverts have been constructed in the drainages on the improved and semi-improved land. Riprap and concrete

aprons have been placed at the culvert openings and at discharge points to protect these structures from erosive flows. To reduce high flow water velocity, Schriever AFB has installed five erosion control dams north of the Secure Area. Three small (i.e., less than 1 acre) wetlands are described in Section 3.5.4.

3.4.3 Floodplains

One floodplain, encompassing about 8.5 acres, is located in the extreme northeastern corner of the Base. A 100-year flood zone is a land area having a one percent chance of being flooded during a given year. Potential development in the floodplain is subject to the provisions of Executive Order 11988, which requires Federal agencies to look at all practical alternatives to avoid impacts to floodplains. AFI 32-7064 lists three criteria that must be met for the USAF to construct in a floodplain: evaluate and document the potential effects of such actions through the environmental impact analysis process; consider alternatives to avoid these effects and incompatible development in the floodplain; and design or modify actions in order to minimize potential harm to or within the floodplain. Development in the floodplain as well as along all major drainages is avoided at Schriever AFB.

3.5 BIOLOGICAL RESOURCES

At Schriever AFB, the flora and fauna in undeveloped areas of the Base are typical of the shortgrass prairie although noxious weeds are present. Biological resources discussed in this section include vegetation, wildlife, sensitive species, wetlands, and noxious weeds.

3.5.1 Vegetation

In the area of Schriever AFB, historic vegetation (i.e., prior to European settlement between 1867 and 1940) was largely shortgrass prairie interspersed with wetlands. Trees were absent or found only sporadically. Although climate was the primary factor determining the dominance of grasslands on the shortgrass prairie, wildland fire occurred with a frequency of less than 35 years and undoubtedly impacted the distribution and composition of species.

European settlement increased livestock grazing on the shortgrass prairie, introduced trees as windbreaks or to provide shade and landscaping, and impacted some species compositions in the natural depressions. Since the Base was established, changes have included the construction of roads and buildings, planting of trees largely in the Secure Area, and until recently, continuation of livestock grazing on undeveloped lands. Apart from the trees and construction near the three homesteads and in the Secure Area, much of the shortgrass prairie at Schriever AFB is similar to that found in the area prior to European settlement.

The shortgrass prairie landscape at Schriever AFB is dominated by blue grama (*Bouteloua gracilis*), buffalo grass (*Bochloe dactyloides*), three-awned grass (*Aristida purpuria*), dropseed (*Sporobolus cryptandrus*), and needle-and-thread grass (*Stipa comata*). Upland areas are in good condition, although heavy grazing in the past is evident by the species composition (CNHP, 2000). The prairie is spotted with natural depressions that primarily support saltgrass (*Distichlis spicata*), two spikerushes (*Eleocharis palustrus and E. aciculais*), and a native sedge (*Carex sp.*). Prior to base acquisition, cattle utilized these areas. Although trees are rare on the shortgrass prairie, some isolated small stands do exist. Discrete stands of trees are located along a draw south of Enoch Road near the industrial warehouse area where the Schriever Activity Center (SAC) is located, around three former homesteads, and near a windmill southeast of the restricted area. Trees south of Enoch Road are mature cottonwood (*Populus sargentii*). Around the homestead and windmill, trees are primarily box elder (*Acer negundo*) and Hawthorne (*Crataegus sp.*).

Landscaped areas at Schriever AFB consist of irrigated turf grasses, native grass plantings, and native and ornamental shrubs and trees. The landscaped areas include the Base entryway, Falcon Parkway, medians within the parking areas, and recreational areas. The urban forest composition consists of approximately 45 percent coniferous and 55 percent deciduous trees.

3.5.2 Wildlife

The native fauna at Schriever AFB consists of species associated with the shortgrass prairie. Mammals identified include pronghorn (*Antilocapra americana*), coyote (*Canis latrans*), black-tailed prairie dog (*Cynomys ludovicianus*), thirteen-lined ground squirrel (*Spermophilus tridecemlineatus*), and desert cottontail (*Sylvilagus audubonii*). Birds include western meadowlark (*Sturnella neglecta*), lark bunting (*Calamospiza melanocorys*), horned lark (*Eremophila alpestris*), and American kestrel (*Falco sparverius*). Trees associated with old homesteads or developed portions of the Base support additional species that might not otherwise be found in the area such as American robin (*Turdus migratorius*), house sparrow (*Passer domesticus*), and great horned owl (*Bubo virginianus*). A complete list of species identified during The Nature Conservancy's (TNC) Colorado Natural Heritage Program (CNHP) survey in 2000 can be found in Chapter 4 of the Integrated Natural Resources Management Plan.

Schriever AFB is located within the Central Flyway, which extends from Canada to the Gulf of Mexico. The western boundary of the flyway follows closely the eastern base of the Rocky Mountains. It may be called "the flyway of the Great Plains" as it encompasses the entire region lying between the valley of the Mississippi River and the Rocky Mountains. The USFWS report, issued by the Division of Migratory Bird Management, entitled *Birds of Conservation Concern 2002,* identifies 19 species in Bird Conservation Region 18 that represent the highest conservation priorities (beyond those already designated as Federally threatened or endangered) (USFWS, 2002). Of those 19 species, the burrowing owl (*Athene cunicularia*) and lark bunting (*Calamospiza melanocorys*) have been identified to date at Schriever AFB.

Migratory birds are protected through International Treaties and the Migratory Bird Treaty Act (MBTA). Federal regulation (50 CFR10.13) provides the framework for regulation of migratory bird take and possession. Federal permits are required to take, possess, transport, and dispose of migratory birds, bird parts, feathers, nests, or eggs. Schriever AFB will review all projects to ensure compliance with the MBTA. When necessary, application for permits will be made to the USFWS Migratory Bird Permit Office in Denver, Colorado.

3.5.3 Threatened and Endangered Species

No species listed as threatened or endangered by the USFWS regularly utilize lands occupied by Schriever AFB (CNHP, 2000). The state listed threatened burrowing owl (*Athene cunicularia*) and state special concern black-tailed prairie dog (*Cynomys ludovicianus*) are present at Schriever AFB. In addition, the globally rare plant species, plains ragweed (*Ambrosia linearis*), is found at Schriever AFB. Consultation with the USFWS, CDOW, and TNC's CNHP also has revealed that Schriever AFB is within the range of several other threatened, endangered, and sensitive species as well as other species of concern (Table 2). Northern leopard frog, bald eagle, Mexican spotted owl, ferruginous hawk, mountain plover, Preble's meadow jumping mouse, lynx, and the swift fox could potentially, and in some cases do, occur in the surrounding region.

Table 2
TES and Other Species of Concern Potentially Occurring at Schriever AFB

AMPHIBIANS			
Common Name	Scientific Name	Status	Occurrence
Northern leopard frog	*Rana pipiens*	SC	Does not exist on Base.
BIRDS			
Common Name	Scientific Name	Status	Occurrence
Bald Eagle	*Haliaeetus leucocephalus*	FT, ST	Does not exist on Base.
Burrowing Owl	*Athene cunicularia*	ST	Migratory Resident
Mexican Spotted Owl	*Strix occidentalis lucida*	FT, ST	Does not exist on Base.
Ferruginous Hawk	*Buteo regalis*	SC	Does not exist on Base.
Mountain Plover	*Charadrius montana*	SC	Does not exist on Base.
MAMMALS			
Common Name	Scientific Name	Status	Occurrence
Black-Tailed Prairie Dog	*Cynomys ludovicianus*	SC	Permanent Resident
Preble's Meadow Jumping Mouse	*Zapus hudsonius preblei*	FT, ST	Does not exist on Base.
Lynx	*Lynx canadensis*	FT, SE	Does not exist on Base.
Swift Fox	*Vulpes velox*	SC	Does not exist on Base.

Status Codes: FE = Federally Endangered; FT = Federally Threatened;
SE = State Endangered; ST = State Threatened; SC = State Special Concern

Actions that may affect a listed species or habitat for listed species require consultation with the USFWS under the Endangered Species Act. State special concern species, on the other hand, do not have legal designations nor do they constitute a statutory category.

3.5.3.1 Black-Tailed Prairie Dog

Black-tailed prairie dogs (*Cynomys ludovicianus*), a species of state special concern, occupy shortgrass and mixed-grass prairie habitats with well-drained, friable soils that permit the construction of complex burrow systems. Black-tailed prairie dogs are diurnal, burrowing, colonially dwelling, herbivorous rodents that are active aboveground throughout the year (CNHP, 2000). Populations of black-tailed prairie dogs at Schriever AFB expanded rapidly in recent years. Three separate BTPD towns occupying approximately 62 acres were identified in 2002. Approximately 129 acres in five towns were occupied in 2005 (Young, 2005), and the most recent mapping shows approximately 275 acres are occupied in seven towns (Figure 3). Since 2005, black-tailed prairie dog populations have experienced more modest growth as a result of increased vegetation height limiting expansion and providing cover for natural predators.

Black-tailed prairie dog populations must be managed not only to promote future viability of the species but also to prevent their expansion into the Secure Area, where conflicts with the military mission may arise. Schriever AFB has been divided into areas based on the following three levels of management: (1) maintain as prairie dog habitat, (2) maintain as a buffer between active BTPD colonies and those areas where black-tailed prairie dogs are not desired, and (3) maintain as BTPD-free area (Figure 4). Management will prevent BTPD expansion into the Secure Area, as well as encroachment into areas of human habitation or high levels of human use to lessen human health risks in the event of a disease outbreak. No cases of sylvatic plague have been documented to date.
Planned management efforts consist of removing prairie dogs from areas that conflict with the

military mission (principally through use of the Rodenator Pro™), rehabilitation of removal areas, installation of visual barriers and predator perches, restriction of colony expansion within 300 feet of Management Zone 3, and provision of suitable habitat for prairie dogs (Young, 2005).

3.5.3.2 Burrowing Owl

Burrowing owls (*Athene cunicularia*) are a migratory species found in Colorado from late March or early April through October. During winter, the owls migrate to Mexico and Central America. Burrowing owls do not dig their own burrows; rather they adopt abandoned rodent burrows or nest in colonies within a prairie dog town. Their diet includes rodents, small birds, eggs, nestlings, reptiles, and insects.

With the expansion of the black-tailed prairie dog, habitat was created for the state listed threatened burrowing owl at Schriever AFB. Burrowing owls were first observed on Base in November 2001, and populations since have been monitored annually. Three nesting pairs with 13 fledglings were observed in 2004. Through the BTPD Management Zones, areas have been designated for maintaining healthy and stable prairie dog populations and consequently habitat for the burrowing owl. Construction and other activities on Base are restricted during late spring through fall in areas where the species is present.

3.5.3.3 Plains Ragweed

On the Great Plains of Colorado, the globally rare plains ragweed (*Ambrosia linearis*) occurs in playas on the prairie or may grow in artificial habitats similar to playas. An area on Schriever AFB of less than 40 acres has been identified as having the plains ragweed and potential habitat (CNHP, 2000). Since there is no documented information on the effects of fire on the plains ragweed, prescribed fire will be excluded from areas known to contain this species until the effects over subsequent growing seasons can be studied at the plot-level.

3.5.4 Wetlands

Wetlands are defined by the U.S. Army Corps of Engineers (COE) as areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. In addition to providing habitat for many plants and animals, wetlands provide flood control and water quality functions in support of ecosystem integrity.

Executive Order 11990 directs federal agencies to consider potential adverse impacts on wetlands by avoidance, minimization, and mitigation of adverse impacts for all federal actions. DoDI 4715.3 specifies that DoD lands shall be managed for the goal of no net loss of wetlands. If wetland impact is proposed, it will be necessary to apply for permits prior to commencement of construction.

In 2001, the U.S. Army COE completed the Wetlands Re-Examination for Schriever AFB, Colorado. Three small wetlands were identified, all of which are less than 1 acre. Changes in the size and status of wetlands since 1991 are largely attributed to declines in effective precipitation in past decades. With sufficient rainfall, previously identified wetlands likely would still pond water and serve as an ephemeral water area for migratory birds and other wildlife.

3.5.5 Noxious Weeds

The Colorado Department of Agriculture, Division of Plant Industry, develops and coordinates integrated weed management programs in the state. “Noxious weed” is defined by the Colorado Noxious Weed Act, C.R.S. 35-5.5-103(2) as an alien plant or parts of an alien plant that have been designated by rule as being noxious or has been declared a noxious weed by a local

advisory board, and meets one or more of the following criteria: (a) aggressively invades or is detrimental to economic crops or native plant communities; (b) is poisonous to livestock; (c) is a carrier of detrimental insects, diseases, or parasites; and (d) the direct or indirect effect of the presence of this plant is detrimental to the environmentally sound management of natural or agricultural ecosystems. The County Forestry and Noxious Weeds Department regulates noxious weeds and pests on public and private lands within its jurisdiction. Executive Order 13112 and the Sikes Act, as amended, also require control of invasive species and reductions in their ecological and economic impact. The Air Force actively manages noxious weeds on Schriever AFB pursuant to AFI 32-1053, *Pest Management*, by mowing or applying spot herbicide treatments via a commercial contractor.

Seven state and federally listed noxious plant species were identified at Schriever AFB during a survey conducted in 2004 (North Wind, 2005). They include Canada thistle (*Cirsium arvense*), field bindweed (*Convolvulus arvensis*), diffuse knapweed (*Centaurea diffusa*), spotted knapweed (*Centaurea maculosa*), musk thistle (*Carduus nutans*), puncturevine (*Tribulus terrestris*), and Russian olive (*Elaeagnus angustifolia*). Six other invasive species also were found during the field surveys, including cheatgrass (*Bromus tectorum*), Russian thistle (*Salsola kali*), kochia (*Kochia scoparia*), tumble mustard (*Sisymbrium altissimum*), yellow sweetclover (*Melilotus officinalis*), and goatsbeard (*Tragopogon dubius*). Each of these species is difficult to control and poses an invasive threat to the Base's native vegetation.

Control priorities were developed using the National Park Service Exotic Species Ranking System (Hiebert and Stubbendieck 1993), which analyzed each invasive species based on interactions between significance of impact (threat) and feasibility of control. The most problematic invasive species at Schriever AFB are the Canada thistle (*Cirsium arvense*) and field bindweed (*Convolvulus arvensis*). Removal and control of all noxious and invasive plant species on Base is given special management consideration through the *Invasive Plant Species Control Plan* (North Wind, 2005). This plan also describes strategies for preventing the spread of invasive plants and preventing the establishment of additional invasive species.

4.0 ENVIRONMENTAL CONSEQUENCES

This section of the EA presents an evaluation of the potential environmental consequences of the three alternatives described in Section 2.0. Potential impacts are evaluated relative to the existing environment described in Section 3.0. The overall management approach and practices largely are evaluated on a programmatic level, rather than a project-specific level.

The concept of "significance" includes consideration of both the context and the intensity or severity of the impact, as defined by 40 CFR 1508.27. Impact severity could be based on the magnitude of change, the likelihood of change, the potential for violation of laws or regulations, the context of the impact (spatial and temporal), and the resilience of the resource. Significant impacts are effects that are most substantial and should receive the greatest attention in decision making. Impacts that are not significant result in little or no effect to the existing environment. If a resource would not be affected by a proposed activity, a finding of no impact was declared. If a resource would be improved by a proposed activity, a beneficial impact was noted.

The activities conducted under the current natural resources management program and the planned activities for the action alternatives are designed to avoid negative environmental impacts and include planning measures for compliance with applicable laws and regulations as well as stewardship of the natural resources. The Proposed Action would provide greater environmental benefits than either continuing the No Action Alternative or implementing a Limited Action Alternative, because the range of management projects to be implemented address issues that have emerged since development of the initial INRMP in 2001.

Under the No Action Alternative, natural resources would continue to be managed in accordance with existing plans and programs. Black-tailed prairie dog expansion would continue to encroach upon the Secure Area, increasing risk of damage to base infrastructure and to human health in the event of a disease outbreak. Baseline conditions would deteriorate under this alternative. Further, the full benefits to be realized from implementing the INRMP, revised in 2006, would not be achieved.

Under the Proposed Action, a broad range of natural resources management activities and practices, which support DoD and USAF policy on stewardship and ecosystem management, would be implemented through the INRMP. Adaptive management would be used to assess and improve management practices and help ensure stated goals are achieved. Baseline conditions would improve under this alternative through effective management of local black-tailed prairie dog populations and use of prescribed burns for grassland management.

Under the Limited Action Alternative, small-scale, short-duration grazing in well-defined areas would be used in lieu of prescribed burns for grassland management. While livestock grazing ceased at Schriever AFB in 2004, with increased precipitation in recent years, the rangeland may again accommodate small-scale grazing for control of noxious weeds in areas designated by the Natural Resource Manager where or during periods when prescribed burns may not be feasible. Small animals such as goats or sheep logistically would be more amenable to grazing on Base given the perimeter fence and limited access points.

4.1 LAND USE

Land use on Schriever AFB would be impacted if the implementation of natural resources management activities caused inconsistencies with established land use plans or policies, reduced the viability of existing land use

activities, created threats to public health, safety, and welfare of adjacent or nearby land users, or conflicted with the military mission.

4.1.1 Proposed Action

Implementing the Proposed Action would present no adverse impacts to land use or impact planned land uses. Implementation of the Proposed Action would not change the existing or future land uses on Schriever AFB in terms of achieving the military mission. However, positive benefits to the Base's ability to maintain the Secure Area and flexibility in siting future development, as well as minimize disease transmission would be provided by effective management of black-tailed prairie dog populations. Additional benefits to ecosystem integrity would be provided through participation in regional partnerships and integration of natural resources management with operations.

4.1.2 No Action Alternative

Selecting the No Action Alternative would adversely impact land use on the Base given the rate and extent of black-tailed prairie dog encroachment on the Secure Area. If prairie dog expansion continues to encroach upon the Secure Area, risk of damage to base infrastructure and to human health in the event of a disease outbreak would increase. Flexibility in siting development also would decrease as removal of prairie dogs requires more effort than exclusion and prairie dog expansion also may attract burrowing owls to areas not currently occupied. The capability of lands to support the military mission may be impacted.

4.1.3 Limited Action Alternative

Under the Limited Action Alternative, small-scale, short-duration grazing in well-defined areas for grassland management may increase public access to the Base by individuals holding leases. However, no significant impact to land use on Schriever AFB would be experienced.

4.2 AIR RESOURCES

Air quality would be impacted if implementation of natural resources management activities resulted in significant contributions to emissions from Schriever AFB.

4.2.1 Proposed Action

Implementation of the Proposed Action, notably prescribed burns (100 acres annually), would have short-term impacts on local air quality and visibility. Estimated emissions would not exceed the NAAQS or CAAQS within the relatively large area in which the emissions would occur and given dispersive meteorological conditions.

Smoke from prescribed fires is a complex mixture of carbon, tars, liquids, and gases. This open combustion source produces particles of widely ranging size, depending to some extent on the rate of energy release of the fire. The major air pollutants are particulate, carbon monoxide, and volatile organics. Nitrogen oxides are emitted at rates of 1 to 4 grams per kilogram burned, depending on combustion temperatures. Emissions of sulfur oxides are negligible (U.S. EPA, 1995).

The size of a burn is not the only factor that affects the amount of pollutants emitted. Emissions are greatly affected by the fuel loading (density of material per acre), the type of fuel, and the percentage of the material consumed. Emissions are estimated by averaging the reported fuel loading of other burns with the same fuel type. Fuel loadings for grasslands in Colorado range from .74 to 4.0 tons per acre, with 2 tons per acre cited as the average fuel loading (CDPHE, 2005b). With dry conditions, the mass of fuel consumed is defined as the available fuel. Emission factors, reported as pounds of the specific pollutant produced for each ton of fuel that is consumed, for grassland burns in Colorado are 20 pounds per ton (lbs/ton) of total PM_{10} (includes all particulates in smaller size classes), 150 lbs/ton of CO, 0 lbs/ton of

volatile organics, and 2.5 lbs/ton of NOx (CDPHE, 2005b) Air pollutant generation from burning 100 acres of grassland at Schriever AFB over the course of a year is estimated to be 2 tons per year of PM_{10}, 15 tons per year of CO, and .25 tons per year of NOx.

Schriever AFB, as part of the Colorado Springs Metropolitan Area, is located within a maintenance area for carbon monoxide. Per 40 CFR 93, Subpart B, *Determining Conformity of General Federal Actions to State or Federal Implementation Plans*, emissions would be regionally significant if they exceeded 10 percent of the inventory for a pollutant. The SIP budget for CO in this area is 270 tons per day, or 98,550 tons per year (CDPHE, 2003). Emissions from the Proposed Action do not comprise 10 percent of the daily inventory and are not regionally significant. Thresholds are used to determine conformity with a SIP. The threshold for CO is 100 tons per year. Estimated emissions from the Proposed Action are less than this threshold, would conform to the SIP, and are not significant. As such, a conformity analysis and determination for the Proposed Action is not required.

Permits will be secured from the Colorado Department of Public Health and Environment as well as El Paso County before any burns are carried out. Safety measures and other guidance in the Wildland Fire Management Plan will minimize potential impacts. Until the effects of fire on the plains ragweed over subsequent growing seasons is determined at the plot level, prescribed fire will be excluded from areas known to contain this species. Further, prescribed burns will be conducted outside the nesting season for migratory birds. As prescribed burns have the potential to increase prairie dog expansion due to reductions in vegetative cover, burn locations must be carefully considered until data on such effects can be obtained at Schriever AFB.

Prescribed burning at Schriever AFB will aim to duplicate the historic wildfire frequencies of the shortgrass prairie (i.e., less than 35 years), creating positive effects by increasing biodiversity and facilitating control of invasive species.

4.2.2 No Action Alternative

Selecting the No Action Alternative would present no adverse impacts to air resources due to the continuation of current natural resource management activities at Schriever AFB.

4.2.3 Limited Action Alternative

Similar to the No Action Alternative, implementation of natural resources management activities under this alternative would present no adverse impacts to air resources at Schriever AFB.

4.3 GEOLOGICAL RESOURCES

Geological resources would be impacted if implementation of natural resources management activities resulted in severe soil erosion such that areas could no longer be maintained in existing land use.

4.3.1 Proposed Action

Implementation of the Proposed Action would present no adverse impacts and would create positive effects on geological resources from avoiding construction activities in the soil types and on slopes identified as having severe constraints, maintaining a buffer along the intermittent drainages, identifying and implementing erosion control measures, and installing a monitoring system to record storm events. All management actions involving soil disturbance would be conducted in accordance with best management practices (BMP).

4.3.2 No Action Alternative

Selecting the No Action Alternative would present no adverse impacts to geological resources due to the continuation of current natural resource management activities at Schriever AFB. The baseline conditions for geological resources

would continue on Base. BMPs and other relevant guidance would continue to be used to minimize potential impacts from soil disturbance.

4.3.3 Limited Action Alternative

Under the Limited Action Alternative, small-scale, short-duration grazing in well-defined areas for grassland management is not likely to lead to degradation of native vegetation and topsoil or increased erosion. Soil water-retention capabilities also are unlikely to be impacted.

4.4 WATER RESOURCES

Water resources would be impacted if the implementation of natural resources management activities resulted in a change to the quantity or quality of groundwater or surface water, or if they involved development in the 100-year floodplain at Schriever AFB.

4.4.1 Proposed Action

Implementing the Proposed Action would present no adverse impacts to water resources. Water resources would continue to be protected in accordance with relevant laws and regulations. Avoiding development in the 100-year floodplain and along drainages as well as implementing other BMPs would minimize impacts to water resources and enhance groundwater recharge, surface water quality, and flood protection.

4.4.2 No Action Alternative

Under the No Action Alternative, water resources at Schriever AFB would continue to be protected in accordance with relevant laws and regulations. There would be no adverse impacts.

4.4.3 Limited Action Alternative

Implementation of the Limited Action Alternative may impact soil water-retention capabilities but would not present an adverse impact to water resources at Schriever AFB.

4.5 BIOLOGICAL RESOURCES

Biological resources would be impacted if the implementation of natural resources management activities resulted in degradation of the current shortgrass prairie, wetlands, or urban forest or in significant reductions in population size or distribution of a species of concern.

4.5.1 Proposed Action

Implementing the Proposed Action would present no adverse impacts to biological resources. Numerous benefits would be realized by implementing prescribed burns that aim to duplicate historic wildfire frequencies of the shortgrass prairie, a fire-adapted system—namely, increasing native species' biodiversity and facilitating control of invasive species. Management actions will maintain the integrity of wetland habitats for migratory birds and maintain urban forest habitat for other bird species. Wildlife populations will be enhanced by the sustainability and enhancement of native habitats. While black-tailed prairie dog populations at Schriever AFB will be decreased in Management Zones 2 and 3, reductions are not significant to overall species populations. Furthermore, nearly one-half of the Base will remain available for black-tailed prairie dog habitation and species associated with their burrows (e.g., burrowing owls). Potential impacts to other small mammals from lethal removal efforts will be monitored. Black-tailed prairie dog removal will be undertaken during a period when burrowing owls are not present (1 November through 28 February). Prescribed burns also will be conducted outside the nesting season for migratory birds. Until effects over subsequent growing seasons can be studied at the plot level, prescribed fire will be excluded from areas inhabited by the globally rare plains ragweed. Routine monitoring will facilitate knowledge of other threatened and endangered species that may become established at Schriever AFB as well as the success of management actions.

4.5.2 No Action Alternative

Implementation of the No Action Alternative would present no adverse impacts; however, shortgrass prairie habitats may decline as a result of decreased options for management of noxious weeds and other invasive species.

4.5.3 Limited Action Alternative

Under the Limited Action Alternative, small-scale, short-duration grazing in well-defined areas may provide control for noxious weeds; however, such efforts must be carefully monitored to prevent declines in species diversity and trends toward decreasing condition of vegetation with increased possibility of invasion by noxious weeds, other undesirable species, and increased erosion.

4.6 CUMULATIVE IMPACTS

Cumulative impacts are the incremental impacts of an action when added to the impacts of other federal or nonfederal past, present, or reasonably foreseeable future actions. Provisions of the INRMP, revised in 2006, that integrate the requirements of the military mission with natural resources protection are designed to minimize potential cumulative impacts.

Development is ongoing and/or planned not only at Schriever AFB but also in the surrounding vicinity. Approximately one-half mile west of Schriever AFB across Curtis Road, a 150-acre residential development is under construction. Land between this residential development and Schriever AFB is used for livestock grazing. On base, over the next 5 years, new facilities are planned to ensure that adequate community support facilities exist, to support current and future mission requirements and population growth, to limit the Restricted Area to missions that require high levels of security, and to maintain appropriate force protection. The majority of this on-base development is planned for already improved or semi-improved areas, minimizing impacts to natural resources. In addition to the approximately 150 acres associated with the military family housing development, about 38 acres would be converted from grassland to impermeable surface (building and pavement areas) over the next 5 years. The proposed development represents about 6 percent of the 3,200 acres of undeveloped land.

Implementing the Proposed Action analyzed in this EA, including the natural resources management activities recommended and considering other environmental management activities, would not result in negative cumulative impacts to the environment at or in the vicinity of Schriever AFB. In addition to the current management practices, the Proposed Action would implement projects that promote black-tailed prairie dog habitation in areas that do not conflict with the military mission and enhance shortgrass prairie management, addressing noxious weeds and enhancing native species, through prescribed burns that aim to duplicate historic wildfire frequencies. While black-tailed prairie dog populations at Schriever AFB will be decreased in Management Zones 2 and 3, reductions are not significant to overall species populations. These and other measures recommended in the INRMP directly support regional ecosystem management initiatives and would enhance and protect the environment, including habitat for wildlife, migratory birds, and species of concern. Monitoring programs, annual review, and 5-year updates of the INRMP allow for continuous reassessment of management goals and objectives (adaptive management) and would help to avoid undesirable cumulative impacts. Coordination with state and federal wildlife agencies, as required by the SAIA, further reduces the potential for cumulative negative impacts.

4.7 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the effects that the

uses of these resources have on future generations. Irreversible effects primarily result from the use or destruction of a specific resource (such as energy and minerals) that cannot be replaced within a reasonable time frame. Irretrievable resource commitments involve the loss in value of an affected resource that cannot be restored as a result of the action (such as extinction of listed, rare and/or sensitive species). For the Proposed Action, resource commitments are neither irreversible nor irretrievable.

5.0 AGENCIES AND PERSONS CONSULTED

In accordance with the SAIA, Schriever AFB has worked cooperatively with the USFWS and the CDOW to ensure that the INRMP reflects the mutual agreement of these parties concerning the conservation, protection, and management of fish and wildlife resources on the Base. Draft copies of the INRMP have been provided to these agencies and also were made available to the general public for review.

Melissa Trenchik, NEPA Program Manager, and Jerry Thompson, Natural Resources Manager, were the primary contacts in the preparation of this document. Other individuals contacted during development of the INRMP and associated EA are listed below. Letters of concurrence are provided in Appendix B.

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6.0 LIST OF PREPARERS

This Environmental Assessment has been prepared by the Air Force Center for Environmental Excellence (AFCEE) and the 50th Civil Engineer Squadron at Schriever AFB with contractual assistance from HydroGeoLogic, Inc. Personnel involved in the preparation and review of this report are indicated below.

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APPENDIX A

GOALS, OBJECTIVES, AND PROJECTS

GOAL 1: NATURAL RESOURCES INFORMATION IS INCORPORATED INTO ALL MANAGEMENT DECISIONS AT SCHRIEVER AFB

OBJECTIVE 1.1: Maintain a qualified staff within Environmental Flight.

PROJECT 1.1.1: Provide time and travel funds for Natural Resources Manager (NRM) to attend national, regional, and state conferences and training courses.

PROJECT 1.1.2: Provide time and travel funds for Regulatory Specialist to attend training related to natural and cultural resources management.

OBJECTIVE 1.2: Increase accessibility of natural resource-related information.

PROJECT 1.2.1: Integrate natural resource data in GeoBase initiative.

OBJECTIVE 1.3: Integrate natural resources information in Base planning.

PROJECT 1.3.1: Establish an internal INRMP Implementation Task Force.

GOAL 2: COMPONENTS OF PHYSICAL ENVIRONMENT ARE PROTECTED

OBJECTIVE 2.1: Prevent soil erosion.

PROJECT 2.1.1: Avoid construction activities in the soil types and on slopes identified as having severe construction constraints for building and roads.

PROJECT 2.1.2: Maintain a buffer along the intermittent drainages north and south of the restricted zone.

PROJECT 2.1.3: Identify and implement erosion control measures.

PROJECT 2.1.4: Install monitoring system to record storm events.

OBJECTIVE 2.2: Control non-point source pollution.

PROJECT 2.2.1: Monitor non-point source pollution.

OBJECTIVE 2.3: Implement water conservation measures.

PROJECT 2.3.1: Reduce turf in landscaped areas.

PROJECT 2.3.2: Use efficient irrigation systems, including drip or trickle systems, that distribute the water in such a way that almost all is actually used by the plants and little evaporates or is wasted on paved surfaces.

GOAL 3: PRESERVE AND ENHANCE, TO THE EXTENT PRACTICABLE, NATIVE ECOSYSTEMS AND ASSOCIATED HABITAT FOR WILDLIFE SPECIES

OBJECTIVE 3.1: Maintain and improve the ecological integrity of wetlands.

PROJECT 3.1.1: Maintain the integrity of fences around wetlands.

OBJECTIVE 3.2: Maintain and improve the ecological integrity of shortgrass prairie.

PROJECT 3.2.1: Use livestock grazing with caution on shortgrass prairie.

PROJECT 3.2.2: Use native plant species to seed areas on the semi-improved and unimproved land.

PROJECT 3.2.3: Retain services of one fully qualified Type II or III Prescribed Burn Boss and one fully qualified Type II or III Ignition Specialist.

PROJECT 3.2.4: Implement prescribed burning for about 100 acres per year.

OBJECTIVE 3.3: Maintain and improve the ecological integrity of urban forest.

PROJECT 3.3.1: Perform routine inspection and maintenance.

PROJECT 3.3.2: Replace lost trees to perpetuate the urban forest.

OBJECTIVE 3.4: Maintain habitat for tree- and shrub-dwelling wildlife species.

PROJECT 3.4.1: Preserve existing trees at homesteads as potential raptor nesting habitat and for use by other tree-nesting species such as American robins.

PROJECT 3.4.2: Replace trees and shrubs lost to disease or other factors at the homesteads. Trees to be planted include plains cottonwood, hackberry, juniper, and ponderosa pine. Shrubs include American plum, skunkbush sumac, and golden current.

OBJECTIVE 3.5: Implement the Integrated Pest Management Plan.

PROJECT 3.5.1: Prevent establishment of additional invasive plant species.

PROJECT 3.5.2: Prevent spread of invasive plant species.

PROJECT 3.5.3: Aggressively control or eradicate noxious plant species.

GOAL 4: PROTECT AND CONSERVE INDIVIDUALS AND POPULATIONS OF NATIVE PLANTS, FISH, AND WILDLIFE

OBJECTIVE 4.1: Provide suitable habitat to maintain a stable BTPD population in areas that do not conflict with the military mission (Management Zones 1 and 2).

PROJECT 4.1.1: Create suitable habitat maps for the entire base.

PROJECT 4.1.2: Install visual barriers and/or predator perches to contain the maximum allowable expansion of prairie dogs in Management Zone 2.

PROJECT 4.1.3: Remove potential migration pathways between Management Zones 1 and 2—rehabilitate vehicle pathways, livestock trails, and other obvious trails that lead into undesirable areas.

PROJECT 4.1.4: Map prairie dog colonies annually to assess the status of the population. Use standardized counts to estimate population size.

OBJECTIVE 4.2: Manage migratory birds, including the burrowing owl.

PROJECT 4.2.1: Annually monitor the grassland avian community during the breeding season for the presence of burrowing owls and other migratory bird species.

PROJECT 4.2.2: Avoid construction, other disturbance activities, and prescribed burns from late spring through fall.

PROJECT 4.2.3: Protect traditional nesting and perching sites for raptors.

PROJECT 4.2.4: Utilize information from monitoring efforts to determine the need for more detailed management actions.

OBJECTIVE 4.3: Manage populations of the plains ragweed.

PROJECT 4.3.1: Maintain the integrity of fences around populations.

PROJECT 4.3.2: Monitor status and distribution of populations.

PROJECT 4.3.3: Exclude prescribed fire from areas known to contain the plains ragweed until effects over subsequent growing seasons can be studied.

OBJECTIVE 4.4: Establish framework for management actions related to other species of concern with suitable habitat located at Schriever AFB.

PROJECT 4.4.1: Annually monitor for species potentially occurring on Base.

PROJECT 4.4.2: Utilize information from monitoring efforts to determine the need for more detailed management actions.

GOAL 5: CONTROL RAPIDLY EXPANDING BLACK-TAILED PRAIRIE DOG COMMUNITIES

OBJECTIVE 5.1: Eliminate black-tailed prairie dogs from Management Zone 3.

PROJECT 5.1.1: Aggressively remove prairie dogs from undesirable areas in Management Zone 3 using certified pest control agents or handheld devices such as the Rodenator Pro™.

PROJECT 5.1.2: Apply chemical repellents to discourage use of food resources in Management Zone 3 and encourage movement out of the area.

PROJECT 5.1.3: Rehabilitate BTPD removal area in Management Zone 3—destroy prairie dog burrow openings and replant area with native tall grasses to discourage future re-occupancy.

OBJECTIVE 5.2: Reduce area of prairie dog towns in Management Zone 2 that are currently encroaching on the Secure Area (Management Zone 3).

PROJECT 5.2.1: Aggressively remove prairie dogs within 300 feet of Management Zone 3 using certified pest control agents or handheld devices such as the Rodenator Pro™...

PROJECT 5.2.2: Rehabilitate black-tailed prairie dog removal areas in Management Zone 2—destroy prairie dog burrow openings and replant area with native tall grasses to discourage future re-occupancy.

OBJECTIVE 5.3: Prevent future prairie dog encroachment on the Secure Area.

PROJECT 5.3.1: Discontinue mowing in areas of Management Zone 2 where prairie dogs are not desired. Mowing may be used to encourage expansion into desirable areas, away from the Secure Area.

PROJECT 5.3.2: Install temporary visual barriers around areas deemed suitable and acceptable for prairie dog occupancy in Management Zone 2.

PROJECT 5.3.3: Install predator perches along boundaries of prairie dog occupancy areas in Management Zone 2.

PROJECT 5.3.4: Institute monthly surveys for prairie dog incursions into Management Zone 3, and remove intruding prairie dogs.

PROJECT 5.3.5: Plant hedge rows of native species to serve as visual barriers around areas deemed suitable for prairie dogs in Management Zone 2.

PROJECT 5.3.6: Install nesting platforms on some predator perches to encourage avian predator nesting.

PROJECT 5.3.7: Remove potential migration pathways between Management Zones 2 and 3—rehabilitate vehicle pathways, livestock trails, and other obvious trails that lead into undesirable areas.

GOAL 6: UTILIZE AND PURSUE PARTNERSHIPS WITH FEDERAL, STATE, AND LOCAL GOVERNMENT AND SUPPORT AGENCIES

OBJECTIVE 6.1: Support existing Cooperative Agreements (CA) and memoranda of understanding.

OBJECTIVE 6.2: Develop new cooperative agreements and memoranda of understanding.

PROJECT 6.2.1: Participate in regional stakeholder meetings to identify leveraging and information exchange opportunities.

GOAL 7: INCREASE AWARENESS OF REQUIREMENTS FOR NATURAL RESOURCES MANAGEMENT AT SCHRIEVER AFB

OBJECTIVE 7.1: Expand public outreach initiatives specifically related to native habitats and wildlife species and their management in support of the mission.

PROJECT 7.1.1: Develop a Commander's Summary for the INRMP.

PROJECT 7.1.2: Reinstate inclusion of environmental information in newcomer orientation briefings, highlighting key resources and issues.

PROJECT 7.1.3: Sponsor events associated with commemorative days.

OBJECTIVE 7.2: Expand opportunities for wildlife-oriented outdoor recreation.

PROJECT 7.2.1: Develop wildlife viewing guides, especially for birds.

PROJECT 7.2.2: Design and install interpretive signs along jogging trail.

PROJECT 7.2.3: Establish park area near one of the homesteads.

GOAL 8: MAINTAIN A CURRENT INRMP

OBJECTIVE 8.1: Monitor the success and failure of natural resources management projects and initiatives in support of adaptive management.

PROJECT 8.1.1: Identify all monitoring data being collected on Base.

PROJECT 8.1.2: Develop and implement a monitoring plan.

PROJECT 8.1.3: Identify data sharing opportunities at Schriever AFB.

PROJECT 8.1.4: Assess data sharing opportunities with regional stakeholders.

OBJECTIVE 8.2: Conduct annual reviews of INRMP.

PROJECT 8.2.1: Coordinate and participate in annual review meetings.

PROJECT 8.2.2: Identify management adjustments based on monitoring data.

PROJECT 8.2.3: Prioritize natural resource management projects and initiatives.

PROJECT 8.2.4: Review and revise budget requests.

OBJECTIVE 8.3: Update the INRMP as needed.

PROJECT 8.3.1: Maintain a master update list and update reports.

APPENDIX B

STATE AND FEDERAL CONCURRENCE LETTERS

STATE OF COLORADO

Bill Ritter Jr. , Governor
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF WILDLIFE
AN EQUAL OPPORTUNITY EMPLOYER

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For Wildlife-
For People

February 13, 2007

Ms. Melissa Trenchik
500 O'Malley Ave. Suite 19
Schriever AFB, CO 80912

RE: USAF-INMRP implementation

Dear Ms. Trenchik:

We have received your statement proposing that the INRMP at Schriever AFB be implemented. After reviewing the document, we feel our previous comments were accurately captured and recognized, and appreciate your efforts to manage wildlife on the property.

As far as resources that may be impacted, we feel the biological section in your draft covers the species we would conserve in a grasslands ecosystem. For example, we agree with your "zone" management concept for prairie dogs, and feel it adequately provides the habitat considerations necessary for many wildlife species.

Thank you again for the opportunity to comment. If you have any questions, feel free to contact District Wildlife Manager Steve Cooley at (719) 227-5282.

Sincerely,

Dan Prenzlow
SE Regional Manager

cc: Deeney
S. Cooley
File

COLORADO
HISTORICAL
SOCIETY

The Colorado History Museum 1300 Broadway Denver, Colorado 80203-2137

January 30, 2007

Melissa Trenchik
50 CES/CEV (AFSPC)
500 O'Malley Avenue, Suite 19
Schriever AFB, CO 80912-5019

Re: Integrated Natural Resources Management Plan (INRMP) at Schriever AFB.
(CHS #49458)

Dear Ms. Trenchik,

Thank you for your additional information correspondence dated January 17, 2006 and received by our office on January 22, 2007 as well as additional information received by email on January 26, 2007 regarding the above-mentioned project. After review of the submitted information, we concur with the finding of *no historic properties* under Section 106 of the National Historic Preservation Act.

If unidentified archaeological resources are discovered during construction, work must be interrupted until the resources have been evaluated in terms of the National Register criteria, 36 CRF 60.4, in consultation with this office.

We request being involved in the consultation process with the local government, which as stipulated in 36 CFR 800.3 is required to be notified of the undertaking, and with other consulting parties. Additional information provided by the local government or consulting parties might cause our office to re-evaluate our eligibility and potential effect findings.

Please note that our compliance letter does not end the 30-day review period provided to other consulting parties.

If we may be of further assistance, please contact Amy Pallante, our Section 106 Compliance Coordinator, at (303) 866-4678.

Sincerely,

Mark Wolfe

for Georgianna Contiguglia
State Historic Preservation Officer