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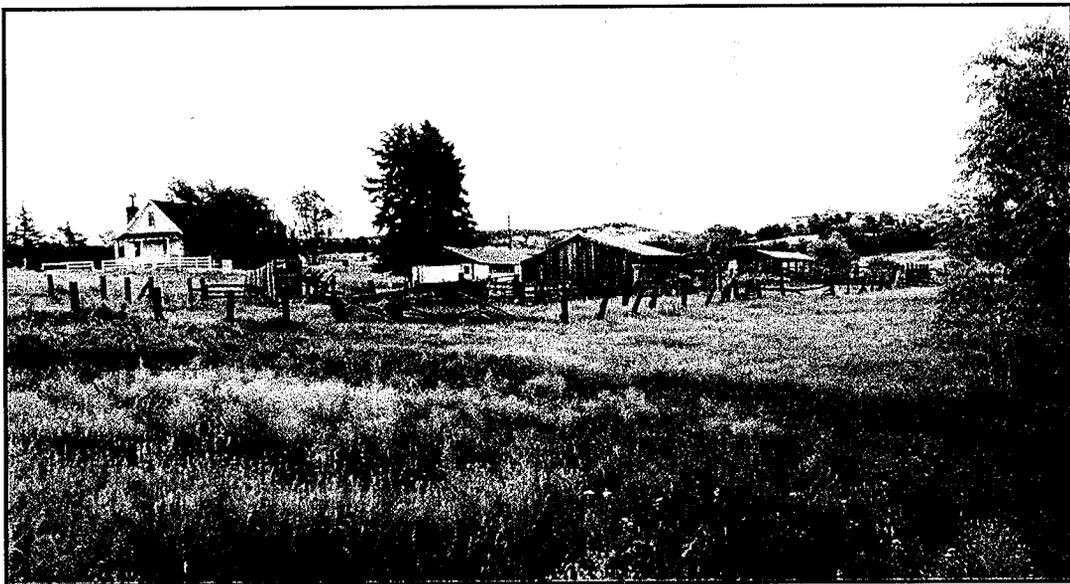
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U.S. Fish and Wildlife Service
Ecological Services
Colorado Field Office

**FINAL DRAFT ENVIRONMENTAL ASSESSMENT/HABITAT
CONSERVATION PLAN**
for
**ISSUANCE OF AN ENDANGERED SPECIES ACT SECTION
10(A)(1)(B) PERMIT FOR THE INCIDENTAL TAKE OF THE
PREBLE'S MEADOW JUMPING MOUSE (*Zapus hudsonius
preblei*) ON STRUTHERS RANCH PROPERTY, EL PASO
COUNTY, COLORADO**

JUNE 2003



**Final Draft Environmental Assessment/Habitat
Conservation Plan for Issuance of an Endangered Species
Act Section 10(a)(1)(B) Permit for the Incidental Take of
the Preble's Meadow Jumping Mouse (*Zapus hudsonius
preblei*) on Struthers Ranch, El Paso County, Colorado**

Prepared for:

**U.S. Fish and Wildlife Service
Ecological Services
Colorado Field Office
755 Parfet Street, Suite 361
Lakewood, CO 80215**

On behalf of:

**Struthers Ranch Development, LLC
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This Environmental Assessment/Habitat Conservation Plan was prepared by SWCA Environmental Consultants with the guidance, participation, and independent evaluation of the United States Fish and Wildlife Service (USFWS). The USFWS, in accordance with Title 40 Code of Federal Regulations, Part 1506 (a) and (b), is in agreement with the findings of the analysis and approves and takes responsibility for the scope and content of the document.

June 4, 2003

COVER SHEET

Title for Proposed Action: Issuance of an Endangered Species Act section 10(a)(1)(B) permit allowing for the potential incidental take of the Preble's meadow jumping mouse (*Zapus hudsonius preblei*) on Struthers Ranch, El Paso County, Colorado.

Unit of the U.S. Fish and Wildlife Service Proposing the Action: Regional Office, Region 6, Ecological Services, Colorado Field Office, 755 Parfet Street, Suite 361, Lakewood, Colorado 80215.

Legal Mandate for Proposed Action: Endangered Species Act of 1973, as amended, section 10(a)(1)(B), as implemented by 50 CFR 17.32 for threatened species.

Permit Duration: 30 years.

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- A U.S. Army Corps of Engineers Concurrence Letter, and Draft Mitigation Plan for Waters of the U.S.
- B Draft Letter of Credit for Struthers Ranch Development, LLC
- C Cultural Resource Inventory and State Historic Preservation Office Concurrence Letter
- D Authorization Contract for the Use of a Portion of an Off-Site Property
- E Example Deed Restriction

LIST OF ACRONYMS

%	percent
Corps	U.S. Army Corps of Engineers
CWA	Clean Water Act
EA	environmental assessment
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
HCP	Habitat Conservation Plan
NEPA	National Environmental Policy Act
NRCS	Natural Resource Conservation Service
PLS	pure live seed
PMJM	Preble's meadow jumping mouse
SHPO	State Historic Preservation Office
SWCA	SWCA Environmental Consultants
TPL	Trust for Public Lands
U.S.	United States
USFWS	U.S. Fish and Wildlife Service
WQCD	Water Quality Control Division

1.0 INTRODUCTION

This document includes an Environmental Assessment and Habitat Conservation Plan (EA/HCP) required as part of an application for an Endangered Species Act (ESA) section 10(a)(1)(B) permit for the potential incidental take of the Preble's meadow jumping mouse (*Zapus hudsonius preblei*) (PMJM) on Struthers Ranch, El Paso County, Colorado. The potential take is incidental to the otherwise lawful development, construction, and occupation of residential lots, commercial development, and associated infrastructure on the property.

1.1 PROJECT LOCATION

The approximately 107-acre Struthers Ranch is located on the east side of Interstate 25, roughly 3.5 miles southeast of the Town of Monument in the northwest portion of El Paso County, Colorado (Figure 1.1). The property encompasses a portion of Black Forest Creek directly northeast and upstream of the United States (U.S.) Air Force Academy. Specifically, Struthers Ranch is located in Section 36 of Township 11 South, Range 67 West (S 1/2 of SE 1/4; S 1/2 of NE 1/4 and NW 1/4 of SE 1/4; SE 1/4 of SW 1/4; and NE 1/4 of SW 1/4). Struthers Ranch is bordered by scattered residential development to the north, residential development to the east and south, the U.S. Air Force Academy to the south and southwest, and Struthers Road (a frontage road for Interstate 25) to the west (Figures 1.2 and 1.3).

1.2 PERMITTEES

The proposed permit would authorize the incidental take of PMJM on the Struthers Ranch by Struthers Ranch Development, LLC (Applicant or its assigns). Struthers Ranch Development, LLC does not currently own the property at this time, but the property will be purchased prior to permit issuance. The current landowner will not be a cosignatory on the permit. A copy of the deed of sale of the property will be submitted to the USFWS prior to permit issuance. The permit will cover the activities associated with the proposed residential and commercial development of Struthers Ranch (Section 4.2) and all officers, members, employees, agents, contractors, and licensees of the Applicant.

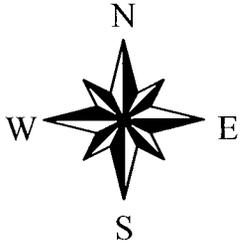
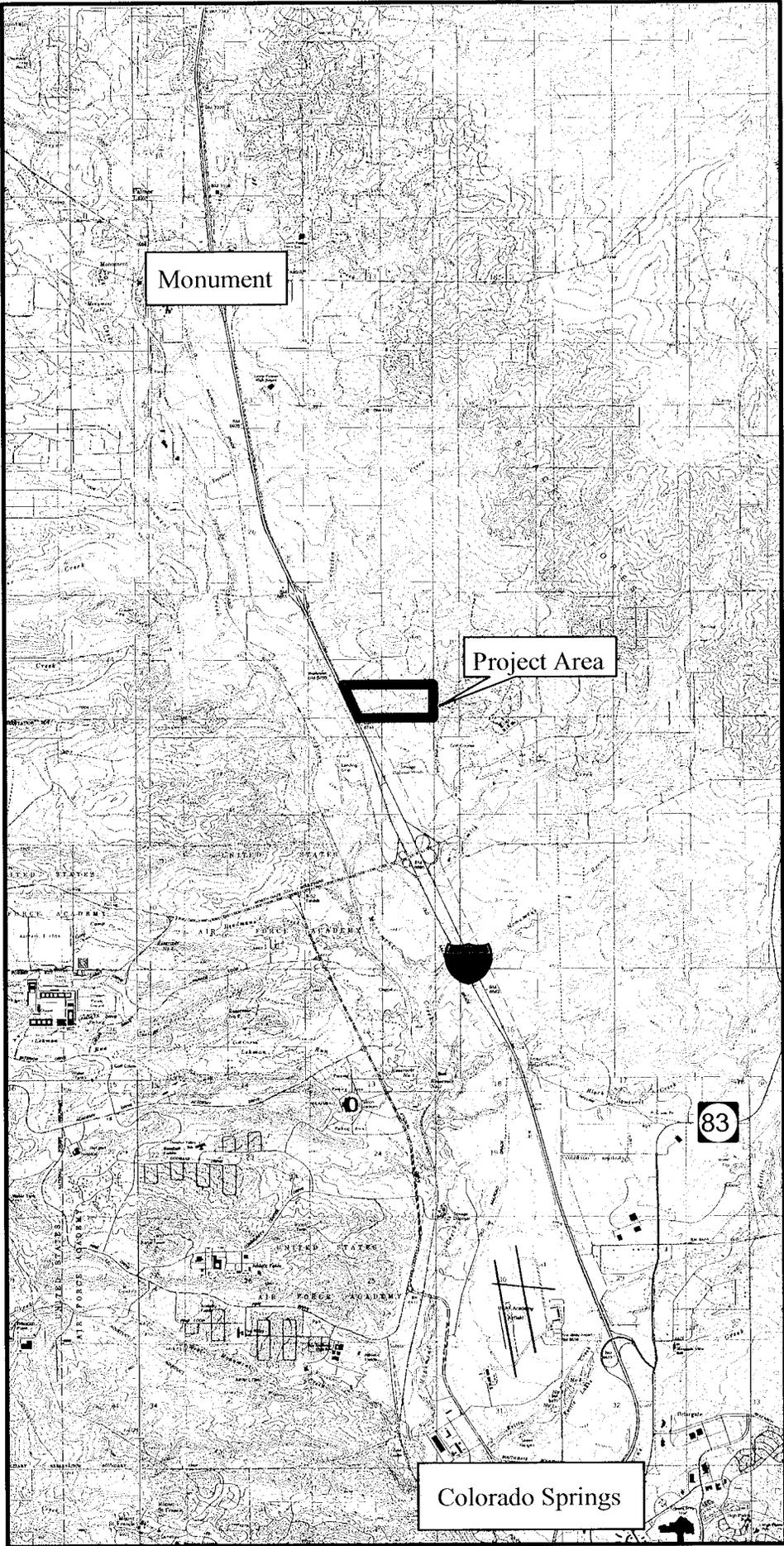
The Applicant accepts and agrees to the responsibility for adhering to the requirements and conditions of the proposed permit and of this EA/HCP, and for implementing and managing the mitigation plan contained herein.

1.3 TERM OF PERMIT

The Applicant requests that the duration of the proposed section 10(a)(1)(B) permit be for a period of 30 years from the date of issuance. This time frame will allow full implementation of the proposed action and conservation measures. During this period, the Applicant will be allowed to take PMJM through the disturbance of PMJM habitat as defined in this document. After expiration of the 30-year permit, any "take" within the said geographical boundaries not specifically covered by this application will require authorization by the U.S. Fish and Wildlife Service (USFWS), possibly through a subsequent permit application under the ESA. However,

the terms and conditions contained in the HCP shall not expire and shall be subject to the enforcement authority of section 11(b) of the ESA.

Figure 1.1.
General Location of the
Struthers Ranch Property,
El Paso County, Colorado.



Scale 1 : 80 000

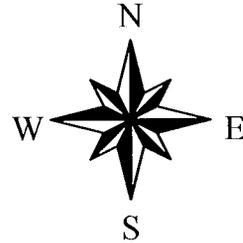
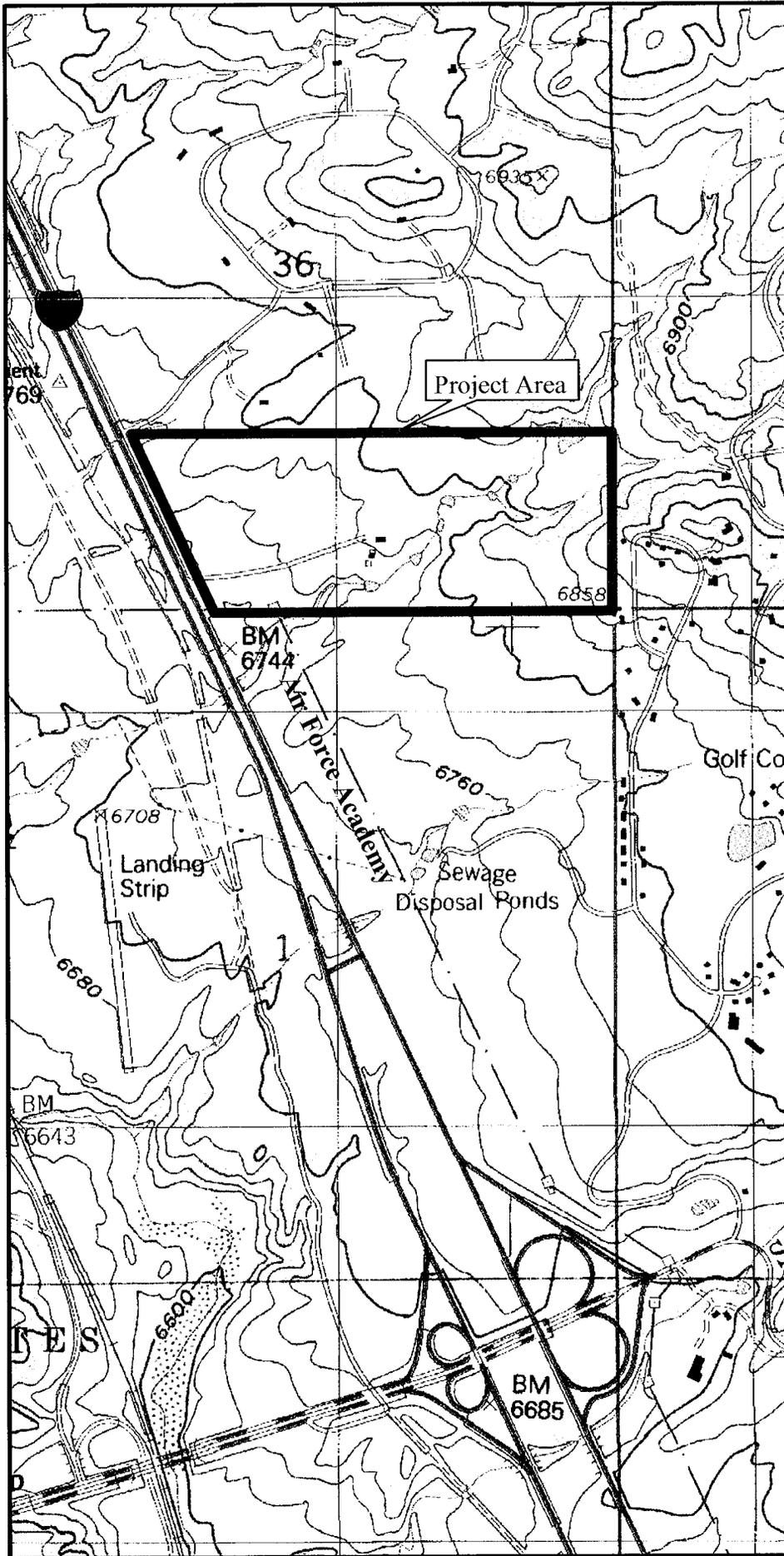
Base Map: USGS 7.5 Minute Series
Topographic Maps

Quadrangles: Monument & Pikeview

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8461 Tumpike Drive, Suite 100
Westminster, CO 80031
303.487.1183
Created July 11, 2001
Path I:\4146-7116 Struthers Ranch\pr\buffer.apr

Figure 1.2.
Project Location,
Struthers Ranch Property,
El Paso County, Colorado.



Scale 1 : 15 000

Base Map: USGS 7.5 Minute Series
 Topographic Maps

Quadrangles: Monument & Pikeview

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3.4.2 Status of Other Federally Listed Species On or Adjacent to Struthers Ranch

Black-footed ferrets historically ranged across the entire Great Plains; however, isolation of, and reduction in, the number of prairie dog (*Cynomys* spp.) colonies, its primary food source, has eliminated the black-footed ferret from the vast majority of its former range. Currently, the ferret is known to occur only in areas of reintroduction in Wyoming, South Dakota, Arizona, Montana, western Colorado, and eastern Utah. No prairie dog towns are known to occur on or immediately adjacent to Struthers Ranch, indicating the unlikely occurrence of black-footed ferrets in the area.

Bald eagles typically inhabit areas near large open water bodies throughout the breeding season in order to fish or scavenge. The project area does not contain any large open water bodies; therefore, the regular occurrence of bald eagle on or immediately adjacent to the project area during the breeding season is considered extremely unlikely. During migration and winter, eagles will utilize areas away from water, especially to scavenge upon large dead animals. However, migration and winter use by eagles within the project area is considered to be minimal due to a lack of adequate prey base (fish, waterfowl, and prairie dogs) and the highly developed nature of adjacent properties. The lack of proper nesting and foraging habitat suggests that the regular occurrence of this species on or immediately adjacent to the project area is highly unlikely.

The Mexican spotted owl is known to occur in Mexico, west Texas, New Mexico, Arizona, Utah, and Colorado. In the northern portion of its range, the spotted owl inhabits slickrock canyons. However, towards the south of its range, the species' habitat affinities graduate more towards forested mountains and canyons. Although the species is listed as occurring in El Paso County, only a few records of the species exist (Andrews and Righter 1992). The lack of requisite habitat on and adjacent to the project area suggests that occurrences of the species on the property would be extremely unlikely.

Once thought to be extinct, and only found in Colorado, the greenback cutthroat trout is endemic to the mountain drainages of the Arkansas and South Platte Rivers; these drainages either lie upslope or in a different drainage system than that of the subject property. The on-site drainage on Struthers Ranch lies outside of the known range of the subspecies and is very shallow and warm-watered, which does not provide suitable habitat for trout. This suggests that the occurrence of greenback cutthroat trout on the subject tract is extremely unlikely.

The Arkansas darter, a small minnow-like fish, is only found in tributaries of the Arkansas River in Colorado, Kansas, Missouri, and Oklahoma. In Colorado, isolated populations have been found in several spring areas adjacent to Fountain Creek south of Colorado Springs and other small tributaries in the eastern portion of the state. Struthers Ranch lies outside of the known range of Arkansas darter and lacks the permanent large water flow essential to the species; therefore, the occurrence of this fish on the property is extremely unlikely.

In early 1999, the National Wildlife Federation petitioned the USFWS to list the black-tailed prairie dog as a threatened species under the ESA. In May 1999, the agency agreed that the petition may be warranted, but precluded listing it at that time. However, USFWS did state that

the listing issue would be addressed on an annual basis until either the species is listed or sufficient information is presented to rule otherwise. As previously stated, site investigations of the study property did not locate any prairie dog colonies on or immediately adjacent to the tract; therefore, any occurrence of prairie dogs in the project area is unlikely.

The mountain plover is known to breed in the Rocky Mountain states from Canada south to Mexico with most breeding birds occurring in Montana and Colorado. Requisite nesting habitat for the species consists of prairie areas containing short vegetation, bare ground, and flat topography. Mountain plovers show a strong affiliation for sites that have been heavily grazed but will also attempt to breed on fallow and cultivated fields that mimic natural habitats. According to Kingery (1998), the only known nesting areas for mountain plover in El Paso County is on the far eastern edge where vast prairie situations exist. The relatively small degree of grasslands and amount of disturbance on and adjacent to the property suggests the occurrence of mountain plover on the property to be unlikely.

3.5 WETLANDS

A delineation of jurisdictional waters including wetlands was completed on the property in October 2001 by SWCA and was submitted to the Corps in October 2002 (Appendix A). The delineation found 3.84 acres of jurisdictional waters on Struthers Ranch. Of this, 2.52 acres satisfy the wetland criteria established in the 1987 U.S. Army Corps of Engineers' Wetland Delineation Manual (Environmental Laboratory 1987). The majority of the wetlands are associated with the southernmost portions of lower Black Forest Creek around the southernmost stock pond and along the south property boundary (Appendix A). Because of stream degradation from deposition of large amounts of sediment, only small wetland areas are present along the central and upper reaches of lower Black Forest Creek and the north and south forks of upper Black Forest Creek. Dominant vegetation in wetland areas varies with the moisture conditions and the degree of flood damage. Below the downstream stock pond, wetland vegetation consists mostly of moderately dense stands of coyote willow, cottonwood, and peach-leaf willow. Smaller wetland areas upstream support moderate densities of Baltic rush and Nebraska sedge, interspersed with dense grasses such as bluegrass and muhly.

3.6 GEOLOGY/SOILS

Struthers Ranch is located at the interface of the western Great Plains and the Rocky Mountains. The property is underlain by two geologic formations: Quaternary older gravels and alluviums and Tertiary deposits of the upper part of the Dawson Arkose. Quaternary gravels and alluviums are found within the on-site drainage valley while Dawson Arkose deposits are present on higher elevations on the property.

Soils on Struthers Ranch fall into three different classes dependent upon location on the tract. The drainage floor consists of Pring coarse sandy loams of 3 to 8 percent slopes. The southern upland area of the property is comprised of the Tomah-Crowfoot loamy sands on 3 to 8 percent slopes while upland areas on the northern portion of the tract consist of the Tomah-Crowfoot loamy sands on 8 to 15 percent slopes. The Pring complex consists of deep, well-drained soils that form in sandy sediments on drainage floors. The Tomah-Crowfoot association consists of

soils that develop on gentle to moderately sloped areas on hills and ridges (Soil Conservation Service 1981).

3.7 LAND USE

The approximately 107-acre Struthers Ranch is the last portion of the original Struthers Ranch, a cattle-ranching property that comprised a large portion of land between the Town of Monument and the City of Colorado Springs. There is an existing, vacant residence in the center of the parcel with associated lawn, landscaping, corrals, and dilapidated ranch outbuildings. Though the ranch buildings are no longer in use, active, year-round cattle grazing continues on the property.

Areas to the east and south of Struthers Ranch consist of high to moderate density residential developments with associated roads and other infrastructure. Struthers Road, a frontage road for Interstate 25, is located directly west of the property. Land directly north of the property remains relatively undeveloped, with some houses constructed on lots approximately 5 acres in size.

3.8 CULTURAL RESOURCES

Based on a file search conducted at the Colorado Office of Archaeology and Historic Preservation in Denver on October 12, 2001 by SWCA, no significant archaeological or cultural properties have been recorded within Struthers Ranch. In fact, two intensive cultural resource inventories for a borrow pit and an area along the Interstate 25 corridor failed to identify any archaeological sites in the immediate project area or outside the project area. An intensive cultural resource inventory of Struthers Ranch by SWCA in March 2003 (Appendix C) identified one 1920s trash scatter and the Struthers Ranch residence and outbuildings. The lack of prehistoric and protohistoric archaeological sites is probably due to the absence of toolstone (or stone used to make tools) in the area. The Struthers Ranch complex consists of a 1½-story wood framed main house with a carport addition, a tool shed, and a series of interconnected corrals enclosing a long, wood plank barn with a lean-to roof covered with tin; a dilapidated wood framed barn with vertical board-and-batten wood plank siding and a front gable roof covered with tin; and a rectangular concrete block milking barn with a side gable roof covered with tin. A series of loading chutes are on the western end of the corral. The Struthers Ranch is a small-family cattle ranch typical of the Colorado eastern plains in the early to late twentieth century. The site does not appear to be significant or eligible for listing on the National Register of Historic Places based on: 1) the architectural aspects are not unique or representative of a period, a specific architect, or an architectural school or movement; and 2) the site is not associated with any person or event of local, regional, or national significance. While it is conceivable that the property might be eligible for listing on the National Register under Criterion A because of its association with the development of the cattle and ranching industry in El Paso County and the Colorado eastern plains, the property's feeling, association, and setting have all been diminished and compromised by the intensive residential development on all sides of the extant property. Moreover, the integrity of all of the buildings is poor from disuse. The historic trash scatter is also recommended as not eligible for listing on the National Register due to its limited data potential.

The State Historic Preservation Office (SHPO) has concurred with the cultural resource surveys and recommendations that no portions of the property are significant or eligible for listing on the National Register of Historic Places (Appendix C).

3.9 AIR QUALITY

Air quality in the project area is influenced by the air quality of the City of Colorado Springs, the Town of Monument, and Interstate 25. Wind direction in the area is commonly from the north; however, changing pressure systems affect wind direction and speed. The Colorado Springs area is currently an attainment/maintenance area for carbon monoxide pollutants, but has no identified problem with ozone or PM10 levels, based upon ambient air quality standards as per the Colorado Air Quality Control Commission.

3.10 WATER QUALITY

Quality of surface water runoff on Struthers Ranch is estimated to be fair due to active cattle grazing which may contribute to higher levels of various organic pollutants. The functioning adequacy of an upstream residential detention pond is of question due to the massive amount of stream erosion that has occurred from recent storm events, which the detention facility appears to be incapable of buffering. These erosive flushes from storm events have drastically increased the amount of siltation and sedimentation on Struthers Ranch and most likely causes greater turbidity during high rainfall periods.

3.11 SOCIOECONOMICS

El Paso County is experiencing rapid population growth in the Colorado Springs area. From 1990 to 2000, the El Paso County population increased by 24 percent. Current population numbers for the county are estimated at 519,773 with a projected increase by 2025 to 744,645. Primary employment sectors in El Paso County include business services, communications, health services, and education (El Paso County Website 2002). Struthers Ranch is currently undeveloped; however, with the increased opportunities for employment, there is increased pressure for housing development in the area.

4.0 PROPOSED ACTION AND ALTERNATIVES

This section describes the alternatives that have been considered during the planning process for the proposed project including the no action alternative, preferred alternative (construction of Struthers Ranch), an alternate development plan, and participation in the regional HCP. The environmental consequences of these alternatives are presented in Section 5.0.

4.1 ALTERNATIVE 1 – NO ACTION

The no action alternative would involve abandonment of the proposed Struthers Ranch development. No impacts from construction would occur to PMJM habitat on Struthers Ranch, thus requiring no application for an incidental take permit. All monies invested in the project would be lost by the Applicant and/or its financial partners. Accepting this alternative requires the assumption that leaving the land undeveloped is economically viable into the foreseeable future. This assumption is not valid because it would result in economic hardship for the applicant, and the potential for future development along the creek would continue to exist.

Without the acquisition of the section 10 permit, the proposed preservation of PMJM habitat along Black Forest Creek would not occur and the condition of the natural environment on the property would continue to degrade due to grazing pressures, spreading weeds, and instability of the creek channel.

4.2 ALTERNATIVE 2 – PROPOSED (PREFERRED) ALTERNATIVE

The preferred alternative consists of the issuance of a permit under section 10(a)(1)(B) of the ESA to authorize the potential incidental take of PMJM. The permit issuance will allow construction of residential and commercial development and associated infrastructure on 66.72 acres of the 107-acre Struthers Ranch (Figure 4.1). The remaining 40.28 acres will remain undeveloped. Impacts to PMJM habitat will result from construction of residences and associated driveways, roads, and utilities as well as drainage stabilization structures such as rip-rap and drop structures. Commercial development and a detention pond are also proposed, but no impacts to PMJM habitat would occur from this portion of the proposed action. Of the approximately 48.93 acres in the project area that are considered habitat for PMJM, development is expected to impact 16.37 acres. Of this, 15.24 acres would be permanently impacted and 1.13 acres would be temporarily impacted (Table 4.1). Mitigation is planned for approximately 35.49 acres with varying amounts of restoration and enhancement of PMJM habitat as described in the HCP (see Section 6.0). This results in a mitigation ratio of 2.168:1 for temporary impacts as well as permanent impacts.

Construction is scheduled to commence in 2004. Construction of single-family homes is planned for 18.10 acres in the southeastern portion of the property, and 27.90 acres of land in the north-central portion. A 100-foot setback from existing development is required by El Paso County along the northern property boundary and 2.38 acres of this will be used for community recreation. Commercial development would encompass 9.56 acres located adjacent to Interstate 25 just east of the proposed Struthers Road. Construction of Struthers Road will occur on 5.65 acres on Struthers Ranch.

Struthers Road will also be extended off-property for approximately 1.23 acres onto the Falcon’s Nest property, which is located immediately south of Struthers Ranch. This extension is required by El Paso County ordinances to allow two entrances for each subdivision for addressing fire and other safety hazards. The adjoining landowner has authorized this small portion of the Falcon’s Nest property to be used by the Applicant as long as mitigation for such off-site impacts is the responsibility of the Applicant and not the owner of the Falcon’s Nest property. All mitigation for the off-site impacts has been incorporated on the Struthers Ranch property (see Section 6.5). Documentation authorizing the off-site impacts can be found in Appendix D.

The Black Forest Creek crossing for Struthers Road would consist of an 8-by-8-foot concrete multiple box culvert as recommended in the “Black Forest Creek Drainage Basin Planning Study,” which was approved by El Paso County. The 40-foot culvert width for this design is consistent with a similar culvert design used at the existing Interstate 25 crossing immediately downstream. A detention pond will be constructed just south of Struthers Road on 1.73 acres. Additional infrastructure, including a 20-foot utility easement, storm drains, drop structures, and rip-rap will occur on 1.40 acres. Specific impacts to PMJM habitat from the proposed development are discussed further in Section 5.0.

Table 4.1. Impacts from the Preferred Alternative to PMJM Habitat on Struthers Ranch

Type of Activity	Type of Impact	Acres
Residential Development	Permanent	12.40
Struthers Road On Property	Permanent	1.34
Struthers Road Off Property	Permanent	1.23
Drop Structures	Permanent	0.26
Storm Water Outfall Drains	Permanent	0.01
Utility Easement	Temporary	0.29
Rip-Rap	Temporary	0.84
Total Impacts		16.37

The proposed action minimizes impacts to the riparian vegetation along Black Forest Creek and limits development to the highest elevations on the parcel. Development of the northeast portion of the property between the middle and south forks of upper Black Forest Creek has also been avoided to maintain a more continuous riparian corridor along the creek. This will facilitate development on the property while minimizing, to the greatest extent practicable, impacts to PMJM habitat and waters of the U.S. In addition, the proposed action includes extensive on-site conservation measures, as described in Section 6.0 (HCP), to repair damage from current cattle grazing practices, poor watershed management upstream, and the heavy flood events. This will result in an overall improvement in the stability of the drainage, which will, in turn, improve vegetation quality and diversity within the on-site PMJM habitat.

4.3 ALTERNATIVE 3 – ALTERNATE DEVELOPMENT PLAN

Under Alternative 3, residential development on the property would take place on approximately 73 acres (Figure 4.2). The balance of the property, approximately 32 acres, would be preserved as with Alternative 2, though the size of the mouse preserve area would be reduced. Additionally, mitigation required to offset impacts from this increased development plan would have to occur off-site. Alternative 3 was rejected because it would have resulted in greater impacts to upland areas potentially occupied by PMJM and the additional mitigation required would make the project infeasible.

4.4 ALTERNATIVE 4 – PARTICIPATION IN THE REGIONAL HCP

El Paso County is currently developing a Regional HCP intended for adoption by area utilities and each governmental entity within the affected portions of the County including the City of Colorado Springs. This Regional HCP will incorporate the needs of local permittees but will allow each permittee to receive a separate permit for their individual jurisdiction.

Submittal of the draft Regional HCP to USFWS is expected by the end of 2004 (Bonar 2002). In addition to review of this draft, associated National Environmental Policy Act (NEPA) processes and analyses will be required. Therefore, it is anticipated that final acceptance of the El Paso County Regional HCP by USFWS most likely will not occur until 2005.

This alternative assumes the Applicant would participate in the El Paso County Regional HCP and that the property eventually would be subject to the conservation strategy set forth therein. This would delay the proposed action until the Regional HCP is approved and implemented. The Applicant would suffer financial loss due to this postponement of the project.

5.0 ENVIRONMENTAL CONSEQUENCES

5.1 ALTERNATIVE 1 – NO ACTION

The no action alternative would mean the abandonment of the entire project including all proposed mitigation. The Applicant would not develop Struthers Ranch and there would be no take of PMJM habitat. No immediate impacts would occur to wildlife, vegetation, wetlands, cultural resources, or other environmental resources. However, abandonment of the proposed project would have long-term impacts. Without the acquisition of a section 10 incidental take permit, active cattle ranching would continue and proposed stabilization of the creek channel would not occur. This may lead to continued degradation of PMJM habitat and habitat for other wildlife and plant species from intense grazing and continued sediment deposition from poor watershed management. The additional proposed improvements to PMJM habitat would also be abandoned, thus creating no benefit to PMJM while the potential for future development would still exist.

In addition to the ecological impacts from this alternative, the Applicant, its employees, and other entities reliant upon the Applicant would be subjected to the economic impacts of discontinuing the project.

5.2 ALTERNATIVE 2 – PROPOSED (PREFERRED) ALTERNATIVE

5.2.1 On-Site Impacts

Impacts that will result from the proposed action are described below and are illustrated in Figure 5.1. Implementation of the HCP (Section 6.0) is designed to mitigate for these impacts.

5.2.1.1 Vegetation

The proposed alternative would result in the total surface disturbance of 66.72 acres on Struthers Ranch and 1.23 acres off-site. Development would occur primarily in locations that currently support grasslands (52.48 acres) and small patches of wooded areas composed of Gambel's oak (2.30 acres). These vegetation types are common for the area. Clearing of vegetation would occur to create space for the construction of homes, to grade for new roads, and to landscape. Small amounts of riparian vegetation, including 2.52 acres of wetland vegetation, will be impacted for construction of the Struthers Road crossing, a utility easement, and drop structures and rip-rap used to stabilize the drainage. This includes 0.12 acre of wetland vegetation that only will be temporarily impacted. Riparian vegetation at the road crossing consists mostly of moderately dense stands of coyote willow, cottonwood, and peach-leaf willow. Other areas along the creek that would be impacted by infrastructure support moderate densities of Baltic rush and Nebraska sedge or consist mostly of open sandy washes with little vegetation.

The remaining 40.28 acres of Struthers Ranch will remain undeveloped. Vegetation in these areas will be relieved from the current grazing pressures and permitted to return to a more natural condition. Additionally, 35.49 acres of the undeveloped land along Black Forest Creek will be maintained as a preservation area with extensive conservation measures to restore and enhance vegetation for local wildlife use.

Drainage instability has resulted in past flood damage to riparian vegetation, which has been exacerbated by cattle grazing leading to sparse vegetation in most areas (see Section 3.2 and Figures 3.5 and 3.6). Alternative 2 proposes to stabilize the drainage and repair this past damage through extensive planting and reseeded (see Section 6.0 – HCP – for details).

5.2.1.2 Wildlife

Wildlife inhabiting areas planned for development would be displaced to adjacent areas, which will result in increased competition for nesting, foraging, breeding, and feeding for those species in the local area. Landscape vegetation will provide habitat for those species of wildlife tolerant of residential and commercial development. A significant portion of the property, 40.28 acres, will not be developed (Figure 4.1). Of this, 35.49 acres occurring along the Black Forest Creek corridor will continue to provide habitat for many of the wildlife species currently inhabiting the area. Undetermined effects associated with the promotion of urban wildlife species and human activities associated with the proposed development may result in negative impacts to certain species, while others may be unaffected or positively affected by this development. Conservation and restoration of the 35.49 acres along Black Forest Creek proposed by Alternative 2 in Section 6.0 (HCP) may counter some of the above-mentioned effects by improving vegetation quality in these remaining areas. The current lack of cover and forage provided by the short, grazed grasses on the property and abundance of open sandy washes resulting from flood damage are considered to be of poor quality for wildlife use. Removal of grazing pressure and the extensive restoration and enhancement of vegetation along the creek corridor proposed by Alternative 2 will improve habitat quality for many wildlife species.

5.2.1.3 Threatened and Endangered Species

The PMJM is the only federally listed threatened species known to occur on Struthers Ranch. DA TI MBI Environmental conducted surveys for PMJM on Struthers Ranch in 1999. As detailed in Section 3.4.1.1, nine PMJM were captured along portions of Black Forest Creek. For defining impacts of the proposed project on PMJM, as per the recommendation of the USFWS, the Applicant has defined PMJM habitat as that area located within 300 feet of the designated FEMA 100-year floodplain along Black Forest Creek and associated tributaries. This translates to 48.93 acres of PMJM habitat on Struthers Ranch.

Alternative 2 proposes to develop 16.37 acres within the 48.93 acres of onsite PMJM habitat. Of this, 15.24 acres would be permanently impacted and 1.13 acres would be temporarily impacted (Table 5.1). Additional indirect impacts could also occur from activities such as long-term increased human activity within close proximity to PMJM habitat, introduction or increases in predator species such as domestic cats, increases in competing species such as deer mice and other small rodents, and increases in surface runoff.

The majority of the captured PMJM on Struthers Ranch were located downstream of the lower stock pond where vegetation is still fairly dense. Upper portions of the drainage have sustained severe flood damage, which, exacerbated by grazing pressures, has resulted in large areas of sparse vegetation and bare sand. Alternative 2 proposes to stabilize the drainage and repair flood damage with extensive planting and reseeded as described in Section 6.0 (HCP). The HCP is designed to minimize the possibility of future severe flooding events and substantially improve

PMJM habitat on the property to minimize any adverse effects resulting from modification of habitat for developed areas.

Table 5.1. Detailed Impacts from the Preferred Alternative to PMJM Habitat on Struthers Ranch

Type of Activity	Type of Impact	Acres	Type of Habitat*
Residential Development	Permanent	12.38	Upland
Residential Development	Permanent	0.02	Waters of the U.S.
Struthers Road On Property	Permanent	0.77	Upland
Struthers Road On Property	Permanent	0.57	Waters of the U.S.
Struthers Road Off Property	Permanent	1.07	Upland
Struthers Road Off Property	Permanent	0.16	Waters of the U.S.
Drop Structures	Permanent	0.16	Upland
Drop Structures	Permanent	0.10	Waters of the U.S.
Storm Water Outfall Drain	Permanent	0.01	Upland
Utility Easement	Temporary	0.28	Upland
Utility Easement	Temporary	0.01	Waters of the U.S.
Rip-Rap	Temporary	0.78	Upland
Rip-Rap	Temporary	0.06	Waters of the U.S.
Total Impacts		16.37	

* Waters of the U.S. include jurisdictional waters and jurisdictional wetlands. All impacts to waters of the United States are based upon results of the delineation and U.S. Army Corps of Engineers concurrence (see Appendix A).

5.2.1.3.1 Assessment of Take

Based on the distribution of PMJM habitat on Struthers Ranch, 16.37 acres of PMJM habitat would be directly impacted by completion of the proposed development plan.

As part of the proposed alternative, an HCP has been designed to minimize the potential adverse modification of habitat described above and to assure that this alternative does not reduce the potential for survival and recovery of PMJM in the wild, as mandated by requirements of 50 CFR Part 17.22(b)(1)(iii). The HCP is detailed in Section 6.0.

No take is anticipated for any other federally listed or proposed species.

5.2.1.4 Wetlands

Approximately 2.52 acres of wetlands and 1.32 acres of non-wetland jurisdictional waters are present on Struthers Ranch associated with Black Forest Creek. It is estimated that 1.08 acres of wetlands and 0.25 acre of waters will be impacted by the proposed project (Table 5.2). Proposed mitigation for wetland impacts within PMJM habitat is discussed in the HCP and also will be addressed in an application to the Corps for a section 404 Permit (Appendix A). Some wetland

areas extend west outside of PMJM habitat on the gentle slopes along the south property boundary (see Appendix A). Mitigation for these wetland areas will be addressed in the Corps application as well and will occur outside of the defined PMJM habitat.

Table 5.2. Expected Impacts from the Preferred Alternative to Waters of the U.S. on Struthers Ranch

Type of Activity	Type of Impact	Acres	Type of Water
Residential Development	Permanent	0.02	Wetlands
Commercial Development	Permanent	0.04	Wetlands
Struthers Road On Property	Permanent	0.75	Wetlands
Struthers Road On Property	Permanent	0.08	Waters
Struthers Road Off Property	Permanent	0.10	Wetlands
Struthers Road Off Property	Permanent	0.06	Waters
Drop Structures	Permanent	0.02	Wetlands
Drop Structures	Permanent	0.08	Waters
Detention Pond	Permanent	0.06	Wetlands
Detention Pond	Temporary	0.05	Wetlands
Utility Easement	Temporary	0.01	Waters
Rip-Rap	Temporary	0.04	Wetlands
Rip-Rap	Temporary	0.02	Waters
Total Impacts		1.33	

5.2.1.5 Geology and Soils

Grading for new construction will comply with all El Paso County construction codes for erosion and sedimentation control.

Current drainage instability has resulted in eroded slopes and significant sedimentation on Struthers Ranch (see Figures 3.3, 3.4, 3.6, and 3.7). Alternative 2 proposes the installation of permanent drop structures and slope stability measures (rip-rap) to minimize future soil erosion and sedimentation on-site and downstream of Struthers Ranch. Proposed locations for drop structures and rip-rap are depicted in Figure 4.1. Vegetation planting and seeding of eroded slopes and sandy washes, as described in Section 6.0 (HCP), will further stabilize slopes and allow for soil development in areas with deep sediment from recent flooding events.

5.2.1.6 Land Use

The preferred alternative is fully compatible with current land use in the area. The Town of Monument lies nearby to the north, the City of Colorado Springs lies nearby to the south, and low- to moderate-density residential areas are present adjacent to Struthers Ranch to the north, south, and east.

5.2.1.7 Air Quality

Development of the property will contribute to local traffic noise and exhaust emissions by increasing the number of people operating vehicles in the area. A temporary increase in noise and dust levels is expected during the construction process. None of these impacts are expected to be significant enough to have an effect on local or regional air quality.

5.2.1.8 Water Quality

Because surface water quality mitigation would be designed in accordance with applicable state and/or local regulations, no significant impacts to local water quality are expected to occur. Due to the current damaged condition of the channel, water quality may be improved after mitigation through stabilization of the channel and removal of cattle that currently have access to the stream.

Storm water runoff and other surface water will be directed to appropriate storm water detention ponds where sediment content will be reduced prior to entering the stream system. All water exiting the detention ponds will be discharged back into Black Forest Creek through energy dissipation facilities. Peak flow rates released from the detention facilities will not exceed historic peak flow rates during average rainfall events.

Subsurface ground water may be altered by the increase in impervious cover in the form of paved roads and parking lots. Some of the water that would have infiltrated into the soil to recharge ground water will now become surface water runoff, which will be diverted to the above-mentioned detention ponds. However, it is anticipated that water infiltration into the ground water from additional irrigation of landscaped areas will likely offset some of this potential loss.

5.2.1.9 Cultural Resources

According to the results of a cultural resource inventory of the property (Appendix C), no significant or eligible for listing historic or archaeological sites exist within the project boundary. Thus, no impacts are expected to occur to any significant site of historical value. The SHPO has agreed with this assessment and provided a concurrence letter for the property (Appendix C). In the event that a historical or archaeological site is discovered during construction, all impacting activities will be halted until the site is evaluated by SHPO.

5.2.1.10 Socioeconomics

The proposed development would result in a small increase in the number of residents in the area and presumably an increased use of Struthers Road. However, use of Struthers Road would increase independent of new development since the County has proposed to extend the road further south as an arterial roadway. In addition to the increase in the number of residents and the increased use of Struthers Road, the proposed development may result in a slight increase in local property values. There are no established communities that will be displaced or disadvantaged by this development, and no environmental justice issues are associated.

5.2.2 Off-Site Impacts

5.2.2.1 Vegetation

Construction of the county-required access road into the southern portion of the property will impact 1.23 acres of land on the property to the south of the Struthers Ranch tract (Table 5.1). The total 1.23 acres of impact are located within off-site PMJM habitat. Of this, 1.07 acres of the road will impact upland grasses and 0.10 acre of the road will impact jurisdictional wetlands. The remaining 0.06 acre of road construction will occur in the jurisdictional channel and will not impact vegetation (Table 5.2).

5.2.2.2 Wildlife

Displacement of certain wildlife species would be expected to occur from the development areas to adjacent greenbelts as well as adjacent properties. As a result of the suburban influence, the population of some species might be expected to increase while others may experience a decrease in numbers. However, as previously stated, expected wildlife density on the developable portions of the property is low due to the heavily grazed condition of the vegetation.

5.2.2.3 Endangered Species

The Preferred Alternative involves only minor off-property construction activities related to the southern access road. Total construction off-site will occur within 1.23 acres of PMJM habitat. Of this, 0.16 acre of riparian habitat (wetlands and waters) would be permanently impacted and 1.07 acres of upland habitat would be permanently impacted (Table 5.1). Direct impacts to habitat will occur through removal of shrubs and other vegetation in PMJM habitat. Indirect impacts could also occur from activities such as long-term increased human activity within close proximity to PMJM habitat, introduction or increases in predator species such as domestic cats, increases in competing species such as deer mice and other small rodents, and increases in surface runoff.

Positive off-site impacts to PMJM are also expected as a result of the planned improvements to PMJM habitat in the project area under the mitigation plan. PMJM populations downstream will benefit by the restoration of damaged riparian habitat in the project area and the improved water quality resulting from drainage stabilization measures proposed in the mitigation plan.

5.2.2.4 Wetlands

Permanent impacts to 0.10 acre of off-site wetlands and 0.06 acre of off-site waters are expected to occur only at the location of the Struthers Road crossing at Black Forest Creek (Table 5.2). These impacts are located within PMJM habitat. Proposed mitigation for the impact to these wetlands and waters is included within the HCP and also will be addressed in an application to the Corps for a section 404 permit (Appendix A).

5.2.2.5 Geology and Soils

A small amount of off-site impacts to geology or soils are expected to occur at the location of the proposed access road on the southern portion of the property. A reduction in sediment deposition downstream may result from the erosion control measures proposed on-site in the mitigation plan.

5.2.2.6 Land Use

Development of Struthers Ranch would increase the overall development in the area beyond currently existing developments or planned developments. The preferred alternative is fully compatible and comparable to current and projected land use in the area.

5.2.2.7 Air Quality

As previously discussed in the on-site impacts section, vehicle emissions and noise levels are expected to increase locally due to an increase in the number of vehicles in the area. This local increase will also have minor effects on the regional air quality conditions. None of these impacts are considered to have a measurable effect on local or regional air quality.

5.2.2.8 Water Quality

As stated previously, because surface water quality mitigation would be designed in accordance with applicable state and/or local regulations, no significant off-site impacts to water quality are expected to occur. Water quality downstream from Struthers Ranch may be improved as a result of installation of erosion control measures and the removal of cattle that currently have access to the stream.

5.2.2.9 Cultural Resources

Based on investigations by SWCA, no significant cultural resources are known to occur immediately adjacent to the property. Therefore, no off-site impacts to cultural resources are expected.

5.2.2.10 Socioeconomics

Development of Struthers Ranch is expected to result in a slight increase in the number of motorized vehicles in the area, which may result in a slight increase in traffic congestion. It would also result in a slight increase in the local population and local property values. Since there is no minority or low-income housing adjacent to the property, there would be no off-site environmental justice issues.

5.2.3 Cumulative Impacts

Current management practices for agricultural use have severely impacted vegetation on Struthers Ranch. In some stretches along Black Forest Creek, cattle grazing and flooding have eliminated all streamside vegetation. This lack of vegetation along the creek has decreased the habitat value for PMJM on the property, especially in the upstream areas. The habitat continues to degrade from continued cattle grazing and erosion. Prior PMJM surveys have shown much higher population numbers along the downstream portions of the property where past flood damage is minimal and vegetation is denser. Habitat quality is considered moderate to high further downstream on the Air Force Academy.

Black Forest Creek originates approximately 1 mile northeast of the property, and habitat in this upstream area is considered poor due to a highly altered channel surrounded by development. Implementing the mitigation proposed by the Applicant and controlling the stream flow and runoff from adjacent properties will improve PMJM habitat on the property. This is especially

relevant to the on-site upstream areas. The check structures proposed for the channel will improve stability of the drainage, which is expected to improve downstream water quality by reducing future flood damage.

Negative cumulative impacts may occur from the indirect effects of increasing predator species such as domestic cats and competition with other small rodents that may increase with the increase in human activity in the area.

Overall, the Preferred Alternative, including its mitigation plan, will improve PMJM habitat along Black Forest Creek. Habitat will be enhanced and restored, thereby creating better quality and availability of habitat for PMJM as detailed in Section 6.4. With success of the mitigation plan as described in Section 6.6.5, the proposed Struthers Ranch development is not expected to have a significant negative impact on PMJM.

5.3 ALTERNATIVE 3 – ALTERNATE DEVELOPMENT PLAN

5.3.1 On-Site Impacts

5.3.1.1 Vegetation

As a result of implementation of Alternative 3, direct modification of vegetation would occur on 18.63 acres of potential PMJM upland and wetland habitat on Struthers Ranch. This would be an increase from Alternative 2 of 2.26 acres of impact to PMJM habitat. As in Alternative 2, vegetation in proposed development areas primarily consists of grasslands and small patches of Gambel's oak.

5.3.1.2 Wildlife

Impacts to wildlife are expected to be similar to those described for Alternative 2, although impacts to wildlife species intolerant or less tolerant of human activity would likely be greater because of the increased size of developed areas.

5.3.1.3 Endangered Species

Impacts to PMJM would be slightly higher than those expected to result from Alternative 2. An additional 2.26 acres of PMJM habitat would be disturbed and made unavailable for the mouse preserve area. As with Alternative 2, impacts are not expected to occur to any other listed, proposed, or candidate species.

5.3.1.4 Assessment of Take

Compared to Alternative 2, Alternative 3 would directly impact 2.26 additional acres of PMJM habitat. No take is anticipated for any other federally listed or proposed species.

5.3.1.5 Wetlands

No additional impacts to wetlands would occur as a result of Alternative 3.

5.3.1.6 Geology and Soils

A slight additional impact to geology and soils on upland areas would result from Alternative 3.

5.3.1.7 Land Use

In general, impacts to land use would be as described for Alternative 2.

5.3.1.8 Air Quality

Overall, impacts to air quality would be similar to those of Alternative 2.

5.3.1.9 Water Quality

Overall, impacts to water quality would be similar to those of Alternative 2.

5.3.1.10 Cultural Resources

Impacts to cultural resources are expected to be similar to those of Alternative 2.

5.3.1.11 Socioeconomics

In general, socioeconomic impacts would be as described for Alternative 2.

5.3.2 Off-Site Impacts

Off-site construction necessary for completion of Alternative 3 would be identical to that required for Alternative 2. Accordingly, off-site impacts expected to result from Alternative 3 are similar to those of Alternative 2.

5.3.3 Cumulative Impacts

Cumulative impacts to some resources would be slightly higher, including impacts to vegetation. No cumulative impacts to air and water quality are expected.

5.4 ALTERNATIVE 4 – PARTICIPATE IN THE REGIONAL HCP

Impacts to PMJM habitat and all other environmental resources as a result of development would likely be the same as those addressed for Alternative 2, the Preferred Alternative, if participation in the El Paso County Regional HCP should occur. However, delay of the proposed project may have immediate impacts on PMJM habitat, overall vegetation, soils, and water quality due to continued cattle ranching and drainage instability. The continued degradation of PMJM habitat and habitat for other wildlife and plant species from delay of the mitigation plan may impact local wildlife populations and require even more intensive mitigation measures in the future.

Alternative 4 would also economically impact the Applicant due to time constraints associated with waiting for the completion of the Regional HCP. El Paso County has not yet completed a first draft of the Regional HCP. It is likely that acquisition of final approval of the plan will not occur until sometime in 2004 or later. The financial cost to the Applicant of postponing development until acceptance of the Regional HCP would be too great to consider this alternative.

6.0 HABITAT CONSERVATION PLAN

6.1 DESCRIPTION OF PLAN AREA

The proposed Struthers Ranch development project is situated along the eastern edge of the Front Range of the Rocky Mountains. The project area is characterized by small rolling hills interspersed by shallow drainages. As described in Section 3.1, a portion of Black Forest Creek flows across the tract in a northeast to southwest direction.

The development area is predominantly made up of grasslands that have been historically and are currently used as pasture for cattle (Figure 6.1). Dominant vegetation consists of native grasses such as blue grama and three-awn. Weedy species such as diffuse knapweed and mullein are also common throughout the area. Some areas adjacent to Black Forest Creek support coyote willow, Nebraska sedge, Baltic rush, and dense grasses (Figure 6.2).

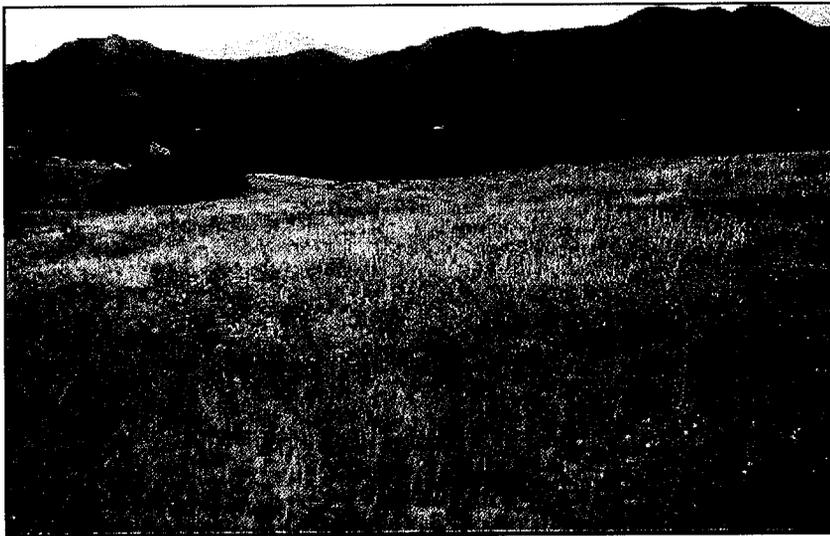


Figure 6.1. Grassland on Struthers Ranch.

Figure 6.2. Riparian and Wetland Vegetation on Struthers Ranch.



Flooding has heavily impacted the middle and upper portions of the creek. As mentioned in Section 3.1, a 1999 flood event inundated the middle fork and deposited a large amount of sand and silt downstream (Figure 6.3). The south fork and the upper channel of the north fork exhibit less flood damage and are characterized by narrow channels with grassy vegetation up to the banks. Clumps of Gambel's oak are scattered along both of these forks. Some fringe wetland vegetation is present.



Figure 6.3. Flood Damaged Portion of Black Forest Creek, Struthers Ranch.

The lower section of Black Forest Creek on Struthers Ranch contains a variety of vegetation characteristics. In some areas, dense riparian and wetland vegetation, dominated by coyote willow, Nebraska sedge, and Baltic rush, are found along the creek. However, even in these areas, the surrounding vegetation tends to be heavily impacted by grazing and ponds created by beaver activity (refer to Figure 3.5). Some portions of the lower reaches are so heavily impacted by grazing and previous flood events that the majority of vegetative cover is gone, creating open sandy areas with only sparse wetland or grassy vegetation, as seen in Figure 3.6. Other areas consist of a narrow channel with adjacent sparse grassy and weedy cover. In these areas, shrubs and understory vegetative cover may be scattered along the banks (Figure 6.4).

6.2 MITIGATION PLAN

As part of Alternative 2, the preferred alternative, this HCP is proposed to minimize and mitigate the potential take of PMJM within the project boundary by restoring and enhancing PMJM habitat and insuring its long-term protection. This HCP will attempt to insure that the proposed action does not reduce the potential for survival and recovery of the PMJM in the wild, as mandated by requirements of 50 CFR Part 17.22(b)(1)(iii).



Figure 6.4. Narrow Channel in Lower Reaches of Black Forest Creek on Struthers Ranch, El Paso County, Colorado.

6.3 IMPACTS

Impacts to PMJM habitat from the Preferred Alternative are outlined in Table 5.1. The Preferred Alternative will impact a total of 16.37 acres of PMJM habitat (on-and off-site) through the construction of homes and associated infrastructure. Of this, 15.24 acres would be permanently impacted and 1.13 acres would be temporarily impacted. Direct impacts to habitat will occur through removal of shrubs and other vegetation. The remaining 32.56 acres of PMJM habitat on the property will remain undeveloped. Impacts to PMJM habitat would result from construction of residences and associated driveways, roads, and utilities, as well as drop structures and rip-rap for erosion control along Black Forest Creek. Commercial development and a detention pond are also proposed, but no impacts to PMJM habitat would occur from this portion of the proposed action. In order to mitigate potential impacts to PMJM, 35.49 acres of habitat will be restored, enhanced, or created (Figure 6.5), including the temporary impact areas. The proposed mitigation by the Applicant is equivalent to a ratio of 2.168:1.

6.4 PMJM HABITAT REQUIREMENTS

The PMJM has been determined by USFWS to be subject to potential threats from human-induced activity. It is found at the interface between the Rocky Mountains and the Great Plains at elevations below 7,600 feet in Colorado. As described in Section 3.4.1, the ideal habitat for PMJM, as supported by USFWS, is areas of open, wet meadows and riparian corridors consisting of grasses, forbs, and shrubs. It is believed that PMJM require habitat that is within close proximity of open water.

In El Paso County, this typical habitat consists of complex riparian communities composed of multi-strata woodland and herbaceous species such as coyote willow, western snowberry, choke cherry, and wetland grasses. Cattail stands generally are not considered to represent prime PMJM habitat.

Further studies have shown that the mouse often hibernates and forages in adjacent upland areas that support grasses, western snowberry, Gambel's oak, and choke cherry. The level of dependency of the mouse upon extensive upland areas for survival has not yet been determined.

6.5 GOALS AND OBJECTIVES

The goals and objectives of this HCP involve mitigation for the 16.37 acres of impacts to PMJM habitat expected from the Preferred Alternative (Alternative 2) by restoring damaged PMJM habitat, enhancing vegetation diversity and cover in existing undeveloped PMJM habitat, creating new PMJM habitat, and long-term protection of the habitat corridor in order to help ensure PMJM population survival and viability. This HCP proposes to conduct restoration/enhancement/creation procedures on 35.49 total acres on Struthers Ranch within the Black Forest Creek corridor. The mitigation on Struthers Ranch includes mitigation for the 1.23 acres of off-site impacts resulting from the development of the southern access road. This results in a mitigation ratio of 2.168:1. Mitigation activities are intended to result in a net benefit for PMJM through improvement of the habitat value of these areas.

As a final form of mitigation, the Applicant is proposed to place deed restrictions on all remaining PMJM habitat and the preserved area will be managed for PMJM only. As a way to finance the management of the Black Forest Creek corridor, the Applicant will enter into an agreement to provide an endowment for management of the property with Trust for Public Lands (TPL), or a similar organization, who will take over the deed to the property once the mitigation standards of success (Section 6.6.6) are achieved. See Section 6.6.10.3 for more details.

6.6 MITIGATION STRATEGY

The mitigation strategy outlined in this plan will occur in several ways; habitat restoration, enhancement, creation, and long-term protection through deed restrictions and an endowment for management of the preserve.

Of the 35.49 acres of mitigation area, restoration and enhancement will occur on 19.78 acres of upland areas and restoration will occur on 5.01 acres of riparian areas (Table 6.1). Additionally, limited enhancement will occur on 8.05 acres of uplands. Limited enhancement will consist of weed control and the removal of grazing to encourage existing native grass recovery. No seeding or planting will occur in these areas (see Section 6.6.4). Habitat creation will occur on an additional 2.65 acres including the detention pond in the southwest corner of the property located outside of PMJM habitat and within the PMJM buffer area currently occupied by the ranch house outbuildings. The detention pond will be designed to function as a wetland area contiguous with existing PMJM habitat and areas currently occupied by ranch buildings will be planted with native grasses after removal of the structures (see Section 6.6.5). Restoration and

enhancement will be achieved through a combination of removing grazing pressures, weed control, and planting and seeding of native species as described in the following sections.

Cattle will be removed at the commencement of mitigation in all areas. By removing this pressure, the entire site should be enhanced by allowing the existing vegetation to recover, decreasing erosion, and allowing for the effectiveness of the additional mitigation activities described in the following sections.

Table 6.1. Mitigation Acreage Summary for Struthers Ranch.

Type of Mitigation	Location	Acres
Restoration/Enhancement	Uplands	19.78
Restoration	Riparian	5.01
Limited Enhancement	Uplands	8.05
Creation	Old Ranch Site and Detention Pond	2.65
Total Mitigation		35.49

6.6.1 Noxious Weed Control

Weeds will be controlled through spraying prior to any seeding or planting activities in all restoration, restoration/enhancement, and limited enhancement areas where necessary. During past site visits, noxious weeds such as mullein and diffuse knapweed have been identified throughout the area, with knapweed being the dominant weed species. The objective of the weed control plan will be to prevent further spread of these or any other noxious weed species. The goal will be to reduce the density of weeds to less than 5 percent (%) of the total aerial cover.

While there are many different ways to control noxious weeds, chemical application appears to be the most effective and efficient way of reaching the desired goal of weed density reduction for this project. Thus, the Applicant proposes to hire a licensed weed control company to apply the herbicide Plateau[®]. This herbicide, when applied at the correct and recommended mixture and at the recommended time of year, can target many different weed species and other woody plants, leaving existing grasses. This chemical was chosen by the USFWS (2002) because of its success of controlling the identified weeds; its low mobility rate in soil; its low toxicity to fish, mammal, and bird species; and the fact that non-target plants are tolerant of the chemicals.

For maximum results in controlling and reducing the weeds, the infested areas will be treated once in the early spring (mid to late April) prior to the emergence of PMJM and once during autumn (after 15 October). After the first year of treatments, additional weed spraying will occur only as a spot treatment in those areas deemed necessary. Follow-up herbicide applications during the following growing seasons will be conducted on an as-needed basis until success is achieved. Should significant areas of noxious weeds be identified during the following growing seasons, the areas will be treated with the same herbicide and applied from hand-held and/or backpack sprayers.

The herbicide will be applied to upland areas identified as infested with noxious weeds using a tractor or an All-Terrain Vehicle with an attached tank. Smaller areas and areas near water and riparian vegetation will be treated using hand-held and/or backpack sprayers. The Applicant believes that by using these methods of application, the operator can have a better control of where the herbicide is being applied, thus the chances for wind drift and inadvertent spraying of trees, shrubs, and wetlands will be decreased. If necessary, individual trees and shrubs will be covered during applications. Again, the goal of spraying is to reduce the density of noxious weeds, not to control or kill existing or newly planted trees and shrubs as well as the existing riparian vegetation along Black Forest Creek.

Additional pressure in reducing weed densities will come from the establishment of native grass and forb species after the spraying has been completed as described in the following sections.

6.6.2 Upland Habitat Restoration/Enhancement

Restoration and enhancement methods will be implemented on 19.78 acres of uplands (Figure 6.5). Restoration will occur in areas where temporary impacts will occur from implementation of the proposed alternative. Temporarily disturbed land includes the location of the proposed utility pipeline crossing, the storm drain within the 300-foot PMJM protection boundary, and portions of rip-rap areas used for erosion control purposes. Enhancement will occur in areas where the vegetation has been heavily impacted by grazing. Existing grass cover in enhancement areas varies slightly but was estimated at an average of 50% aerial cover.

All areas within the defined PMJM habitat boundary on Struthers Ranch where temporary impacts occur will be replanted immediately following the completion of the construction phase in that area. The impacted areas will be revegetated using native grass and shrub species. Seeding of temporarily impacted areas will occur by drill seeding a minimum of three species listed in Table 6.2. The species listed in Table 6.2 were compiled by consulting with the Colorado Division of Wildlife, the U.S. Natural Resource Conservation Service (NRCS), the Corps, and other private biological consultants currently working with PMJM. In areas where tractors cannot gain access or where drill seeding is impractical because of impacts to existing vegetation, broadcast seeding will occur using the same species but at a rate twice that mentioned in Table 6.2. The overall planting rate will range from seven to ten pure live seed (PLS) pounds per acre based on the combination of species used.

In the areas of proposed rip-rap placement along creek banks, shrubs will be planted between the rocks to improve overall vegetation cover in these areas and further stabilize the bank. In general, snowberry shrubs and choke cherry will be used along the riparian edge with Gambel's oak and ponderosa pine used further upslope. Shrub species planted may vary slightly from this depending on slope and water availability to achieve the standards of success described in Section 6.6.6 but will only consist of those species listed in Table 6.3. Species for each area will be chosen to blend with the surrounding existing vegetation.

Table 6.2. Native Grass Seeds Recommended by the Colorado Division of Wildlife and the U.S. Natural Resource Conservation Service

Common Name	Scientific Name	Growth Season	Minimum Seeding Rate (PLS lbs./acre)
Switchgrass	<i>Panicum virgatum</i>	Warm	3
Yellow Indiangrass	<i>Sorghastrum nutans</i>	Warm	5
Big bluestem	<i>Andropogon gerardi</i>	Warm	6
Prairie sandreed	<i>Calamovilfa longifolia</i>	Warm	4
Sideoats grama	<i>Bouteloua curtipendula (Vaughn)</i>	Warm	5
Sand dropseed	<i>Sporobolus cryptandrus</i>	Warm	1
Blue grama	<i>Bouteloua gracilis</i>	Warm	2
Canada wildrye	<i>Elymus canadensis</i>	Cool	11
Western wheatgrass	<i>Pascopyrum smithii</i>	Cool	8
Indian ricegrass	<i>Achnatherum hymenoides</i>	Cool	6

PLS = pure live seed

In upland enhancement areas where grasses have been severely impacts by grazing, the weed control methods described in Section 6.6.1 will be followed by the planting of native grass and shrub species. Enhancement of upland areas will begin during the first spring after the HCP is approved with over seeding using native grass species in those areas not treated for noxious weeds. Seeding in areas treated for weeds will be conducted during late fall following the last herbicide treatment. The seeding will help increase the aerial cover and species composition of native grass species in an effort to increase cover and food sources for PMJM. Seeding will be conducted by drill seeding a minimum of three species listed in Table 6.2 at the proposed rates. The overall planting rate will range from seven to ten PLS pounds per acre based on the combination of species used. In areas where tractors cannot gain access or to avoid damage to existing vegetation from heavy equipment, the area will be broadcast seeded using a minimum of three species listed in Table 6.2 at double the seeding rate.

Native upland shrub species proposed for mitigation areas are listed in Table 6.3. The proposed planting rates per acre are based on using an individual species or any combination thereof. Naturally, upland shrubs in the Black Forest Creek drainage do not cover an entire acre and in most areas are relatively scarce within PMJM habitat. Therefore, it is anticipated that all mitigation shrub plantings will comprise of small groups of like shrubs, planted in clumps throughout the area with an increase in clumps occurring closer to the riparian areas at a rate equal to 500 plants per acre. Clumps of different species of shrubs will comprise of five to ten 5-gallon potted shrubs. In general, snowberry shrubs and choke cherry will be used along the riparian edge and other low lying areas that regularly received water, with Gambel's oak and ponderosa pine used further upslope. Shrub species planted may vary slightly from this depending on slope and water availability to achieve the standards of success described in Section 6.6.6 but will only consist of those species listed in Table 6.3. Native upland shrub species for each area will be chosen to blend with the surrounding existing vegetation.

Table 6.3. Recommended Upland Shrub Species for Use in Mitigation on Struthers Ranch.

Common Name	Scientific Name	Planting Rate of 5-gal plants/Acre/spp*
Snowberry	<i>Symphoricarpus albus</i>	500
Gambel's oak	<i>Quercus gambelii</i>	500
Choke cherry	<i>Prunus virginiana</i>	500
Skunkbrush	<i>Rhus trilobata</i>	500
Shrubby cinquefoil	<i>Potentilla fruticosa</i>	500
Wild rose	<i>Rosa woodsii</i>	500
Golden currant	<i>Ribes aureum</i>	500

* Planting rate based upon the use of one species to cover one acre. Since all planting rates are the same, to cover 1 acre, 500 plants of any combination may be used. For areas where less than 1 acre will be covered, clump size will be based upon a rate equivalent to 500/ac using single species and/or a combination of the above listed species.

6.6.3 Riparian Restoration

Native wetland shrub and herbaceous species proposed for mitigation areas are listed in Tables 6.4 and 6.5. Restoration is proposed for 5.01 acres of riparian areas that have sustained heavy damage from grazing and past flood events. In areas proposed for riparian restoration, a minimum 15-foot wide willow corridor will be created along the creek bank.

Willows used for mitigation will be willow bundles, nursery-grown 5-gallon potted willows, or a combination of both. Willow bundles are a grouping of five to seven willow stakes or cuttings, tied into clumps approximately 3 to 18 inches in diameter. The terminal bud will be removed so that stem energy will be re-routed to the lateral buds for more efficient root and stem sprouting. Planting willow bundles is an ideal way to plant where an adequately high water table exists and is desirable due to low cost and ease of planting. Willow bundles will be planted at a staking rate of approximately 19,300 stakes per acre on 18-inch centers. These bundles will be obtained by clipping onsite or nearby willow branches affecting no more than one-third of each plant and/or from a nursery. NRCS and nursery guidelines will be followed for planting. Generally, willow bundles will be planted in a belt of varying width, at a minimum of 15 feet wide, mimicking natural clumps depending on soil moisture adjacent to the stream channel. In areas where the water table is not high enough for willow bundles to succeed, nursery-grown potted willows or a combination of potted willows and bundles will be used. Potted willows will be planted at a rate of 700 plants per acre. The proposed planting rate of 700 potted plants per acre is based upon using an individual species and/or any combination thereof. It is not anticipated that an entire acre will be covered immediately after planting. The planting will be done in a manner to create a mosaic that blends with the surrounding, natural landscape. Planting rates are best estimates at this time. If natural processes such as precipitation levels expedite or slow down the planting process, these planting rates may need to be increased or decreased accordingly to achieve the standards of success described in Section 6.6.6.

Table 6.4. Recommended Wetland/Riparian Shrub Species for Use in Mitigation on Struthers Ranch

Common Name	Scientific Name	Planting Rate*
Coyote willow (potted)	<i>Salix exigua</i>	700 – 5-gal/acre
Coyote willow (stakes)	<i>Salix exigua</i>	19,360/acre
Bluestem willow (potted)	<i>Salix irrorata</i>	700 – 5-gal/acre
Bluestem willow (stakes)	<i>Salix irrorata</i>	19,360/acre
Peach-leaf willow (potted)	<i>Salix amygdaloides</i>	700 – 5-gal/acre
Peach-leaf willow (stakes)	<i>Salix amygdaloides</i>	19,360/acre

* Planting rate based upon the use of one species to cover 1 acre. Since all planting rates are the same, to cover 1 acre, 700 plants, for example, of any combination may be used. For areas where less than 1 acre will be covered, clump size will be based upon a rate equivalent to 700/ac using single species and/or a combination of the above listed species.

Table 6.5. Recommended Wetland/Riparian Herbaceous Species for Use in Mitigation on Struthers Ranch

Common Name	Scientific Name	Planting Rate
Poverty rush (seed)	<i>Juncus tenuis</i>	1.5 lbs/acre
Poverty rush (plant)	<i>Juncus tenuis</i>	1000 – 2.5"/acre
Torrey rush (seed)	<i>Juncus torreyi</i>	1.7 lbs/acre
Torrey rush (plant)	<i>Juncus torreyi</i>	1000 – 2.5"/acre
Colorado rush (seed)	<i>Juncus confusus</i>	1.3 lbs/acre
Colorado rush (plant)	<i>Juncus confusus</i>	1000 – 2.5"/acre
American threesquare (seed)	<i>Scirpus Americanus</i>	2 lbs/acre
American threesquare (plant)	<i>Scirpus Americanus</i>	1000 – 2.5"/acre
Creeping spikerush (seed)	<i>Eleocharis palustris</i>	2 lbs/acre
Creeping spikerush (plant)	<i>Eleocharis palustris</i>	1000- 2.5"/acre
Softstem bulrush (seed)	<i>Schoenoplectus validus</i>	2 lbs/acre
Softstem bulrush (plant)	<i>Schoenoplectus validus</i>	1000- 2.5"/acre
Nebraska sedge (seed)	<i>Carex nebrascensis</i>	1.5 lbs/acre
Nebraska sedge (plant)	<i>Carex nebrascensis</i>	1000 – 2.5"/acre

Herbaceous wetland species will be planted or seeded in addition to willow planting. It is anticipated that the planting of a combination of willow, rushes, sedge, and other wetland species will help stabilize the newly exposed sediment. This will greatly improve the existing condition of the creek banks. Table 6.5 lists wetland herbaceous species that will be planted and seeded in wetland PMJM habitat restoration areas as recommended by the Colorado Department of Natural

Resources native plant revegetation guide (1998). Established plants in 2.5-inch containers will be planted at the rates listed in Table 6.5 and then supplemented with seeding at the rates shown in the table to create a uniform wetland. A mix of all species in Table 6.5 will be used with each species consisting of at least 5% of the total composition.

6.6.4 Limited Habitat Enhancement

Limited enhancement of PMJM habitat will occur on approximately 8.05 acres and will consist of activities to help the existing vegetation recover from past land use practices. The area set aside for limited enhancement consists of uplands that have been impacted by livestock grazing. Weeds are currently prevalent in these areas. Enhancement measures will include the removal of grazing pressures and the application of weed control methods as described in Section 6.6.1. No planting or seeding will be implemented in these areas.

6.6.5 Habitat Creation

Habitat creation will occur in the southwest corner of the property in a detention pond located outside of PMJM habitat and within the PMJM buffer area currently occupied by the ranch house outbuildings. The detention pond will be designed to function as a wetland area and planted with native wetland grasses and shrubs as described for riparian restoration in Section 6.6.2. The pond will be excavated below existing grades with 4:1 maximum side slopes. The pond will be unlined, allowing for maximum infiltration of storm water runoff. As such, the pond can be expected to establish a relatively moist hydrology to support wetland conditions. The sides of the pond will be vegetated with native upland grasses and upland shrubs following the same guidelines for uplands restoration areas described in Section 6.6.2. This area is contiguous with current PMJM habitat boundaries, and a travel corridor will be provided to encourage PMJM use of this area. The area occupied by the ranch house outbuildings will be planted with native upland grasses after removal of the outbuildings and will follow the same guidelines, including success criteria, as those for the upland restoration areas described above.

6.6.6 Vegetation Monitoring and Standards of Success

The Applicant will carry out all activities pursuant to proposals specified within this HCP and conditions outlined within the anticipated section 10(a)(1)(B) permit. Monitoring of those activities will be the responsibility of the Applicant and reports on monitoring efforts will be provided to USFWS by the end of November of each calendar year throughout the monitoring phase. A restoration/landscaping firm will be contracted to implement the mitigation plan. All mitigation areas will be monitored annually for a period of three growing seasons or until success is achieved.

Baseline vegetation data, including percent cover, will be gathered prior to implementation of the mitigation plan. Permanent photograph points will be established for use in documenting before and after site characteristics. Permanent transect lines will be randomly placed perpendicular to Black Forest Creek throughout the project site. The locations of photograph points and transect lines will be established, surveyed, and permanently marked for future reference. The tentative placement of photograph points is indicated on Figure 6.6. The final location of all photograph points will be submitted to USFWS for approval prior to implementation of the mitigation plan.

A 1-square-meter quadrat will be placed every 5 meters along the downstream side of each transect with the total number of quadrats sampled totaling 80 for the entire area. Within each quadrat, a list of identified plant species will be documented for use in determining species composition and percent canopy cover will be measured. Species composition and canopy cover will be used to determine the target reduction of noxious weeds, increases in desirable species, and enhancement progress. This same procedure will be used for each year of monitoring. Findings of the monitoring evaluation and photographs will be documented in an annual report submitted to the USFWS by 30 November each year during the monitoring program until success is achieved.

Standards for success of herbaceous native vegetation in areas of restoration will be equal to or greater than 60% aerial cover, while noxious weeds will comprise 5% or less of the total aerial cover. At least 50% or greater of the total aerial cover will consist of native species. Within areas of enhancement, the standard for success will be based upon a baseline of 50% cover with the following goals: by the end of the monitoring program (see Mitigation Schedule Section 6.6.8), there will be a 25% increase in aerial cover by native species and aerial cover by noxious weeds will be no greater than 5% of the total cover. Shrub survival for both upland and riparian areas will be 75%, as measured by a full shrub inventory where each individual shrub planted will be inspected at the end of each growing season to verify survival.

Interim remediation during the monitoring period will consist of replacing plants/shrubs as required to meet the success standards. The USFWS will be notified of any necessary remediation activities in the annual monitoring report.

6.6.7 Mitigation Schedule

Upon approval of the section 10 permit, the Applicant will remove cattle from the entire property and bank stabilization mechanisms will be placed in the stream areas that are the most heavily impacted by erosion. Removal of the old ranch buildings will also occur prior to or in conjunction with construction on the property. Weed control and reseeded with native grasses will occur immediately after these modifications are completed.

Different phases of mitigation may be occurring at multiple sites on the property at any given time. Based on the proposed construction schedule, mitigation is anticipated to start by Spring 2004. It is anticipated that the standards of success described in Section 6.6.6 will be met by the end of the third growing season following commencement of mitigation activities. If success is not achieved by that time, the Applicant, in consultation with USFWS, will re-evaluate the proposed mitigation, either opting to design a new mitigation plan that would require an amendment to the HCP or continue with the existing plan until success is obtained.

6.6.8 Efforts to Minimize Impacts

In an effort to minimize and reduce the amount of impact to PMJM habitat while staying in compliance with the ESA, the Applicant has reduced the amount of land that was scheduled for development. The original development plan for Struthers Ranch (Figure 4.2) planned for the development of areas well within the PMJM habitat boundary. As a result of the process of obtaining a section 10 permit, the Applicant pulled back the permanent development lines from

the riparian corridor, thereby reducing impacts to PMJM habitat by approximately 7 acres. Northeast portions of the property between the north and south forks of upper Black Forest Creek are suitable for grading for residential development; however, the Applicant has chosen to exclude this area from development plans to provide a more natural riparian corridor and maintain sufficient upland habitat for local wildlife.

6.6.9 Long-term Management

6.6.9.1 Controlled Access

Access to all areas of mitigation and all areas left as PMJM habitat will be restricted. The Applicant proposes to construct a split rail fence and post signs every 100 feet notifying the public of restricted access. The signs will include the following wording: “No Public Access or Mowing Beyond this Point – Wildlife Habitat Preservation Area.” The fencing and signs will be posted in areas that are most easily accessed by people. This will restrict human access while allowing for wildlife movement.

During the construction phase of the proposed alternative, contractors and their employees will be educated by a representative of the Applicant prior to any construction on the need to stay within certain areas and on the reasons behind protecting PMJM habitat. Orange construction fencing and silt fencing will delineate areas off-limit to construction personnel and a representative of the contractor will monitor the construction site to insure no violations of the permit occur.

6.6.9.2 Pet Restrictions

Other impacts to the PMJM, such as an increase in domestic predators, have been documented to occur in similar development projects. To mitigate for these impacts, covenants will be put in place for the entire development that prohibit free-roaming pets including cats and dogs. A continuous fence will be installed separating all residential areas from the riparian corridor to deter people from accessing the PMJM habitat and help prevent dogs from gaining access to the creek corridor. These barrier fences will be installed prior to construction and maintained as one unit. This will reduce mortality rates to PMJM by domestic animals. A draft covenant document for the development will be submitted to the USFWS for approval prior to permit issuance.

6.6.9.3 Deed Restrictions

All lands remaining as PMJM habitat on the Struthers Ranch property, approximately 35.49 acres, will be deed restricted and managed for PMJM use only. The deed restriction will state that “Except as explicitly described in the Plan, no alterations will occur in the area described as PMJM habitat areas that would adversely impact PMJM habitat, including, but not limited to, dumping or placing of soil or other materials, such as trash, mowing, removal or destruction of vegetation (with the exception of noxious weed control), excavation or removal of soil, and activities detrimental to flood control, water conservation, or erosion control.” Final development of the deed restriction is dependent upon permit issuance and the sale of the property to Struthers Ranch Development, LLC. A final, signed deed restriction will be submitted to the USFWS for its review prior to permit issuance. A draft deed restriction for the PMJM habitat area is provided in Appendix E.

6.6.9.4 Endowment

In addition to the initial conservation and restoration of the Black Forest Creek Corridor, the Applicant has proposed to provide a monetary endowment to TPL or a similar organization for the continued management of the corridor. Based on preliminary estimates by TPL, an endowment of approximately \$90,000 would be required. TPL bases this amount on the vast experience their organization has with other such easements. This endowment would be used to maintain the periphery fencing, provide for long-term monitoring of the PMJM population, and defend the property from violations of the easement restrictions. Acceptance by a long-term management entity is dependent upon issuance of the section 10(a)1(B) permit. However, construction on the Struthers Ranch property will not begin until an agreement is reached between the conservation entity, the Applicant, and USFWS.

6.6.9.5 Funding

Successful conservation planning requires that sufficient funding be made available to implement the HCP and to insure completion and success of this plan. The Applicant is committed to providing the necessary funding to insure successful completion of the proposed mitigation. The Applicant will make the necessary annual appropriations for funding the HCP provisions through its internal annual budgeting process. As a further guarantee of this commitment, the Applicant has provided a Letter of Credit (Appendix B). Prior to any construction, the Applicant will estimate the cost of mitigation as proposed by the HCP and will forward its estimate to USFWS for approval.

6.6.9.6 Foreseeable Events

It is the belief of the Applicant that the success of the mitigation plan is not likely to be jeopardized by foreseeable events such as fire, drought, wildlife browsing, or 100- to 500-year floods. The proposed plantings should survive a large flood event; however, if a flood, fire, or extreme drought situation occurs within the period of time before the plan is deemed successful by USFWS, the Applicant will replant as needed to achieve mitigation success.

Once established, the plants should be able to withstand browsing by wildlife such as deer or beaver. However, if substantial damage occurs and leads to mortality of plantings, the Applicant will carry out necessary measures, including replacing dead trees and shrubs with live potted stock, to ensure mitigation success.

Coordination with adjacent landowners will help to assure that future construction projects will not cause impacts to the mitigated area.

If a foreseeable event occurs, consultation with USFWS will be conducted to determine the level of activities that would be required to restore pre-existing conditions.

6.7 AMENDMENT PROCEDURES

If necessary, the HCP and the section 10 permit may be amended as long as the cumulative effects of the amendment do not significantly change the criteria contained in this HCP. All proposed amendments will be approved by USFWS prior to implementation.

6.7.1 Amendments to Development Plans

It is acknowledged that upon the written request of the Applicant to the appropriate agency, approval may be granted for amendments to development plans for the subject property which do not encroach on PMJM habitat that is not presently contemplated to be taken as a consequence of the development, and which do not alter the conditions set forth in this HCP.

6.7.2 Minor Amendments to the HCP

Minor amendments involve routine administrative revisions or changes to the operation and management program and do not diminish the level or means of mitigation. Such minor amendments do not alter the terms of the section 10(a)(1)(B) permit.

Upon the written request of the Applicant, the USFWS is authorized to approve minor amendments to this HCP, if the amendment does not conflict with the primary purpose of this HCP.

6.7.3 All Other Amendments

All other amendments will be considered an amendment to the section 10(a)(1)(B) permit, subject to any other procedural requirements of federal law or regulation that may be applicable to amendment of such a permit.

7.0 ADAPTIVE MANAGEMENT

The Applicant acknowledges that the information available about PMJM and the management strategies currently maintained by USFWS are ever evolving. If future information regarding possible modifications to management of PMJM develops, the Applicant will adapt management strategies to the most current practices suggested by USFWS, if those practices are deemed pertinent for Struthers Ranch. If it is apparent that proposed management techniques of the monitoring program for this project are not adequate, the Applicant will consult with USFWS to identify alternate management strategies.

8.0 DURATION

This HCP is written in anticipation of issuance of a section 10(a)(1)(B) permit for 30 years during construction and occupation of Struthers Ranch.

9.0 PUBLIC AND AGENCY COORDINATION

The Applicant has been working with the USFWS on the proposed development for the past 1.5 years. The following agencies, organizations, and individuals were consulted or coordinated with during the process of addressing endangered species concerns for Struthers Ranch.

SWCA Environmental Consultants - Westminster, Colorado
El Paso County, Colorado
United States Fish and Wildlife Service - Lakewood, Colorado
United States Army Corps of Engineers - Pueblo, Colorado

This document was originally prepared by SWCA Environmental Consultants on behalf of the Applicant.

Publication notification of the availability of the Draft Environmental Assessment/Habitat Conservation Plan will be published in the Federal Register. All concerned agencies and entities will be provided a copy for review and comment.

10.0 LITERATURE CITED

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APPENDIX A

U.S. Army Corps of Engineers Concurrence Letter Draft Wetland Mitigation Report

SWCA
ENVIRONMENTAL CONSULTANTS



**US Army Corps
of Engineers®**

Southern Colorado Project Office

DRAFT WETLAND MITIGATION PLAN
for
**STRUTHERS RANCH LOCATED ALONG BLACK FOREST
CREEK, EL PASO COUNTY, COLORADO**

APRIL 2003



**Draft Wetland Mitigation Plan for Struthers Ranch Located
along Black Forest Creek, El Paso County, Colorado**

Prepared for:

U.S. Army Corps of Engineers
Southern Colorado Project Office
720 North Main St., Room 205
Pueblo, CO 81003-3046

On behalf of:

Struthers Ranch Development, LLC
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B	Letter of Credit

LIST OF ACRONYMS

%	percent
CFR	Code of Federal Regulations
Corps	U.S. Army Corps of Engineers
CWA	Clean Water Act
EPA	U.S. Environmental Protection Agency
GPS	Global Positioning System
NEPA	National Environmental Policy Act
PMJM	Preble's meadow jumping mouse
SWCA	SWCA Environmental Consultants
U.S.	United States
USFWS	U.S. Fish and Wildlife Service

1.0 INTRODUCTION

SWCA Environmental Consultants (SWCA) was contracted by Struthers Ranch Development, LLC to prepare a United States (U.S.) Army Corps of Engineers (Corps) Section 404 permit application for the Struthers Ranch development. This procedure was conducted for compliance with federal regulations concerning water quality as set forth under the *Clean Water Act* (CWA) of 1972. The Corps enforces Section 404 of the CWA, which regulates the discharge of dredged or fill material into all waters of the U.S., including wetlands. Such waters are known as “jurisdictional waters of the U.S.” and have been defined to include not only obvious water bodies such as rivers, lakes, harbors, and bays, but also less obvious bodies of water such as intermittent streams, wetlands, and even stock ponds when they occur in drainages.

Pursuant to Section 404 of the CWA, the Corps defines wetlands in Title 33 Code of Federal Regulations Section 328.3b (33 CFR 328.3b) as those areas that are inundated or saturated by surface or ground water 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. The Corps’ Wetland Delineation Manual (Environmental Laboratory 1987) states that jurisdictional wetlands possess three essential characteristics: (1) hydrophytic vegetation, (2) hydric soils, and (3) wetland hydrology. For an area to be classified as a jurisdictional wetland under the federal guidelines, all of the above criteria must generally be met.

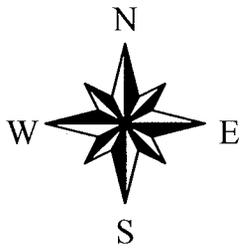
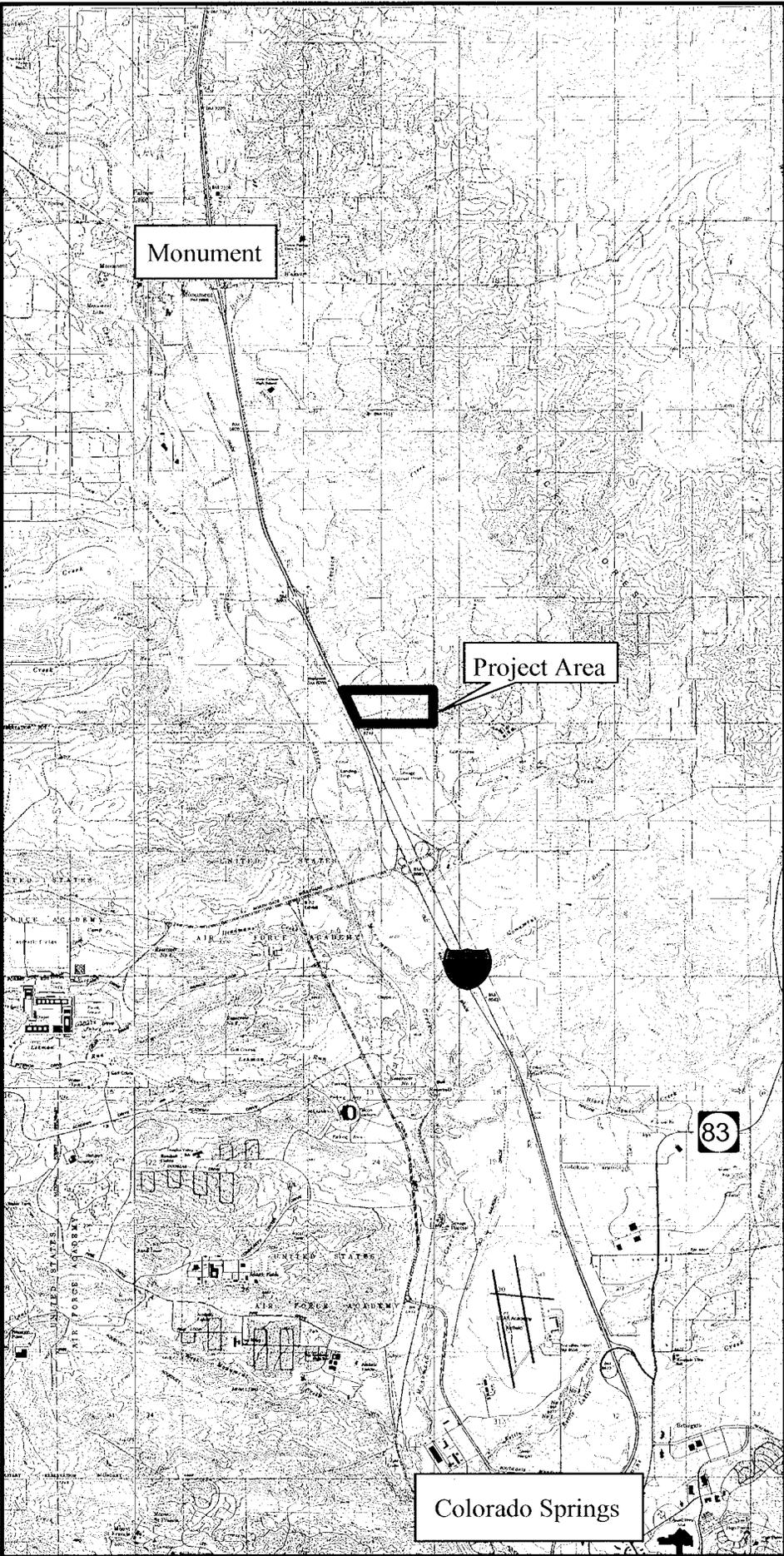
Current regulations regarding impacts from a proposed action to jurisdictional waters of the U.S., including wetlands, totaling more than 0.5 acre require the prior acquisition of an individual Section 404 permit issued by the Corps. A Section 404 permit application may require the completion of a federal environmental assessment or environmental impact statement as required by the *National Environmental Policy Act* (NEPA). During review of the permit application, the Corps is required by law to consult with other federal, state, and local agencies with interest regarding the potential impacts of the proposed project. These agencies may include the U.S. Fish and Wildlife Service (USFWS), the Environmental Protection Agency (EPA), and various state, county, and city governments. Conservation recommendations from various agencies may be included as conditions of the Section 404 permit issued by the Corps.

This mitigation plan has been developed to offset impacts to wetlands and other jurisdictional waters of the U.S. from construction of the Struthers Ranch development and to provide the data required for the Corps to conclude that the project will result in “No Net Loss” of wetlands. The plan proposes a combination of restoration, enhancement, creation, and long-term conservation of wetlands on the property. An alternatives analysis is included to describe the justification for the proposed action.

1.1 PROJECT AREA DESCRIPTION

The approximately 107-acre Struthers Ranch is located on the east side of Interstate 25, roughly 3.5 miles southeast of the Town of Monument in the northwest portion of El Paso County, Colorado (Figure 1). The property encompasses a portion of Black Forest Creek directly northeast and upstream from the U.S. Air Force Academy.

Figure 1.
General Location of the
Struthers Ranch Property.



Scale 1 : 80 000

Base Map: USGS 7.5 Minute Series
Topographic Maps

Quadrangles: Monument & Pikeview

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Specifically, Struthers Ranch is located in Section 36 of Township 11 South, Range 67 West (S $\frac{1}{2}$ of the SE $\frac{1}{4}$; S $\frac{1}{2}$ of the NE $\frac{1}{4}$; and NW $\frac{1}{4}$ of the SE $\frac{1}{4}$; SE $\frac{1}{4}$ of the SW $\frac{1}{4}$; and the NE $\frac{1}{4}$ of the SW $\frac{1}{4}$). Struthers Ranch is bordered by scattered residential development to the north, residential development to the east and south, the U.S. Air Force Academy to the south and southwest, and Struthers Road (a frontage road for Interstate 25) to the west (Figures 2 and 3).

1.1.1 Topography

The proposed Struthers Ranch development project is situated between the eastern edge of the Front Range of the Rocky Mountains and the southwestern edge of the Black Forest. The project area is characterized by small rolling hills bisected by Black Forest Creek and an unnamed tributary. Black Forest Creek originates approximately 1 mile northeast of the property, flows through a storm water detention pond located on the northeast property boundary, and then extends across the property in a southwest direction (4,321,447 meters north/514,260 meters east, Zone 13) (Figures 2 and 3).

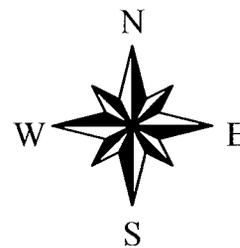
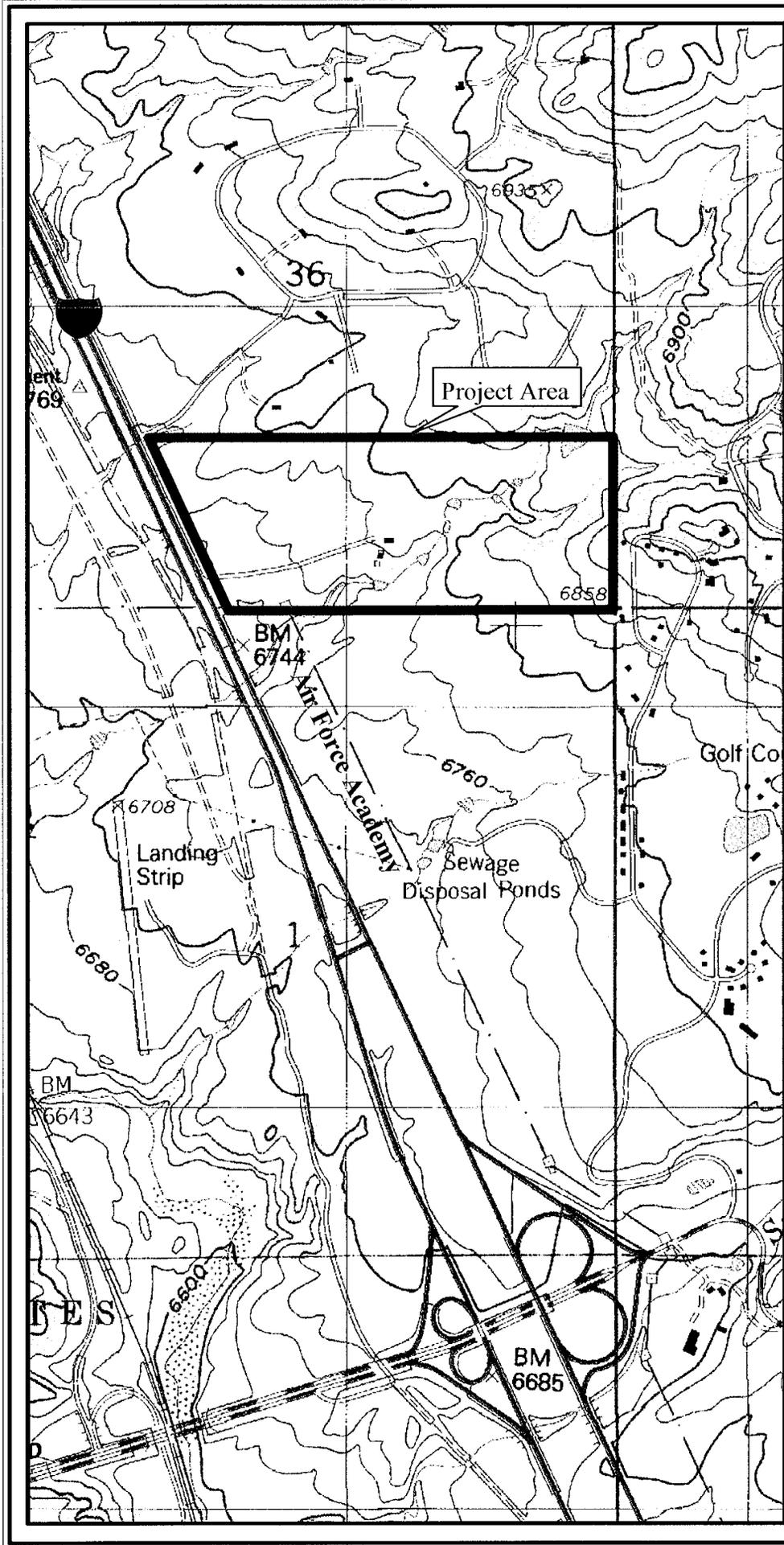
An unnamed tributary, originating off-site and east of the property, flows west into Black Forest Creek downstream of the detention pond. This tributary is referred to in this document as the south fork of upper Black Forest Creek. The main channel of Black Forest Creek originates from the northwest edge of the detention pond off-property and is referred to as the north fork of upper Black Forest Creek. Several earthen dam stock ponds are located along Black Forest Creek downstream from the confluence with the south fork. A beaver pond is also located within lower Black Forest Creek near the south property boundary.

Severe flooding in the spring of 1999 created an additional deeply cut channel, hereby referred to as the middle fork of upper Black Forest Creek, that originates from the south edge of the detention pond. This channel appears to be the former path of upper Black Forest Creek before the detention pond was constructed and the outflow was rerouted to the north. The flooding was due to the detention pond's inability to control flood events of significant magnitudes. Figures 4 and 5 depict the damage caused by that storm event and the current condition of the middle fork. Currently, water does not flow through this channel on a regular basis, but the channel continues to act as an emergency spillway.

1.1.2 Soils

Soils on Struthers Ranch fall into three different classes. The drainage floor consists of Pring coarse sandy loams on 3 to 8 percent slopes. The southern upland area of the property is comprised of the Tomah-Crowfoot loamy sands on 3 to 8 percent slopes while upland areas on the northern portion of the tract consist of the Tomah-Crowfoot loamy sands on 8 to 15 percent slopes. The Pring complex consists of deep, well-drained soils that form in sandy sediments on drainage floors. The Tomah-Crowfoot association consists of soils that develop on gentle to moderately sloped areas on hills and ridges (Soil Conservation Service [SCS] 1981). These soils do not appear on the list of Hydric Soils of United States (SCS 1991).

**Figure 2.
Project Location,
Struthers Ranch Property**



3000 0 3000 6000 Feet



Scale 1 : 15 000

Base Map: USGS 7.5 Minute Series
Topographic Maps

Quadrangles: Monument & Pikeview

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Figure 4. Flood Damaged Channel within the Middle Fork of Upper Black Forest Creek.

Figure 5. Flood Damaged Channel of the Middle Fork of Upper Black Forest Creek.



1.1.3 Vegetation

Three major vegetation communities are present on the Struthers Ranch property: (1) an upland prairie community, (2) an upland Gambel's oak (*Quercus gambelii*)/prairie community, and (3) a wetland/riparian drainage community (Figure 3). The dominant vegetation across upland areas consists of native grasses such as blue grama (*Bouteloua gracilis*) and three-awn (*Aristida* spp.) interspersed with fringed sage (*Artemisia frigida*). Weedy species such as diffuse knapweed (*Centaurea diffusa*) and mullein (*Verbascum thapsus*) are common in some areas. In the upper third portion of the drainage, more mesic areas on the slopes to Black Forest Creek support moderate densities of Gambel's oak with an occasional ponderosa pine (*Pinus ponderosa*).

Vegetation composition in riparian areas along Black Forest Creek differs markedly depending upon soil moisture, degree of previous flood damage, and topography. Scattered cottonwood (*Populus deltoides sargentii*) trees up to 60 feet in height occur throughout the drainage. Below the downstream stock pond, hydrologic conditions support moderately dense stands of coyote willow (*Salix exigua*), cottonwood, and peach-leaf willow (*Salix amygdaloides*) (Figure 6). Some wetland areas support moderate densities of Baltic rush (*Juncus balticus*) and Nebraska sedge (*Carex nebrascensis*) interspersed with dense grasses such as bluegrass (*Poa* spp.) and muhly (*Muhlenbergia* spp.). However, the majority of lower Black Forest Creek on the property has sustained severe flood damage that has been exacerbated by subsequent cattle grazing. Therefore, many riparian areas on the property are characterized by sparse vegetation and/or exposed sandy soils (Figures 7 and 8).



Figure 6. Willow and Cottonwood Stands Downstream of the Lower Stock Pond.

**Figure 7. Flood and
Grazing Damaged Area
in Lower Reaches of
Black Forest Creek.**



**Figure 8. Flood and
Grazing Damaged Area
in Lower Reaches of
Black Forest Creek.**

Additionally, many areas supporting willow shrub cover support very little understory vegetation due to the flooding and cattle grazing. The north and south forks of upper Black Forest Creek support open areas of grazed grasses and sedges with low to moderately dense peach-leaf willow and snowberry (*Symphoricarpos albus*) (Figure 9). The middle fork of upper Black Forest Creek does not support wetland or riparian vegetation. Areas immediately adjacent to this channel support upland grasses and forbs with relatively dense clumps of Gambel's oak. Further information on wetland vegetation throughout Black Forest Creek is provided in Section 1.1.4.



Figure 9. Portion of the South Fork of Upper Black Forest Creek.

1.1.4 Description of Jurisdictional Waters

A delineation of jurisdictional waters was completed on Struthers Ranch in October 2001 by SWCA. The delineation identified 3.84 acres of jurisdictional waters of the U.S., including wetlands, on the property under the definition prescribed by the Corps (Figure 10). Of this, 2.52 acres are designated as jurisdictional wetlands located within seven separate areas (Areas A through G) (Figure 10). The remaining 1.32 acres are jurisdictional waters within the defined channels of Black Forest Creek and its unnamed tributary including 0.34 acre within the detention pond on the northeast corner of the property. A delineation report, including field data sheets with vegetation, hydrology, and soils data, was provided by SWCA to the Corps in November 2002. Concurrence from the Corps on that report was received in January 2003 (see Appendix A).

Wetlands on the property are dominated by coyote willow, Nebraska sedge, Baltic rush, Torrey rush (*Juncus torreyi*), and plains cottonwood (*Populus deltoidesi*). Below the southernmost stock pond, hydrologic conditions also support moderately dense stands of coyote willow and peach-leaf willow. However, the majority of lower Black Forest Creek has sustained severe damage from flooding and cattle grazing (see Section 1.1.3). The north and south forks of upper Black Forest Creek support areas of grasses and sedges with scattered to moderately dense peach-leaf willow and snowberry (Figure 9). The middle fork of upper Black Forest Creek is mostly devoid of vegetation; does not receive a regular flow of water; and no wetland areas were found in this channel during the delineation (Figures 4 and 5). Downstream of the eroded area, the channel opens into a grassy swale. Before 1999, several historic stock ponds were located along the channel of Black Forest Creek. These dams were all breached during the flood event.

Wetland Areas A and B are located in the southwest portion of the property and are disjunct from the drainage (Figure 10). Area A is 0.81 acre in size and Area B is 0.50 acre. Dominant wetland vegetation in both areas consists of Nebraska sedge and Baltic rush. Wetland Area C is located immediately adjacent to Black Forest Creek just west of the lower most earthen dam and is 0.17 acre in size. Predominant wetland vegetation consists of coyote willow.

Wetland Area D is located upstream of the lower most dam and is 0.78 acre in size spanning both sides of the channel. This area is heavily grazed and consists of 40 to 50 percent (%) exposed sandy soil. Dominant vegetation in this area consists of Baltic rush, Torrey rush, willow herb (*Epilobium* spp.), and coyote willow.

Wetland Area E is located within the south fork of upper Black Forest Creek. This wetland is 0.11 acre in size and supports mostly Baltic rush and sedges that were unidentifiable due to heavy grazing.

Wetland Areas F and G are located along the north fork of Black Forest Creek and both support moderate densities of coyote willow. Area G also supports approximately 70% ground cover of sedges that were unidentifiable due to grazing.

A detention pond is located on the northeast property boundary with approximately 0.34 acre of the pond delineated within the property boundary. The outflow from the pond is currently routed through the north fork of upper Black Forest Creek. The channel widens downstream of the pond forming several sandbars and patches of dense willow seedlings and then narrows in the lower portion of the fork before merging with the south fork of upper Black Forest Creek.

Other non-wetland jurisdictional waters of the U.S. are located in the channel of Black Forest Creek and associated tributaries totaling 0.98 acre.

1.2 PROJECT BACKGROUND

The proposed project on Struthers Ranch includes construction of a combination of single-family residential units and commercial development along the Interstate 25 and Baptist Road corridors, with open space along the creek corridors. Wetland impacts would result from the construction of Struthers Road (a proposed box culvert creek crossing connecting Struthers Road to the southern part of the property) and from drop structures and rip-rap placement to stabilize the stream banks from further erosion.

2.0 ALTERNATIVES ANALYSIS

In addition to the proposed action, other alternatives were analyzed that would result in different levels of impact to the jurisdictional waters of the U.S. on Struthers Ranch. This alternatives analysis provides the history and justification for the proposed action.

2.1 ALTERNATIVE 1 – NO ACTION

The no action alternative would involve abandonment of the proposed Struthers Ranch development. No impacts from construction would occur to jurisdictional waters of the U.S. on Struthers Ranch, thus requiring no application for a Section 404 permit. All monies invested in the project would be lost by the Applicant and/or its financial partners. Accepting this alternative requires the assumption that leaving the land undeveloped is economically viable into the foreseeable future. This assumption is not valid because it would result in economic hardship for the Applicant, and the potential for future development along the creek would continue to exist.

Without the acquisition of the Section 404 permit, the proposed preservation of the Black Forest Creek corridor would not occur and the condition of the natural environment on the property would continue to degrade due to grazing pressures, spreading weeds, and instability of the creek channel.

2.2 ALTERNATIVE 2 – PROPOSED (PREFERRED) ALTERNATIVE

The Preferred Alternative consists of the issuance of a permit under Section 404 of the CWA to authorize impacts to jurisdictional waters on Struthers Ranch. The permit issuance would allow development on portions of Struthers Ranch where jurisdictional waters are present. Impacts to wetlands would result from construction of residences, roads, utilities, a detention pond, and commercial development (Figure 11). Of the approximately 3.84 acres in the project area that are considered jurisdictional waters of the U.S., it is estimated that 1.08 acres of wetlands and 0.25 acre of waters will be impacted by the Preferred Alternative (Table 1).

The entire development would include construction of residential and commercial development and associated infrastructure on 66.72 acres of the 107-acre Struthers Ranch. The remaining 40.28 acres will remain undeveloped. Wetlands mitigation is planned for 1.33 acres with varying amounts of restoration, enhancement, and creation of jurisdictional waters as described in Section 3.0.

Construction is scheduled to commence in 2003 immediately upon approval of this Section 404 permit application and the pending Environmental Assessment/Habitat Conservation Plan submitted to the USFWS (see Section 4.0). Construction of single-family homes is planned for 18.10 acres in the southeastern portion of the property, and 27.90 acres of land in the north-central portion. A 100-foot setback from existing development is required by El Paso County along the northern property boundary and 2.38 acres of this will be used for community recreation.

Commercial development would encompass 9.56 acres located adjacent to Interstate 25 just east of the proposed Struthers Road. Construction of Struthers Road will occur on 5.65 acres on Struthers Ranch. Struthers Road will also be extended off-property for approximately 1.21 acres. This extension is required by El Paso County ordinances to allow two entrances for each subdivision for addressing fire and other safety hazards. The Black Forest Creek crossing for Struthers Road would consist of an 8-by-8-foot concrete multiple box culvert as recommended in the “Black Forest Creek Drainage Basin Planning Study,” which was approved by El Paso County. The 40-foot culvert width for this design is consistent with a similar culvert design used at the existing Interstate 25 crossing immediately downstream. A detention pond will be constructed just south of Struthers Road on 1.73 acres. Additional infrastructure including a 20-foot utility easement, storm drains, drop structures, and rip-rap will occur on 1.40 acres.

Table 1. Expected Impacts from the Preferred Alternative to Waters of the U.S. on Struthers Ranch

Type of Activity	Type of Impact	Acres	Type of Water
Residential Development	Permanent	0.02	Wetlands
Commercial Development	Permanent	0.04	Wetlands
Struthers Road On Property	Permanent	0.75	Wetlands
Struthers Road On Property	Permanent	0.08	Waters
Struthers Road Off Property	Permanent	0.10	Wetlands
Struthers Road Off Property	Permanent	0.06	Waters
Drop Structures	Permanent	0.02	Wetlands
Drop Structures	Permanent	0.08	Waters
Detention Pond	Permanent	0.06	Wetlands
Detention Pond	Temporary	0.05	Wetlands
Utility Easement	Temporary	0.01	Waters
Rip-rap	Temporary	0.04	Wetlands
Rip-rap	Temporary	0.02	Waters
Total Impacts		1.33	

Disturbances expected to impact waters of the U.S. associated with Black Forest Creek include 1.21 acres of permanent impacts and 0.12 acre of temporary impacts (Table 1). Residential and commercial development will permanently impact 0.06 acre of wetlands. The proposed Struthers Road crossing will permanently impact 0.85 acre of wetlands and 0.14 acre of waters both on and off property. A 20-foot utility easement crossing will temporarily impact 0.01 acre of waters. The proposed detention pond will permanently impact 0.06 acre and temporarily impact 0.05 acre of wetlands. Additional infrastructure (drop structures and rip-rap) to stabilize the drainage will permanently impact 0.02 acre of wetlands and 0.08 acre of waters while temporarily impacting 0.04 acre of wetlands and 0.02 acre of waters.

The proposed action minimizes impacts to the riparian vegetation along Black Forest Creek and limits development to the highest elevations on the parcel away from the creek. This will facilitate development on the property while minimizing, to the greatest extent practicable, potential impacts to jurisdictional waters of the U.S. In addition, the proposed action includes extensive on-site conservation measures, as described in Section 3.0, to repair damage from current cattle grazing practices, poor watershed management upstream, and the heavy flood events. This will result in an overall improvement in the stability of the drainage, which will, in turn, improve water quality and vegetation quality and diversity along the creek corridor.

2.3 ALTERNATIVE 3 – ALTERNATE DEVELOPMENT PLAN – NO IMPACT

The development plan with no impact to wetlands would result in abandonment of the proposed development. Stream stabilization mechanisms would not be installed, resulting in increased erosion within already eroded areas. Construction of the Struthers Road culvert would also be halted eliminating an El Paso County required access road. Impacts would be identical to those described for Alternative 1.

2.4 ALTERNATIVE 4 – ALTERNATE DEVELOPMENT PLAN – INCREASED IMPACT

Alternative 4 would involve constructing commercial development within wetland areas in the southwest corner of the property, dramatically increasing the impact to wetlands by the development. This action would not be financially feasible due to increased costs of mitigation and increased ecological impacts and was summarily rejected.

3.0 MITIGATION PLAN

3.1 GOALS AND OBJECTIVES

As part of Alternative 2, the Preferred Alternative, this mitigation plan is proposed to mitigate for impacts to waters of the U.S. as a result of the proposed construction and ensure no net loss of wetlands. The goals and objectives of this mitigation plan include the replacement of jurisdictional waters impacted by the proposed development, improvement of vegetation diversity and cover by restoring and enhancing existing wetlands, improvement of water quality, and maintenance of a wetland/riparian corridor to ensure valuable wildlife habitat and long-term protection. As mentioned earlier, 1.33 total acres of waters of the U.S. will be mitigated through restoration, enhancement, and creation. Monitoring of vegetative cover will be implemented to ensure the success of mitigation efforts.

Mitigation activities are likely to result in a net increase in value and functionality of wetlands on the property through overall improvement and expansion of existing wetland communities. Additional riparian/wetland mitigation is proposed as part of a Habitat Conservation Plan to restore wildlife habitat along the Black Forest Creek corridor. Water quality functions will be increased on the property by slowing water flow and reducing erosion through the construction of drop structures and stabilizing rip-rap along Black Forest Creek. One detention pond is also planned for the new development to help control storm water runoff.

3.2 IMPACTS

Impacts to Black Forest Creek will result from construction of residential and commercial developments and their associated infrastructure; and from the extension of Struthers Road, a detention pond, and drop structures and rip-rap to assist in controlling erosion and stream flow (Figure 11). The Black Forest Creek crossing of Struthers Road would consist of an 8-by-8-foot concrete multiple box culvert as recommended in the “Black Forest Creek Drainage Basin Planning Study,” which was approved by El Paso County. The 40-foot culvert width for this design is consistent with a similar culvert design used at the existing Interstate 25 crossing immediately downstream. The detention pond will be excavated below existing grades with 4:1 maximum side slopes. The pond will be unlined, allowing for maximum infiltration of storm water runoff. As such, the pond can be expected to establish a relatively moist hydrology to support wetland conditions.

Total impacts to waters of the U.S. from the Preferred Alternative include 1.21 acres of permanent impacts and 0.12 acre of temporary impacts (Table 1). Residential and commercial development will permanently impact 0.06 acre of wetlands. The proposed Struthers Road crossing will permanently impact 0.85 acre of wetlands and 0.14 acre of waters both on and off property. A 20-foot utility easement crossing will temporarily impact 0.01 acre of waters. The proposed detention pond will permanently impact 0.06 acre and temporarily impact 0.05 acre of wetlands. Additional infrastructure to stabilize the drainage will permanently impact 0.02 acre of wetlands and 0.08 acre of waters while temporarily impacting 0.04 acre of wetlands and 0.02 acre of waters.

3.3 MITIGATION STRATEGY

Mitigation activities are designed to address and achieve the goals stated above, and will occur on 1.33 acres to compensate for the expected impacts to wetlands (Table 2). The mitigation strategy will include wetlands creation, enhancement, restoration, and preservation including deed restrictions to limit certain activities within the mitigated areas (Figure 12).

Cattle will be removed at the commencement of mitigation in all areas. By removing this pressure, the entire site should be enhanced by allowing the existing vegetation to recover, decreasing erosion, and allowing for the effectiveness of the additional mitigation activities described in the following sections.

Table 2. Proposed Wetlands Mitigation on Struthers Ranch.

Type of Activity	Acres
Restoration of temporary wetland impacts	0.09
Restoration of temporary open water impacts	0.03
Creation/restoration/enhancement of existing wetlands	1.21
Total	1.33

3.3.1 Best Management Practices

Best Management Practices for wetlands and riparian areas will be employed in the implementation of the mitigation plan. These include actions to reestablish hydrology, restore native plant communities, and minimize other disturbances as described in the following subsections.

3.3.1.1 Hydrology

Hydrology is an essential component in successful wetlands restoration or creation processes. Currently, Black Forest Creek and the associated tributary exhibit adequate hydrology to support wetland areas. However, much of the riparian vegetation has sustained heavy damage from past flood damage as described in Section 1.1.3. Steps will be taken to assure a sufficient source of water to support mitigation efforts. These measures will include placement of mitigation areas along the existing drainages, stabilization of the creek using drop structures and rip-rap, grading of mitigation areas to a suitable position above the water table, and regulation of flow from storm water detention facilities into the drainage and associated wetlands.

3.3.1.2 Weed Control

Weed control efforts will be necessary in upland areas directly adjacent to riparian communities to prevent the encroachment of weeds into wetland areas and ensure the re-establishment of native vegetation and a diverse wetland community. Existing weed problems within riparian areas have not been identified; however, if weed density has increased by the start of mitigation activities, some weed control within riparian areas will be necessary to ensure success of the mitigation plan.

Weeds will be controlled through spraying prior to any seeding or planting activities in all mitigation areas and adjacent uplands where necessary. During past site visits, noxious weeds such as mullein and diffuse knapweed have been identified throughout upland areas, with knapweed being the dominant weed species. The objective of the weed control plan will be to prevent further spread of these or any other noxious weed species. The goal will be to reduce the density of weeds to less than 5% of the total aerial cover.

While there are many different ways to control noxious weeds, chemical application appears to be the most effective and efficient way of reaching the desired goal of weed density reduction for this project. Thus, the Applicant proposes to hire a licensed weed control company to apply the herbicide Plateau[®]. This herbicide, when applied at the correct and recommended mixture and at the recommended time of year, can target many different weed species and other woody plants, leaving existing grasses. This chemical was chosen by the USFWS (2002) because of its success of controlling the identified weeds; its low mobility rate in soil; its low toxicity to fish, mammal, and bird species; and the fact that non-target plants are tolerant of the chemicals.

For maximum results in controlling and reducing the weeds, the infested areas will be treated once in the early spring (mid to late April) and once during autumn (after 15 October). After the first year of treatments, additional weed spraying will occur only as a spot treatment in those areas deemed necessary. Follow-up herbicide applications during the following growing seasons will be conducted on an as-needed basis until success is achieved. Should significant areas of noxious weeds be identified during the following growing seasons, the areas will be treated with the same herbicide and applied from hand-held and/or backpack sprayers.

The herbicide will be applied to upland areas identified as infested with noxious weeds using a tractor or an All-Terrain Vehicle with an attached tank. Smaller areas and areas near water and riparian vegetation will be treated using hand-held and/or backpack sprayers. The Applicant believes that by using these methods of application, the operator can have a better control of where the herbicide is being applied, thus the chances for wind drift and inadvertent spraying of trees, shrubs, and wetlands will be decreased. If necessary, individual trees and shrubs will be covered during applications. Again, the goal of spraying is to reduce the density of noxious weeds, not to control or kill existing or newly planted trees and shrubs as well as the existing riparian vegetation along Black Forest Creek.

Additional pressure in reducing weed densities will come from the establishment of native grass and forb species after the spraying has been completed.

3.3.1.3 Riparian/Wetland Restoration

Native wetland shrub and herbaceous species proposed for mitigation areas are listed in Tables 3 and 4. Restoration activities are proposed for areas that have been temporarily impacted by the Preferred Alternative or have sustained heavy damage from grazing and past flood events. A minimum 15-foot wide willow corridor will be created along the creek bank in restoration areas.

Table 3. Recommended Wetland/Riparian Shrub Species for Use in Mitigation on Struthers Ranch

Common Name	Scientific Name	Planting Rate*
Coyote willow (potted)	<i>Salix exigua</i>	700 – 5-gal/acre
Coyote willow (stakes)	<i>Salix exigua</i>	19,360/acre
Bluestem willow (potted)	<i>Salix irrorata</i>	700 – 5-gal/acre
Bluestem willow (stakes)	<i>Salix irrorata</i>	19,360/acre
Peach-leaf willow (potted)	<i>Salix amygdaloides</i>	700 – 5-gal/acre
Peach-leaf willow (stakes)	<i>Salix amygdaloides</i>	19,360/acre

* Planting rate based upon the use of one species to cover 1 acre. Since all planting rates are the same, to cover 1 acre, 700 plants of any combination may be used. For areas where less than 1 acre will be covered, clump size will be based upon a rate equivalent to 700/ac using single species and/or a combination of the above listed species.

Table 4. Recommended Wetland/Riparian Herbaceous Species for Use in Mitigation on Struthers Ranch

Common Name	Scientific Name	Planting Rate
Poverty rush (seed)	<i>Juncus tenuis</i>	1.5 lbs/acre
Poverty rush (plant)	<i>Juncus tenuis</i>	1000 – 2.5"/acre
Torrey rush (seed)	<i>Juncus torreyi</i>	1.7 lbs/acre
Torrey rush (plant)	<i>Juncus torreyi</i>	1000 – 2.5"/acre
Colorado rush (seed)	<i>Juncus confusus</i>	1.3 lbs/acre
Colorado rush (plant)	<i>Juncus confusus</i>	1000 – 2.5"/acre
American threesquare (seed)	<i>Scirpus Americanus</i>	2 lbs/acre
American threesquare (plant)	<i>Scirpus Americanus</i>	1000 – 2.5"/acre
Creeping spikerush (seed)	<i>Eleocharis palustris</i>	2 lbs/acre
Creeping spikerush (plant)	<i>Eleocharis palustris</i>	1000- 2.5"/acre
Softstem bulrush (seed)	<i>Schoenoplectus validus</i>	2 lbs/acre
Softstem bulrush (plant)	<i>Schoenoplectus validus</i>	1000- 2.5"/acre
Nebraska sedge (seed)	<i>Carex nebrascensis</i>	1.5 lbs/acre
Nebraska sedge (plant)	<i>Carex nebrascensis</i>	1000 – 2.5"/acre

Willows used for mitigation will be willow bundles, nursery-grown 5-gallon potted willows, or a combination of both. Willow bundles are a grouping of five to seven willow stakes or cuttings, tied into clumps approximately 3 to 18 inches in diameter. The terminal bud will be removed so that stem energy will be re-routed to the lateral buds for more efficient root and stem sprouting. Planting willow bundles is an ideal way to plant where an adequately high water table exists and

is desirable due to low cost and ease of planting. Willow bundles will be planted at a staking rate of approximately 19,300 stakes per acre on 18-inch centers. These bundles will be obtained by clipping onsite or nearby willow branches affecting no more than one-third of each plant and/or from a nursery. Natural Resource Conservation Service and nursery guidelines will be followed for planting. Generally, willow bundles will be planted in a belt of varying width, at a minimum of 15 feet wide, mimicking natural clumps depending on soil moisture adjacent to the stream channel. In areas where the water table is not high enough for willow bundles to succeed, nursery-grown potted willows or a combination of potted willows and bundles will be used. Potted willows will be planted at a rate of 700 plants per acre. The proposed planting rate of 700 potted plants per acre is based upon using an individual species and/or any combination thereof. It is not anticipated that an entire acre will be covered immediately after planting. The planting will be done in a manner to create a mosaic that blends with the surrounding, natural landscape. Planting rates are best estimates at this time. If natural processes such as precipitation levels expedite or slow down the planting process, these planting rates may need to be increased or decreased accordingly to achieve the standards of success described in Section 3.4.2.

Herbaceous wetland species will be planted or seeded in addition to willow planting. It is anticipated that the planting of a combination of willow, rushes, sedge, and other wetland species will help stabilize the newly exposed sediment. This will greatly improve the existing condition of the creek banks. Table 4 lists wetland herbaceous species that will be planted and seeded in wetland Preble's meadow jumping mouse (PMJM) (*Zapus hudsonius preblei*) habitat restoration areas as recommended by the Colorado Department of Natural Resources native plant revegetation guide (1998). Established plants in 2.5-inch containers will be planted at the rates listed in Table 4 and then supplemented with seeding at the rates shown in the table to create a uniform wetland. A mix of all species in Table 4 will be used with each species consisting of at least 5% of the total composition.

3.3.1.4 Habitat Creation

Wetland creation will occur in the southwest corner of the property within the proposed detention pond. The detention pond will be designed to function as a wetland area and planted with native wetland grasses and shrubs as described for riparian restoration in Section 3.3.1.3. The pond will be excavated below existing grades with 4:1 maximum side slopes. The pond will be unlined, allowing for maximum infiltration of storm water runoff. As such, the pond can be expected to establish a relatively moist hydrology to support wetland conditions.

3.3.1.5 Disturbance Minimization

Due to the presence of the federally listed threatened PMJM, construction of a split rail fence and posting of signs every 100 feet notifying the public of restricted access will help in ensuring success of the mitigation plan. The signs will include the following wording: "No Public Access or Mowing Beyond this Point – Wildlife Habitat Preservation Area." The fencing and signs will be posted in areas that are most easily accessed by people. This will restrict human access while allowing for wildlife movement.

Silt fencing will be used along waters of the U.S. during construction to minimize impacts from erosion.

3.3.2 Timing of Mitigation

Upon approval of the Section 404 permit, the Applicant will remove cattle from the entire property and bank stabilization mechanisms will be placed in the stream areas that are the most heavily impacted by erosion. Removal of the old ranch buildings will also occur prior to or in conjunction with construction on the property. Weed control and reseeding with native grasses will occur immediately after these modifications are completed.

Different phases of mitigation may be occurring at multiple sites on the property at any given time. Based on the proposed construction schedule, mitigation should start by mid-2003. It is anticipated that the standards of success described in Section 3.4.2 will be met by the end of the third growing season following commencement of mitigation activities. If success is not achieved by that time, the Applicant, in consultation with the Corps, will re-evaluate the proposed mitigation, either opting to design a new mitigation plan or continue with the existing plan until success is obtained.

3.3.3 Functionality Analysis

Upon completion of the proposed project, the quality of the riparian corridor on Black Forest Creek and tributaries will be improved by an increased diversity of trees and shrubs, creating better habitat for wildlife. The water quality on the property will also be improved by installation of storm water outfall drains, detention ponds, and drop structures along Black Forest Creek. The storm water outfall drains and detention ponds will control water flow, reducing erosion from storm events. Finally, the drop structures will slow the flow of the stream, reducing erosion in low-lying wetland areas that have been previously impacted during higher flood events.

3.3.4 Funding

Successful conservation planning requires that sufficient funding be made available to implement the mitigation plan and to insure completion and success of this plan. The Applicant is committed to providing the necessary funding to insure successful completion of the proposed mitigation. The Applicant will make the necessary annual appropriations for funding the mitigation plan provisions through its internal annual budgeting process. As a further guarantee of this commitment, the Applicant has provided a Letter of Credit (Appendix B).

3.4 MONITORING PLAN

Monitoring of restored and created wetland sites will ensure successful establishment of a viable and self-sustaining wetland community.

3.4.1 Baseline Data Gathering

The Applicant will carry out all activities pursuant to proposals specified within this mitigation plan and conditions outlined within the anticipated Section 404 permit. Monitoring of those activities will be the responsibility of the Applicant and reports on monitoring efforts will be

provided to the Corps by the end of November of each calendar year throughout the monitoring phase. A restoration/landscaping firm will be contracted to implement the mitigation plan. All mitigation areas will be monitored annually for a period of three growing seasons or until success is achieved.

Baseline vegetation data, including percent cover, will be gathered prior to implementation of the mitigation plan. Permanent photograph points will be established for use in documenting before and after site characteristics. Permanent transect lines will be randomly placed perpendicular to Black Forest Creek within wetland mitigation areas. The locations of photograph points and transect lines will be established, surveyed, and permanently marked for future reference. A 1-square-meter quadrat will be placed every 5 meters along the downstream side of each transect. Within each quadrat, a list of identified plant species will be documented for use in determining species composition and percent canopy cover will be measured. Species composition and canopy cover will be used to determine the target reduction of noxious weeds, increases in desirable species, and enhancement progress. This same procedure will be used for each year of monitoring. Findings of the monitoring evaluation and photographs will be documented in an annual report submitted to the Corps by 30 November each year during the monitoring program until success is achieved.

3.4.2 Wetland Performance Criteria

Performance criteria for wetland/riparian mitigation areas include the following:

- Restoration and/or maintenance of adequate hydrology and soil saturation necessary to sustain wetland communities.
- Established wetland vegetative communities with dominant (>50%) hydrophytic species (FAC, FACW, or OBL) and minimum aerial coverages of 80% by the end of the monitoring period.
- Evidence of development of hydric soils in wetland areas by the end of the third growing season.
- Wetland creation sites should exhibit the acreages outlined in Section 3.3. Restoration sites should exhibit acreages equal to or greater than the original delineated acreages before disturbance.
- Trees and shrubs planted during mitigation efforts will be monitored for survivability, and if necessary, will be replaced to achieve 75% success.

3.4.3 Monitoring Methods

The following monitoring methods will be used to assess the success of the mitigation activities based on the performance criteria listed above. Parameters to be monitored and documented in annual reports include the following:

- Data outlined in the specific mitigation final construction plans.
- Photographs taken from established photograph locations that provide an overview of all wetland mitigation areas.

- Soil test pits will be dug in each mitigation area to monitor the development of hydric soils, soil saturation, and other indicators of hydrology. Test pit locations will be recorded with Global Positioning System (GPS) units and mapped during the first year of monitoring. Subsequent soil pits will be located adjacent to the prior year's pits.
- Vegetation cover and composition will be assessed annually during the 3-year monitoring period using 1-meter quadrants described above. Locations will be established adjacent to soil test pit locations and will be surveyed and mapped during the first year of monitoring. Vegetation will be identified to species level, and percent cover will be calculated. Wetland indicator status will be recorded for each species present.

3.4.4 Maintenance

Maintenance of mitigation areas will include measures necessary to promote healthy growing conditions for vegetation. The following measures are among those that may be necessary to ensure healthy growth and success in mitigation areas.

- Watering during the initial period of establishment may be necessary in areas where hydrology is not sufficient to support new plantings. This will occur until roots are developed to an extent where they can reach water.
- Pruning of any dead or diseased material from container stock will take place prior to planting to help ensure successful transplantation.
- If necessary, weed control will be implemented to prevent establishment of weedy species in mitigation areas.
- Wildlife exclosures will be temporarily erected if signs of depredation by wildlife on wetland or riparian vegetation in mitigation areas are apparent.

3.4.5 Contingency Plan

If deficiencies are noted during the monitoring period, remedial action will take place to correct any problems identified. Corrective action may include the following:

- Replacement of container plants with material of the same species.
- If the above does not succeed, plugs from adjacent existing vegetation may be used, but removal of existing vegetation cover should be limited to 10%. In areas of vegetation removal, reseeding of the same species of native vegetation will take place and fertilizer approved for wetland areas should be applied immediately to encourage regrowth.
- In areas originally seeded, reseeding may take place. The seeding mix proposed in this plan shall be used unless the contracted party can give justification for an alternate mix. If a different seeding mix is to be used, it must first be approved by the Corps.

4.0 PERMITS

Struthers Ranch Development, LLC will also be applying for an incidental take permit with the USFWS for potential impacts to PMJM that could occur from the proposed development. An Environmental Analysis was prepared by SWCA with the guidance, participation, and independent evaluation of the USFWS. An Environmental Assessment and Habitat Conservation Plan has been prepared and submitted to accompany an application for an Endangered Species Act Section 10(a)(1)(B) permit for the potential incidental take of PMJM on Struthers Ranch. The potential take is incidental to the otherwise lawful development, construction, and occupation of residential lots, commercial development, and associated infrastructure on the property.

5.0 LITERATURE CITED

- CDNR (Colorado Department of Natural Resources). 1998. Native Plant Revegetation Guide for Colorado: Caring for the Land Series, Volume III. Colorado State Parks, Colorado Natural Areas Program. 258 pp.
- Environmental Laboratory. 1987. Corps of Engineers wetland delineation manual. Technical report Y-87-1. U.S. Army Engineers Waterways Experiment Station. Vicksburg, MS.
- SCS (U.S. Department of Agriculture Soil Conservation Service – now Natural Resource Conservation Service). 1991. Hydric Soils of the U.S.
- SCS (U.S. Department of Agriculture Soil Conservation Service – now Natural Resource Conservation Service). 1981. In Cooperation with the Colorado Agriculture Experiment Station. Soil Survey of El Paso county Area, Colorado. 212 pp.
- USFWS (United States Fish and Wildlife Service). 2002. USFWS Memorandum – Pesticide Review of the Briargate Habitat Conservation Plan. To K. Linder, USFWS, from L. Coppock and B. Spagnuolo, USFWS. October 8.

APPENDIX A

**U.S. Army Corps of Engineers Jurisdictional Waters
Concurrence Letter**



DEPARTMENT OF THE ARMY

ALBUQUERQUE DISTRICT, CORPS OF ENGINEERS

SOUTHERN COLORADO REGULATORY OFFICE

720 NORTH MAIN STREET, SUITE 205

PUEBLO, COLORADO 81003-3046

FAX (719) 543-9475

REPLY TO
ATTENTION OF:

January 15, 2003

Operations Division
Regulatory Branch

Mr. Larry Semo
SWCA, Incorporated
8461 Turnpike Drive
Westminster, CO 80031

Dear Mr. Semo:

This replies to your November 26, 2002, letter requesting a Section 404 jurisdictional determination for waters of the United States on the Struthers Ranch property in an unnamed drainage near Colorado Springs, El Paso County, Colorado in Section 36, Township 11, range 67 West. We have assigned Action No. 2003 00019 to this request.

We have evaluated the information you provided and concur with your findings of waters of the United States within the project site. The jurisdictional boundary is defined by our description of wetlands along the channel and OHWM identifiers.

A Department of the Army permit may be required for the discharge of dredged or fill material into these waters. If you have any questions about this determination or permit requirements, please feel free to contact me at (719) 543-6915 or by email at van.a.truan@usace.army.mil.

Sincerely,

A handwritten signature in black ink, appearing to read "Van A. Truan", written over a diagonal line.

Van A. Truan
Chief, Southern Colorado
Regulatory Office

APPENDIX B

Letter of Credit

APR 07 03 03:31P P.2

JRC Financial, Inc.

7640 Delmonico Drive
Colorado Springs, CO 80919

Phone: 719-633-6630

Mobile: 719-633-6630

Fax: 719-633-6672

Email: jrcrist@aol.com

April 7, 2003

Mr. Kevin Paul
Struthers Ranch Development, LLC
P.O. Box 281
Larkspur, CO 80118

RE: Struthers Ranch Development (SRD) Financing

Kevin:

Based upon the information you have provided me to date, JRC Financial, Inc. will be able to provide you with the Line of Credit to pay for the restoration of the habitat on a portion of the property known as Struthers Ranch. Advances from this loan will be subject to your final acquisition of Struthers Ranch, review of your current financials, recording of your final plat with conditions met, review of your builder sales contracts, and the United States Fish and Wildlife Service giving final approval of your Habitat Conservation Plan.

If everything above is approved as expected, the terms of your loan will be as follows:

- | | |
|--------------------------|---|
| 1. Loan Advance Amount: | Line of Credit not to exceed \$540,000, |
| 2. Discount Points: | 3% added to the Loan Amount, when advanced, |
| 3. Interest Rate: | One-year LIBOR plus 450 basis points, |
| 4. Maturity Date: | 3 years, |
| 5. Monthly Payment: | Interest only, monthly, |
| 6. Principal Reductions: | Equal to 70% of the sale of any parcel, |
| 7. Security: | Struthers Ranch Development |
| 8. Guarantors: | Kevin Paul and Lincoln Earhart, |

Please call me if you have any questions. Thank you.

Sincerely,



John R. Crist
President

APPENDIX B

Draft Letter of Credit for Struthers Ranch Development, LLC

JRC Financial, Inc.

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Colorado Springs, CO 80919

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John R. Crist
President

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Please call me if you have any questions. Thank you,

Sincerely,



John R. Crist
President

APPENDIX C

Cultural Resource Inventory

State Historic Preservation Office Concurrence Letter

SWCA
ENVIRONMENTAL CONSULTANTS

8461 Turnpike Drive, Suite 100
Westminster, CO 80031
303.487.1183
303.487.1245 fax

**CULTURAL RESOURCE INVENTORY OF THE
PROPOSED STRUTHERS RANCH DEVELOPMENT,
EL PASO COUNTY, COLORADO**



Submitted to U.S. Fish and Wildlife Service, U.S. Department of Interior

Prepared for Struthers Ranch Development, LLC

Prepared by SWCA Environmental Consultants

March 2003

ABSTRACT

In March 2003, personnel from SWCA Environmental Consultants performed a file search and literature review and inventoried 107 acres associated with the proposed Struthers Ranch Development along Black Forest Creek. These investigations were performed in support of the Environmental Assessment for the Habitat Conservation Plan (Preble's meadow jumping mouse) associated with the proposed development. As a result of the inventory, Struthers Ranch (5EP4460) and one 1920s trash scatter (5EP4461) were recorded. Both properties are recommended as not eligible for listing on the National Register of Historic Places (NRHP). Because no property currently listed on or eligible for listing on the NRHP would be adversely affected by the proposed undertaking, cultural resource clearance is recommended, with no additional work or stipulations.

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Appendix A: USGS 7.5' Topographic Map Depicting Cultural Resource Locations.

COLORADO CULTURAL RESOURCE SURVEY

Cultural Resource Survey Management Information Form

I. PROJECT SIZE

Total federal acres in project: <u>0</u>	Acres surveyed: <u>0</u>
Total state acres in project: <u>0</u>	Acres surveyed: <u>0</u>
Total private acres of project: <u>107</u>	Acres surveyed: <u>107</u>
Other <u>Total</u> : <u>0</u>	Acres surveyed: <u>0</u>
	Total acres surveyed: <u>107</u>

II. PROJECT LOCATION

County: El Paso Principal Meridian: 6th
USGS Quad map name(s) and date(s): Monument, CO (1986/Revised 1994)
Township: 11S Range: 67W Sec: 36 S ½ SE ¼ SE ¼ SW ¼

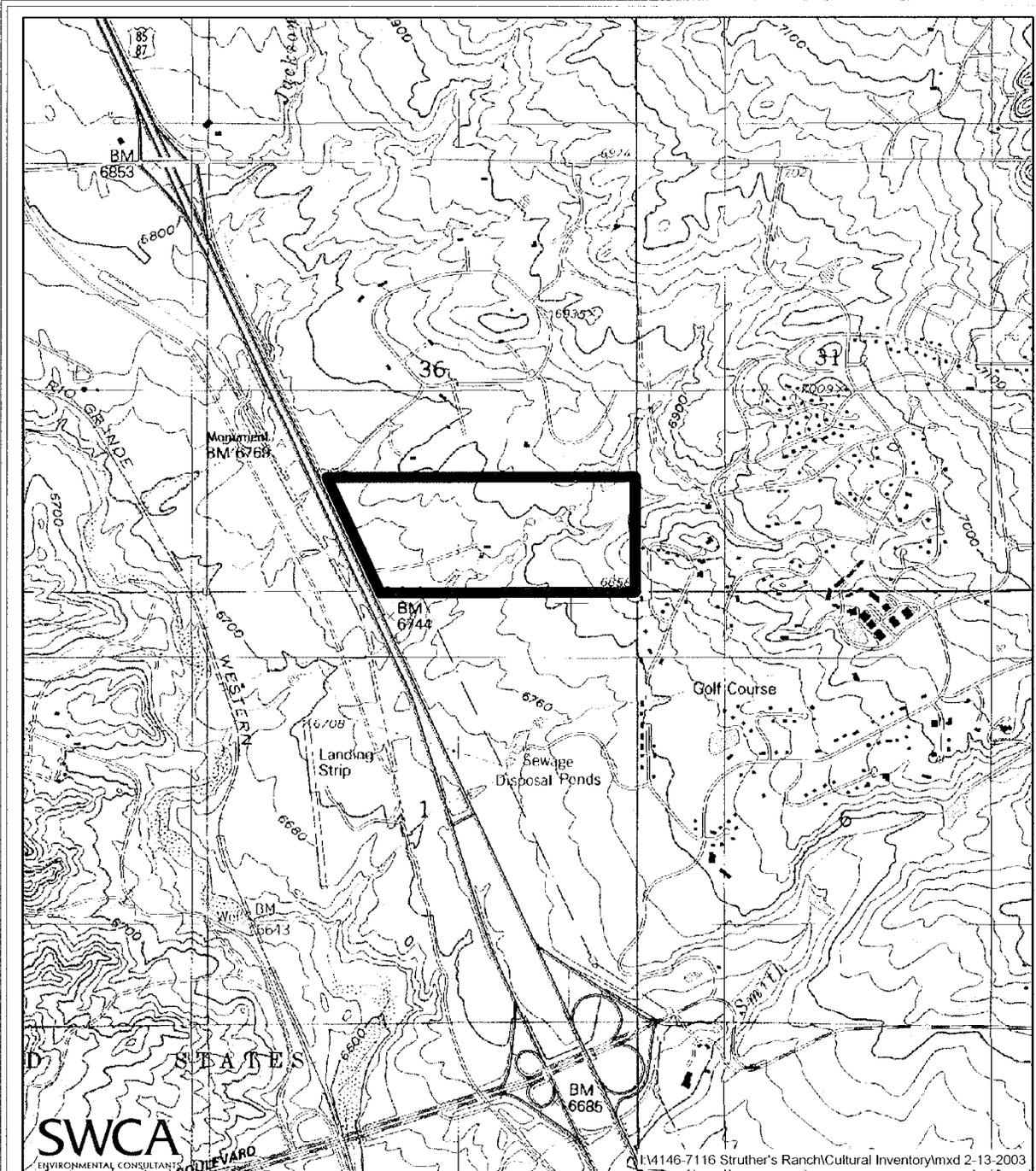
III. SITES

Smithsonian Number	Resource Type			Eligibility				Management Recommendations						
	Historical	Paleontological	Unknown	Eligible	Not Eligible	Need Data	Contributes to National Register District	No Further Work	Preserve/Avoid	Monitor	Test	Excavate	Archival Research	Other
5EP4460	X				X			X						
5EP4461	X				X			X						

IV. ISOLATED FINDS

Smithsonian Number	Resource Type			
	Prehistoric	Historical	Paleontological	Unknown

Smithsonian Number	Resource Type			
	Prehistoric	Historical	Paleontological	Unknown



COLORADO
QUADRANGLE LOCATION

LEGEND

Inventoried Area

0 0.25 0.5
 Miles
 Scale 1:24,000
 Quadrangle: Monument, CO
 T11S, R67W, Section 36

Struthers Ranch Inventoried Area, El Paso County, Colorado.

INTRODUCTION

In March 2003, SWCA Environmental Consultants (SWCA) personnel conducted a literature review/file search and an intensive cultural resource inventory in support of the Environmental Assessment (EA) for the Habitat Conservation Plan (HCP) associated with the proposed 107-acre Struthers Ranch Development in northern El Paso County, Colorado. The HCP addresses conservation measures for potential impacts to habitat for the Preble's meadow jumping mouse (PMJM) – a species listed as threatened under the *Endangered Species Act* of 1973 (ESA). Because of the potential to impact significant and important cultural and historical resources, the U.S. Fish and Wildlife Service (USFWS), Department of Interior, requested a cultural resource inventory of the proposed development. The goals of these investigations were to: 1) conduct a literature review and file search at the Colorado Office of Archaeology and Historic Preservation (OAHP) to identify previously conducted cultural resource management studies and previously recorded cultural resources within the proposed Struthers Ranch Development; 2) identify all cultural and historic resources within areas that would be impacted by the proposed development area; 3) make a determination of significance by applying the National Register of Historic Places (NRHP) criteria; 4) determine the effects that the proposed development would have on significant cultural resources; and 5) make recommendations regarding each property as it relates to the proposed development and treatment of potentially historic properties.

The entire proposed Struthers Ranch Development is east of Interstate 25 (I-25) and the City of Monument, and it incorporates portions of Section 36, T11S, R67W. The project area is depicted on the Monument (1986/Revised 1994), Colorado 7.5' United States Geological Survey (USGS) topographic quadrangle.

The USFWS is the lead federal agency for this undertaking. The federal nexus is Section 10 of the ESA of 1973 (amended) and the *National Environmental Policy Act* of 1971 (amended). The area of potential effect (APE) includes all areas associated with the proposed Struthers Ranch Development. This work was performed so that the USFWS would be in compliance Section 106 of the *National Historic Preservation Act* of 1966 (amended). Impacts to cultural resources could result from grading, trenching, and excavation associated with the construction of buildings and supporting infrastructure.

SWCA personnel performed the work under Colorado State Cultural Resource Use Permit 2003-16. Bill Martin was the principal investigator. Todd Kohler and Scott Phillips assisted Mr. Martin during the fieldwork portion of the project. SWCA personnel performed the fieldwork on March 11, 2003.

This report includes an environmental overview; a brief summary and context for prehistoric, protohistoric, and historical archaeological sites in the region; a summary of previous work and expected results; a summary of the field methods and project objectives; the results of the cultural resource investigations at the proposed development; management recommendations; evaluation of the research; and a summary and conclusions.

ENVIRONMENTAL SETTING

The project area is located on the northern end of the Palmer Divide, which is an elevated structure that separates the Platte River and Arkansas River basins. It is in the Colorado Piedmont physiographic province of eastern Colorado. The study area is in an area characterized by rolling topography; includes a series of low, narrow, northeast/southwest-trending ridge spurs and incised, southwest-facing slopes; and is on the eastern margin of a moderately wide valley formed by Monument Creek, which is less than 0.5 mile (mi) west of the western edge of the proposed development. The project area includes, and is bisected by, the upper and middle reaches of Black Forest Creek— a tributary of Monument Creek. Elevations range from 6,740 (feet) ft on the western end of the development to 6,858 ft on the southeastern corner of the development. While comparatively undisturbed, the recently inventoried area is surrounded by areas that have been heavily disturbed by residential, infrastructure, and commercial developments. Within the inventoried areas, previous disturbances include primarily ranching activities, including the installation of a number of check dams along Black Forest Creek, and a fiber optic line in the western portion of the parcel. Inventoried areas were covered with dense vegetation, with surface visibility averaging 20 to 40 percent (%) across the entire area. Surface visibility was the only obvious environmental factor that affected the inventory.

The Palmer Divide is a high upland divide that extends eastward from the mountains and separates the Arkansas and South Platte River basins. The topographic feature is approximately 2,000 ft higher than other areas of the Colorado Piedmont to the north and south. Due to its topographic location, the Palmer Divide has a climate that is similar to the mountains located to the west. The orographic effect causes the area to experience delayed warming in the spring, lower summer temperatures, delayed cooling in the fall, and higher amounts of precipitation. The average high temperature in January between 6,000 and 8,000 ft is 45E F and the average low is 15E F; in July the average high is 85E F and the average low is 56E F (Zier and Kalasz 1999).

The majority of the Struthers Ranch Development supports open grasslands. The dominant vegetation across upland and slope areas consists of native grasses such as blue grama (*Bouteloua gracilis*) and three-awn (*Aristida* spp.) interspersed with fringed sage (*Artemisia frigida*). Weedy species such as diffuse knapweed (*Centaurea diffusa*) and mullein (*Verbascum thapsus*) are common in some areas. In the upper one-third of the drainage, more mesic areas on the slopes to Black Forest Creek support moderate densities of Gambel's oak (*Quercus gambelii*), with an occasional ponderosa pine (*Pinus ponderosa*).

Vegetation composition in riparian areas along Black Forest Creek differs markedly depending upon soil moisture, degree of previous flood damage, and topography. Scattered cottonwood (*Populus deltoides sargentii*) trees up to 60 ft in height occur throughout the drainage. Below the downstream stock pond, hydrologic conditions support moderately dense stands of coyote willow (*Salix exigua*), cottonwood, and peach-leaf willow (*Salix amygdaloides*). Some wetland areas support moderate densities of Baltic rush (*Juncus balticus*) and Nebraska sedge (*Carex nebrascensis*) interspersed with dense grasses such as bluegrass (*Poa* spp.) and muhly (*Muhlenbergia* spp.). However, the majority of lower Black Forest Creek has sustained severe flood damage that has been exacerbated by subsequent cattle grazing. Therefore, many riparian areas on the property are characterized by sparse vegetation and/or exposed sandy soils.

Additionally, many areas supporting willow shrub cover support very little understory vegetation due to the flooding and cattle grazing. The north and south forks of upper Black Forest Creek also support open areas of grazed grasses and sedges with low to moderately dense peach-leaf willow and snowberry (*Symphoricarpos albus*). The middle fork of upper Black Forest Creek does not support wetland or riparian vegetation. Areas immediately adjacent to this channel support upland grasses and forbs with relatively dense clumps of Gambel's oak.

The property is underlain by two geologic formations: Quaternary older gravels and alluviums and Tertiary deposits of the upper part of the Dawson Arkose. Quaternary gravels and alluviums are found within the on-site drainage valley while Dawson Arkose deposits are present on higher elevations on the property.

Soils within the project fall into three different classes dependent upon location on the tract. The drainage floor consists of Pring coarse sandy loams, 3 to 8% slopes. The southern upland area of the property is comprised of the Tomah-Crowfoot loamy sands on 3 to 8% slopes while upland areas on the northern portion of the tract consist of the Tomah-Crowfoot loamy sands, 8 to 15% slopes. The Pring complex consists of deep, well-drained soils that form in sandy sediments on drainage floors. The Tomah-Crowfoot association consists of soils that develop on gentle to moderately sloped areas on hills and ridges (Soil Conservation Service 1981).

Wildlife found throughout the project area is typified by those species commonly found along Colorado's Front Range and in El Paso County. Wildlife includes the following common bird species: red-tailed hawk (*Buteo jamaicensis*), black-billed magpie (*Pica hudsonia*), western meadowlark (*Sturnella neglecta*), vesper sparrow (*Pooecetes gramineus*), house finch (*Carpodacus mexicanus*), and spotted towhee (*Pipilo maculatus*). Common mammals include mule deer (*Odocoileus hemionus*), pronghorn antelope (*Antilocapra americana*), coyote (*Canis latrans*), red fox (*Vulpes vulpes*), raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), and deer mice (*Peromyscus maniculatus*).

CULTURE HISTORY AND PREVIOUS WORK

The following section provides a brief overview of the region's culture history, a summary of previous work conducted in the area, and a statement of expected results.

CULTURE HISTORY

The culture history of the region includes the prehistoric, protohistoric, and historic periods. Overviews of these periods follow.

Prehistoric and Protohistoric Overview

The project area is in the Arkansas River Basin as defined by the recently published Arkansas River Basin Context (Zier and Kalasz 1999). The Arkansas River Basin Context demonstrates that the Arkansas River Basin was used by a variety of Native American groups throughout all of prehistory, beginning with Clovis hunters at the end of the Pleistocene and continuing through to the onset of European occupation of the region. The context provides a state-of-the-art summary of our knowledge of prehistoric and early historic developments of the region and

provides a list of research domains for future research, which include *Chronology, Population Dynamics, Technology, Settlement and Subsistence Strategies, and Geomorphology and Paleoclimate*. If an archaeological site can produce information about several of the research domains – along with other variables such as possessing good physical integrity, being able to be dated to a specific cultural historic period by relative or absolute dating techniques, and containing intact, subsurface archaeological deposits – then a site is generally evaluated as a significant archaeological property eligible for listing on the NRHP under Criterion D. Archaeological sites in the proposed project area conceivably could produce information that would address the research domains concerning *Population Dynamics, Settlement and Subsistence Strategies, and Geomorphology and Paleoclimates*.

The Protohistoric period (460-140 years B.P.) begins with European contact and ends with the period of permanent settlement by literate peoples (Zier and Kalasz 1999). Most of the cultural (tribal) identities now associated with Plains Native Americans have their roots in the Protohistoric period.

The beginning of the Protohistoric period is marked by the emergence of the Dismal River complex (first described as an aspect under the Midwest Taxonomic System). Although initially defined on the basis of work in southwest Nebraska (Gunnerson 1960), the range of the Dismal River complex is now thought to extend well into the Arkansas River Basin. The Dismal River people are generally acknowledged as transitory Apache, characterized by horticulture and micaceous ware ceramics much like those Apache wares still existing in northeast New Mexico today.

Later in the Protohistoric period, many other historically known cultures made passing or long-term use of the Arkansas River Basin. Included in these cultures were the Utes, the Shoshones, the Comanches, the Arapahos, the Kiowas, the Pawnees, and even the Navajos. The degree to which each of these groups left recognizable material culture in the archaeological record is a matter of discussion.

Historic Overview

Major themes in Colorado history include exploration and settlement; mining; ranching, farming, and homesteading; irrigation; and urbanization (Mehls 1984a and 1984b).

To those living in the power centers of the East Coast in the early nineteenth century, the area now known as Colorado was a distant, remote wilderness. The Spanish, however, had made forays into the region since the late eighteenth century, attempting to establish trading relationships with the Native American groups who occupied the area. Throughout the early nineteenth century, trading and trapping were the primary activities of the small non-Native American population in the area. When precious metal deposits were discovered in the 1850s, miners, their families, and those who hoped to cash in on the mining industry flooded into Colorado. Although mining was the backbone of the economy of the state until the late nineteenth century, industries including farming, ranching, coal mining, and other support industries, popped up in conjunction with efforts to extract precious metal from the earth. Immigrants from around the country and around the world streamed into the state to supply labor to the burgeoning industries. The late nineteenth century was a time of change, and the economy

of the state diversified. Farming, ranching, banking, tourism, and health industries grew in importance.

Linked by common statehood, the various regions of Colorado possess a common heritage, but each area maintains distinct characteristics and specific historical development. For this reason, it is important to approach the historical cultural resources in Colorado with both an understanding of how individual sites are shaped by regional and statewide processes and how the actions of people who occupied these sites helped shape and create these processes.

The Louisiana Purchase in 1803 brought about confusion over national borders between the American and Spanish governments, which resulted in Spanish patrolling of the northern plains and the present site of Denver until 1819. That year the Adams-Obis Treaty was signed by both governments, resolving the dispute over where the boundary between American lands and Spanish lands was located, and American exploration of the region greatly increased (Mehls 1984a). Exploration efforts were concentrated along the South Platte River. During the Oregon Migration of the 1840s, particular attention was paid in this region to the discovery of alternative routes for travelers moving west (Mehls 1984a). Americans also patrolled the northern Colorado plains to control the Native Americans in the region and reduce the threat of raiding to American settlers and trappers traveling through the area.

Several trading forts were established in the 1830s and early 1840s, including Fort Vasquez, Fort St. Vrain, Fort Lupton, and Fort Jackson. The presence of these forts made northeastern Colorado a popular winter and exchange destination for trappers (Mehls 1984a). In the 1840s, the traders and trappers fell on hard times when the fur market crashed. Simultaneously, trappers experienced a severe reduction in the number of pelts they were able to obtain due to over-hunting of certain species. Many forts closed later in the 1840s, and the trading entrepreneurs moved elsewhere. Afterward, a sparse number of mountain men settled in the region, selling necessary goods to migrating settlers traveling through the region, or farming (Mehls 1984a).

The Colorado gold rush of 1859 attracted a completely different wave of people to the northern plains regions. Because of the sheer volume of fortune seekers to the area, this region of the state became the cradle of permanent Anglo settlement and the American government's push for Colorado's statehood (Mehls 1984a). Unsuccessful miners tried their hand at farming the plains, and entrepreneurs chasing the growing population's need for goods and services were integral to the establishment of Colorado Springs, as was the discovery of gold in Dry Creek, Cherry Creek, and Fountain Creek Canyon. Although the small and quickly depleted gold deposits in the area eventually produced a reverse migration, many people, especially commercial business owners, chose to stay to permanently establish a supply center for mountain mining communities in the southern Rocky Mountains (Mehls 1984a). This period also saw a large amount of conflict between American settlers and soldiers and the Native American groups who had previously moved freely through northeastern Colorado on a seasonal basis. One of the most disastrous of these violent encounters occurred at Sand Creek in November 1864.

The post-1900 period along the Front Range and on the northern plains is characterized by advances in agricultural techniques. Irrigated crops were dominated by sugar beets, and dryland farming techniques and crops were improved. With the advent of the automobile, tourist trade increased, and railroads began to decline in importance as many goods began being shipped by

truck. During the first half of the twentieth century, Colorado Springs became a large urban area specializing in regional energy development, tourism, distribution of goods and services, and military support.

PREVIOUS WORK

Based on a file search conducted at the Colorado OAHP in Denver on March 4, 2003 by SWCA, no significant archaeological or cultural properties have been recorded in Struthers Ranch Development project area. In fact, two intensive cultural resource inventories for a borrow pit and an area along the I-25 corridor failed to identify any archaeological sites in the immediate project area or outside the project area.

EXPECTED RESULTS

Previous investigations in the area indicate that the current project area is likely to contain a low to moderately high density of prehistoric sites. Previous investigations around the proposed development have also indicated that the prehistoric sites most likely to be encountered in the current project area will be small prehistoric lithic scatters or small open camps resulting from relatively brief occupations of a sort characteristic of an Archaic lifestyle. Likewise, it is judged that those sites will have simple assemblages dominated by a few simple flaked stone tools, unmodified flakes, and often ground stone. It is possible that ceramic artifacts or other remains more representative of the Late Prehistoric or Protohistoric periods will be encountered, and it is possible that larger sites resulted from repeated reoccupation of the same locality will be encountered.

The project area is judged to have moderate to high potential to contain historic sites representing a range of historic site types, especially sites related to ranching/farming. The project area is situated within a historically active ranching area that spans the time period from the 1860s to the present. In that regard, it is situated in and immediately adjacent to the prime homestead lands in the area, most of which were claimed prior to 1890.

FIELD METHODS AND OBJECTIVES

The following section describes the field methods used during this project.

FIELD METHODS

SWCA archaeologists surveyed the project area using a series of 20- to 22-meter (m) (65- to 72-ft) wide, zig-zag transects. Transects were oriented north/south, east/west, or northwest/southeast. Field personnel examined the ground surface for artifacts, features, or other evidence such as charcoal-stained sediments, with special attention paid to anthills, blowouts, drainage cutbanks, and two-track roads. Surface visibility was poor to marginal throughout the survey area, with visibility averaging 20 to 40 percent. Conceptually, a site was defined before the on-set of field work as a discrete area containing one or more features, seven or more prehistoric artifacts, or 21 or more historic artifacts at least 50 years old. Isolated finds (IFs) were defined as four or fewer prehistoric artifacts or 20 or less historic artifacts. Historic

artifacts clearly from the same item were counted as a single artifact. Surface visibility was marginal throughout the study area, with visibility averaging 20 to 40%. The entire project area was snow free.

Field personnel recorded all of the newly recorded IFs on Colorado OAHF forms, and the IFs were mapped with a Trimble ProXR Global Positioning System (GPS) unit. The GPS unit is accurate to within 10 centimeters (cm) along the x and y axes and 20 cm along the z axis. Field GPS data was post-processed using the Denver Community Base Station data and projected into Universal Transverse Mercator (UTM), Zone 13 north, North American Datum 1927. All GPS data was exported into ArcMap 8.1 shapefiles and plotted onto the associated geo-referenced USGS 7.5' quadrangle to ensure accuracy and to produce location maps of all resources.

An inventory of associated artifacts was also completed for each IF. For prehistoric material, it included classifying artifacts into broad technological/morphological categories according to type and relative amount of reduction they have undergone. While not mutually exclusive, three reduction sequences resulting in different idealized end products are defined. The first sequence involves the reduction of flakes, pebbles, cobbles, and cores into bifacial implements. It is referred to as the biface reduction sequence, and it results in the production of various classes of bifaces, including projectile points and other final bifaces, preforms, blanks, and preblanks. The second reduction sequence involves the use of flakes removed from nodules, cores, bifaces, and other source material as flake tools. Flake tools are classified as retouched flake tools if one or more of their margins has been modified or utilized flake tools if the flake exhibits evidence of use but no modification. The third reduction sequence involves the limited modification (or flaking) of cobbles, pebbles, and other nodules as tools. Certain attributes were recorded for all flaked stone tools, including portion, length, width, and thickness, and raw material type. The unutilized debris resulting from flaked stone reduction is classified as flakes, which includes flakes and angular fragments resulting from reduction activities. Flakes are classified in terms of the amount of cortex exhibited on their exterior surface. Flakes with more than 90% cortex are classified as primary flakes, flakes with 10 to 90% cortex are classified as secondary flakes, and flakes with less than 10% cortex are classified as tertiary flakes. These categories are intended to roughly differentiate flakes removed at various stages during the reduction process. Angular fragments consist of indistinguishable angular debris resulting from the failure of cores, tool blanks, flakes, or other pieces of raw material during the lithic reduction sequence. Raw material types were noted for each flake.

Historic archaeological material was recorded in a similar manner. Observed artifacts were recorded by material type, e.g., glass and metal, and object class, e.g., tin cans, bottles, plates. Glass color was described since color can be diagnostic to certain periods. Measurements and diagnostic attributes, especially maker's marks, were described and sketched.

SWCA personnel did not collect any artifacts during these investigations.

EVALUATION CRITERIA

The criteria for evaluating a property in terms of its potential listing on the NRHP provides a systematic, definable means to evaluate historic and cultural properties. The criteria specified in 36 CFR 60.4 are as follows:

The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

A) That are associated with events that have made a significant contribution to the broad patterns of our history; or

B) That are associated with the lives of persons significant in our past; or

C) That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D) That have yielded or may be likely to yield information important in prehistory or history.

OBJECTIVES

As mentioned before, the goals of the inventory were to: 1) identify all cultural and historic resources within areas that would be impacted by the proposed development; 2) make a determination of significance by applying the NRHP criteria to identified properties; 3) determine the effects that the proposed development would have on identified cultural resources; and 4) make recommendations regarding each property as it relates to the proposed development. As mentioned before, this inventory was performed at the request of the USFWS to ensure that locally, regionally, or nationally significant historic and cultural properties were identified, considered, and treated and to provide information for the EA associated with the HCP for the proposed Struthers Ranch Development.

RESULTS OF CULTURAL RESOURCE INVENTORY

The following section summarizes the results of the cultural resource inventory at the proposed Struthers Ranch Development. SWCA personnel inventoried the entire 107 acres associated with the proposed development. As a result of the inventory, they documented one ranch (5EP4460, Struthers Ranch) and one historic trash scatter (5EP4461). Both properties are summarized below.

5EP4460 (Struthers Ranch) complex consists of a 1 1/2-story wood framed main house with a carport addition, a tool shed, and a series of interconnected corrals enclosing a long stall; a chicken coop with a lean-to roof covered with tin; a dilapidated wood framed barn with vertical board-and-batten wood plank siding; and a front gable roof covered with tin, and a rectangular concrete block milking barn with a side gable roof covered with tin. A series of loading chutes are on the western end of the corral. Other elements associated with the ranch landscape, but which were not recorded as part of the ranch complex per se, include several trash dumps dating to the late 1960s and early 1970s; several shallow contours; a windmill and baler; and a series of check dams along Black Forest Creek (depicted on the 7.5' USGS quadrangle map). The

integrity of the complex, particularly the main house, has been diminished by disuse and recent intensive vandalism.

Struthers Ranch is a small-family cattle ranch typical of the Colorado eastern plains in the early to late twentieth century. Section 36, T11S, R67W was deeded to the State of Colorado in 1875. The files at the El Paso County Assessor's and Clerk's offices do not list when the State of Colorado sold the property, but the Struthers family bought the property in 1945. According to the county assessor's on-line records, the house was constructed in 1915 by an unnamed party. The Struthers family moved out of the house in 1994, although the property still functions as a working ranch.

5EP4461 is a trash scatter consisting of variety of historic items scattered over a 50-m north/south by 35-m east/west area of a low, dissected, east/west-trending ridge/bench on the eastern margin of a moderately wide valley formed by Monument Creek. The soil is a brown gravelly sandy loam deposited as alluvial overbank sediments. On-site vegetation consists of various short grasses, forbs, yucca, and prickly pear. Previous disturbances to the site include intensive grazing and sheet erosion. A utility line and property fence are on the western edge of the site, immediately east of, and above, Struthers Road and I-25.

Artifacts include one metal "Dietz" cap with wire bales, one purple-discolored bottle base (machine mold with no maker mark), one metal spatula, one rubber shoe heel, one barrel hoop fragment, one 1926 Colorado license plate, one automobile headlight frame ring, one milk glass sherd, four clear glass bottle sherds, one miscellaneous galvanized metal fragment, three lengths of wire, one clinker concentration (2-m diameter area), six hinge-lid tobacco tins, one sanitary can, 18 can fragments, 12 whiteware plate fragments, and one fragmented hole-in-cap can. Based on the associated artifacts, the site appears to date to the 1920s. Its association with the Struthers Ranch is unclear.

MANAGEMENT RECOMMENDATIONS

5EP4460 (Struthers Ranch) does not appear to be significant or eligible for listing on the NRHP based on: 1) the architectural aspects are not unique or representative of a period, a specific architect, or an architectural school or movement; and 2) the site is not associated with any person or event of local, regional, or national significance. While it is conceivable that the property might be eligible for listing on the NRHP under Criterion A because of its association with the development of the cattle and ranching industry in El Paso County and the Colorado eastern plains, the property's feeling, association, and setting have all been diminished and compromised by the intensive residential, commercial, public, and infrastructure development on all sides of the extant property, including the Air Force Academy and I-25. Moreover, the integrity of all of the buildings is poor from disuse and recent, intensive vandalism, which have also diminished the qualities of workmanship and design. There are better examples of early- to mid-twentieth century family ranches in El Paso County, in particular, and eastern Colorado, in general than the Struthers Ranch.

Based on the March 2003 Plan of Development Struthers Ranch Development, the entire ranch complex would be razed to make room for several residential plots. Because the property is

recommended as not eligible for listing on the NRHP, the proposed undertaking would have no effect on this property. No additional work or stipulations are recommended.

5EP4461 is a 1920s trash scatter that is recommended as not eligible for listing on the NRHP. This recommendation is based on the fact that: 1) the site is a common site type whose association with any person or event of local, regional, or national significance would be difficult to establish; and 2) it is not likely to produce any additional information that would further our understanding of the region's history.

The proposed future Struthers Road Extension would impact most, if not all, of this site. Because the site is recommended as not eligible for listing on the NRHP, the proposed undertaking would have no effect on this site. No additional work or stipulations are recommended.

Because the proposed Struthers Ranch Development will not adversely affect any property currently listed on or eligible for listing on the NRHP, the proposed undertaking should be allowed to proceed as planned. No additional work or stipulations are recommended.

EVALUATION OF RESEARCH

The goals of this project were purely management related and did not include a research component. It was considered likely that prehistoric resources would be encountered based on: 1) our knowledge of the prehistoric occupation of the region; 2) results of previous inventories in the area which identified prehistoric sites; and 3) the fact that the project is located near Monument Creek. We also expected to locate dispersed evidence of prehistoric forays into the region, which might consist of small lithic scatters or isolated artifacts. However, no evidence of prehistoric use was documented during this inventory. The absence of prehistoric sites/artifacts probably has more to do with the upland nature of inventoried areas, the near lack of useable toolstone, and the lack of permanent water. In terms of historic resources, a small trash scatter dating to the 1920s and the Struthers Ranch were the only sites identified during the inventory, which is consistent with what we expected from the on-set of the project based on the literature and file search.

SUMMARY AND CONCLUSIONS

In March 2003, SWCA cultural resource specialists examined 107 acres associated with the proposed Struthers Ranch Development along the upper and middle reaches of the Black Forest Creek. SWCA personnel recorded the Struthers Ranch (5EP4460) and one 1920s historic trash scatter (5EP4461) during their inventory of the proposed development. Struthers Ranch includes a ranch house and several associated outbuildings, along with other components of the landscape (i.e., check dams, contour breaks, and several trash dumps) that were not recorded as part of the ranch. 5EP consists of scattered trash dating to the 1920s. Its association with Struthers Ranch is unclear. Based on the absence of prehistoric artifacts and sites, this portion of the prehistoric landscape is characterized by a low density archaeological record; this part of the prehistoric landscape was used on a nonintensive, sporadic basis during the prehistoric period. Historic use of the landscape involved primarily intensive livestock grazing and ranching, based on the presence of Struthers Ranch and associated elements of the ranch landscape.

REFERENCES CITED

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1960 *An Introduction to Plains Apache Archaeology - The Dismal River Aspect*. Anthropological Papers, No. 58, Bureau of American Ethnology Bulletin 173, pp. 131-260, pls. 1-38.

Mehls, Steven F.

1984a *Colorado Plains Historic Context*. Prepared for the Colorado Historical Society, Denver.

1984b *Colorado Mountains Historic Context*. Prepared for the Colorado Historical Society, Denver.

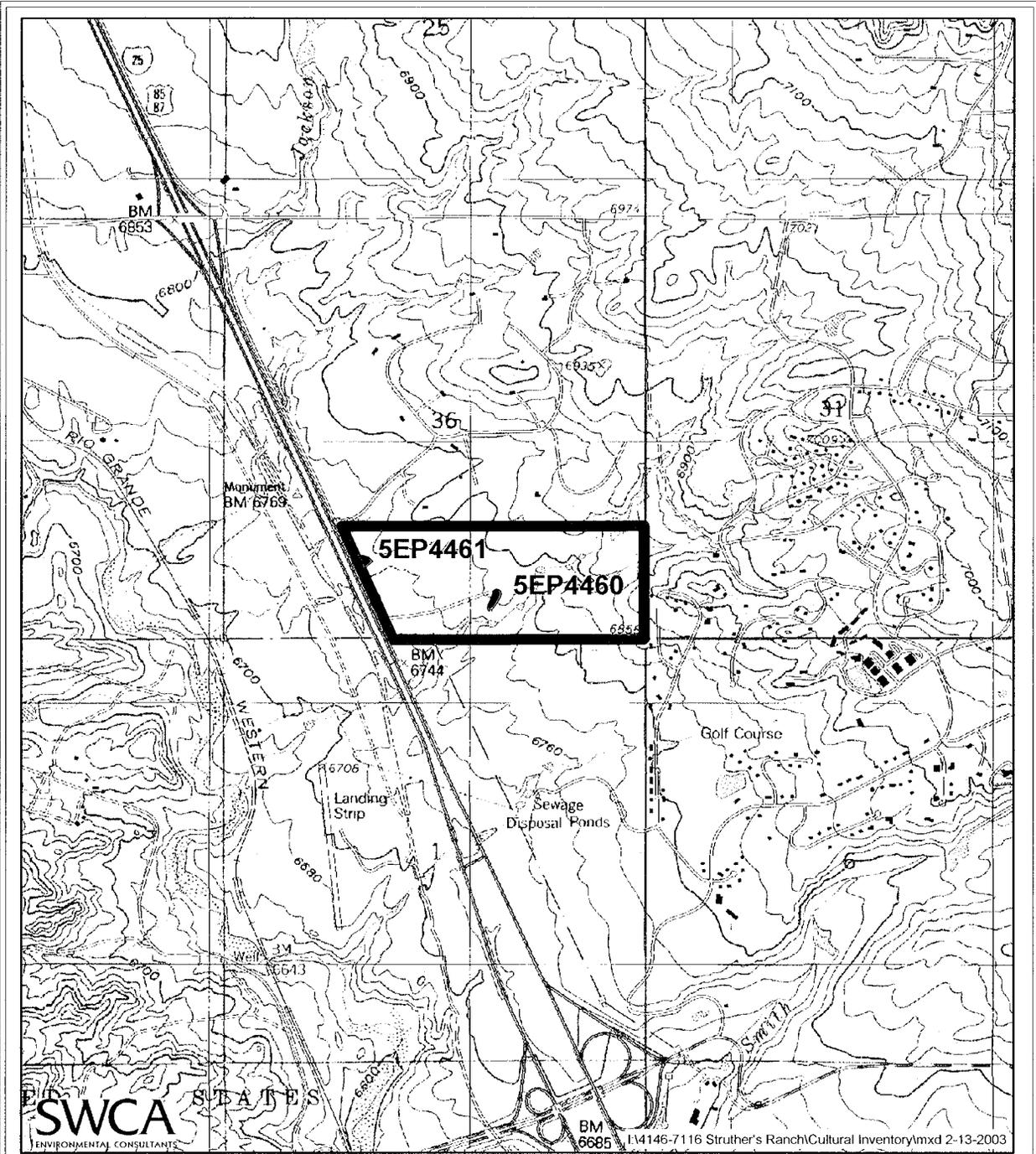
Soil Conservation Service

1981 *Soil Survey of El Paso County, Colorado*. United States Department of Agriculture, in cooperation with Jefferson County and the Colorado Agricultural Experiment Station.

Zier, Christain J., and Stephen M. Kalasz

1999 *Colorado Prehistory: A Context for the Arkansas River Basin*. Colorado Council of Professional Archaeologists, Denver, Colorado.

Appendix A: USGS 7.5' Topographic Map Depicting Cultural Resource Locations



COLORADO
 QUADRANGLE LOCATION

LEGEND

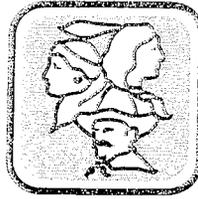
- Inventoried Area
- Site Boundary

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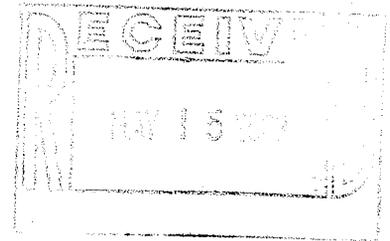
0 0.25 0.5
 Miles

Scale 1:24,000
 Quadrangle: Monument, CO
 T11S, R67W, Section 36

Struthers Ranch Inventoried Area and Cultural Resources, El Paso County, Colorado.



COLORADO
HISTORICAL
SOCIETY



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

April 29, 2003

Kathleen Linder
Fish & Wildlife Service
755 Parfet Street, Suite 361
Lakewood, CO 80215

Re: Struthers Ranch Development

Dear Ms. Linder:

Our office has reviewed the cultural resource report prepared by Bill Martin of SWCA for the project listed above.

We concur that 5EP4460, an abandoned ranch, is not eligible to the National Register. This site is not associated with persons or events important in history and has no distinctive architectural characteristics.

5EP4461, a small 1920's trash scatter, is also not eligible to the National Register. This site will yield no further information important to history.

We concur that no historic properties will be affected by this project.

Should unidentified cultural resources be discovered in the course of development, work must be interrupted until the resources have been evaluated in terms of the National Register criteria, 36 CFR 60.4, in consultation with our office.

If we may be of further assistance please contact Jim Green at 303-866-4674.

Sincerely,

Georgianna Contiguglia
State Historic Preservation Officer

GC/WJG

cc: S. S. Struthers

APPENDIX D

Authorization Contract for the Use of a Portion of an Off-Site Property

**PURCHASE AGREEMENT
FOR
VACANT LAND**

I hereby certify this to
be a true and exact copy
of the original document.
MK Van Deype

THIS PURCHASE AGREEMENT FOR VACANT LAND ("Agreement"), dated as of December 10, 2002, is by and between **Summit Enterprises of Kansas, L.L.C., a Kansas limited liability company** (collectively, "Seller"), whose address is 8969 S. Hillview Rd. Morrison, CO 80465, and **Struthers Ranch Development, LLC, a Colorado limited liability company** ("Purchaser"), whose address is P.O. Box 281, Larkspur, CO 80118.

I. GENERAL

1.1 Recitals.

Property. Seller owns that certain real property comprising approximately 4,810 square feet located in El Paso County, CO and legally described on Exhibit A attached hereto and incorporated herein, together with all appurtenances, reservations and hereditaments (collectively, "Property"). Seller wishes to sell to Purchaser and Purchaser wishes to acquire from Seller the Property, free and clear of all liens, encumbrances, liabilities, duties and obligations, except for the "Permitted Exceptions" (as defined below), subject to the terms and conditions contained herein.

1.2 Agreement and Deposit. Subject to, and in accordance with, the terms and conditions contained in this Agreement, and in consideration of the "Deposit" (as defined below) and the mutual agreements contained herein, Seller agrees to sell to Purchaser, and Purchaser agrees to purchase from Seller, the Property. Upon the execution of this Agreement, Purchaser shall pay to Seller a refundable earnest money deposit in the amount of \$500 ("Deposit"), which is also the total purchase price of subject property, which shall be held by Security Title Guaranty Company, 1277 Kelly Johnson Blvd., Suite 100, Colorado Springs, CO 80920 ("Title Company") as provided herein. The Deposit shall become non-refundable as provided in Section 3.2(b) below.

II. CONSIDERATION

By and in consideration of Seller selling the Property to Purchaser, Purchaser shall, on or before the closing date of subject property commence endangered species mitigation for the Preble Mouse ("Mitigation") on certain real property owned by Seller, as more particularly described on Exhibit B attached hereto and incorporated herein ("Seller Property"). The Mitigation shall be part of, and in conformance with, Purchaser's existing mitigation plan for the Preble Mouse in connection with its development of certain property adjacent to and north of the Property known as "Struthers Ranch" ("Struthers Ranch"), Permit No. TBD dated issued by the U.S. Army Corps of Engineers ("Mitigation Plan"). In addition, Purchaser shall include one storm drain in the mitigation plan. This drain shall originate outside of the northwest corner of the Summer Glen Estates, run along Struthers Road, and end in the proximity of the box culvert to the northwest. **The Mitigation shall run with,**

a four-lane right-of-way from Glen Eagle Drive north to the most southern boundary of Struthers Ranch, subject to, and conditioned upon, Seller obtaining final plat approval for the Seller Property from El Paso County Board of County Commissioners. The extension of, and improvements to, Struthers Road shall be in full compliance with County specifications. In addition, Seller shall cause one storm drain to be installed at the same time he extends the utilities under Struthers Road to his northern boundary. This drain shall originate outside of the northwest corner of the Summer Glen Estates, run along Struthers Road, and end in the proximity of the box culvert to the northwest. This drain will meet all County and USFW specifications. This extended road, utilities, and drain shall be at the Seller's sole cost and expense. This Section 6.1 shall survive Closing in the event Purchaser does not terminate this Contract.

6.2 **Purchaser's Covenants.** Purchaser agrees to cooperate with Seller and to execute and deliver to third parties notices of the transfer of the Property;

VII. ACCESS PRIOR TO CLOSING

At any time prior to Closing, upon reasonable notice to Seller, Purchaser and Purchaser's agents, contractors, architects and engineers shall have the right to enter the Property for purposes of conducting inspections provided such inspections are conducted in such a manner as not to damage the Property. Purchaser agrees to indemnify and hold Seller harmless from any and all damage to the Property caused by any such inspections, and any mechanic's or materialman's liens that may be filed against the Property by reason of, the performance of any of the acts herein mentioned. This Article shall survive termination of the Contract.

VIII. CLOSING

8.1 **Closing Time and Place.** Closing of Purchaser's acquisition of the Property shall occur on or before December 20, 2002 ("Closing"). Closing shall take place on such date at the offices of Title Company, or at such other time and place as the parties may mutually agree. Closing may be extended only pursuant to express terms of this Agreement or the written agreement of Purchaser and Seller.

8.2 **Closing.** The following shall occur at Closing:

(a) **Deed.** Seller shall execute, have acknowledged and deliver to Purchaser a general warranty deed ("Deed") conveying good and marketable fee title to the Property to Purchaser, subject only to the Permitted Exceptions;

(b) **FIRPTA.** Seller shall execute, have acknowledged and deliver to Purchaser a non-foreign affidavit to assure Seller's compliance with Section 1445 of the Internal Revenue Code of 1986, as amended; and

(c) **Title Insurance.** Such other documents as may be reasonably required by the Title Company in order to consummate the transaction as set forth in this Agreement.

(d) Escrow Deed. Purchaser shall execute and deliver to the Title Company a general warranty deed for the Property subject only to the Permitted Exceptions and any title matters caused by Seller which shall be held in escrow by the Title Company ("Escrow Deed"). The Escrow Deed shall be released to Purchaser upon completion of the Mitigation as evidenced by a certificate or letter issued by the U.S. Army Corps of Engineers. In the event of a "Default by Purchaser" (defined below), or in the event Purchaser fails to acquire Struthers Ranch, the Title Company shall deliver the Escrow Deed to Seller as provided below in Section 9.2

8.3 Purchaser and Seller shall pay the following at Closing:

(a) Seller's Costs. Seller shall pay 1/2 of all Closing costs assessed by the Title Company. Seller shall also pay the cost of title evidence furnished to Purchaser pursuant to Section 3.2 hereof, together with any endorsements to the Title Policy, not to exceed \$500.

(b) Purchaser's Costs. Purchaser shall pay 1/2 of all Closing costs assessed by the Title Company. Purchaser shall pay all transfer, recording, filing, excise, documentary, revenue stamp and similar fees and taxes payable in connection with the transfer of the Property contemplated by this Agreement, including without limitation, all fees, recording costs or taxes incurred by Purchaser; and

(c) Proration. Real estate taxes and other state, county, school, district, municipal and other governmental and quasi-governmental taxes, charges and assessments shall be prorated between Seller and Purchaser as of 12:01 a.m. of the day of Closing on the basis of a 365-day year. Property taxes shall be prorated on the basis of the most recently available assessment and the most recently available mill levy. This proration shall be considered a final settlement as of Closing.

IX. DEFAULTS AND REMEDIES

9.1 Default by Seller. "Default by Seller" shall mean a failure by Seller to comply with or satisfy any covenant or agreement of Seller contained in this Agreement, or a breach by Seller of any representation or warranty of Seller contained in this Agreement. Upon any Default by Seller, Purchaser may, (a) terminate this Agreement whereupon the Deposit shall be returned to Purchaser; or (b) treat this Agreement as being in full force and effect. In which case Purchaser shall perform all of its obligations hereunder, and Purchaser shall have the right to an action for specific performance, or damages, including any and all consequential damages, or both. Upon termination of this Agreement by Purchaser and the return of the Deposit pursuant to this Section 9.1, neither party shall have any further obligations to the other.

9.2 Default by Purchaser. "Default by Purchaser" shall mean a failure of Purchaser to comply with or satisfy any covenant or agreement contained in this Agreement, or a breach of any representation or warranty of Purchaser contained in this Agreement. Upon any Default by Purchaser after 10 days prior written notice from Seller to Purchaser and Title Company ("Default Notice") and opportunity to cure, Seller may retain the Deposit as liquidated damages and treat this Agreement as being in full force and effect, and the Property shall

be reconveyed to Seller pursuant to the Escrow Deed. The Title Company is hereby directed and authorized to deliver the Escrow Deed to Seller upon receipt of the Default Notice and evidence that such Default by Purchaser remains uncured beyond the 10 day period. In addition, in the event Purchaser fails to acquire Struthers Ranch on or before 12/1/04, the Title Company is hereby directed and authorized to deliver the Escrow Deed to Seller upon receipt from Purchaser of a notice to that effect. In the event Seller treats this Agreement as being in full force and effect, Seller shall perform all of its obligations hereunder, and Seller shall have the right to an action for specific performance. Upon termination of this Agreement by Seller pursuant to this Section 9.2, neither party shall have any further obligations to the other.

X. MISCELLANEOUS

101 Notices. Any notices under this Agreement shall be in writing, signed by the party giving the same and shall be deemed properly given and received when actually given and received or 3 business days after mailed, if sent by registered or certified United States mail, postage prepaid, or on the same day if sent by facsimile before 5:00 P.M. Mountain Standard Time, or the next business day if sent by facsimile after 5:00 P.M. Mountain Standard Time, or 2 business days after sent, if sent by an overnight delivery service, addressed to the party to receive the notice at the address set forth below or such other address as any party may specify by notice to the other party.

If to Seller: Summit Enterprises of Kansas, L.L.C.
8969 S. Hillview Rd.
Morrison, CO 80465
Telephone: 303/618-1292
Facsimile: 303/697-2782 ✓

If to Purchaser: Struthers Ranch Development, LLC,
P.O. Box 281
Larkspur, CO 80118
Telephone: 303/908-4829
Facsimile: 303/681-0835 ✓

If to Title Company: Security Title Guaranty Company
1277 Kelly Johnson Blvd., Suite 100
Colorado Springs, CO 80920
ATTN: L. Thomas Wilcox
Telephone: 719/590-1711 ✓
Facsimile: 719/590-9686

10.2 Brokers. The parties hereby acknowledge there is no real estate broker involved in this transaction. Each party agrees to indemnify, defend and hold harmless the other from all claims, including attorney's fees and costs incurred as a result of anyone's claiming any fee, commission or compensation on account of this Agreement, its negotiation or the sale hereby ✓

contemplated.

10.3 SPECIAL TAXING DISTRICTS. SPECIAL TAXING DISTRICTS MAY BE SUBJECT TO GENERAL OBLIGATION INDEBTEDNESS THAT IS PAID BY REVENUES PRODUCED FROM ANNUAL TAX LEVIES ON THE TAXABLE PROPERTY WITHIN SUCH DISTRICTS. PROPERTY OWNERS IN SUCH DISTRICTS MAY BE PLACED AT RISK FOR INCREASED MILL LEVIES AND EXCESSIVE TAX BURDENS TO SUPPORT THE SERVICING OF SUCH DEBT WHERE CIRCUMSTANCES ARISE RESULTING IN THE INABILITY OF SUCH A DISTRICT TO DISCHARGE SUCH INDEBTEDNESS WITHOUT SUCH AN INCREASE IN MILL LEVIES. PURCHASER SHOULD INVESTIGATE THE DEBT FINANCING REQUIREMENTS OF THE AUTHORIZED GENERAL OBLIGATION INDEBTEDNESS OF SUCH DISTRICTS, EXISTING MILL LEVIES OF SUCH DISTRICT SERVICING SUCH INDEBTEDNESS, AND THE POTENTIAL FOR AN INCREASE IN SUCH MILL LEVIES.

10.4 Assignment of Agreement. Purchaser may not assign or delegate in writing its rights and obligations under this Agreement without Seller's prior written consent, except an assignment to an entity or trust controlled by Purchaser which shall not require Seller's prior written consent, and which entity or trust shall assume all of Purchaser's rights, obligations, responsibilities and warranties hereunder.

10.4 Recording. Neither party shall record this Agreement nor any memorandum hereof.

10.6 Severability. If any clause or provision of this Agreement is illegal, invalid or unenforceable under applicable present or future laws, it is the intention of the parties that the remainder of this Agreement shall not be affected and in lieu of any such clause or provision, there be added as a part hereof a substitute clause or provision as similar in terms and effect to such illegal, invalid or unenforceable clause or provision as may be possible.

10.7 Successors and Assigns. Subject to the provisions of Section 11.5 above, this Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective successors and assigns.

10.8 Costs of Legal Proceedings. If either party institutes legal proceedings with respect to this Agreement, the prevailing party shall be entitled to court costs and reasonable attorneys' fees incurred by such party in connection with such legal proceedings.

10.9 No Oral Modifications. No amendments or modifications to this Agreement shall be made or deemed to have been made unless in writing executed and delivered by the party to be bound thereby.

10.10 Time of the Essence. Except as specifically provided herein, all of the provisions of this Agreement regarding time for performance are of the essence.

10.11 **Governing Law.** This Agreement shall be interpreted and enforced according to the laws of the State of Colorado.

10.12 **Headings and Captions.** The headings and captions contained in this Agreement are for convenience only and shall not be considered in interpreting the provisions hereof.

10.13 **Counterparts.** This Agreement, including facsimile copies of this Agreement, may be executed in several counterparts, each of which shall be deemed an original but all of which shall constitute one and the instrument. In the event facsimile copies of this Agreement are executed, the original signatures shall be compiled and attached to form the original Agreement.

10.14 **Effective Date.** For purposes of this Agreement, the Effective Date of this Agreement is the last date on which a party to this Agreement has executed the final version of this Agreement.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement the day and year first above written.

SELLER:

Summit Enterprises of Kansas, L.L.C.,
a Kansas limited liability company

By: 
Its 1/10/02

Date: 12/10/02

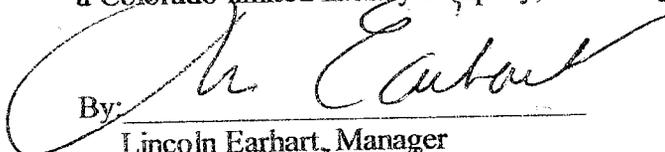
PURCHASER:

Struthers Ranch Development, LLC,
a Colorado limited liability company

By: Larkspur Properties, LLC,
a Colorado limited liability company, as Manager

By: 
Kevin Paul, Manager
Date: 12/10/02

By: GEB Investment Group, LLC,
a Colorado limited liability company, as Manager

By: 
Lincoln Earhart, Manager
Date: 12/10/02

Acknowledgement and Consent

The undersigned hereby agrees that Executive Custom Homes, (A Colorado Corporation) (Executive) does hereby release Summit Enterprises of Kansas, LLC, (a Kansas Limited Liability Company) (Summit) of its obligation to sell the vacant land identified in exhibit A and Summit does hereby release Executive of its obligation to purchase the vacant land identified in exhibit A. The contract between Executive and Summit dated _____ shall henceforth be terminated as to the property identified in exhibit A only. Executive releases all rights, interests, credits, claims and obligations arising from this land.

By: _____
Gary Erickson, Executive Customs Homes, INC. President
1295 Kelly Johnson Blvd. Suite 230
Colorado Springs, CO 80920
719-531-0707

By: 
Emil Ruzicka, Summit Enterprises of Kansas, LLC, President MS-
8969 S. Hillview Rd.
Morrison, CO 80465 .
303-618-1292

By: Larkspur Properties, LLC,
a Colorado limited liability company, as Manager

By: [Signature]
Kevin Paul, Manager
Date: 12/10/02

By: GEB Investment Group, LLC,
a Colorado limited liability company, as Manager

By: [Signature]
Lincoln Earhart, Manager
Date: 12/10/02

Acknowledgement and Consent

The undersigned hereby agrees that Executive Custom Homes, (A Colorado Corporation) (Executive) does hereby release Summit Enterprises of Kansas, LLC, (a Kansas Limited Liability Company) (Summit) of its obligation to sell the vacant land identified in exhibit A and Summit does hereby release Executive of its obligation to purchase the vacant land identified in exhibit A. The contract between Executive and Summit dated _____ shall henceforth be terminated as to the property identified in exhibit A only. Executive releases all rights, interests, credits, claims and obligations arising from this land.

~~By: [Signature]
Gary Erickson, Executive Customs Homes, INC. President
1295 Kelly Johnson Blvd. Suite 230
Colorado Springs, CO 80920
719-531-0707~~

By: [Signature]
Emil Ruzicka, Summit Enterprises of Kansas, LLC, President *mgr*
8969 S. Hillview Rd.
Morrison, CO 80465
303-618-1292

Exhibit "A"

EXHIBIT A
SCHEDULE A - Page 2

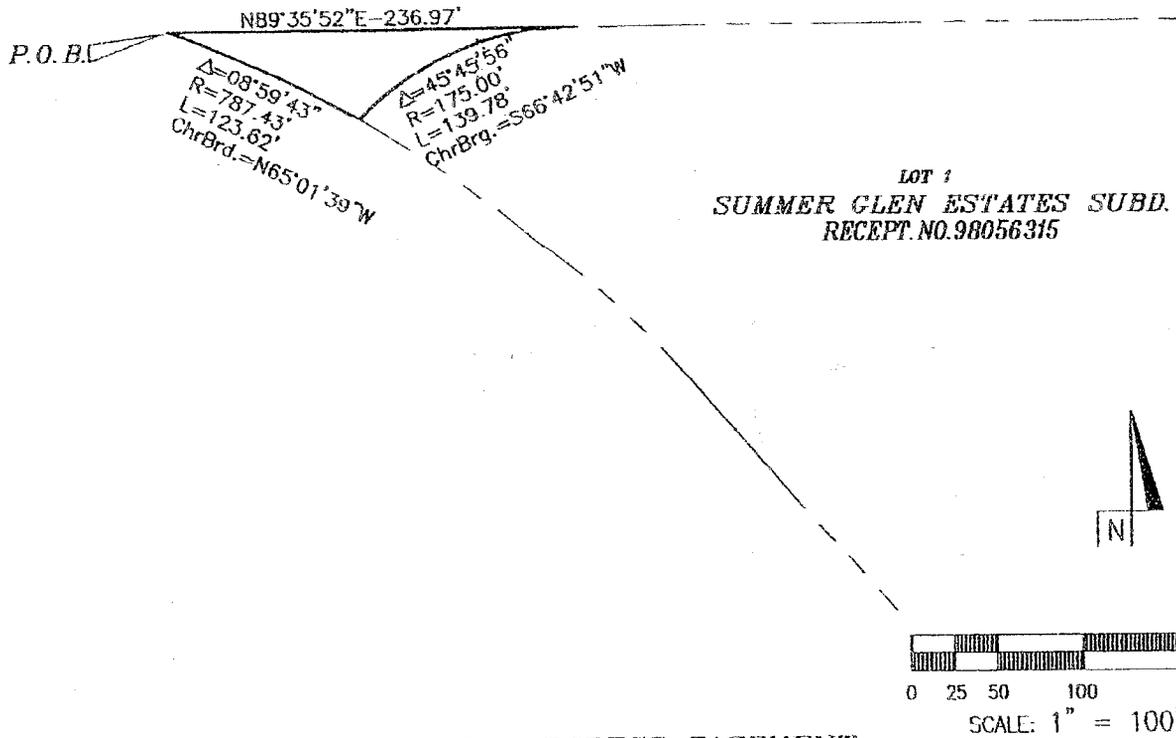
Order No. E089311A02-2

A portion of Summer Glen Estates Subdivision as recorded under Reception No. 98056315 of the records of the Clerk and Records Office of the County of El Paso, State of Colorado, being more particularly described as follows:

Beginning at the Northwesterly corner of said Summer Glen Estates Subdivision; thence N 89 degrees 35'52" E along the Northerly boundary line thereof, a distance of 236.97 feet; thence along the Arc of a non-tangent curve to the left having a central angle of 45 Degrees 45' 56" a radius of 175.00 feet, an arc length of 139.78 feet, whose chord bears S 66 Degrees 42'51"W, to a point on the Southwesterly boundary line of said Summer Glen Estates Subdivision; thence along said Southwesterly boundary line on the arc of a non-tangent curve to the left having a central angle of 08 Degrees 59'43", a radius of 787.43 feet, an arc length of 123.62 feet, whose chord bears N Degrees 55 Degrees 01'39"W to the Point of Beginning.

County of El Paso,
State of Colorado.

(for informational purposes only) NONE



LOT 1
 SUMMER GLEN ESTATES SUBD.
 RECEIPT NO. 98056315

LAND DESCRIPTION - INGRESS & EGRESS EASEMENT

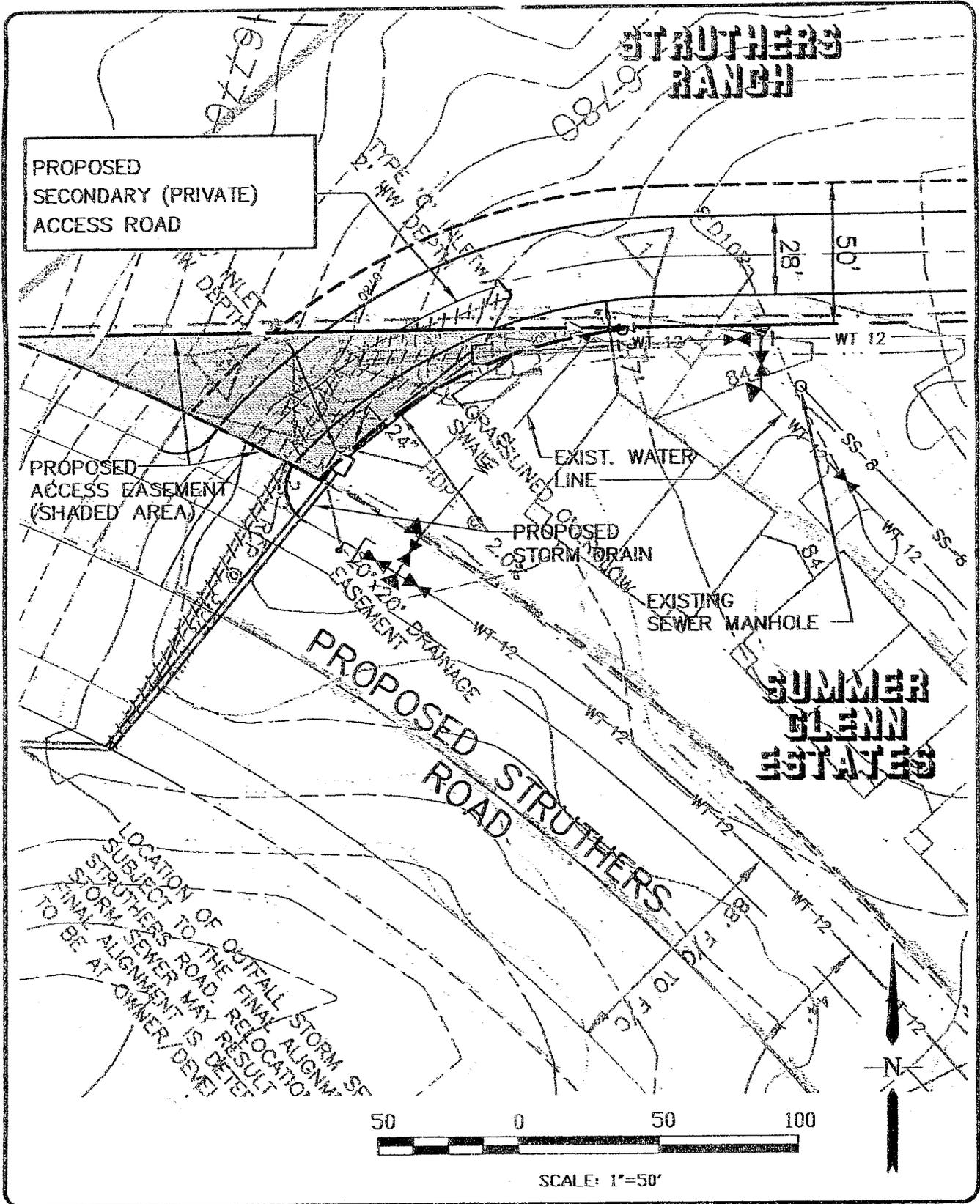
A easement for ingress and egress purposes located in a portion of Summer Glen Estates Subdivision, as recorded under Reception No. 98056315 of the records of the Clerk and Recorder's Office of the County of El Paso, State of Colorado, being more particularly described as follows:

Beginning at the northwesterly corner of said Summer Glen Estates Subdivision; Thence N89° 35'52"E along the northerly boundary line thereof, a distance of 236.97 feet; Thence along the arc of a non-tangent curve to the left having a central angle of 45°45'56", a radius of 175.00 feet, an arc length of 139.78 feet, whose chord bears S66°42'51"W, to a point on the southwesterly boundary line of said Summer Glen Estates Subdivision; Thence along said southwesterly boundary line on the arc of a non-tangent curve to the left having a central angle of 08°59'43", a radius of 787.43 feet, an arc length of 123.62 feet, whose chord bears N65°01'39"W to the Point of Beginning.

The tract contains 4811 square feet (0.110 acres) more or less.

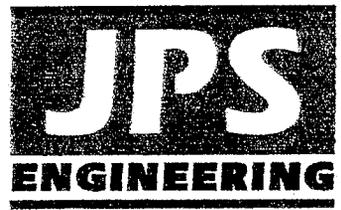
For and on Behalf of
 Pinnacle Land Surveying Co., Inc.
 John W. Towner
 P.L.S. #25968

PINNACLE LAND SURVEYING, INC.		
925 W. Cucharras, Colorado Springs, CO 80937		
EXHIBIT		
INGRESS AND EGRESS EASEMENT		
SCALE: 1" = 100'	DRAWN BY: CAJ	FILE: 00008700EXH.DWG
DATE: 10/23/01	CHECKED BY: JWT	JOB NO. 00008700



J:\JPS\PROJECTS\080006.STRUTHERS\DWG\A.DWG

PROPOSED ACCESS ROAD EASEMENT



STRUTHERS RANCH

FIGURE A

JPS PROJ NO. 080006

Clarification Acknowledgement: The Seller's Property referred to in Section 6.1 refers to the property described in Exhibit C. Also in Section 4.1-b, "Purchaser" shall include Struthers Ranch, LLC or its Assignees.

Initials SRK LP JWR

Exhibit "B"

Exhibit "C"

FALCON'S NEST FILING NO. 3

in Range 67 West
and as follows:
d to herein are
en; by a brass cap,
56 feet); fence
ed States Air Force
said El Paso

corner of SUMMER
19. 3. courses are
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35'45"17"E; 2)
long the arc of
feet for an arc
FALCON'S NEST FILING
courses are along
a non-tangent
10.00 feet for an
to the Northwest
(the following 2
a. a point of
11'48" a radius of
tract described in
le of said tract.

DEVELOPMENT STANDARDS

1. PRINCIPLE PERMITTED USES: SINGLE FAMILY DWELLINGS
OPEN SPACE
DETENTION POND
2. ALLOWABLE ACCESSORY BUILDINGS OR STRUCTURES AND RELATED USES:
 - A. DETACHED PRIVATE PARKING GARAGE OR CARPORT
 - B. STORAGE SHED
 - C. GAZEBO
 - D. DECK (ATTACHED OR DETACHED, COVERED OR UNCOVERED)
 - E. SWIMMING POOL, HOT TUB, TENNIS COURT OR SIMILAR PRIVATE RECREATIONAL FACILITY
 - F. PRIVATE GREENHOUSE
 - G. FENCE, WALL AND HEDGE
 - H. HOME OCCUPATIONS AS PROVIDED IN SECTION 35.6 OF THE EL PASO COUNTY LAND DEVELOPMENT CODE

LEGAL DESCRIPTION

A tract of land located in the Northeast Quarter of Section 1, Township 12 South, Range 67 West of the 6th P.M., County of El Paso, State of Colorado, more particularly described as follows:

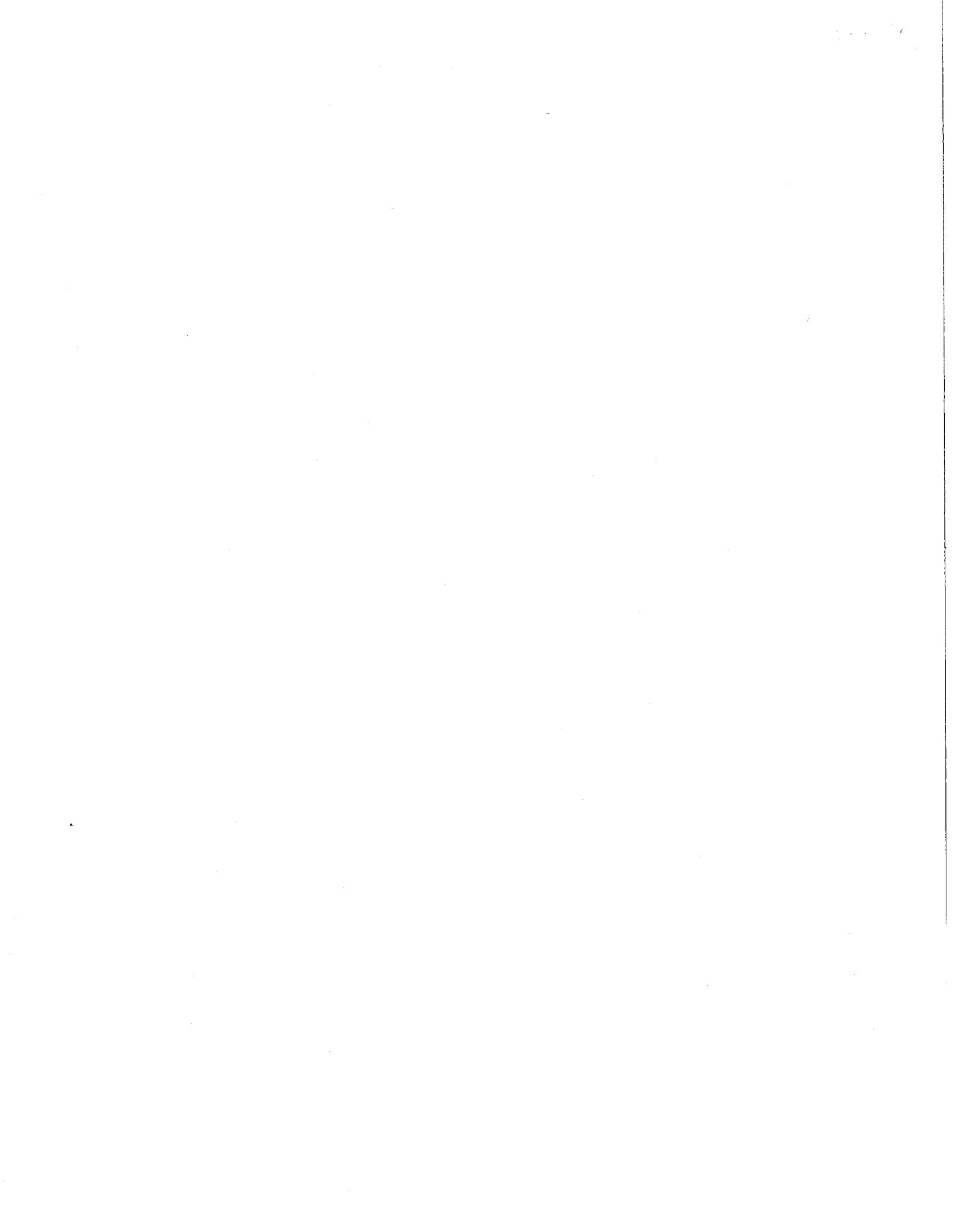
Commencing at the North Quarter corner of said Section 1 (the bearings referred to herein are relative to the North line of said Northeast Quarter being monumented on each end by a brass cap with an assumed bearing between them of N89°35'52"E and a distance of 2657.56 feet); thence N89°35'52"E along said North line, 7.22 feet to the Northeast corner of the United States Air Force Academy boundary as recorded in Plat Book O-2 at Page 84 of the records of said El Paso County and the Point of Beginning;

Thence continue N89°35'52"E along said North line 505.17 feet to the Northeast corner of SUMMER GLEN ESTATES SUBDIVISION as recorded at Reception No. 98056315; the following 3 courses are along the West boundary of said SUMMER GLEN ESTATES SUBDIVISION: 1) along the arc of a non-tangent curve to the right, said curve having a central angle of 27°31'46", a radius of 787.43 feet for an arc distance of 378.35 feet (said curve having a chord bearing of S55°45'37"E; 2) S41°59'44"E, tangent to aforesaid curve, 371.29 feet to a point of curve; 3) along the arc of said curve to the right having a central angle of 26°04'31", a radius of 1260.00 feet for an arc distance of 573.42 feet to an angle point on the Northwesterly boundary of FALCON'S NEST FLUNG NO. 1 as recorded at Reception No. 96156674 of said records; the following 2 courses are along said Northwesterly boundary: 1) S74°04'47"W, 120.00 feet; 2) along the arc of a non-tangent curve to the right, said curve having a central angle of 15°41'19", a radius of 1140.00 feet for an arc distance of 312.15 feet (said curve having a chord bearing of S08°04'34"E) to the Northwest corner of a tract of land described at Reception No. 99082190 of said records; the following 2 courses are along the Westerly line of said tract: 1) S00°13'54"E, 225.57 feet to a point of curve; 2) along the arc of said curve to the left having a central angle of 21°31'48", a radius of 860.00 feet for an arc distance of 323.15 feet to the Northeast corner of that tract described in Book 2658 at Page 52 of said records; thence S89°46'06"W along the North line of said tract, 251.72 feet to a point on the Easterly line of a tract described in Book 5205 at Page 1013 of said records; (the following 2 courses are along the Easterly and Northerly lines of said tract): 1) N25°23'25"W, 192.50 feet; 2) S89°46'06"W, 192.50 feet to a point on the Easterly boundary of said United States Air Force Academy; thence N25°23'25"W along said Easterly boundary 1871.20 feet to the Point of Beginning.

Containing 29.303 acres more or less.

NOTARIAL

IN WITNESS WHEREOF



APPENDIX E

Example Deed Restriction

