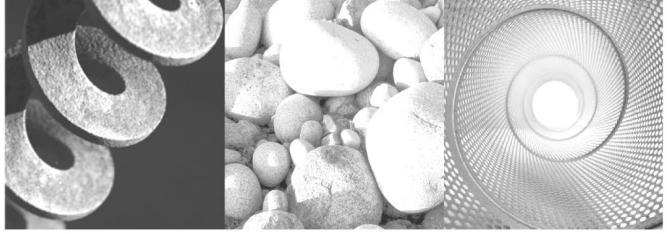

GEI Consultants

MSO Year 1 Protocol Survey Report

Fishers Canyon Open Space Master Plan

Colorado Springs, Colorado

Submitted to:
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Submitted by:
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September 30, 2024
Project No. 2303995

Lucy Harrington
Project Manager/Ecologist

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Appendices

1. Introduction

The City of Colorado Springs hired Studio-Campo, which in turn contracted with GEI Consultants, Inc. (GEI) to perform U.S. Fish and Wildlife Service (USFWS) protocol surveys (MSO Protocols) for the Mexican spotted owl (*Strix occidentalis lucida*), or MSO, in areas under consideration for the development of the new Fishers Canyon Open Space, located in Colorado Springs, Colorado (Figure 1-1). The purpose of these surveys was to determine the presence of the species within the property in order to identify constraints to onsite recreational development. The Area of Interest (AOI) is located at 38°45'10.80 n 104°51'4.98 w, which is approximately eight miles south of downtown Colorado Springs and includes an area of around 343 acres within which five ephemeral or intermittent drainages exist (Figure 1-2). Cheyenne Mountain Space Force Station (CMSFS) abuts the property to the southeast and the Colorado Springs antenna farm joins the property to the southwest. To the north, the property is bound by the Broadmoor Residential Community neighborhood along its southeastern boundary and the Broadmoor Cloud Camp facility along the southwestern property line. The eastern boundary abuts a residential neighborhood. Pike National Forest, which is owned and managed by the U.S. Forest Service (USFS) makes up the western boundary of the site. Fishers Canyon Open Space has an elevation ranging from approximately 6,670 above sea level along its eastern edge to 8,994 feet at its northwestern point. This varied elevation contributes to the diverse forest, scrub oak, and grassland ecosystems found within the Fishers Canyon Open Space. A number of steep canyons and large outcroppings also exist. No MSO observations have previously been documented within the Fishers Canyon Open Space boundaries, and no previous surveys have been conducted in the AOI.

Figure 1-1. Regional Map

Draft For Internal Review

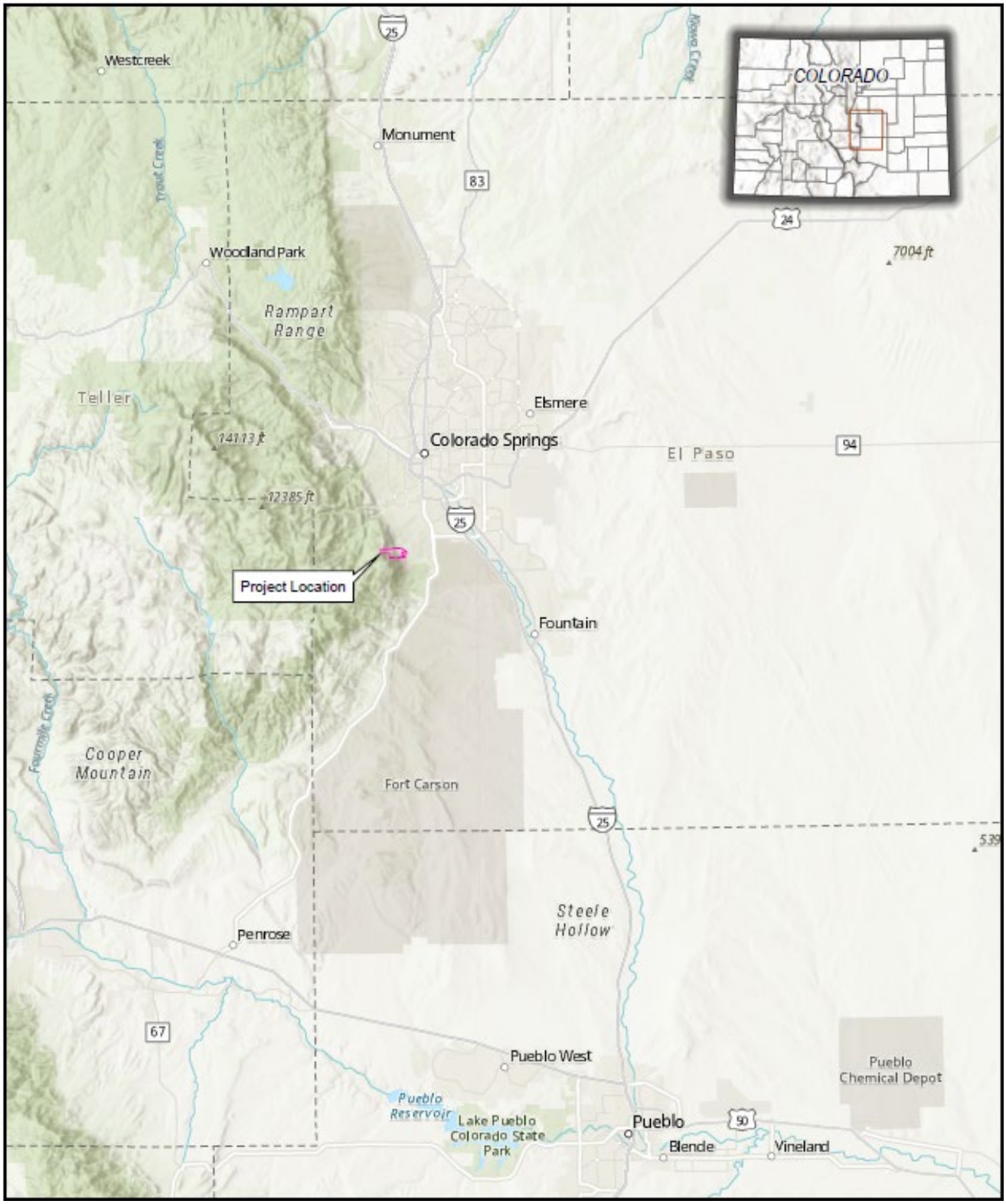

Figure 1-2. Site Map with Drainages

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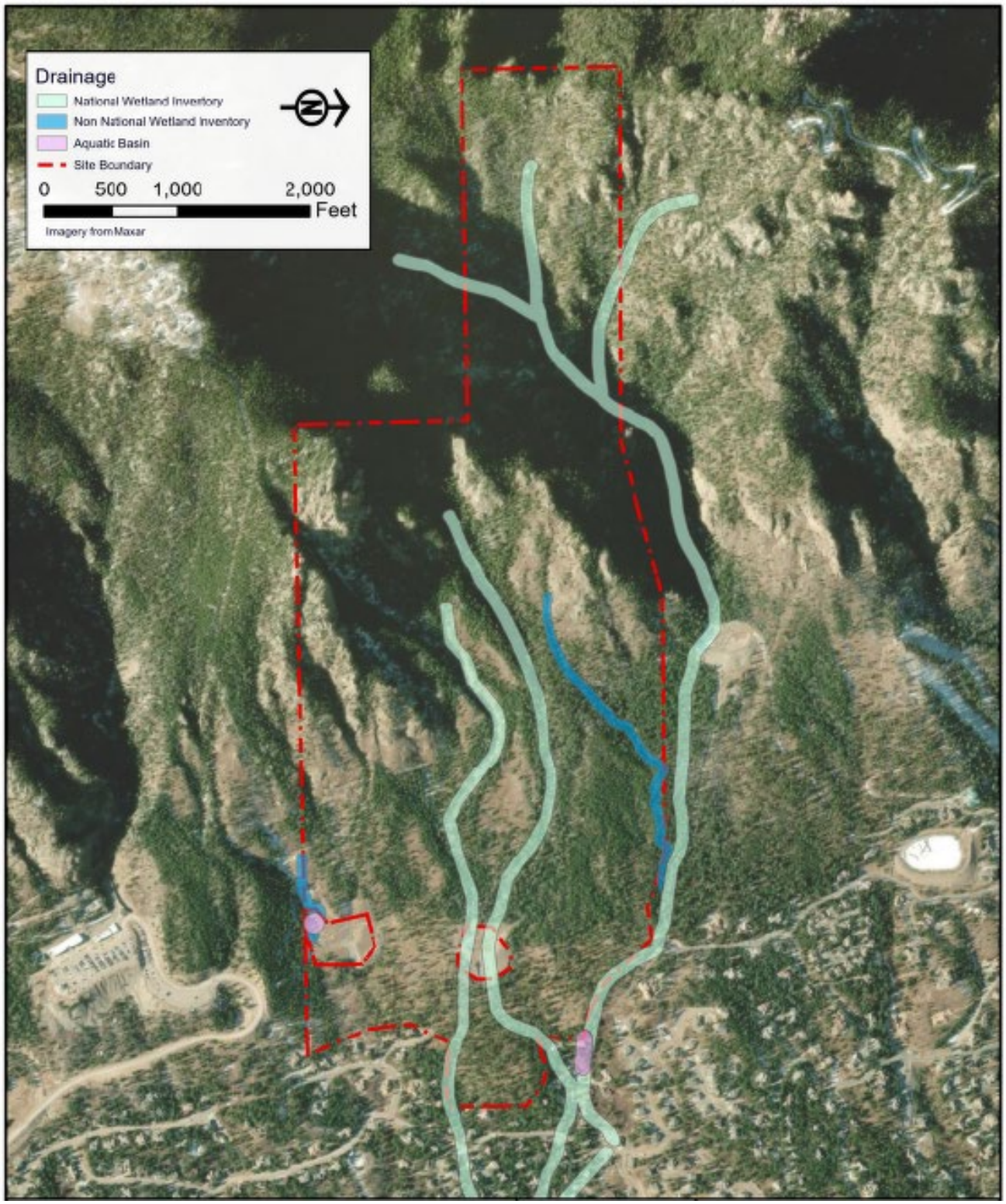


2. Background

2.1. MSO Habitat and Life History

The MSO is found in forested mountains and canyons across the southwestern United States and Mexico. Its habitat includes Utah, Colorado, Arizona, New Mexico, and western Texas, stretching south into various Mexican states. Although the owl has a wide distribution, it does not inhabit all areas equally and, instead, is concentrated in specific regions that align with separated mountain ranges and canyon systems.

The owl is frequently associated with mature mixed-conifer forests consisting of species such as Douglas-fir (*Psuedotsuga menziesii*), white fir (*Abies concolor*), limber pine (*Pinus flexilis*), blue spruce (*Picea pungens*) ponderosa pine (*Pinus ponderosa*) and Gambel oak (*Quercus gambellii*), as well as riparian forests, which includes various species of broadleaved deciduous trees and shrubs. They are also found in steep canyons and cliff faces in the southwestern U.S. The MSO is believed to occupy habitat at elevations between 4,100 feet and 9,000 feet above sea level. The MSO is usually found in areas with some type of water source and where canopy closure is typically greater than 40 percent. Owl foraging habitat includes a wide variety of forest conditions, canyon bottoms, cliff faces, tops of canyon rims, and riparian areas (USFWS, 2024).

The home range of the MSO is generally believed to consist of approximately 600-acre per breeding pair. Some individuals travel between 20- and 50-kilometers during breeding season, which lasts from 1 March to 31 August each year. Most adults remain within the same territory year-over-year without migrating to new locations. In winter months, individual MSOs may move vertically from higher to lower elevations within this territory. In higher elevations, such as those present within the Fishers Canyon Open Space, breeding may begin later (i.e., April 1) due to winter conditions (Shaula Hedwall, Pers. Comm. 4/11/2024). They typically nest and roost in dense forests or rocky canyons. In the northern parts of their range, such as southern Utah, Colorado, northern Arizona, and New Mexico, many nests are found in caves or on cliff ledges in steep canyons. In other areas, nests are located in trees. Rather than building their own nests, the MSO prefers to use existing structures, such as dwarf-mistletoe-induced witches' brooms in trees or caves in rock faces (Shaula Hedwall, Pers. Comm. 4/11/2024).

Human activity such as hiking, shooting, or off-road vehicle activity in or near nesting, roosting, or foraging sites may result in abandonment of an area, and indirectly may affect habitat parameters from trampling, vegetation removal, or increased fire risk (USFWS 2024). However, development and noise does not necessarily preclude owl habitation (Shaula Hedwall, Pers. Comm. 4/11/2024).

2.2. Regulatory Framework and Location Information

In 1993, the USFWS classified the MSO as a threatened species under the Endangered Species Act. A recovery plan was first issued for the MSO in 1995 with a revised recovery plan released in 2012. The Fishers Canyon Open Space is located within the Southern Rocky Mountains Ecological Management Unit (EMU) as defined by the updated recovery plan (USFWS 2012). In 2004, approximately 8.6 million acres of federal lands were designated as critical habitat for the MSO in Arizona, Colorado, New Mexico,

and Utah (USFWS, 2004). The primary constituent elements (now referred to as physical and biological features) of this critical habitat were identified based on the habitat features associated with MSO occupancy. These elements include:

Forest Structure Elements:

- A diversity of tree species, encompassing mixed-conifer, pine-oak, and riparian forest types, with various tree sizes representing different age classes. At least 30-45% of these trees should be large, with a trunk diameter of 0.3 meters (12 inches) or greater, measured at 1.4 meters (4.5 feet) above ground level.
- A shaded canopy formed by tree branches and foliage that covers at least 40% of the ground.
- The presence of large dead trees (snags) with a trunk diameter of at least 0.3 meters (12 inches) when measured at 1.4 meters (4.5 feet) above ground level.

Prey Species Maintenance Elements:

- Significant amounts of fallen trees and other woody debris.
- A diverse array of tree and plant species, including hardwoods.
- Sufficient residual plant cover to support fruit and seed production and facilitate plant regeneration.

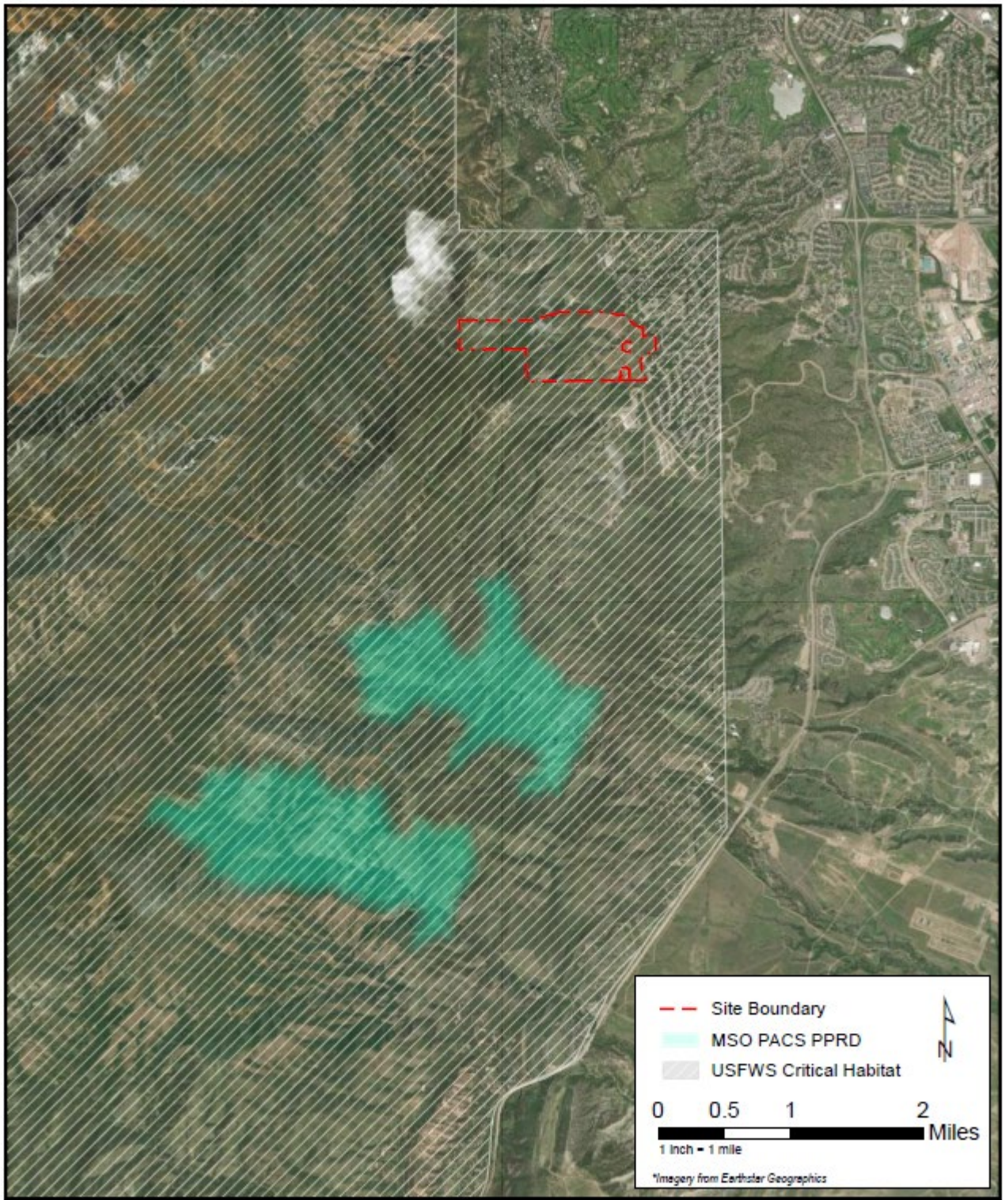
Canyon Habitat Elements (at least one of the following):

- Availability of water, which typically results in cooler temperatures and higher humidity compared to surrounding areas.
- Clusters or strips of mixed-conifer, pine-oak, pinyon-juniper, and/or riparian vegetation.
- Canyon walls featuring crevices, ledges, or caves.
- A high percentage of ground litter and woody debris.

The Fishers Canyon Open Space is located entirely within designated critical habitat, Unit SRM-C-2, for this species (USFWS, 2004). Additionally, the USFS Pikes Peak Ranger District established several Protected Activity Centers (PACs) in the vicinity of Fishers Canyon Open Space in 1994. These include the Rock Creek and the Little Fountain Creek PACs, which contain habitat features such as multi-storied canopy, large trees, intermittent water with some riparian habitat, and steep and narrow canyons with parallel cliffs containing ledges or potholes for nesting. Individual MSOs were detected in these drainages in 1992 and 1993, leading to the designation of the PACs. MSOs have not been detected since these individuals were first detected (F. Quesada, Pers. comm. Via email 3/13/2024). Autonomous Recording Units (AMUs) were deployed in the Rock Creek drainage in 2024; however as of the writing of this report, the AMUs had yet to be collected or analyzed by the USFS (F. Quesada, Pers. comm via email 8/30/2024). Casual MSO surveys were performed by military and SFWS staff on property owned by the CMSFS in 2023 with no occurrences detected (David Kelley, Pers. Comm. 3/18/2024). Critical habitat and approximate PAC sites are illustrated in Figure 2-1. The entirety of the Fishers Canyon Open Space site is contained in the Southern Rocky Mountains Ecological Management Unit, as described in the MSO Recovery Plan.

Figure 2-1. MSO PACs and Critical Habitat

Draft For Internal Review



3. Methods

3.1. Desktop Analysis

Before beginning field surveys, GEI conducted an initial desktop evaluation of the possible breeding and nesting habitats within a 0.5-mile radius of the exterior boundaries of the AOI, per MSO Protocols (USFWS, 2022). Per the MSO Protocol, site inventories should encompass all areas that could impact owls and their habitats. Due to the steepness of the site and potential accessibility issues, GEI determined that calling stations would be the preferred survey methodology. Desktop analysis to identify calling station locations focused on the identification of areas with 40% or greater canopy and areas with a prevalence of cliffs and rock ledges that could be used for MSO nesting. A combination of LIDAR data, GIS modeling, and aerial photography was utilized for this effort (Figure 3-1). Additionally, aerial photographs were used by GEI staff to pinpoint the top and bottom of the four main waterways that extend from west to east on the site. These areas were identified as focal points for potential call stations as it was determined that these draws could promote movement of MSOs throughout the property as well as containing the riparian structure and humidity that is preferred by MSO individuals. Additionally, topography and distance between potential call station locations were considered to facilitate the projection of call-back recordings throughout the site. All potential calling station locations were between 0.25 and 0.5 miles apart. The results of this desktop analysis were field verified by GEI during reconnaissance-level site visits on September 7, October 30, and October 31, 2023.

Based on desktop and field reconnaissance efforts, locations for calling stations, as described in the Protocol, were identified throughout the Fishers Canyon Open Space property. This information was then compared to the approximate location of the Chamberlain Trail alternatives, a key feature proposed for the Fishers Canyon Open Space, to confirm calling stations would provide coverage to this area as well as all other portions of the property.

Clint Henke (ERO Resources) served as the technical review for the location of the calling stations. Comments were then incorporated into a study design, which was submitted to the USFWS on 15 May 2024. Feedback from USFWS on the study design was received on 17 May 2024 (Appendix A - USFWS Communication). These comments were incorporated into the final study design, resulting in a total of 10 calling locations throughout the site, as illustrated in Figure 3-2.

Summer 2024 Working Map

Figure 3-1. Desktop Analysis of MSO Habitat

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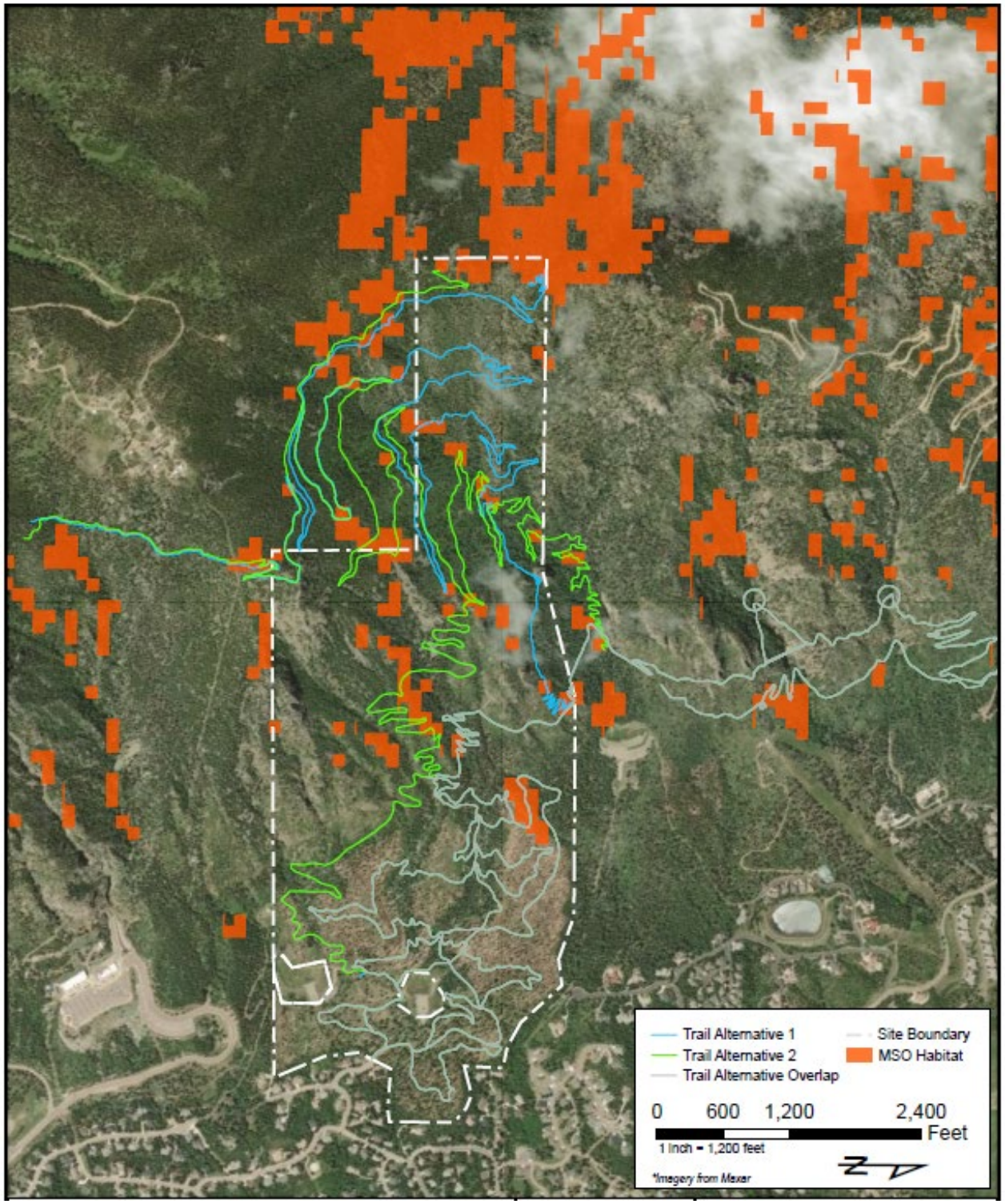
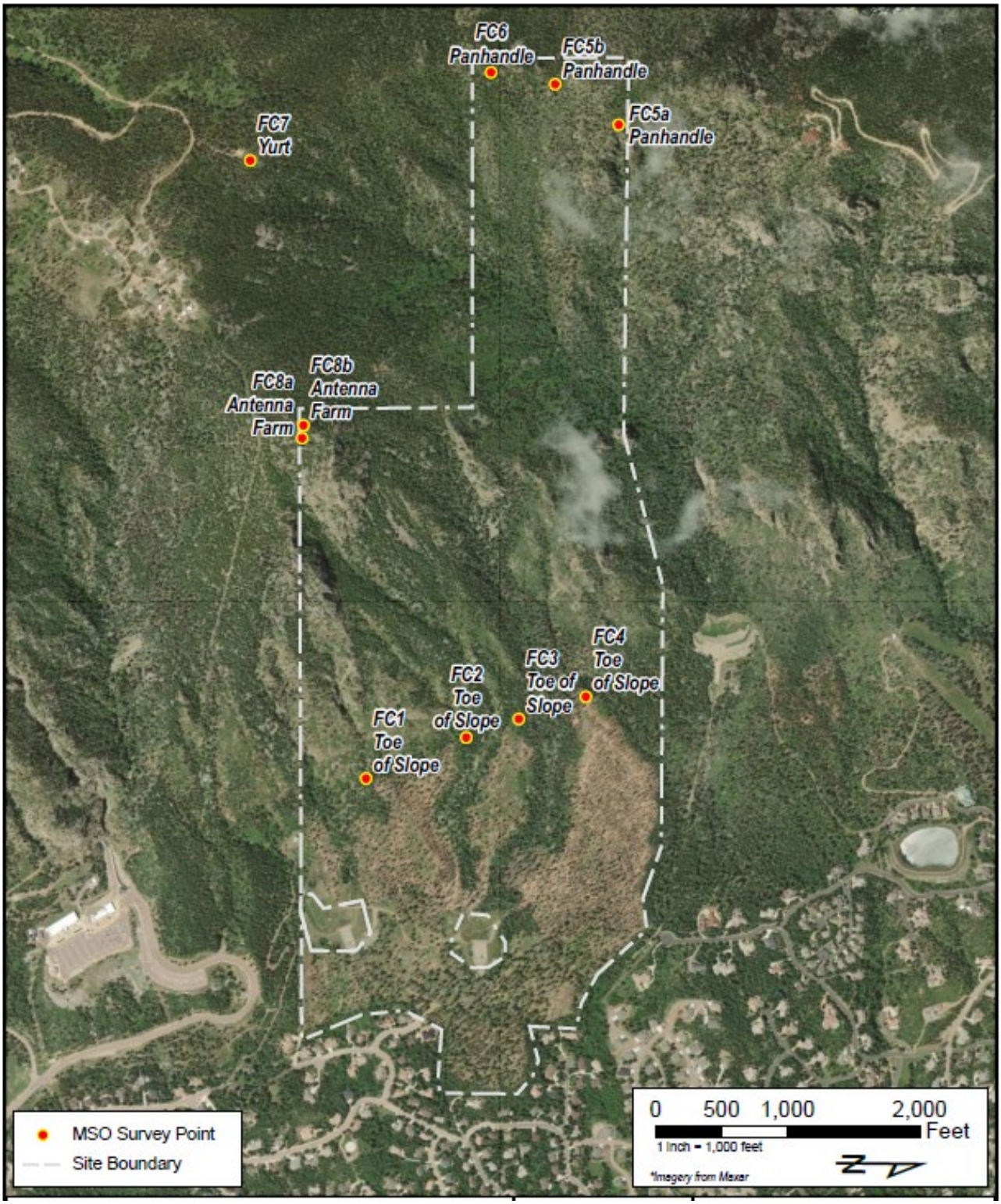


Figure 3-2. MSO Call Stations **Draft For Internal Review**



3.2. Field Surveys

Year 1 of the two-year site inventory effort within the Fishers Canyon Open Space was conducted primarily in accordance with methods outlined in the MSO Protocol (USFWS 2022). These methods include the following key elements:

- Conduct four complete surveys in the height of breeding season (in this habitat preferably mid-April through June 30).
- Conduct a complete survey of the area within seven consecutive days.
- Allow for 15 minutes at each call station (10 minutes of calling, 5 minutes of listening).
- Allow five full days pass between surveys.
- Conduct surveys within two-to three-hours following sunset or two- to three- hours preceding sunrise.
- Alter the order in which call stations are surveyed.

Deviations from the Protocols are described below.

Prior to the initial effort, call stations were flagged with reflective markers and noted with sub-meter Trimble units in order to accurately relocate calling stations during each survey event. These points were then uploaded into the Field Maps application developed by ESRI. Field forms were also uploaded into the Survey 123 application to allow for ease of infield data recordation. A complete field data table is provided as Appendix B.

Protocol field surveys were conducted between 19 May and 2 July 2024. During each of the four survey events, all 10 of the calling stations were visited within the property, which were divided into three subunits: 1) panhandle, 2) antenna farm, and 3) eastern toe of the slope (Figure 3-2). Because of the steepness of the site and associated safety concerns, each survey event was performed over a two-day mobilization to allow for full coverage of all three subunits.

Ecological communities throughout the site generally consisted of a mix of mixed conifer forest and rock outcrops/cliffs with small nuances in vegetative makeup within each of the survey collection areas. For example, communities within the toe of the slope subunit consisted of a mixed conifer forest that included species such as Douglas Fir, white fir, and gamble oak with some scattered ponderosa pines. Survey points FC5b and 5C6 in the panhandle subunit were also primarily in mixed conifer forests though gamble oak and ponderosa pines were both absent in this portion of the site. In this location, scattered aspens (*Populus tremuloides*) and blue spruce were present. FC5a was in a more exposed setting that included bare earth and prominent rock outcroppings as well as ponderosa pines and Douglas fir on the periphery of the site. At the antenna farm subunit, survey points FC8b and FC8a were located on top of exposed rock outcroppings overlooking the property. Surrounding these points was a mixed conifer/aspen forest similar to the composition of the panhandle subunit. Finally, FC7 was located on the constructed deck of a private land inholding. While this site is not located within the boundary of the Fishers Canyon Open Space, the location provided an unobstructed visual and acoustic view of the property within 0.5 mile of the boundary. Surrounding the constructed deck was mixed conifer forest as

described for the panhandle subunit. For all locations, calling stations were strategically located at or near the mouth or start of draws. Photographs of each of the call stations are included in Appendix C – Call Station Photographs.

All surveys were led by with Clint Henke who is authorized to perform Mexican Spotted Owl presence/absence surveys under the USFWS permit #ES-040510-2. At least one surveyor accompanied Mr. Henke on each event to improve the accuracy of results and provide additional site safety. To further encourage site safety, access to the site was obtained via accessible public roads and on private property where permission was given. The accompanying surveyors included the following individuals:

- Morgan Bappe-Cordova (GEI)
- Lucy Harrington (GE)
- Sarah Skigen-Caird (GEI)
- Mark Edwards (ERO)
- Crystel Enriques (Intern)

3.2.1. *Protocol Deviations*

Due to weather and safety concerns, several deviations were made from the official Protocol, as described below.

May 29, 2024: Lightning and rain moved over the property immediately before surveys could be conducted in the panhandle subunit (sites FC5a, FC5b and FC6). Due to the exposed nature of these sites along a ridge line as well as the presence of rain and lightning, which may have prevented MSO detection, these call station sites were abandoned for this survey effort. Rather, surveyors employed continuous calling methods, as described in the MSO Protocol while walking the ridge line and returning to vehicles.

July 1 and 2, 2024: The MSO Protocol encourages surveys to be completed prior to June 30 as MSO detection decreases in July. However, the Protocol does provide that one survey may be completed through August 31 of any given year. The majority of surveys were conducted during the peak of breeding season with the final survey completed in the first two days of July.

July 2, 2024: Heavy rain and lightning during pre-dawn surveys resulted in a delay of start time for this event. Due to safety concerns and the potential for false negative findings of MSO, surveys did not begin until 0600. In this instance, USFWS staff was contacted for guidance. Guidance was received to complete this survey as planned (see Appendix A).

For all surveys, the order was maintained for the duration of survey events. This was due to both wildlife and safety concerns. This followed a pattern of nighttime collection period of starting at the antenna farm subunit, followed by a predawn collection period along the toe of slope sub-unity, and ending with a second nighttime collection at the panhandle subunit. This pattern allowed for the most hazardous sites to be accessed before sunset (i.e., antenna farm and panhandle subunits) while more traversable areas along the toe of slope subunit were accessed during pre-dawn surveys.

4. Results

No MSO individuals were detected during 2024 surveys. A summary of results is provided in Table 1 at the end of the report. During the course of the surveys, frequent noise was heard throughout the Fisher Canyon Open Space property. This includes common urban noise from the surrounding neighborhoods, such as dogs, cars, and sirens, as well as highway noise from Interstate 25, which appeared to be amplified due to site steepness and numerous rock outcrops found throughout the Fishers Canyon Open Space. Additionally, noise from the Fort Carson Army Base was frequently heard and included explosions from detonated ordinances and other weapons as well as music projected from loudspeakers at 0630 and 1230 each day. Additionally, no “brooms” or other vegetation that could be used for nesting substrate within mature trees was observed onsite.

No raptors were called in at any time during the year 1 inventory. However, several owls were heard during individual survey event including a great horned owl (*Strix occidentalis lucida*), northern saw-whet owl (*Aegolius acadicus*), and flammulated owl (*Psiloscops flammeolus*). The great horned owl call was heard from FC4 on 19 May between 0430 and 0500 and was estimated to be coming from a location >1 mile from the call location. This bird did not appear to move closer to the survey site for the duration of the survey effort and was therefore not considered to be “called in” by the call back. The saw-whet owl was heard south of FC7 on 28 May, starting at 2057 and lasting until 2012. A flammulated owl was also heard at call station FC7 on 1 July 1 and appeared to be calling in response to the MSO recording. This animal was heard from 2200-2215 when the survey was completed.

June surveys which included 13-14 June, resulted in significant observations of songbird activity, particularly near FC1, FC2, and FC3. This included a seemingly aggressive response from a pair of western tanagers (*Piranga ludoviciana*) while calling. This included “dive bombing” surveyors and loud vocalizations.

5. Conclusion

During the Year 1 inventory of the Fishers Canyon Open Space, no MSO were observed, despite the presence of high quality and diverse habitat. This may be a result of raptor presence, noise disturbance, edge habitat, and absence of appropriate nesting substrate. As stated above, no raptors were called in; however, a juvenile golden eagle was observed onsite during the field reconnaissance visit on October 30, 2023, and a red tail hawk was observed soaring overhead on September 7, 2023, reconnaissance visit. Peregrine falcons (*Falco peregrinus*) and great horned owls are also known to nest on adjacent properties (ebird, 2024). However, the nesting peregrine falcons on the CMSFS appear to have abandoned their nest in 2023 (David Kelley, Pers. Comm. 3/18/2024). Significant habitat exists for these raptors throughout the site and new nest development by these and other raptors should be expected. The presence of these species may reduce the habitat quality within the Fishers Canyon Open Space for MSO.

The significant urban noise emanating from the adjacent neighborhoods may also be a deterrent for MSO habitation. This audio disturbance is augmented from noise from the Fort Carson Army Base. Due to the proximity of these disturbance sources plus the numerous rock outcroppings that enhance the acoustics, significant audible disturbance could be heard in even the most remote portions of the site during all survey events. These conditions may resemble conditions in the mountains outside of Albuquerque, New Mexico where suitable habitat exists but MSO have not been recorded (C. Henke, pers. comm.).

The Fishers Canyon Open Space is also the quintessential edge habitat. Exurban communities exist along the eastern edge of the property, extending northward along the Rampart Range. Residents of these communities were observed walking dogs in the evenings within the Fishers Canyon Open Space and social trails exists throughout the eastern portions of the site, as well as within Fisher's Canyon proper. Two large debris basins also exist within the property as well as several access roads which provide occasional vehicle access to these areas. In 2023, approximately 86 acres of fire mitigation occurred on the eastern edge of the property, resulting in the chopping and chipping of a number of ponderosa pines onsite. This work is expected to continue in 2025. Directly to the south of the property is the CMSFS, which has staff entering and leaving this facility via paved roads 24 hours per day. Along the southwestern boundary of the site, the antenna farm exists just outside of the Fishers Canyon Open Space property at the summit of Cheyanne Mountain, and immediately southwest of call stations FC8a and 8b. This station is also inhabited 24 hours per day with a number of access roads, towers, and outbuildings directly over the Fishers Canyon Open Space. Calling station FC7 is located on a 5-acre inholding containing a yurt, walkway, and a large, constructed overlook patio. While this residence appears to be used relatively infrequently, the housing plot and associated access road is maintained to be clear of trees and other vegetation, causing a significant break in the natural mixed conifer forest. Finally, adjacent to the northwest portions of the site, the Broadmoor Resort's Cloud Camp has a large lodge as well as a number of cabins that overlook Fishers Canyon and appear to be frequently filled to capacity. Further, guests of the Broadmoor have exclusive access to recreate on the currently closed-to-the-public MacNeill Trail via a special use permit issued by the USFS. This trail spans the length of the Panhandle subunit, intersecting call stations FC 6, FC5b and FC5a. While this trail does not appear to be frequently used, it is well-maintained, further creating breaks in contiguous habitat.

Finally, the site does not appear to have suitable nesting substrate in the trees. Surveyors purposefully looked for brooms in the mature mixed conifers, but this vegetation was notably absent throughout the property. It is unclear if broom structures have always been absent on the site, potentially due to the dry conditions associated with the exposed slopes prominent throughout the property, or if this may be a new development resulting from climate change which may have resulted in hotter and drier conditions than were historically present. Regardless, nest-ready vegetation could not be identified within the property. Ledges and cliff faces still appeared to provide suitable nesting platforms at certain locations within the property.

Based on these findings, we believe that MSO do not currently inhabit the Fishers Canyon Open Space. Although only a year 1 inventory was completed, it appears that a number of factors preclude habitation of the Fishers Canyon Open Space. We therefore recommend that Year 2 protocols are not necessary to assume absence of this animal within the Fishers Canyon Open Space boundary.

6. References

USFWS 2004. Endangered and Threatened Wildlife and Plants; Final Designation of Critical Habitat for the Mexican Spotted Owl, Final Rule. 69 FR 53182 53298.

Ebird web application. Available: https://ebird.org/region/US-CO-041/bird-list. Accessed: 19 January, 2024.

USFWS 2012. MEXICAN SPOTTED OWL RECOVERY PLAN, FIRST REVISION (Strix occidentalis lucida). 414 Pp.

USFWS 2022. Mexican Spotted Owl Survey Protocol. 21 pp.

____2024. Environmental Conservation Online System (ECOS). Mexican spotted owl (Strix occidentalis lucida). Available: https://ecos.fws.gov/ecp/species/8196

Pers. Comm.

Kelley, David. Natural Resources Program Manager, Peterson SFB/Cheyenne Mt. SFS, Maui SSC. U.S. Air Force. 18 March 2024.

Hedwall, Shaula. Senior/Supervisory Fish and Wildlife Biologist, USFWS Arizona Ecological Services Office. Mexican Spotted Owl Training, Cloudcroft, NM. 11 April, 2024.

Quesda, Felix. Wildlife Biologist, USFS Pike National Forest, Pikes Peak Ranger District via email 13 March, 2024 and 30 August, 2024.

Tables

Table 1. MSO Survey Results

Table 1

Fishers Canyon Open Space

Year 1 Protocol MSO Survey Results summary

Survey Date	Site Name	Observers	Survey #	Outing #	Aborted?	Mexican Spotted Owls Detected?	Precipitation Start	Call Point	Call Time Start	Call Time End	Total Call Minutes
May 19, 2024	FC8B	Lucy Harrington & Clint Henke	1	1	N	N	None	8b	1945	2000	15
May 19, 2024	FC8A	Lucy Harrington & Clint Henke	1	1	N	N	None	8a	2020	2035	15
May 19, 2024	FC7	Lucy Harrington & Clint Henke	1	1	N	N	None	FC7	2142	2257	15
May 20, 2024	FC4	Lucy Harrington & Clint Henke	1	2	N	N	None	FC4	445	500	15
May 20, 2024	FC3	Lucy Harrington & Clint Henke	1	2	N	N	None	FC3	525	540	15
May 20, 2024	FC2	Lucy Harrington & Clint Henke	1	2	N	N	None	FC2	605	620	15
May 20, 2024	FC1	Lucy Harrington & Clint Henke	1	2	N	N	None	FC1	640	655	15
May 20, 2024	FC5A	Lucy Harrington & Clint Henke	1	2	N	N	None	FC5A	709	724	15
May 20, 2024	FC5B	Lucy Harrington & Clint Henke	1	2	N	N	None	FC5B	737	752	15
May 20, 2024	FC6	Lucy Harrington & Clint Henke	1	2	N	N	2 (Light Rain)	FC6	802	817	15
May 28, 2024	FC8B	Sarah Skigen-Caird & Clint Henke	2	1	N	N	None	FC8B	1915	1930	15
May 28, 2024	FC8A	Sarah Skigen-Caird & Clint Henke	2	1	N	N	None	FC8A	1950	2005	15
May 28, 2024	FC7	Sarah Skigen-Caird & Clint Henke	2	1	N	N	None	FC7	2057	2112	15
May 29, 2024	FC1	Sarah Skigen-Caird & Clint Henke	2	2	N	N	None	FC1	606	621	15
May 29, 2024	FC2	Sarah Skigen-Caird & Clint Henke	2	2	N	N	None	FC2	530	545	15
May 29, 2024	FC3	Sarah Skigen-Caird & Clint Henke	2	2	N	N	None	FC3	500	515	15
May 29, 2024	FC4	Sarah Skigen-Caird & Clint Henke	2	2	N	N	None	FC4	428	443	15
May 29, 2024	FC6	Sarah Skigen-Caird & Clint Henke	2	3	Y	N	2 (Light Rain)	FC6	1819	1834	15
June 11, 2024	FC8B	M. Edwards & Clint Henke	3	1	N	N	None	FC8B	1940	1956	16
June 11, 2024	FC8A	M. Edwards & Clint Henke	3	1	N	N	None	FC8A	2010	2027	17
June 11, 2024	FC7	M. Edwards & Clint Henke	3	1	N	N	None	FC7	2120	2135	15
June 12, 2024	FC3	M. Edwards & Clint Henke	3	2	N	N	None	FC3	450	506	16
June 12, 2024	FC2	M. Edwards & Clint Henke	3	2	N	N	None	FC2	527	543	16
June 12, 2024	FC4	M. Edwards & Clint Henke	3	2	N	N	None	FC4	415	430	15
June 12, 2024	FC1	M. Edwards & Clint Henke	3	2	N	N	None	FC1	705	720	15
June 12, 2024	FC5A	Lucy Harrington & Clint Henke	3	3	N	N	None	FC5A	1925	1940	15
June 12, 2024	FC5B	Lucy Harrington & Clint Henke	3	3	N	N	None	FC5B	1953	2008	15
June 12, 2024	FC6	Lucy Harrington & Clint Henke	3	3	N	N	None	FC6	2015	2030	15
July 1, 2024	FC8A	Lucy Harrington, Clint Henke, & Morgan Bappe-Cordova	4	1	N	N	None	FC8A	2040	2055	15
July 1, 2024	FC8B	Lucy Harrington, Clint Henke, & Morgan Bappe-Cordova	4	1	N	N	None	FC8B	2008	2023	15
July 1, 2024	FC7	Lucy Harrington, Clint Henke, & Morgan Bappe-Cordova	4	1	N	N	None	FC7	2200	2215	15
July 2, 2024	FC1	Lucy Harrington & Clint Henke	4	2	N	N	2 (Light Rain)	FC1	600	615	15
July 2, 2024	FC2	Lucy Harrington & Clint Henke	4	2	N	N	None	FC2	656	711	15
July 2, 2024	FC3	Lucy Harrington & Clint Henke	4	2	N	N	None	FC3	730	745	15
July 2, 2024	FC4	Lucy Harrington & Clint Henke	4	2	N	N	None	FC4	805	820	15
July 2, 2024	FC5A	Lucy Harrington, Crystal Enriquez, & Clint Henke	4	3	N	N	None	FC5A	1945	2000	15
July 2, 2024	FC5B	Lucy Harrington, Crystal Enriquez, & Clint Henke	4	3	N	N	None	FC5B	2015	2030	15
July 2, 2024	FC6	Lucy Harrington, Crystal Enriquez, & Clint Henke	4	3	N	N	None	FC6	2037	2052	15

Appendix A - USFWS Communications

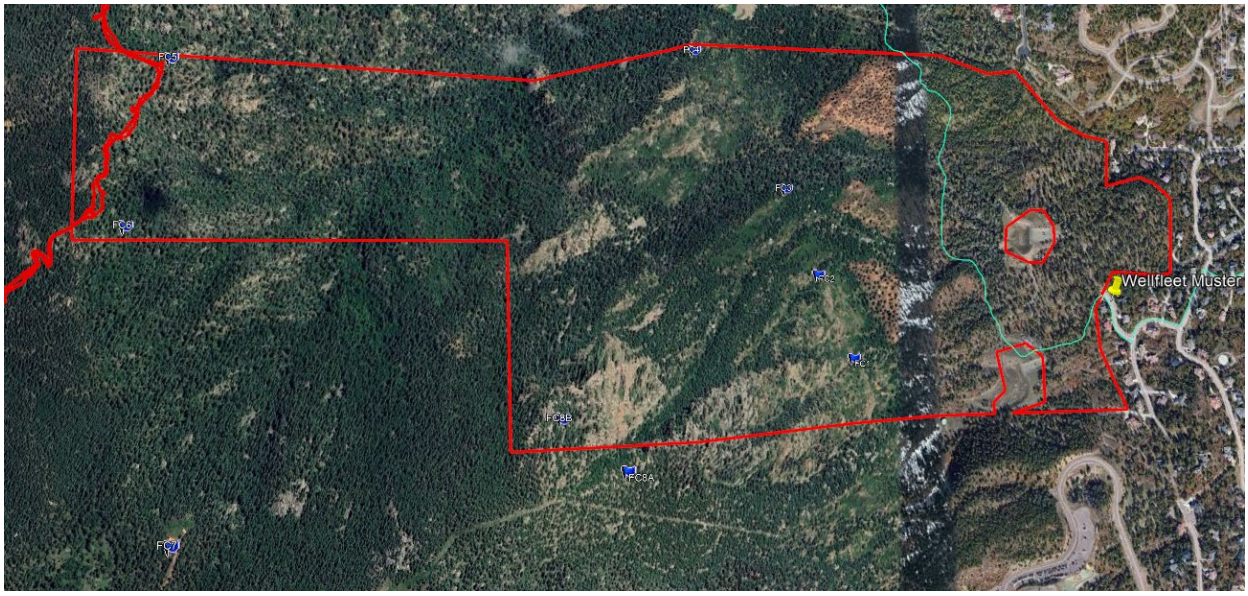
Appendix A.1 – Approval of Study Design

To: Harrington, Lucy
Subject:
Date:
Attachments: image001.png
image002.png

From: Harrington, Lucy
Sent: Friday, May 17, 2024 4:50:39 PM
To: Ellwood, Leslie <leslie_ellwood@fws.gov>
Cc: Clint Henke <chenke@eroresources.com>
Subject: RE: [EXTERNAL] MSO survey and site visit?

Thank you Leslie for the feedback! Here is a screenshot from Google earth. We'll look at adding 1-2 more sites on the western front and maybe removing the far point on the northeast boundary.

More soon! Have a great weekend~



GEI
LUCY HARRINGTON
Sr. Regulatory Specialist/Project Manager
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From: Ellwood, Leslie <leslie_ellwood@fws.gov>
Sent: Friday, May 17, 2024 4:38 PM
To: Harrington, Lucy <lharrington@geiconsultants.com>
Cc: Clint Henke <chenke@eroresources.com>
Subject: [EXT] Re: [EXTERNAL] MSO survey and site visit?

EXTERNAL EMAIL

Hi Lucy,

In general, I think the survey point locations look good. It would be helpful to see the points on an aerial photo to better see the proximity to denser forests, canyons, and rocky outcroppings. I would focus the surveys on those more important areas and maybe focus a little more on the western area of the site where the habitat looks a little better, while keeping some of the eastern points.

Hope that helps.

Happy calling!
Leslie

From: Harrington, Lucy <lharrington@geiconsultants.com>
Sent: Wednesday, May 15, 2024 11:50 AM
To: Ellwood, Leslie <leslie_ellwood@fws.gov>
Cc: Clint Henke <chenke@eroresources.com>
Subject: RE: [EXTERNAL] MSO survey and site visit?

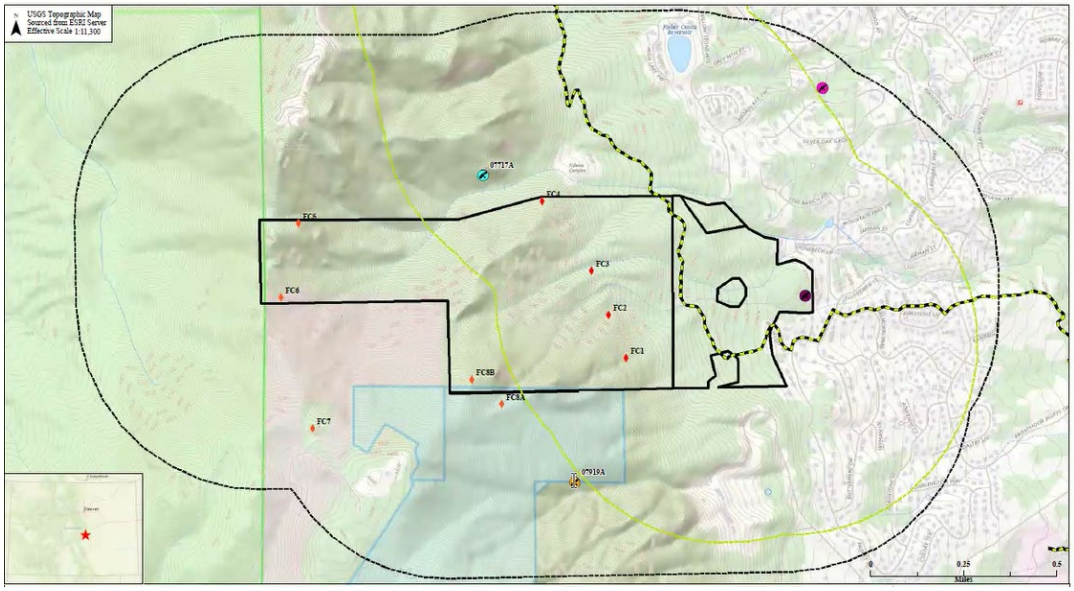
Hi Leslie-

We are mobilizing for our first round of MSO surveys at Fishers Canyon this Sunday. Below is an approximate map of survey locations that Adam Petry had put together. Since his schedule is full, Clint (ERO, cc'd) is stepping in to help us out.

Can you please provide input by Friday as to your thoughts on this survey design based on the site?

Each of the points below will be designated call stations with some potential for intermittent calling along our route as well.

Thank you very much!



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From: Harrington, Lucy <lharrington@geiconsultants.com>
Sent: Wednesday, April 24, 2024 2:54 PM
To: Ellwood, Leslie <leslie_ellwood@fws.gov>
Cc: Adam Petry <petry@westernbiology.com>
Subject: RE: [EXTERNAL] MSO survey and site visit?

Hi again Leslie-

Thank you for getting back to me on this. I have since spoken with the City some more and they are prepared to move forward with full protocol surveys (year 1) in 2024.

Given the time of year, Adam has a pretty full schedule at this point. If you could provide a list of potential contractors that could substitute for Adam at your earliest convenience that would be incredibly helpful.

Thank you so much~

-Lucy

PS. The training I took in Cloudcroft, NM on MSO a few weeks ago was awesome! We found two MSO which was pretty neat.

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From: Ellwood, Leslie <leslie_ellwood@fws.gov>
Sent: Thursday, April 4, 2024 5:41 PM
To: Harrington, Lucy <lharrington@geiconsultants.com>
Cc: Adam Petry <petry@westernbiology.com>
Subject: [EXT] Re: [EXTERNAL] MSO survey and site visit?

EXTERNAL EMAIL

Hi Lucy,

Here's some responses to your questions.

1. It appears portions of the property may qualify for modifications for safety considerations per the protocols. I've attached a few photos I took from along the powerline easement which took us over an hour to reach the property line in broad daylight due to steepness and a large number of rock outcroppings and boulders. Could we modify surveys in western locations to allow for a daytime call plus some ARUs? I would suggest that you could consider doing some point calls from high points that would reach into the steep areas that need to be surveyed without having to travel into those locations. A call can reasonably reach 0.5 miles out from the caller provided you have good conditions (low wind and no water noise) and that call could reach those areas that are hard to physically access. You would just need to spend more time at that calling location. Is this site accessible from the roads to the west? I'm not in favor of daytime calling due to a lower MSO response. We currently do not have a protocol in place for ARUs for clearance work.

2. There are a number of predators on the site including great horned owls (recorded), golden eagles (observed), and peregrine falcons (recorded), as well as a good amount of ambient noise. I wanted to check with you to see if this warranted additional protocol modification? Speaking to the adjoining Space Force staff a few days ago, they believe that these factors decrease the value of the habitat somewhat. MSO have been detected in canyons in Colorado that also have great horned owls and peregrines. Those MSO typically wait until its darker for their calling to start when peregrines are present. Presence of those other birds does not negate the potential for MSO to be present.

3. Finally, Adam suggested you may have some permit holder contact information for staff located on the Front Range that can help with our efforts. Would you mind providing this information? I can track down this information.

4. I'm not clear about your question on a phased approach - would the implementation of the City's project have a phased approach and would that be the reason for a phased MSO survey approach?

Thanks,

Leslie

From: Harrington, Lucy <lharrington@geiconsultants.com>
Sent: Thursday, April 4, 2024 4:03 PM
To: Ellwood, Leslie <leslie_ellwood@fws.gov>
Cc: Adam Petry <petry@westernbiology.com>
Subject: RE: [EXTERNAL] MSO survey and site visit?

Hi Leslie- Following up to see if you've had any more thoughts on this email chain?

Another question: would you be open to the City doing a phased approach? i.e. performing protocol surveys on the northwestern side to make sure we covered what appears to be good roosting habitat during one set of protocol surveys and surveying the eastern part (which doesn't appear to have as much roosting habitat but more human activity) under a different round of protocol surveys?

The southwestern portion of the site has some significant safety concerns.

Happy for a call too.

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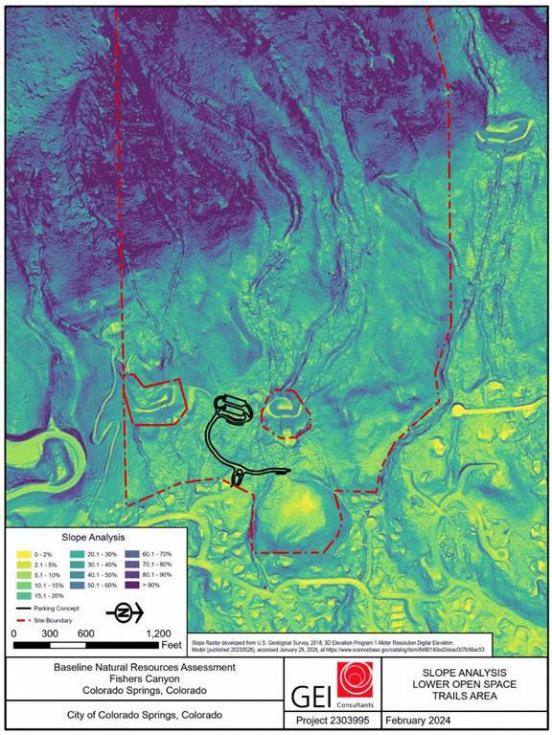
From: Harrington, Lucy
Sent: Tuesday, March 26, 2024 9:49 AM
To: Ellwood, Leslie <leslie_ellwood@fws.gov>
Cc: Adam Petry <petry@westernbiology.com>
Subject: RE: [EXTERNAL] MSO survey and site visit?

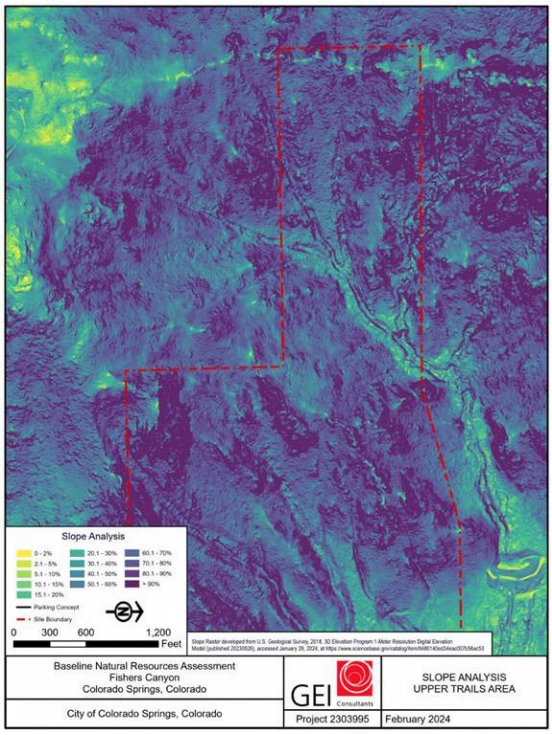
This time with photos ☺

Note survey 3 photo is looking toward the northern property boundary from the southern boundary.

Also see below for our hillshade analysis showing site topography.

Thanks for your thoughts and time~





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From: Harrington, Lucy <lharrington@geiconsultants.com>
Sent: Tuesday, March 26, 2024 9:40 AM
To: Ellwood, Leslie <leslie_ellwood@fws.gov>
Cc: Adam Petry <petry@westernbiology.com>
Subject: RE: [EXTERNAL] MSO survey and site visit?

Hi Leslie- totally understand! Here are my questions:

1. It appears portions of the property may qualify for modifications for safety considerations per the protocols. I've attached a few photos I took from along the powerline easement which took us over an hour to reach the property line in broad daylight due to steepness and a large number of rock outcroppings and boulders. Could we modify surveys in western locations to allow for a daytime call plus some ARUs?

2. There are a number of predators on the site including great horned owls (recorded), golden eagles (observed), and peregrine falcons (recorded), as well as a good amount of ambient noise. I wanted to check with you to see if this warranted additional protocol modification? Speaking to the adjoining Space Force staff a few days ago, they believe that these factors decrease the value of the habitat somewhat.

3. Finally, Adam suggested you may have some permit holder contact information for staff located on the Front Range that can help with our efforts. Would you mind providing this information?

We are trying to be thorough, scientifically robust, and cost efficient for the City of COS so any guidance you can provide that checks all of these boxes is greatly appreciated. Thanks for your help!

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From: Ellwood, Leslie <leslie_ellwood@fws.gov>
Sent: Monday, March 25, 2024 6:23 PM
To: Harrington, Lucy <lharrington@geiconsultants.com>
Subject: [EXT] Re: [EXTERNAL] MSO survey and site visit?

EXTERNAL EMAIL

Hi Lucy,

I'm pretty thoroughly booked this week with deadlines and meetings.

Can you email your questions to me and we'll see if we can resolve them through emails?

Thanks,

Leslie

From: Harrington, Lucy <lharrington@geiconsultants.com>
Sent: Thursday, March 21, 2024 5:44 PM
To: Ellwood, Leslie <leslie_ellwood@fws.gov>
Subject: [EXTERNAL] MSO survey and site visit?

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Hi again-

Wondering if you would have time to touch base on a few more questions that have come up related to owl surveys on Fishers Canyon? Trying to get our survey approach nailed down and want to confirm we're doing it right!

Also, I'm not sure I remembered to offer this to you but if you would like to come out on our survey events, you're welcome to join us for a late night owl party.

I'm pretty free next week if there's a good time to talk.

Thanks!

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Appendix A.2 – Survey Protocol Modification

From: Hedwall, Shaula <shaula_hedwall@fws.gov>
Sent: Tuesday, July 2, 2024 1:04 PM
To: Harrington, Lucy <lharrington@geiconsultants.com>; Ellwood, Leslie <leslie_ellwood@fws.gov>
Cc: Clint Henke <chenke@eroresources.com>
Subject: [EXT] Re: [EXTERNAL] MSO survey guidance for today/ pls advise!!

EXTERNAL EMAIL

Lucy,

Hola! Thank you for the response 🙂. I am glad it all worked out.

I think the timing for the surveys should be fine, I was mostly worried about the weather for this last survey as that could affect your strength of inference. Otherwise, I think everything in your email sounds good (except for no MSO - that is no fun!).

Let us know how it goes and happy holiday to you.

Warm regards,
Shaula

From: Harrington, Lucy <lharrington@geiconsultants.com>
Sent: Tuesday, July 2, 2024 08:26
To: Hedwall, Shaula <shaula_hedwall@fws.gov>; Ellwood, Leslie <leslie_ellwood@fws.gov>
Cc: Clint Henke <chenke@eroresources.com>
Subject: Re: [EXTERNAL] MSO survey guidance for today/ pls advise!!

Morning Shala!
Thx for getting back to us.

The rain stopped right at 6 (right after I sent the email) and we were already at our first survey point along the toe of slope so we just grabbed the four call sites in that area. The weather held and we completed the final survey point at 0815.

Leslie mentioned earlier that the habitat didn't appear very high quality in the T.O. slope area so we were thinking this may be acceptable even though surveys were done a bit outside of the ideal time window? We have also surveyed this area 3 times prior within the window as well as directly above and below from our other points.

Fyi-We have yet to detect MSO within the property during any survey.

For tonight, we're watching the weather carefully in hopes that the storms dissipate (we'll make the call by 6). If not we'll have one more chance tomorrow AM.

If all else fails, we'll try and get something on the books to get the final 1/3 of the property (NW corner) as soon as possible.

We'll let you both know the outcome by tomorrow regardless.

Happy to jump on a call to discuss any of this today- just let me know!

Thanks again for being available.

Get Outlook for Android

From: Hedwall, Shaula <shaula_hedwall@fws.gov>
Sent: Tuesday, July 2, 2024 8:57:07 AM
To: Harrington, Lucy <lharrington@geiconsultants.com>; Ellwood, Leslie <leslie_ellwood@fws.gov>
Cc: Clint Henke <chenke@eroresources.com>
Subject: [EXT] Re: [EXTERNAL] MSO survey guidance for today/ pls advise!!

EXTERNAL EMAIL

Lucy,

Hola! Yikes! I hate it when the weather gets like that - not good for you or detecting owls.

I recommend waiting and coming back to finish the fourth round. It is better to go later and have good conditions than risk yourselves and have low detectability with lightning/rain, etc.

Please be careful! No data is worth you risking yourselves.

Warm regards,
Shaula

Shaula J. Hedwall

Senior/Supervisory Fish and Wildlife Biologist
Arizona Ecological Services Office
U.S. Fish and Wildlife Service
2500 South Pine Knoll Drive
Flagstaff, Arizona 86001
(928) 556-2118

From: Harrington, Lucy <lharrington@geiconsultants.com>
Sent: Tuesday, July 2, 2024 05:00
To: Ellwood, Leslie <leslie_ellwood@fws.gov>; Hedwall, Shaula <shaula_hedwall@fws.gov>
Cc: Clint Henke <chenke@eroresources.com>
Subject: [EXTERNAL] MSO survey guidance for today/ pls advise!!

This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.

Good morning -
We are attempting to complete our last round of mso surveys today (4 of 4). We have two sites out of the three remaining. The first we tried at 4 am but there was significant lightning that presented a safety hazard plus heavy rain that would not be inline with survey protcol (see lightning tracker below for southern co springs,co)

We are now at the second site that's off the Ridgeline and therefore safer. It is raining off and on and also getting late. We have four survey points to get here.

We are wondering if we should abandon our surveys down here? Or grab the four surveys and try to grab the last survey area this evening on the Ridgeline. However, there is a chance 40% of lightning and rain tonight as well.

Knowing that it is late in the survey season already, how would you advise us to proceed giving the weather and timing?

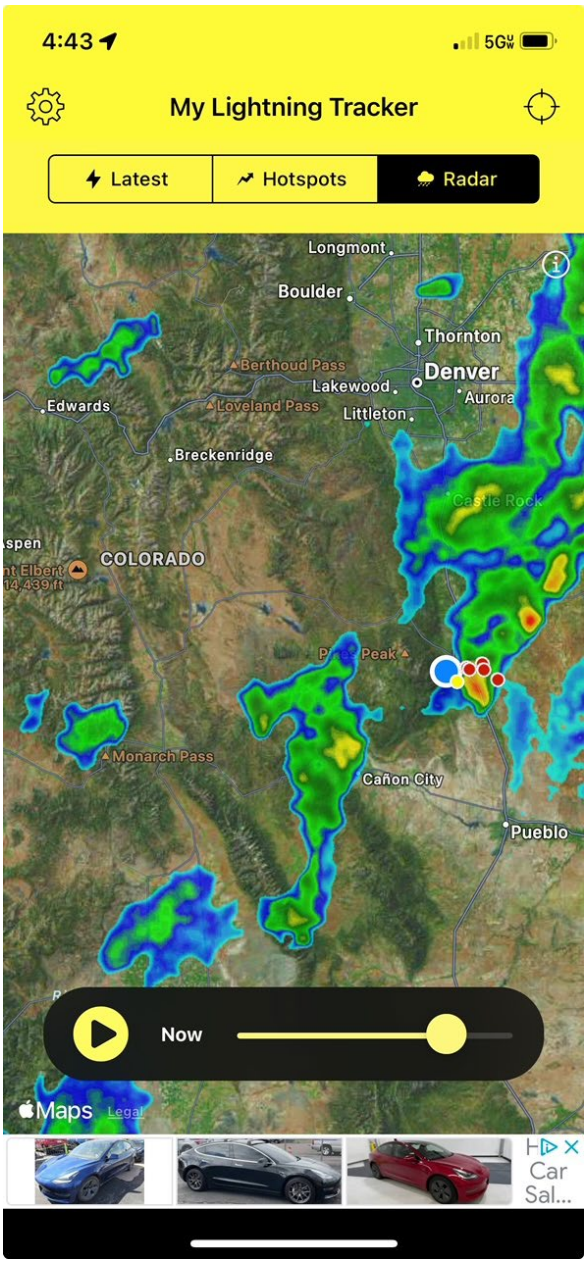
Thank you for any help you can provide!

Lucy and Clint Henke.

Get Outlook for Android

From: Clint Henke <clint.henke@gmail.com>
Sent: Tuesday, July 2, 2024 4:44:40 AM
To: Clint Henke <chenke@eroresources.com>; Harrington, Lucy <lharrington@geiconsultants.com>
Subject: [EXT] Screenshot 2024-07-02 at 4.43.13 AM

EXTERNAL EMAIL



Sent from my iPhone

Appendix B – Field Forms

Fishers Canyon Open Space

Year 1 Protocol MSO Surveys Field Survey Forms

ID	Northing_UTM	Easting_UTM	Subunit
FC1	4289016.833	513147.7188	Toe of Slope
FC2	4289252.92	513052.5783	
FC3	4289398.166	513027.0934	
FC4	4289521.729	512952.5213	
FC5a	4289583.185	511634.3477	Panhandle
FC5b	4289435.611	511542.1545	
FC6	4289282.821	511523.0931	
FC7	4288734.699	511733.0941	Antenna Farm
FC8a	4288798.172	512353.1071	
FC8b	4288910.499	512395.4992	

Mexican Spotted Owl Night Call Survey Form

Inventory Area/ PAC : Fishers Canyon	Survey # : 1	Date: 5/19/2024		Start	End
Inventory / PAC Monitoring (Circle One)	Outing # : 1	Results: No Mexican spotted owls	Wind	3	4
Site Name (Subunit): Antenna Farm	Aborted ? Yes / **No**	detected.	Cloud %	10	20
Observers: C. Henke & L. Harrington			Precip.	0	0
			Temp	56	49

CALL POINTS						RAPTOR RESPONSE													
		Time				Raptor Info					Bearing		Weather			UTM coordinates of observer			UTM Coordinates of Raptor	
Call Pt.	Surv. Method	Start	End	Total Minutes	Call Method	A/V	Sex	Age	Species	Time	1st	2nd	Wind	Cloud %	Precip	East	North	Dist. From	East	North
FC 8b	2	1945	2000	15	1															
FC 8a	2	2020	2035	15	1															
FC 7	2	2142	2257	15	1															

Comments:

At Call Point FC 8a, there was a fair amount of background noise: dogs, cars, and motorcycles.

At Call Point FC 7, there was wind noise and an airplane flew overhead. Motorcycles and cares from the city were audible.

* Spotted Owl = SPOW; Great Horned = GHOW; Flammulated = FLOW; Screech = WESO; Pygmy = NOPO; Saw-Whet = NSWO; Long-Eared = LEOW; Barn = BNOW; Elf = ELOW; Goshawk = NOGO

*Survey Meth: Leap (1), Fixed (2), Continuous (3) Call Method: Recording (1), Vocalization (2), Combination (3) 01/31/2024

Describe Calling Points / Routes:
Subunit: Antenna Farm
Start at Antenna Farm in the evening ~2 hours before sunset and park. Hike down powerline
easement and cut to left to follow slope break to FC8b. Arrive ~1 hour prior
to sunset.
Once 8b is collected, backtrack toward powerline to collect FC 8a.
Then walk up powerline easement to vehicles at Antenna Farm.
Once back in vehicles, drive to FC7 to conduct final nighttime survey in this subunit.

General Habitat Comments:	**Trees Present**	
Lots of granite rock outcroppings interspersed with mixed conifers. Very	x	Ponderosa Pine
steep hillslopes and canyons with rocky ledges.		Pinyon / Juniper
Some aspen and ponderas intermxed in wetter and drier areas, respectively.		Maple
		Gambel Oak
		Oak (other)
	X	Douglas - Fir
	X	Spruce/Fir
		Alder
		Walnut
		Boxelder
		Cottonwood
		Sycamore
		Riparian

Other Comments:
Points FC8a and FC8b corresponded with the top of the ravines that were also surveyed at their mouth,
corresponding with FC1 and FC2.
FC7 is located on a developed patio assoicatied with a private secondary residence. Site was selected
due to ability to safely project recordings into turkey foot tributaries.

Mexican Spotted Owl Night Call Survey Form

Inventory Area/ PAC : Fishers Canyon	Survey # : 1	Date: 5/20/2024		Start	End
Inventory/ PAC Monitoring (Circle One)	Outing # : 2	Results: No Mexican spotted owls	Wind	1	3
Site Name (Subunit): Toe of Slope	Aborted ? Yes / **No**	detected.	Cloud %	0	100
Observers: C. Henke & L. Harrington			Precip.	0	2
			Temp	40	48

CALL POINTS						RAPTOR RESPONSE													
		Time				Raptor Info					Bearing		Weather			UTM coordinates of observer			UTM Coordinates of Raptor
Call Pt.	Surv. Method	Start	End	Total Minutes	Call Method	A/V	Sex	Age	Species	Time	1st	2nd	Wind	Cloud %	Precip	East	North	Dist. From	East	North
FC 4	2	445	500	15	1															
FC 3	2	525	540	15	1															
FC 2	2	605	620	15	1															
FC 1	2	640	655	15	1															

Comments:

At Call Point FC 4, city noise was audible (sirens, cars, etc.). Great horned owl heard in distance (1mi) several times. It didn't get closer doing the survey so not called in.

At Call Point FC 3, city noise was audible. There is good habitat, lots of songbirds.

At Call Point FC 2, highway noise was prevalent.

At Call Point FC 1, lots of noise from Fort Carson was heard (taps and cannon fire).

* Spotted Owl = SPOW; Great Horned = GHOW; Flammulated = FLOW; Screech = WESO; Pygmy = NOPO; Saw-Whet = NSWO; Long-Eared = LEOW; Barn = BNOW; Elf = ELOW; Goshawk = NOGO

*Survey Meth: Leap (1), Fixed (2), Continuous (3) Call Method: Recording (1), Vocalization (2), Combination (3) 01/31/2024

Describe Calling Points / Routes:
Subunit: Toe of Slope
Start dawn surveys by arriving at Wellfleet Street two hours before sunrise. Hike to FC4
From here, move north to south to collect from FC3,2, and 1. This route was
chosen due to ease of walking at night. These surveys generally lasted ~3.5 hours. Upon
colleting FC1, surveyors returned to vehicles at Wellfleet Street.

General Habitat Comments:		**Trees Present**
FC4 was surrounded by ponderosa. However, intensive onsite fire	x	Ponderosa Pine
mitigation had occurred, eliminating previous veg. and leaving woodchips.		Pinyon / Juniper
Immediately north of FC4, there is a deep ravine that is dominiated by		Maple
dense douglas fir. While this had standing water, there was no riparian veg.	x	Gambel Oak
FC3 was dominiated by thick spurce/fir with some gamble oak in the		Oak (other)
understory. Lots of downed snags similar to inhabited areas in	x	Douglas - Fir
Cloudcroft, NM.	x	Spruce/Fir
FC2 and FC1 were domintated by scrub shrub (gamble oak) and ponderosa		Alder
mixed communities.		Walnut
		Boxelder
		Cottonwood
		Sycamore
		Riparian

Other Comments:
These sites were selected due to being at the base of several ravines that contained large rock
outcrops and cliff faces further upslope (i.e. the mouth of the canyons below FC8a and FC8b).

Mexican Spotted Owl Night Call Survey Form

Inventory Area/ PAC : Fishers Canyon	Survey # : 1	Date: 5/20/2024		Start	End
Inventory / PAC Monitoring (Circle One)	Outing # : 2	Results: No Mexican spotted owls detected.	Wind	1	3
Site Name (Subunit): Toe of Slope	Aborted ? Yes / **No**		Cloud %	0	100
Observers: C. Henke & L. Harrington			Precip.	0	2
			Temp	40	48

CALL POINTS						RAPTOR RESPONSE														
		Time				Raptor Info					Bearing		Weather			UTM coordinates of observer			UTM Coordinates of Raptor	
Call Pt.	Surv. Method	Start	End	Total Minutes	Call Method	A/V	Sex	Age	Species	Time	1st	2nd	Wind	Cloud %	Precip	East	North	Dist. From	East	North
FC 5a	2	709	724	15	1															
FC 5b	2	737	752	15	1															
FC 6	2	802	817	15	1															

Comments:

At Call Point FC 5a, American robin was heard, distant thunder, and city noise.

At Call Point FC 5b, Stellers jay was heard, airplane, and city noise.

At Call Point FC 6, wind and light rain started during calls.

* Spotted Owl = SPOW; Great Horned = GHOW; Flammulated = FLOW; Screech = WESO; Pygmy = NOPO; Saw-Whet = NSWO; Long-Eared = LEOW; Barn = BNOW; Elf = ELOW; Goshawk = NOGO

*Survey Meth: Leap (1), Fixed (2), Continuous (3) Call Method: Recording (1), Vocalization (2), Combination (3) 01/31/2024

Describe Calling Points / Routes:

Subunit: Panhandle subunit

Pan handle surveys started by hiking in along the 3-mile MacNiell Trail from Old Stage Coach Rd. This trail was formerly a U.S. Forest Service- maintained trail but is currently no longer under USFS managemnt. Rather, the Broadmoore Hotel (Cloud Camp) maintains this trail via a Special Use Permit for their guests. Surveyors hiked the trail over the ridgeline and dropped into the Fishers Canyon Open Space on the southwestern side of the Panhandle subunit. From here, surveyors proceeded to FC5a, arriving approximately 1 hour before sunset. After surveying at this point, surveyors proceeded north to south to capture FC5b and 6.

General Habitat Comments:		**Trees Present**
Vegetation was mixed conifer with some aspen as well as Ponderora. Unit has areas of	x	Ponderosa
dense, closed vegetation (FC5b and FC6) and other open areas of ponderosa and exposed		Pinyon / Juniper
rock cliffs or outcroppings (i.e. FC5a), depending on slope exposure, etc.		Maple
		Gambel Oak
		Oak (other)
	x	Douglas - Fir
	x	Spruce/Fir
		Alder
		Walnut
		Boxelder
		Cottonwood
		Sycamore
		Riparian

Other Comments:

All three points were selected to direct playback audio into Fishers Canyon proper. While the survey sites did not contain any riparian vegeation, Fishers Canyon contains a mix of riparian vegetation and aspens in the confluence of the Turkey Foot gulches, where there is also running surface water into July, fed by onsite seeps.

Mexican Spotted Owl Night Call Survey Form

Inventory Area/ PAC : Fishers Canyon	Survey # : 2	Date: 5/28/2024		Start	End
Inventory / PAC Monitoring (Circle One)	Outing # : 1	Results: No Mexican spotted owls	Wind	2	2
Site Name (Subunit): Antenna Farm	Aborted ? Yes / **No**	detected.	Cloud %	50	40
Observers: C. Henke & S. Skigen-Caird			Precip.	0	0
			Temp	72	68

CALL POINTS						RAPTOR RESPONSE													
		Time				Raptor Info					Bearing		Weather			UTM coordinates of observer			UTM Coordinates of Raptor
Call Pt.	Surv. Method	Start	End	Total Minutes	Call Method	A/V	Sex	Age	Species	Time	1st	2nd	Wind	Cloud %	Precip	East	North	Dist. From	East	North
FC 8b	2	1915	1930	15	1															
FC 8a	2	1950	2005	15	1															
FC 7	2	2057	2112	15	1															

Comments:

At Call Point FC 8a, dogs and traffic were heard from the monitoring point.

At Call Point FC 7, a saw-whet owl (NSWO) was observed and heard calling to the south of Call Point FC 7.

* Spotted Owl = SPOW; Great Horned = GHOW; Flammulated = FLOW; Screech = WESO; Pygmy = NOPO; Saw-Whet = NSWO; Long-Eared = LEOW; Barn = BNOW; Elf = ELOW; Goshawk = NOGO

*Survey Meth: Leap (1), Fixed (2), Continuous (3) Call Method: Recording (1), Vocalization (2), Combination (3) 01/31/2024

Describe Calling Points / Routes:
Subunit: Antenna Farm
Start at Antenna Farm in the evening ~2 hours before sunset and park. Hike down powerline
easement and cut to left to follow slope break to FC8b. Arrive ~1 hour prior
to sunset.
Once 8b is collected, backtrack toward powerline to collect FC 8a.
Then walk up powerline easement to vehicles at Antenna Farm.
Once back in vehicles, drive to FC7 to conduct final nighttime survey in this subunit.

General Habitat Comments:	**Trees Present**	
Lots of granite rock outcroppings interspersed with mixed conifers. Very	x	Ponderosa Pine
steep hillslopes and canyons with rocky ledges.		Pinyon / Juniper
Some aspen and ponderas intermxed in wetter and drier areas, respectively.		Maple
		Gambel Oak
		Oak (other)
	X	Douglas - Fir
	X	Spruce/Fir
		Alder
		Walnut
		Boxelder
		Cottonwood
		Sycamore
		Riparian

Other Comments:
Points FC8a and FC8b corresponded with the top of the ravines that were also surveyed at their mouth,
corresponding with FC1 and FC2.
FC7 is located on a developed patio assoicatied with a private secondary residence. Site was selected
due to ability to safely project recordings into turkey foot tributaries.

Mexican Spotted Owl Night Call Survey Form

Inventory Area/ PAC : Fishers Canyon	Survey # : 2	Date: 5/29/2024		Start	End
Inventory / PAC Monitoring (Circle One)	Outing # : 2	Results: No Mexican spotted owls	Wind	2	2
Site Name (Subunit): Toe of Slope	Aborted ? Yes / **No**	detected.	Cloud %	5	20
Observers: C. Henke & S. Skigen Caird			Precip.	0	0
			Temp	54	50

CALL POINTS						RAPTOR RESPONSE													
		Time				Raptor Info					Bearing		Weather			UTM coordinates of observer			UTM Coordinates of Raptor
Call Pt.	Surv. Method	Start	End	Total Minutes	Call Method	A/V	Sex	Age	Species	Time	1st	2nd	Wind	Cloud %	Precip	East	North	Dist. From	East	North
FC 4	2	428	443	15	1															
FC 3	2	500	515	15	1															
FC 2	2	530	545	15	1															
FC 1	2	606	621	15	1															

Comments:

At Call Point FC 4, songbirds were calling throughout the monitoring period, traffic was audible from the city.

At Call Point FC 3, songbirds were calling throughout the monitoring period, dogs and traffic were audible from the city.

At Call Point FC 2, songbirds were calling throughout the monitoring period, city traffic was audible.

At Call Point FC 1, songbirds were very active throughout the calling sequence.

* Spotted Owl = SPOW; Great Horned = GHOW; Flammulated = FLOW; Screech = WESO; Pygmy = NOPO; Saw-Whet = NSWO; Long-Eared = LEOW; Barn = BNOW; Elf = ELOW; Goshawk = NOGO

*Survey Meth: Leap (1), Fixed (2), Continuous (3) Call Method: Recording (1), Vocalization (2), Combination (3) 01/31/2024

Describe Calling Points / Routes:
Subunit: Toe of Slope
Start dawn surveys by arriving at Wellfleet Street two hours before sunrise. Hike to FC4
From here, move north to south to collect from FC3,2, and 1. This route was
chosen due to ease of walking at night. These surveys generally lasted ~3.5 hours. Upon
colleting FC1, surveyors returned to vehicles at Wellfleet Street.

General Habitat Comments:		**Trees Present**
FC4 was surrounded by ponderosa. However, intensive onsite fire	x	Ponderosa Pine
mitigation had occurred, eliminating previous veg. and leaving woodchips.		Pinyon / Juniper
Immediately north of FC4, there is a deep ravine that is dominiated by		Maple
dense douglas fir. While this had standing water, there was no riparian veg.	x	Gambel Oak
FC3 was dominiated by thick spurce/fir with some gamble oak in the		Oak (other)
understory. Lots of downed snags similar to inhabited areas in	x	Douglas - Fir
Cloudcroft, NM.	x	Spruce/Fir
FC2 and FC1 were domintated by scrub shrub (gamble oak) and ponderosa		Alder
mixed communities.		Walnut
		Boxelder
		Cottonwood
		Sycamore
		Riparian

Other Comments:
These sites were selected due to being at the base of several ravines that contained large rock
outcrops and cliff faces further upslope (i.e. the mouth of the canyons below FC8a and FC8b).

Mexican Spotted Owl Night Call Survey Form

Inventory Area/ PAC : Fishers Canyon	Survey # : 2	Date: 5/29/2024		Start	End
Inventory / PAC Monitoring (Circle One)	Outing # : 3	Results: No Mexican spotted owls detected.	Wind	2	2
Site Name (Subunit): Panhandle	Aborted ? **Yes** / No		Cloud %	95	95
Observers: C. Henke & S. Skigen-Caird			Precip.	2	2
			Temp	58	58

CALL POINTS						RAPTOR RESPONSE													
		Time				Raptor Info					Bearing		Weather			UTM coordinates of observer			UTM Coordinates of Raptor
Call Pt.	Surv. Method	Start	End	Total Minutes	Call Method	A/V	Sex	Age	Species	Time	1st	2nd	Wind	Cloud %	Precip	East	North	Dist. From	East	North
FC 6	3	1819	1834	15	1															

Comments:

Survey was modified due to weather, monitered approximately 100 meters southwest of Call Point FC 6.

Because rain storms were rapidly approaching from the northwest, we conducted one continuous call for about 10 minutes along the ridgeline as we headed back along MacNeill Trail. The survey was aborted at this time.

* Spotted Owl = SPOW; Great Horned = GHOW; Flammulated = FLOW; Screech = WESO; Pygmy = NOPO; Saw-Whet = NSWO; Long-Eared = LEOW; Barn = BNOW; Elf = ELOW; Goshawk = NOGO

*Survey Meth: Leap (1), Fixed (2), Continuous (3) Call Method: Recording (1), Vocalization (2), Combination (3) 01/31/2024

Describe Calling Points / Routes:

Subunit: Panhandle subunit

Pan handle surveys started by hiking in along the 3-mile MacNiell Trail from Old Stage Coach Rd. This trail was formerly a U.S. Forest Service- maintained trail but is currently no longer under USFS managemnt. Rather, the Broadmoore Hotel (Cloud Camp) maintains this trail via a Special Use Permit for their guests. Surveyors hiked the trail over the ridgeline and dropped into the Fishers Canyon Open Space on the southwestern side of the Panhandle subunit. From here, surveyors proceeded to FC5a, arriving approximately 1 hour before sunset. After surveying at this point, surveyors proceeded north to south to capture FC5b and 6.

General Habitat Comments:		**Trees Present**
Vegetation was mixed conifer with some aspen as well as Ponderora. Unit has areas of	x	Ponderosa
dense, closed vegetation (FC5b and FC6) and other open areas of ponderosa and exposed		Pinyon / Juniper
rock cliffs or outcroppings (i.e. FC5a), depending on slope exposure, etc.		Maple
		Gambel Oak
		Oak (other)
	x	Douglas - Fir
	x	Spruce/Fir
		Alder
		Walnut
		Boxelder
		Cottonwood
		Sycamore
		Riparian

Other Comments:

All three points were selected to direct playback audio into Fishers Canyon proper. While the survey sites did not contain any riparian vegeation, Fishers Canyon contains a mix of riparian vegetation and aspens in the confluence of the Turkey Foot gulches, where there is also running surface water into July, fed by onsite seeps.

Mexican Spotted Owl Night Call Survey Form

Inventory Area/ PAC : Fishers Canyon	Survey # : 3	Date: 6/11/2024		Start	End
Inventory/ PAC Monitoring (Circle One)	Outing # : 1	Results: No Mexican spotted owls	Wind	2	1
Site Name (Subunit): Antenna Farm	Aborted ? Yes / **No**	detected.	Cloud %	20	70
Observers: C. Henke & M. Edwards			Precip.	0	0
			Temp	73	59

CALL POINTS						RAPTOR RESPONSE													
		Time				Raptor Info					Bearing		Weather			UTM coordinates of observer			UTM Coordinates of Raptor
Call Pt.	Surv. Method	Start	End	Total Minutes	Call Method	A/V	Sex	Age	Species	Time	1st	2nd	Wind	Cloud %	Precip	East	North	Dist. From	East	North
FC 8b	2	1940	1956	16	1															
FC 8a	2	2010	2027	17	1															
FC 7	2	2120	2135	15	1															

Comments:

At Call Point FC 8b, Swaison's thrushes could be heard throughout the survey.

At Call Point FC 8a, dogs and traffic could be heard from monitoring point. Swainson's thrush, American robin, and white-breasted nuthatch were detected audibly.

* Spotted Owl = SPOW; Great Horned = GHOW; Flammulated = FLOW; Screech = WESO; Pygmy = NOPO; Saw-Whet = NSWO; Long-Eared = LEOW; Barn = BNOW; Elf = ELOW; Goshawk = NOGO

*Survey Meth: Leap (1), Fixed (2), Continuous (3) Call Method: Recording (1), Vocalization (2), Combination (3) 01/31/2024

Describe Calling Points / Routes:
Subunit: Antenna Farm
Start at Antenna Farm in the evening ~2 hours before sunset and park. Hike down powerline
easement and cut to left to follow slope break to FC8b. Arrive ~1 hour prior
to sunset.
Once 8b is collected, backtrack toward powerline to collect FC 8a.
Then walk up powerline easement to vehicles at Antenna Farm.
Once back in vehicles, drive to FC7 to conduct final nighttime survey in this subunit.

General Habitat Comments:	**Trees Present**	
Lots of granite rock outcroppings interspersed with mixed conifers. Very	x	Ponderosa Pine
steep hillslopes and canyons with rocky ledges.		Pinyon / Juniper
Some aspen and ponderas intermxed in wetter and drier areas, respectively.		Maple
		Gambel Oak
		Oak (other)
	X	Douglas - Fir
	X	Spruce/Fir
		Alder
		Walnut
		Boxelder
		Cottonwood
		Sycamore
		Riparian

Other Comments:
Points FC8a and FC8b corresponded with the top of the ravines that were also surveyed at their mouth,
corresponding with FC1 and FC2.
FC7 is located on a developed patio assoicatied with a private secondary residence. Site was selected
due to ability to safely project recordings into turkey foot tributaries.

Mexican Spotted Owl Night Call Survey Form

Inventory Area/ PAC : Fishers Canyon	Survey # : 3	Date: 6/12/2024		Start	End
Inventory / PAC Monitoring (Circle One)	Outing # : 2	Results: No Mexican spotted owls	Wind	0	1
Site Name (Subunit): Toe of Slope	Aborted ? Yes / **No**	detected.	Cloud %	0	0
Observers: C. Henke & M. Edwards			Precip.	0	0
			Temp	64	64

CALL POINTS						RAPTOR RESPONSE													
		Time				Raptor Info					Bearing		Weather			UTM coordinates of observer			UTM Coordinates of Raptor	
Call Pt.	Surv. Method	Start	End	Total Minutes	Call Method	A/V	Sex	Age	Species	Time	1st	2nd	Wind	Cloud %	Precip	East	North	Dist. From	East	North
FC 4	2	415	430	15	1															
FC 3	2	450	506	16	1															
FC 2	2	527	543	16	1															
FC 1	2	705	720	15	1															

Comments:

At Call Point FC 3, city noise was audible (sirens, carts, etc.). Great horned owl (GHOW) was heard in distance (1mi) several times. It didn't get closer during survey so not called in.

At Call Point FC 2, city noise was audible, but good habitat. Lots of songbirds were heard (spotted towhee, western tanager, western flycatcher, swainson's thrush, and yellow-rumped warbler).

At Call Point FC 4, highway noise was prevalent. Songbirds were also heard (warbling vireo, western flycatcher, American robin, yellow-rumped warbler, spotted towhee, dark-eyed junco, western tanager, and black-headed grosbeak).

At Call Point FC 1, there was lots of noise heard from traffic in Colorado Springs. Songbirds heard were virgina warbler, spotted towhee, American robin, and western tanager.

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*Survey Meth: Leap (1), Fixed (2), Continuous (3) Call Method: Recording (1), Vocalization (2), Combination (3) 01/31/2024

Describe Calling Points / Routes:
Subunit: Toe of Slope
Start dawn surveys by arriving at Wellfleet Street two hours before sunrise. Hike to FC4
From here, move north to south to collect from FC3,2, and 1. This route was
chosen due to ease of walking at night. These surveys generally lasted ~3.5 hours. Upon
colleting FC1, surveyors returned to vehicles at Wellfleet Street.

General Habitat Comments:		**Trees Present**
FC4 was surrounded by ponderosa. However, intensive onsite fire	x	Ponderosa Pine
mitigation had occurred, eliminating previous veg. and leaving woodchips.		Pinyon / Juniper
Immediately north of FC4, there is a deep ravine that is dominiated by		Maple
dense douglas fir. While this had standing water, there was no riparian veg.	x	Gambel Oak
FC3 was dominiated by thick spurce/fir with some gamble oak in the		Oak (other)
understory. Lots of downed snags similar to inhabited areas in	x	Douglas - Fir
Cloudcroft, NM.	x	Spruce/Fir
FC2 and FC1 were domintated by scrub shrub (gamble oak) and ponderosa		Alder
mixed communities.		Walnut
		Boxelder
		Cottonwood
		Sycamore
		Riparian

Other Comments:
These sites were selected due to being at the base of several ravines that contained large rock
outcrops and cliff faces further upslope (i.e. the mouth of the canyons below FC8a and FC8b).

Mexican Spotted Owl Night Call Survey Form

Inventory Area/ PAC : Fishers Canyon	Survey # : 3	Date: 6/12/2024		Start	End
Inventory / PAC Monitoring (Circle One)	Outing # : 3	Results: No Mexican spotted owls	Wind	1	3
Site Name (Subunit): Panhandle	Aborted ? Yes / **No**	detected.	Cloud %	60	100
Observers: C. Henke & L. Harrington			Precip.	0	0
			Temp	72	70

CALL POINTS						RAPTOR RESPONSE													
		Time				Raptor Info					Bearing		Weather			UTM coordinates of observer			UTM Coordinates of Raptor	
Call Pt.	Surv. Method	Start	End	Total Minutes	Call Method	A/V	Sex	Age	Species	Time	1st	2nd	Wind	Cloud %	Precip	East	North	Dist. From	East	North
FC 5a	2	1925	1940	15	1															
FC 5b	2	1953	2008	15	1															
FC 6	2	2015	2030	15	1															

Comments:

At Call Point FC 5a, smokey conditions due to prescribed burns approximately 20 miles to the north. Urban and highway noise audible. House wren heard.

At Call Point FC 5b, some thunder in distance as storm moved in closer. Smokey due to prescribed burn in region (20 miles north).

At Call Point FC 6, played call on both sides of the ridgeline between Fishers Canyon and USFS lands. Increasing wind. Dogs were audible.

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*Survey Meth: Leap (1), Fixed (2), Continuous (3) Call Method: Recording (1), Vocalization (2), Combination (3) 01/31/2024

Describe Calling Points / Routes:

Subunit: Panhandle subunit

Pan handle surveys started by hiking in along the 3-mile MacNiell Trail from Old Stage Coach Rd. This trail was formerly a U.S. Forest Service- maintained trail but is currently no longer under USFS managemnt. Rather, the Broadmoore Hotel (Cloud Camp) maintains this trail via a Special Use Permit for their guests. Surveyors hiked the trail over the ridgeline and dropped into the Fishers Canyon Open Space on the southwestern side of the Panhandle subunit. From here, surveyors proceeded to FC5a, arriving approximately 1 hour before sunset. After surveying at this point, surveyors proceeded north to south to capture FC5b and 6.

General Habitat Comments:		**Trees Present**
Vegetation was mixed conifer with some aspen as well as Ponderora. Unit has areas of	x	Ponderosa
dense, closed vegetation (FC5b and FC6) and other open areas of ponderosa and exposed		Pinyon / Juniper
rock cliffs or outcroppings (i.e. FC5a), depending on slope exposure, etc.		Maple
		Gambel Oak
		Oak (other)
	x	Douglas - Fir
	x	Spruce/Fir
		Alder
		Walnut
		Boxelder
		Cottonwood
		Sycamore
		Riparian

Other Comments:

All three points were selected to direct playback audio into Fishers Canyon proper. While the survey sites did not contain any riparian vegeation, Fishers Canyon contains a mix of riparian vegetation and aspens in the confluence of the Turkey Foot gulches, where there is also running surface water into July, fed by onsite seeps.

Mexican Spotted Owl Night Call Survey Form

Inventory Area/ PAC : Fishers Canyon	Survey # : 4	Date: 7/1/2024		Start	End
Inventory / PAC Monitoring (Circle One)	Outing # : 1	Results: No Mexican spotted owls detected.	Wind	1	1
Site Name (Subunit): Antenna Farm	Aborted ? Yes / **No**		Cloud %	45	20
Observers: C. Henke, L. Harrington, & M. Bappe-Cordova			Precip.	0	0
			Temp	69	60

CALL POINTS						RAPTOR RESPONSE													
		Time				Raptor Info					Bearing		Weather			UTM coordinates of observer			UTM Coordinates of Raptor	
Call Pt.	Surv. Method	Start	End	Total Minutes	Call Method	A/V	Sex	Age	Species	Time	1st	2nd	Wind	Cloud %	Precip	East	North	Dist. From	East	North
FC 8b	2	2008	2023	15	1															
FC 8a	2	2040	2055	15	1															
FC 7	2	2200	2215	15	1															

Comments:

At Call Point FC 8b, the wind picked up to about a 2.

At Call Point FC 8a, dogs and traffic could be heard from monitoring point. Swainson's thrush, American robin, and white-breasted nuthatch were detected audibly.

Between Call Points FC 8a and FC 8b, heard artillary fire and low flying helicopter from Fort Carson area. Quite loud. Urban and highway noise heard off and on throughout. Some artiliary fire during survey. No wind at survey site but louder below (likely 3 or 4 level).

At Call Point FC 7, artillery fire before/during recording, noise from helicopter/airplane during listening. Unidentified (possible flammulated) owl (FLOW) callback - distant.

* Spotted Owl = SPOW; Great Horned = GHOW; Flammulated = FLOW; Screech = WESO; Pygmy = NOPO; Saw-Whet = NSWO; Long-Eared = LEOW; Barn = BNOW; Elf = ELOW; Goshawk = NOGO

*Survey Meth: Leap (1), Fixed (2), Continuous (3) Call Method: Recording (1), Vocalization (2), Combination (3) 01/31/2024

Describe Calling Points / Routes:
Subunit: Antenna Farm
Start at Antenna Farm in the evening ~2 hours before sunset and park. Hike down powerline
easement and cut to left to follow slope break to FC8b. Arrive ~1 hour prior
to sunset.
Once 8b is collected, backtrack toward powerline to collect FC 8a.
Then walk up powerline easement to vehicles at Antenna Farm.
Once back in vehicles, drive to FC7 to conduct final nighttime survey in this subunit.

General Habitat Comments:	**Trees Present**	
Lots of granite rock outcroppings interspersed with mixed conifers. Very	x	Ponderosa Pine
steep hillslopes and canyons with rocky ledges.		Pinyon / Juniper
Some aspen and ponderas intermxed in wetter and drier areas, respectively.		Maple
		Gambel Oak
		Oak (other)
	X	Douglas - Fir
	X	Spruce/Fir
		Alder
		Walnut
		Boxelder
		Cottonwood
		Sycamore
		Riparian

Other Comments:
Points FC8a and FC8b corresponded with the top of the ravines that were also surveyed at their mouth,
corresponding with FC1 and FC2.
FC7 is located on a developed patio assoicatied with a private secondary residence. Site was selected
due to ability to safely project recordings into turkey foot tributaries.

Mexican Spotted Owl Night Call Survey Form

Inventory Area/ PAC : Fishers Canyon	Survey # : 4	Date: 7/2/2024		Start	End
Inventory / PAC Monitoring (Circle One)	Outing # : 2	Results: No Mexican spotted owls detected.	Wind	2	1
Site Name (Subunit): Toe of Slope	Aborted ? Yes / **No**		Cloud %	85	70
Observers: C. Henke & L. Harrington			Precip.	2	0
			Temp	56	66

CALL POINTS						RAPTOR RESPONSE													
		Time				Raptor Info					Bearing		Weather			UTM coordinates of observer			UTM Coordinates of Raptor
Call Pt.	Surv. Method	Start	End	Total Minutes	Call Method	A/V	Sex	Age	Species	Time	1st	2nd	Wind	Cloud %	Precip	East	North	Dist. From	East	North
FC 1	2	600	615	15	1															
FC 2	2	656	711	15	1															
FC 3	2	730	745	15	1															
FC 4	2	805	820	15	1															

Comments:

Lightning and heavy rain at attemped start time of 0400 at the Panhandle. Moved to toe of slope subunit and walked to FC 1 in heavy rain. Started the survey as soon as rain stopped. Emailed USFWS for additional guidance, which was recieved- clearance given for 0600 start time. Possible summer

At Call Point FC 2, taps played at 0630 for 5 minutes and could be heard throughout the site.

At Call Point FC 4, several songbird species were detected (American robin, house wren, song sparrow). City noise and traffic from the city could also be heard from this location.

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*Survey Meth: Leap (1), Fixed (2), Continuous (3) Call Method: Recording (1), Vocalization (2), Combination (3) 01/31/2024

Describe Calling Points / Routes:
Subunit: Toe of Slope
Start dawn surveys by arriving at Wellfleet Street two hours before sunrise. Hike to FC4
From here, move north to south to collect from FC3,2, and 1. This route was
chosen due to ease of walking at night. These surveys generally lasted ~3.5 hours. Upon
colleting FC1, surveyors returned to vehicles at Wellfleet Street.

General Habitat Comments:		**Trees Present**
FC4 was surrounded by ponderosa. However, intensive onsite fire	x	Ponderosa Pine
mitigation had occurred, eliminating previous veg. and leaving woodchips.		Pinyon / Juniper
Immediately north of FC4, there is a deep ravine that is dominiated by		Maple
dense douglas fir. While this had standing water, there was no riparian veg.	x	Gambel Oak
FC3 was dominiated by thick spurce/fir with some gamble oak in the		Oak (other)
understory. Lots of downed snags similar to inhabited areas in	x	Douglas - Fir
Cloudcroft, NM.	x	Spruce/Fir
FC2 and FC1 were domintated by scrub shrub (gamble oak) and ponderosa		Alder
mixed communities.		Walnut
		Boxelder
		Cottonwood
		Sycamore
		Riparian

Other Comments:
These sites were selected due to being at the base of several ravines that contained large rock
outcrops and cliff faces further upslope (i.e. the mouth of the canyons below FC8a and FC8b).

Mexican Spotted Owl Night Call Survey Form

Inventory Area/ PAC : Fishers Canyon	Survey # : 4	Date: 7/2/2024		Start	End
Inventory / PAC Monitoring (Circle One)	Outing # : 3	Results: No Mexican spotted owls	Wind	2	1
Site Name (Subunit): Panhandle	Aborted ? Yes / **No**	detected.	Cloud %	10	40
Observers: C. Henke, L. Harrington, & C. Enriquez			Precip.	0	0
			Temp	57	55

CALL POINTS						RAPTOR RESPONSE													
		Time				Raptor Info					Bearing		Weather			UTM coordinates of observer			UTM Coordinates of Raptor	
Call Pt.	Surv. Method	Start	End	Total Minutes	Call Method	A/V	Sex	Age	Species	Time	1st	2nd	Wind	Cloud %	Precip	East	North	Dist. From	East	North
FC 5a	2	1945	2000	15	1															
FC 5b	2	2015	2030	15	1															
FC 6	2	2037	2052	15	1															

Comments:

Second attempt at Panhandle subunit was successful (wasn't able to complete at 0400 due to weather so switched to ToS for AM survey.

At Call Point FC 5a, highway city noise was audible.

At Call Point FC 5b, city noise was present, 60dB level on average.

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*Survey Meth: Leap (1), Fixed (2), Continuous (3) Call Method: Recording (1), Vocalization (2), Combination (3) 01/31/2024

Describe Calling Points / Routes:

Subunit: Panhandle subunit

Pan handle surveys started by hiking in along the 3-mile MacNiell Trail from Old Stage Coach Rd. This trail was formerly a U.S. Forest Service- maintained trail but is currently no longer under USFS managemnt. Rather, the Broadmoore Hotel (Cloud Camp) maintains this trail via a Special Use Permit for their guests. Surveyors hiked the trail over the ridgeline and dropped into the Fishers Canyon Open Space on the southwestern side of the Panhandle subunit. From here, surveyors proceeded to FC5a, arriving approximately 1 hour before sunset. After surveying at this point, surveyors proceeded north to south to capture FC5b and 6.

General Habitat Comments:		**Trees Present**
Vegetation was mixed conifer with some aspen as well as Ponderora. Unit has areas of	x	Ponderosa
dense, closed vegetation (FC5b and FC6) and other open areas of ponderosa and exposed		Pinyon / Juniper
rock cliffs or outcroppings (i.e. FC5a), depending on slope exposure, etc.		Maple
		Gambel Oak
		Oak (other)
	x	Douglas - Fir
	x	Spruce/Fir
		Alder
		Walnut
		Boxelder
		Cottonwood
		Sycamore
		Riparian

Other Comments:

All three points were selected to direct playback audio into Fishers Canyon proper. While the survey sites did not contain any riparian vegeation, Fishers Canyon contains a mix of riparian vegetation and aspens in the confluence of the Turkey Foot gulches, where there is also running surface water into July, fed by onsite seeps.

Appendix C – Photo Log

Fishers Canyon Open Space Year 1 MSO Protocol Surveys

Photo 1: Fishers Canyon survey point 1, looking south.

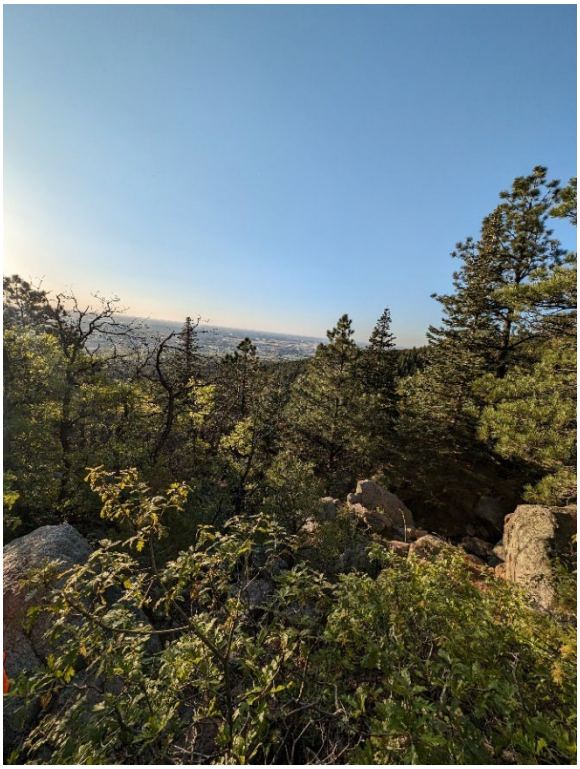

Photo 2: Fishers Canyon survey point 1, looking southeast.

Photo 3 : Fishers Canyon survey point 1, looking southwest.

Photo 4: Fishers Canyon survey point 1, looking west.

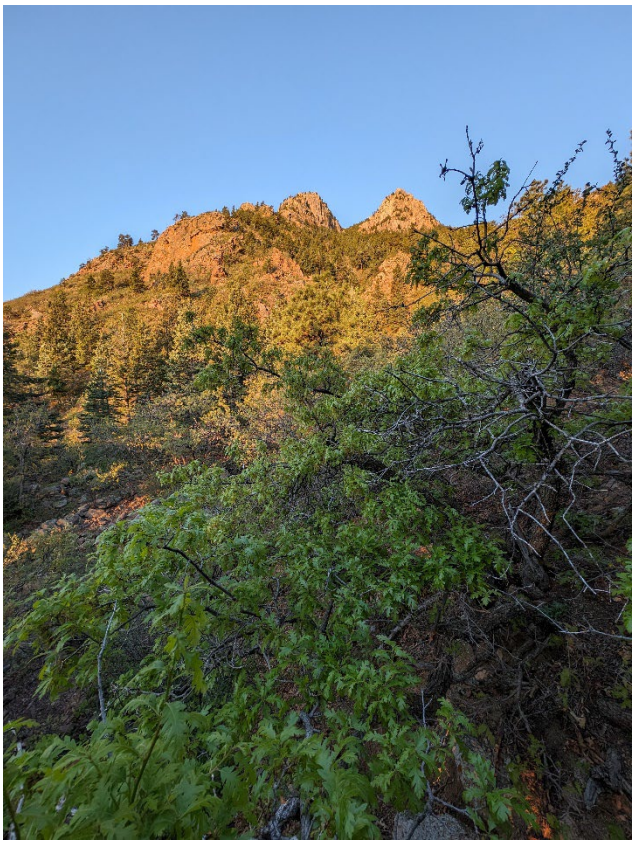

Photo 5: Fishers Canyon survey point 2, looking southwest toward "owl alley".

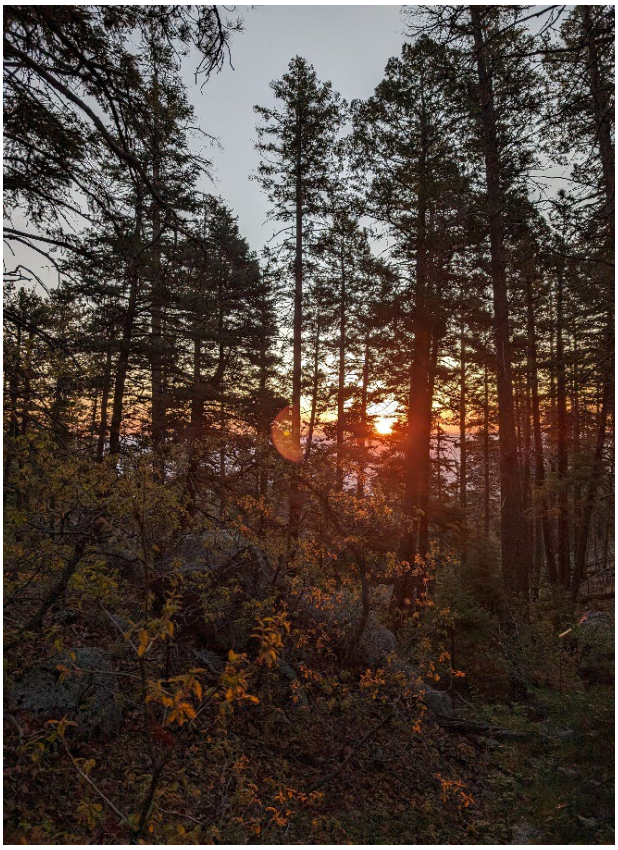

Photo 6: Fishers Canyon survey point 3, looking east.

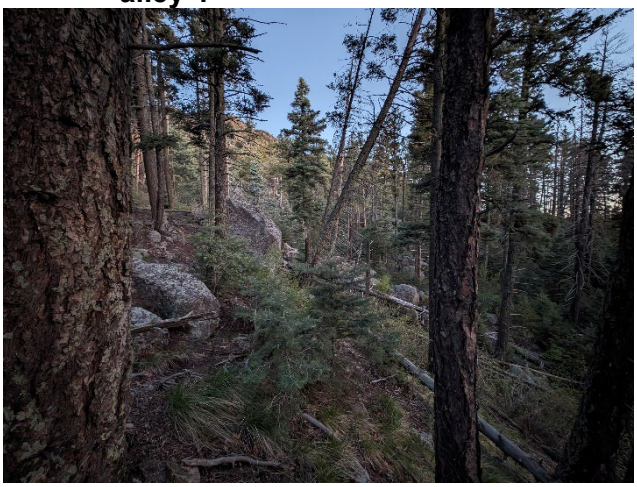

Photo 7: Fishers Canyon survey point 3, looking south.

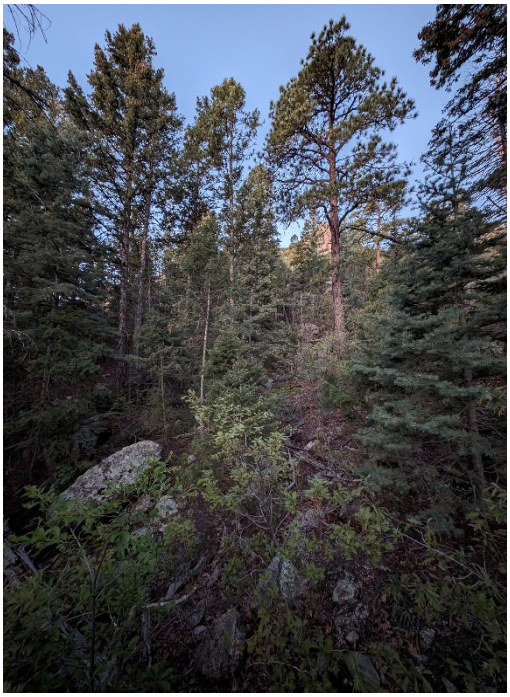

Photo 8: Fishers Canyon survey point 3, looking north.

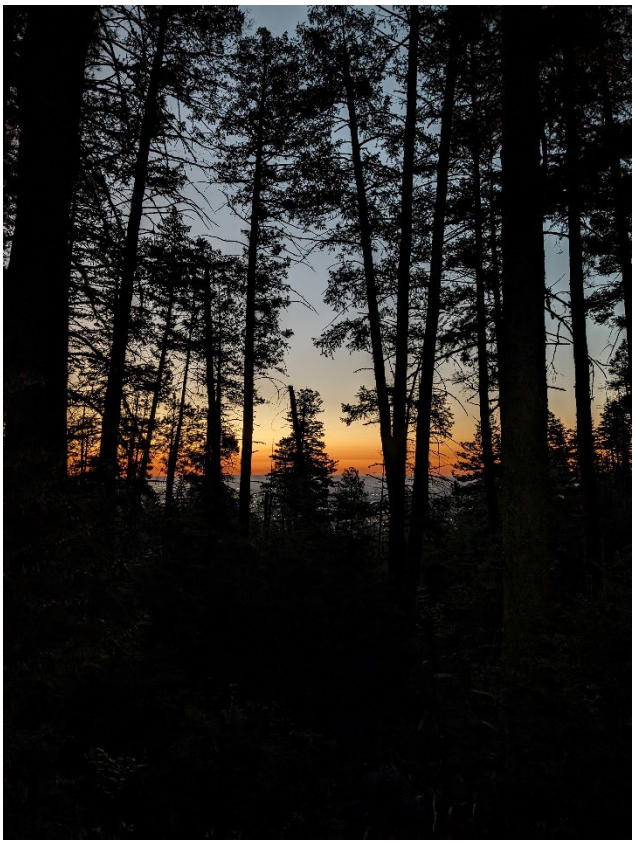

Photo 9: Fishers Canyon survey point 3, looking east.

Photo 10: Fishers Canyon survey point 4 looking north.

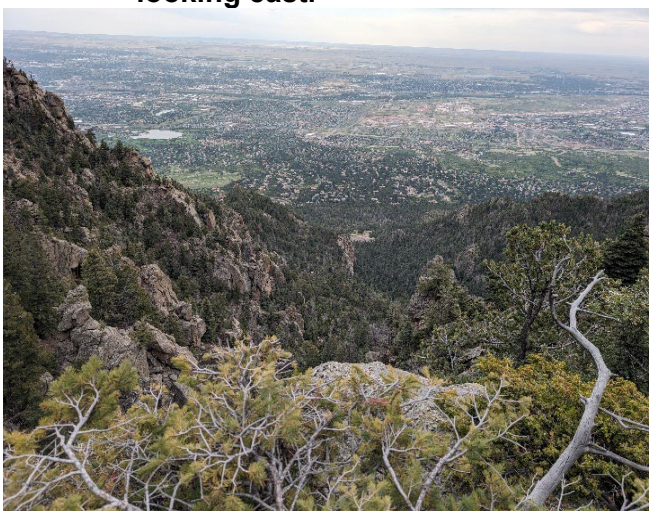

Photo 11: Fishers Canyon survey point 5a, looking east.

Photo 12: Fishers Canyon survey point 5a, looking northeast.

Photo 13: Fishers Canyon survey point 5b, looking east.

Photo 14: Fishers Canyon survey point 6, looking east.

Photo 135: Fishers Canyon survey point 6, looking southeast.

Photo 16: Fishers Canyon survey point 8a, looking east.

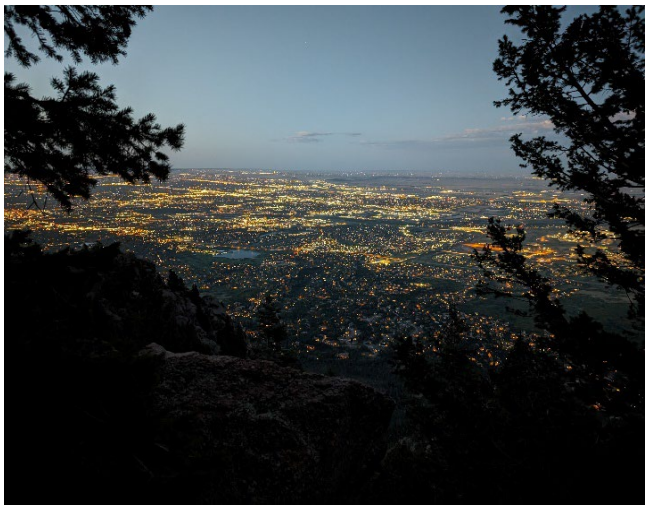

Photo 17: Fishers Canyon survey point 8a, looking east.

Photo 18: Fishers Canyon survey point 8a, looking northeast.

Photo 19: Fishers Canyon survey point 8b, looking north.

Photo 20: Fishers Canyon survey point 7, looking northeast.

Photo 21: Fishers Canyon survey point 7, looking east.

Photo 22: Toe of theSlope Subunit, looking west towards Antenna Farm Subunit.

Photo 23: Panhandle Subunit, looking south toward the Antenna Farm subunit.

Photo 24: USFS lands from backside of ridge from Fishers Canyon (offsite of project area for regional perspective).