# BIOLOGICAL SURVEY REPORT

**Daneros Project**
**San Juan County, Utah**

Prepared for
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## INTRODUCTION

This Biological Survey Report (BSR) evaluates the potential effects of a uranium mining project known as the Daneros Project (Proposed Action) proposed by Utah Energy Corporation on federally threatened or endangered species listed under the Endangered Species Act of 1973, as amended et seq. (ESA), as well as other special status species designated by the State of Utah and the Bureau of Land Management (BLM). The BSR results will evaluate whether any such listed species or their critical habitats are likely to be affected by the Proposed Action. This report will also be used in determining whether formal consultation with the U.S. Fish and Wildlife Service (USFWS) is necessary, per 50 Code of Federal Regulations (CFR) 402.12.

Section 7 of the ESA requires federal agencies to ensure that actions authorized, funded, or carried out by federal agencies are not likely to jeopardize the continued existence of proposed, candidate, threatened, or endangered species or result in the destruction or adverse modification of their critical habitats. This process ensures that listed, proposed, and candidate species receive full consideration in the decision-making process prior to implementing the Proposed Action. This report is prepared in accordance with the BLM's biological survey guidelines and is intended to provide the agency with information to make determinations of effect on species with special conservation status.

## PROJECT DESCRIPTION

The proposed project would entail the construction, operation, and maintenance of an ore pad, air vent area, waste area, portal and service areas. The proposed project area (PPA) is located in the central portion of the Colorado Plateau in southeastern Utah. It is approximately 10 miles southwest of Fry Canyon, Utah. (Appendix A, Figure 1). The PPA is located completely within San Juan County and on BLM lands with federal minerals administered by the BLM Monticello Field Office (MFO). The PPA can be found on the Fry Spring, Utah (1983) U.S. Geological Survey (USGS) 7.5' topographic quadrangle maps (Geo Community 2008) (Appendix A, Figure 2). The legal description of the PPA is Section 06, Township 37 South, Range 16 East. In general, the PPA would be accessed west of Utah State Highway 95 from existing improved roads.

## METHODOLOGY

Prior to field reconnaissance, SWCA Environmental Consultants (SWCA) compiled a list of federally listed and candidate species, species listed by the State of Utah, and BLM Special Management Species with the potential to occur in San Juan County, Utah (USFWS 2008, UCDC 2008).

SWCA conducted a biological survey of the PPA on May 25 - 26, 2008. The biological survey consisted of walking the PPA to collect data for habitat characterizations and survey for Cronquist's milkvetch (*Astragalus cronquistii*). The surrounding areas were visually inspected with binoculars for nests, raptors, or past signs of raptor use, and bighorn sheep. In addition, two evening surveys for bats were conducted in the PPA, focusing on existing mine shaft areas. Weather conditions were warm, clear, and mostly sunny with temperatures near 70°F. Surveys noted vegetation and wildlife present in the PPA and in the vicinity. Digital photographs are included as examples of the existing condition at the proposed project area and the most common vegetative types present (Appendix B).

## ACTION AREA

### Physical Description

The PPA is located below Wingate Mesa, within Bullseye Canyon. The topographic pattern of the general area is varied, consisting of defined ridges and deep, relatively incised valleys and canyons. Soil compositions found in the PPA include contents of very stony sandy clay loam and extremely bouldery loam. The most prevalent soil type in the PPA is the Strych-Skos-Badland complex with Myton family-Skos-Rock outcrop association found just outside the PPA (Natural Resources Conservation Service [NRCS] 2008).

The Strych-Skos-Badland complex consists of three components, two of which are described here (Badland is not considered a major soil component). The Strych component is found on slopes from 30 to 50 percent on structural benches. The parent material consists of alluvium derived from sandstone and shale and/or colluvium derived from sandstone and shale. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained and water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low as is the shrink-swell potential. This soil is not flooded or ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent and the calcium carbonate equivalent within 40 inches, typically, does not exceed 20 percent.

The Skos component is also found at slopes from 30 to 50 percent on structural benches. The parent material consists of colluvium derived from interbedded sandstone and shale and/or residuum weathered from interbedded sandstone and shale. Depth to a root restrictive layer, bedrock, lithic, is 4 to 20 inches. The natural drainage class is well drained and water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is very low with a moderate shrink-swell potential; this soil is not flooded or ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent and the calcium carbonate equivalent within 40 inches, typically, does not exceed 8 percent. The soil has a slightly sodic horizon within 30 inches of the soil surface.

The Myton family-Skos-Rock outcrop association also consists of three components, one of which is described below (rock outcrop is also not considered a major soil component and the Skos component was described above). The Myton family component is found on slopes from 50 to 70 percent on hill slopes and ledges. The parent material consists of colluvium derived from sandstone and shale. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained and water movement in the most restrictive layer is high. Available water to a depth of 60 inches is low as is the shrink-swell potential. This soil is not flooded or ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent and the calcium carbonate equivalent within 40 inches, typically, does not exceed 10 percent.

**Biological Description**

There are six major vegetation communities that exist within the PPA: Colorado Plateau Piñon-Juniper Woodland; Colorado Plateau Piñon-Juniper Shrubland; Colorado Plateau Mixed Bedrock Canyon and Tableland; Colorado Plateau Blackbrush-Mormon tea Shrubland; Inter-Mountain Basins Mixed Salt Desert Scrub; and Inter-Mountain Basins Big Sagebrush Shrubland. Descriptions and locations of vegetation cover types were derived from the Southwest Regional Gap Analysis Program (USGS 2004).

Vegetation within the PPA is comprised mainly of piñon-juniper woodland and shrubland, at about 20 percent cover. The understory consists of patches of four-winged saltbrush (*Atriplex canescens)*, shadescale saltbrush (*Atriplex confertifolia*), cliffrose (*Purshia stansburiana)*, yellow rabbitbrush (*Chrysothamnus viscidiflorus*), rubber rabbitbrush *(Ericameria nauseosa)*, and mountain mahogany (*Cercocarpus montanus*) with sparse cacti, forbs, and graminoids. A list of vegetation observed at the proposed sight by an SWCA biologist on May 25 - 26, 2008 is located in Appendix C.

<u>Colorado Plateau Piñon-Juniper Woodland</u>
This ecological system occurs in dry mountains and foothills of the Colorado Plateau region including the Western Slope of Colorado to the Wasatch Range, south to the Mogollon Rim and east into the northwestern corner of New Mexico. It is typically found at lower elevations ranging from 1500-2440 m. These woodlands occur on warm, dry sites on mountain slopes, mesas, plateaus, and ridges. Severe climatic events occurring during the growing season, such as frosts and drought, are thought to limit the distribution of piñon-juniper woodlands to relatively narrow altitudinal belts on mountainsides. Soils supporting this system vary in texture ranging from stony, cobbly, gravelly sandy loams to clay loam or clay. Piñon pine *(Pinus edulis)* and/or Utah juniper *(Juniperus osteosperma)* dominate the tree canopy. In the southern portion of the Colorado Plateau in northern Arizona and northwestern New Mexico, one-seed juniper *(Juniperus monosperma)* and hybrids of juniper may dominate or codominate the tree

canopy. Rocky Mountain juniper *(Juniperus scopulorum)* may codominate or replace Utah juniper at higher elevations. Understory layers are variable and may be dominated by shrubs, graminoids, or be absent. Associated species include greenleaf manzanita *(Arctostaphylos patula)*, big sagebrush *(Artemisia tridentate)*, littleleaf mountain mahogany *(Cercocarpus intricatus)*, mountain mahogany *(Cercocarpus montanus),* blackbrush (*(Coleogyne ramosissima)*, stansbury cliffrose *(Purshia stansburiana)*, antelope bitterbrush *(Purshia tridentate),* Gambel oak *(Quercus gambelii)*, blue gramma *(Bouteloua gracilis)*, James' galleta *(Pleuraphis jamesii)*, or mutton grass *(Poa fendleriana)*. This system occurs at higher elevations than Great Basin Piñon-Juniper Woodland and Colorado Plateau shrubland systems where sympatric.

Colorado Plateau Piñon-Juniper Shrubland

This ecological system is characteristic of the rocky mesa tops and slopes on the Colorado Plateau, but these stunted tree shrublands may extend further upslope along the low-elevation margins of taller piñon -juniper woodlands. Sites are drier than Colorado Plateau Piñon-Juniper Woodland. Substrates are shallow/rocky and shaley soils at lower elevations (1200-2000 m). Sparse examples of the system grade into Colorado Plateau Mixed Bedrock Canyon and Tableland. The vegetation is dominated by dwarfed (usually <3 m tall) piñon pine and/or Utah juniper trees forming extensive tall shrublands in the region along low-elevation margins of piñon-juniper woodlands. Other shrubs, if present, may include black sagebrush *(Artemisia nova)*, Wyoming big sagebrush *(Artemisia tridentata ssp. wyomingensis)*, yellow rabbitbrush *(Chrysothamnus viscidiflorus)*, or blackbrush. Herbaceous layers are sparse to moderately dense and typically composed of xeric graminoids.

Colorado Plateau Mixed Bedrock and Tableland

The distribution of this ecological system is centered on the Colorado Plateau where it is comprised of barren and sparsely vegetated landscapes (generally <10% plant cover) of steep cliff faces, narrow canyons, and open tablelands of predominantly sedimentary rocks, such as sandstone, shale, and limestone. Some eroding shale layers similar to Inter-Mountain Basins Shale Badland may be interbedded between the harder rocks. The vegetation is characterized by very open tree canopy or scattered trees and shrubs with a sparse herbaceous layer. Common species include piñon pine, ponderosa pine *(Pinus ponderosa)*, juniper spp., blackbrush, and other short-shrub and herbaceous species, utilizing moisture from cracks and pockets where soil accumulates.

Colorado Plateau Blackbrush-Mormon-tea Shrubland

This ecological system occurs in the Colorado Plateau on benchlands, colluvial slopes, pediments or bajadas. Elevation ranges from 560-1650 m. Substrates are shallow, typically calcareous, non-saline and gravelly or sandy soils over sandstone or limestone bedrock, caliche or limestone alluvium. It also occurs in deeper soils on sandy plains where it may have invaded desert grasslands. The vegetation is characterized by extensive open shrublands dominated by blackbrush often with Mormon tea *(Ephedra viridis)*, Torrey's jointfir *(Ephedra torreyana),* or Grayia spinosa (spiny hospage). Sandy portions may include sand sagebrush *(Artemisia filifolia)* as codominant. The herbaceous layer is sparse and composed of graminoids such as Indian ricegrass *(Achnatherum hymenoides)*, James' galleta, or sand dropseed *(Sporobolus cryptandrus)*.

Inter-Mountain Basins Mixed Salt Desert Scrub

This extensive ecological system includes open-canopied shrublands of typically saline basins, alluvial slopes and plains across the Intermountain western U.S. This type also extends in limited distribution into the southern Great Plains. Substrates are often saline and calcareous, medium- to fine-textured, alkaline soils, but include some coarser-textured soils. The vegetation is characterized by a typically open to moderately dense shrubland composed of one or more Atriplex species such as shadescale saltbush *(Atriplex confertifolia),* four-winged saltbush *(Atriplex canescens),* cattle saltbush *(Atriplex polycarpa)*, or spinescale saltbush *(Atriplex spinifera).* Other shrubs present to codominate may include Wyoming big sagebrush, yellow rabbitbrush, rubber rabbitbrush *(Ericameria nauseosa),* Nevada jointfir *(Ephedra nevadensis*), spiny hospage, winterfat *(Krascheninnikovia lanata)*, wolfberry (*Lycium spp.),* bud sagebrush (*Picrothamnus desertorum)*, or horsebrush (*Tetradymia spp*). Greasewood *(Sarcobatus vermiculatus)* is generally absent, but if present does not codominate. The herbaceous layer varies from sparse to moderately dense and is dominated by perennial graminoids such as Indian ricegrass, blue gramma, thickspike wheatgrass (*Elymus lanceolatus ssp. Lanceolatus*), western wheatgrass

(*Pascopyrum smithii)*, James' galleta, big galleta (*Pleuraphis rigida)*, Sandberg bluegrass (*Poa secunda)*, or alkali sacaton (*Sporobolus airoides)*. Various forbs are also present.

Inter-mountain Basins Big Sagebrush Shrubland

This ecological system occurs throughout much of the western U.S., typically in broad basins between mountain ranges, plains and foothills between 1500 and 2300 m elevation. Soils are typically deep, well-drained and non-saline. These shrublands are dominated by basin big sagebrush *(Artemisia tridentata ssp. Tridentate)* and/or Wyoming big sagebrush. Scattered juniper spp., greasewood, and saltbush spp. may be present in some stands. Rubber rabbitbrush, yellow rabbitbrush, antelope bitterbrush, or mountain snowberry *(Symphoricarpos oreophilus)* may codominate disturbed stands. Perennial herbaceous components typically contribute less than 25% vegetative cover. Common graminoid species include Indian ricegrass, blue gramma, thickspike wheatgrass, Idaho fescue *(Festuca idahoensis)*, needle and thread *(Hesperostipa comata)*, basin wildrye *(Leymus cinereus)*, James' galleta, western wheatgrass, Sandberg bluegrass, or bluebunch wheatgrass *(Pseudoroegneria spicata)*.

## SURVEY RESULTS

### Federally Listed Species

Threatened, endangered, and candidate species identified by the USFWS that are known to, or have the potential to, occur in San Juan County are listed in Table 1. There are nine species listed as Threatened or Endangered and one species listed as a Candidate. Species accounts with habitat requirements are provided immediately after Table 1. Field investigations evaluated habitat requirements for these species and in the professional opinion of SWCA, none of the ten federally listed species have the potential to occur in the PPA.

**Table 1. Federally Listed and Candidate Species that are Known to Occur or Have the Potential to Occur in San Juan County, Utah (USFWS 2008).**

| Common Name | Scientific Name | Federal Status | Potential to Occur in the PPA |
|---|---|---|---|
| Black-footed ferret | *Mustela nigripes* | Endangered[1] | No |
| Bonytail | *Gila elegans* | Endangered | No |
| California condor | *Gymnogys californianus* | Endangered[1] | No |
| Colorado pikeminnow | *Ptychocheilus lucius* | Endangered | No |
| Humpback chub | *Gila cypha* | Endangered | No |
| Mexican spotted owl | *Strix occidentalis lucida* | Threatened | No |
| Navajo sedge | *Carex specuicola* | Threatened | No |
| Razorback sucker | *Xyrauchen texanus* | Endangered | No |
| Southwestern willow flycatcher | *Empidonax traillii extimus* | Endangered | No |
| Western Yellow-billed cuckoo | *Coccyzus americanus occidentailis* | Candidate | No |

[1] Experimental Population, Non-Essential

Black-footed Ferret (*Mustela nigripes*)

The black-footed ferret is listed as endangered by the USFWS, with non-essential experimental status given to re-introduced populations (USFWS 2008). Black-footed ferrets are inhabitants of prairie dog towns. Individuals have been released at several sites in the western United States, including the Coyote Basin area of Uintah County, Utah in late 1999. In addition to this reintroduced population, unconfirmed sightings of naturally occurring ferrets persist throughout eastern Utah (Utah Conservation Data Center [UCDC] 2008). No critical habitat for this species is designated in the PPA.

Bonytail *(Gila elegans)*

The bonytail is a rare fish originally native to the Colorado River system. The near extinction of the bonytail can be traced to flow regulation, habitat loss/alteration, and competition with/predation by exotic fishes. Bonytail are now Federally listed as endangered, and efforts to re-establish the species are underway (UCDC 2008). No habitat for the Bonytail exists within the PPA.

California Condor (*Gymnogys californianus)*
The California condor is a Federally listed species, with non-essential experimental status given to re-introduced populations (USFWS 2007). In Utah, sightings were historically rare, noted only twice by pioneers in the 1800s, but sightings of birds that were released in northern Arizona have been made almost statewide in the late 1990s (UCDC 2008). Condors are extending the length of time they spend in areas away from the release site, and are ever more proficient in finding carrion. A number of birds traveled in summer 2006 to Utah to reside in the hills just outside Zion National Park. Condors prefer mountains, gorges, and hillsides, which create updrafts, thus providing favorable soaring conditions (UCDC 2008). Though it is very unlikely, habitat for the released California condors could potentially be found within the PPA.

Colorado pikeminnow (*Ptychocheilus lucius*) and razorback sucker (*Xyrauchen texanus*)
The Colorado pikeminnow and razorback sucker are endemic fish species that once thrived in the Colorado River system. Dam installation and the introduction of non-native fish changed the river environment and put these fish at risk (Upper Colorado River Endangered Fish Recovery Program [UCREFRP] 2006). Critical habitat has been designated for these Colorado River fish species. No habitat for the Colorado pikeminnow and razorback sucker exists within the proposed PPA.

Humpback Chub (*Gila cypha)*
The humpback chub is listed as a Federally Endangered species by the USFWS (USFWS 2007). It lives primarily in canyons with swift currents and white water. Historically, it inhabited canyons of the Colorado River and four of its tributaries: the Green, Yampa, White and Little Colorado rivers. Now, there are two populations near the Colorado/Utah border - one at Westwater Canyon in Utah and one in an area called Black Rocks, in Colorado (UCREFRP 2006). Flow alterations within historical habitat have changed the turbidity, temperature, and flow, which has negatively impacted the species. No habitat for the Humpback chub exists within the PPA. .

Mexican Spotted Owl (*Strix occidentalis lucida*)
The Mexican spotted owl is Federally listed as threatened by the USFWS and is protected under the MBTA (USFWS 2008; MBTA 1918). Mexican spotted owls are rare residents of southern and eastern Utah, residing in steep-walled canyons of the Colorado Plateau ecoregions and adjacent portions of the Utah Mountains ecoregion (Howe 1998). Primary Mexican spotted owl habitat consists of mixed conifer dominated by Douglas-fir (*Pseudotsuga menziesii*), pine, or true fir (*Abies*) and pine-oak forests. Secondarily selected habitats include such features as steep, narrow canyons with cliffs and a perennial water source. Such canyon habitats generally include conifer or riparian forests, or clumps of trees, but also may be sparsely vegetated. Contiguous forests comprised of old-growth forests or forests that have more complex structure than surrounding forests are strongly selected for (Gutierrez et al. 1995). No critical habitat for this species is designated in the PPA.

Southwestern Willow Flycatcher (*Empidonax traillii extimus*)
The Southwestern willow flycatcher is listed as endangered by both the USFWS and is protected under the MBTA (USFWS 2008, MBTA 1918). The species is rare in southern Utah, with the Virgin River supporting most of the breeding flycatchers within the state (Sogge 2003). The Southwestern willow flycatcher breeds in riparian habitats along rivers, streams, and other wetlands. These habitats are typically dominated by cottonwoods (*Populus* spp.), often with an understory of small trees or tall shrubs and surface water nearby. No critical habitat for this species is designated in the PPA.

Yellow-billed Cuckoo (*Coccyzus americanus occidentalis*)
The Western yellow-billed cuckoo is listed as a candidate species by the USFWS and is protected under the MBTA (USFWS 2008; MBTA 1918). This species breeds in riparian woodlands and similar habitats at lower (2,800 feet to 5,500 feet) to middle (5,000 feet to 7,500 feet) elevations (Hubbard 1978). Historically, cuckoos were probably common to uncommon summer residents in Utah. The current

distribution of yellow-billed cuckoos in Utah is poorly understood, though they appear to be an extremely rare breeder in lowland riparian habitats statewide (UCDC 2008, Benton 1987). Population declines resulting from loss or disturbance of riparian habitat have been consistently reported in the West for this species (Finch 1992). The greatest factors affecting the yellow-billed cuckoo have been the invasion of exotic woody plants into southwest riparian systems, and clearing of riparian woodlands for agriculture, fuel, development, and attempts at water conservation (Howe 1986). There are no dense riparian thickets in or adjacent to the PPA to support this species.

**MFO Special Management Species**

The BLM MFO has identified twenty-four species with special management status. Of these, six have the potential to occur in the PPA and surrounding area (Table 2). Areas within and surrounding the PPA provide potential roosting habitat for the Big free-tailed bat (*Nyctinomops macrotis*), Fringed myotis (*Myotis thysanodes*), Spotted bat (*Euderma maculatum*), and Townsend's big-eared bat (*Corynorhinus townsendii*). Suitable habitat also exists for the Desert night lizard(*Xantusia vigilis*) and Kit fox (*Vulpes macrotis*).

**Table 2. Special Management Species Designated by the BLM MFO**

| Species | Conservation Status | Habitat Associations | Potential to Occur in the PPA |
|---|---|---|---|
| | UT | | |
| Allen's big-eared bat (*Idionycteris phyllotis*) | SPC | Occurs primarily in forested mountain areas. | No. Suitable habitat for this species does not occur in the PPA. |
| American white pelican (*Pelecanus erythrorhynchos*) | SPC | Lacustrine areas. | No. Suitable habitat for this species does not occur in the PPA. |
| Arizona toad (*Bufo microscaphus*) | SPC | Lowland riparian habitat. | No. Suitable habitat for this species does not occur in the PPA. |
| Big free-tailed bat (*Nyctinomops macrotis*) | SPC | Inhabits rugged, rocky terrain and typically roosts in rock crevices. | Yes. Suitable habitat for this species occurs throughout the PPA. |
| Bobolink (*Dolichonyx oryzivorus*) | SPC | Restricted to wet meadow and flooded pasture habitats. | No. Suitable habitat for this species does not occur in the PPA. |
| Burrowing owl (*Athene cunicularia hypugaea*) | SPC | Lives in dry, open areas with no trees and short grass, often in association with prairie dog towns. | No. There are no prairie dog towns in the vicinity of the PPA. |
| California floater (*Anodonta californiensis*) | SPC | Lake and pond habitats. | No. Suitable habitat for this species does not occur in the PPA. |
| Common chuckwalla (*Sauromalus ater*) | SPC | Occurs in desert communities of blackbrush and salt desert scrub with large rocks and boulders. | No. Desert vegetation and rocky hillsides occur in the PPA to suit this species. However, it is not known to occur in San Juan County. |
| Desert night lizard (*Xantusia vigilis*) | SPC | Found in arid and semiarid rocky areas. | Yes. Suitable habitat for this species exists in the PPA.. |

| | | | |
|---|---|---|---|
| Ferruginous hawk (*Buteo regalis*) | SPC | Relies on grassland or shrubsteppe terrain and, in many parts of Utah, nests on the ecotone between these habitats and piñon-juniper woodlands. | No. There are no open areas within the PPA that could provide foraging habitat. Piñon-juniper woodlands occur in the PPA, but there is no foraging habitat in close proximity. |
| Fringed myotis (*Myotis thysanodes*) | SPC | Commonly roosts in mine tunnels, caves, and buildings. | Yes. There are multiple mine shafts in the PPA. |
| Greater sage-grouse (*Centrocercus urophasianus*) | SPC | Uses sagebrush-grassland habitats and nests on the ground. | No. Suitable habitat for this species does not occur in the PPA. |
| Gunnison's prairie dog (*Cynomys gunnisoni*) | SPC | Inhabit grasslands, semidesert and montane shrublands. | No. Suitable habitat for this species does not occur in the PPA. |
| Kit fox (*Vulpes macrotis*) | SPC | A desert-adapted fox, it is found exclusively in arid and semi-arid landscapes with soils suitable for denning. | Yes. Suitable habitat for this species occurs in the PPA. However, no dens were observed during the survey. |
| Lewis's woodpecker (*Melanerpes lewis*) | SPC | Habitat includes ponderosa pine and open riparian areas. | No. Suitable habitat for this species does not occur in the PPA. |
| Long-billed curlew (*Numenuis americanus*) | SPC | Nests in dry grasslands where sufficient cover and abundant prey exists. | No. Suitable habitat for this species does not occur in the PPA. |
| Mogollon vole (*Microtus mogollonensis*) | SPC | Inhabit thickets of *Ceanothus*, *Rosa, Symphoricarpos*, and *Arctostaphylos* shrubs, as they require thick stands of brush. | No. Suitable habitat for this species does not occur in the PPA. |
| Short-eared owl (*Asio flammeus*) | SPC | Prefers open country and is a ground-nesting species that occupies grasslands and tundra. | No. Suitable habitat for this species does not occur in the PPA. |
| Silky pocket mouse (*Perognathus flavus*) | SPC | Inhabits semidesert arid grasslands with rocky or loamy soils. | No. Suitable habitat for this species does not occur in the PPA. |
| Smooth greensnake (*Opheodrys vernalis*) | SPC | Habitat in Utah includes meadows and stream margins. | No. Suitable habitat for this species does not occur in the PPA. |
| Spotted bat (*Euderma maculatum*) | SPC | Found in dry, rough, desert terrain. Roosts are typically in rock crevices or under loose rocks or boulders. | Yes. Suitable habitat for this species occurs throughout the PPA. |
| Three-toed woodpecker (*Picoides tridactylus*) | SPC | Coniferous forests with a significant percentage of dead trees. | No. Suitable habitat for this species does not occur in the PPA |
| Townsend's big-eared bat (*Corynorhinus townsendii*) | SPC | Roosts in abandoned mines and natural caverns. | Yes. There are multiple mine shafts in the PPA. |
| Yavapai mountainsnail | SPC | Found in aspens and in | No. Suitable habitat for this |

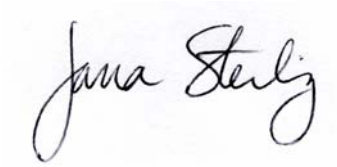
| | | | |
|---|---|---|---|
| (*Oreohelix yavapai*) | | rocky habitat in the vicinity of Navajo Mountain and the Abajo Mountains. | species does not occur in the PPA |

**CERTIFICATION**

Within the limitations of schedule, budget, and scope of work, SWCA warrants that this study was conducted in accordance with accepted environmental science practices, including the technical guidelines, evaluation criteria, and species' listing statuses in effect at the time this evaluation was performed. The results and conclusions of this report represent the best professional judgment of SWCA scientists, and are based on information provided by the project proponent and that obtained from agencies and other sources during the course of the study.

In the professional opinion of SWCA, the proposed action would not violate any provisions of the ESA.

Signature



18 June 2008

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## LITERATURE CITED


Benton 1987. Behle et al. Walters 1983. Text taken from Parrish, J. R., F. P. Howe, and R. E. Norvell. 1999. Utah Partners in Flight draft conservation strategy. UDWR publication number 99-40. Utah Partners in Flight Program, Utah Division of Wildlife Resources, Salt Lake City.

Finch, Deborah M. August 1992. Threatened, Endangered, and Vulnerable Species of Terrestrial Vertebrates in the Rocky Mountain Region. USDA Forest Service General Technical Report RM-215.

Geo Community. 2008. Website for USGS 1:24,000 topographic maps. Fry Spring publication date 1983.

Gutierrez, R.J., A.B. Franklin, and W.S. Lahaye. 1995. Spotted Owl. In: The Birds of North America, No.179, 1995. 28pp. A.Poole and F.Gill, eds.

Howe, Frank. 1998. Endangered and Threatened Animals of Utah. Utah State University Extension Service

Howe, William H. December 22, 1986. Status of the Yellow-Billed Cuckoo (Coccyzus americanus) in New Mexico. New Mexico Department of Game and Fish.

Hubbard, J.P. 1978. Revised checklist of the birds of New Mexico. New Mexico Ornithological Society Publication No 6.

Migratory Bird Treaty Act of 1918 (MBTA). 16 U.S.C. §§703-712 July 3, 1918; As Amended 1936, 1960, 1968, 1969, 1974, 1978, 1986, and 1989. United States Code. http://laws.fws.gov/lawsdigest/migtrea.html

Natural Resources Conservation Service (NRCS). 2008. Web Soil Survey of San Juan County, New Mexico. http://websoilsurvey.nrcs.usda.gov/app/. Accessed January 2008.

Sogge, Mark. K., P. Dockens, S.O. Williams, B. Kus, S. J. Sferra. 2003. Southwestern Willow Flycatcher Breeding Site and Territory Summary. USGS.

United States Fish and Wildlife Service (USFWS). 2007. Endangered species list for San Juan County, Utah. http://www.fws.gov/mountain-prairie/ut.html/. Accessed June 2008.

United States Geological Survey (USGS) National Gap Analysis Program. 2004. Provisional Digital Land Cover Map for the Southwestern United States. Version 1.0. RS/GIS Laboratory, College of Natural Resources, Utah State University.

Upper Colorado River Endangered Fish Recovery Program [UCREFRP] 2006. UCREFRP Home Page. http://www.fws.gov/coloradoriverrecovery.htm (Last update: 14 December 2006).

Utah Conservation Data Center (UCDC) 2008. State of Utah Natural Resources. UCDC Home Page. http://dwrcdc.nr.utah.gov/ucdc/default.asp. Accessed June 2008.

# BSR – Appendix A
# Project Maps

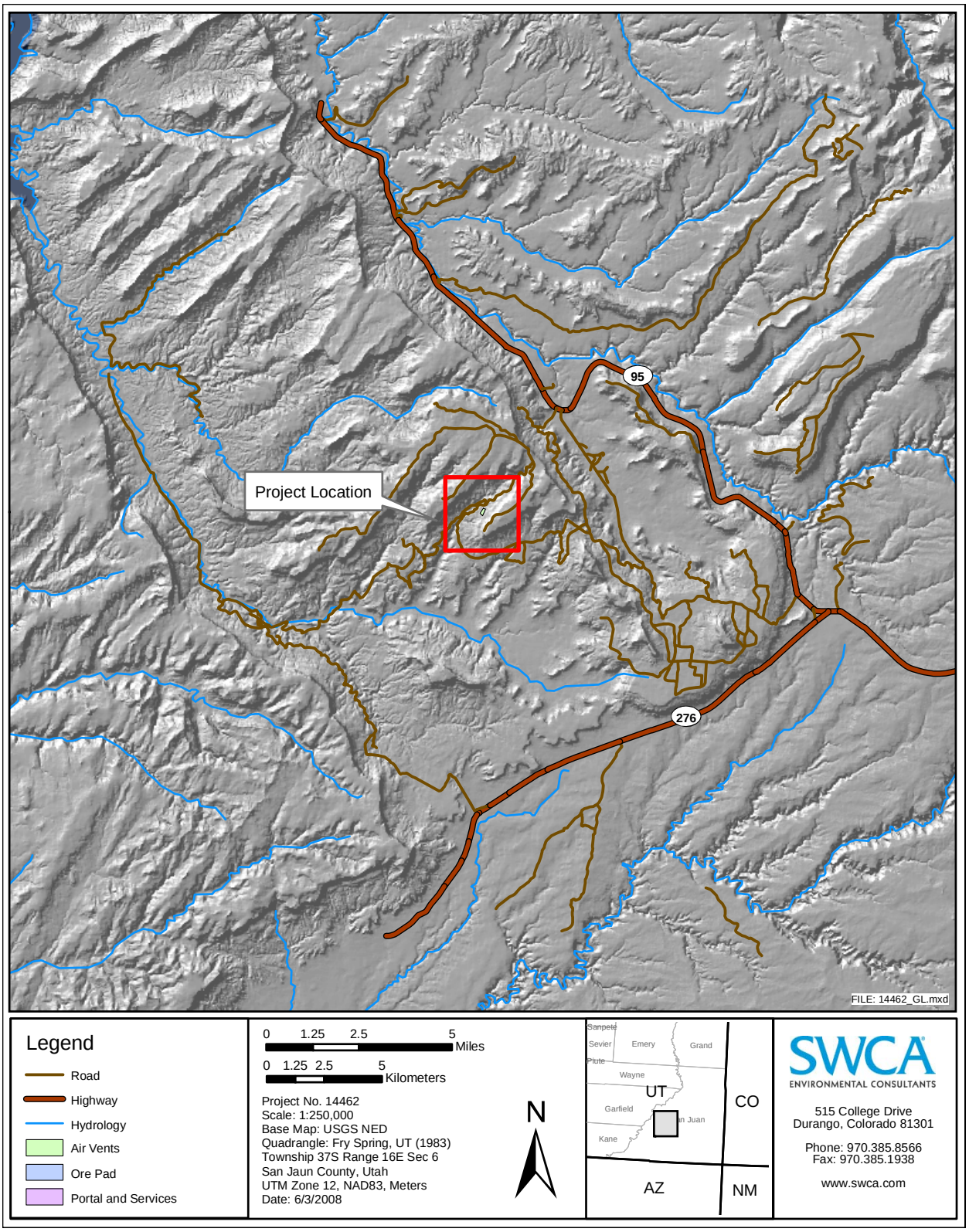


**Figure 1. General Location Map**

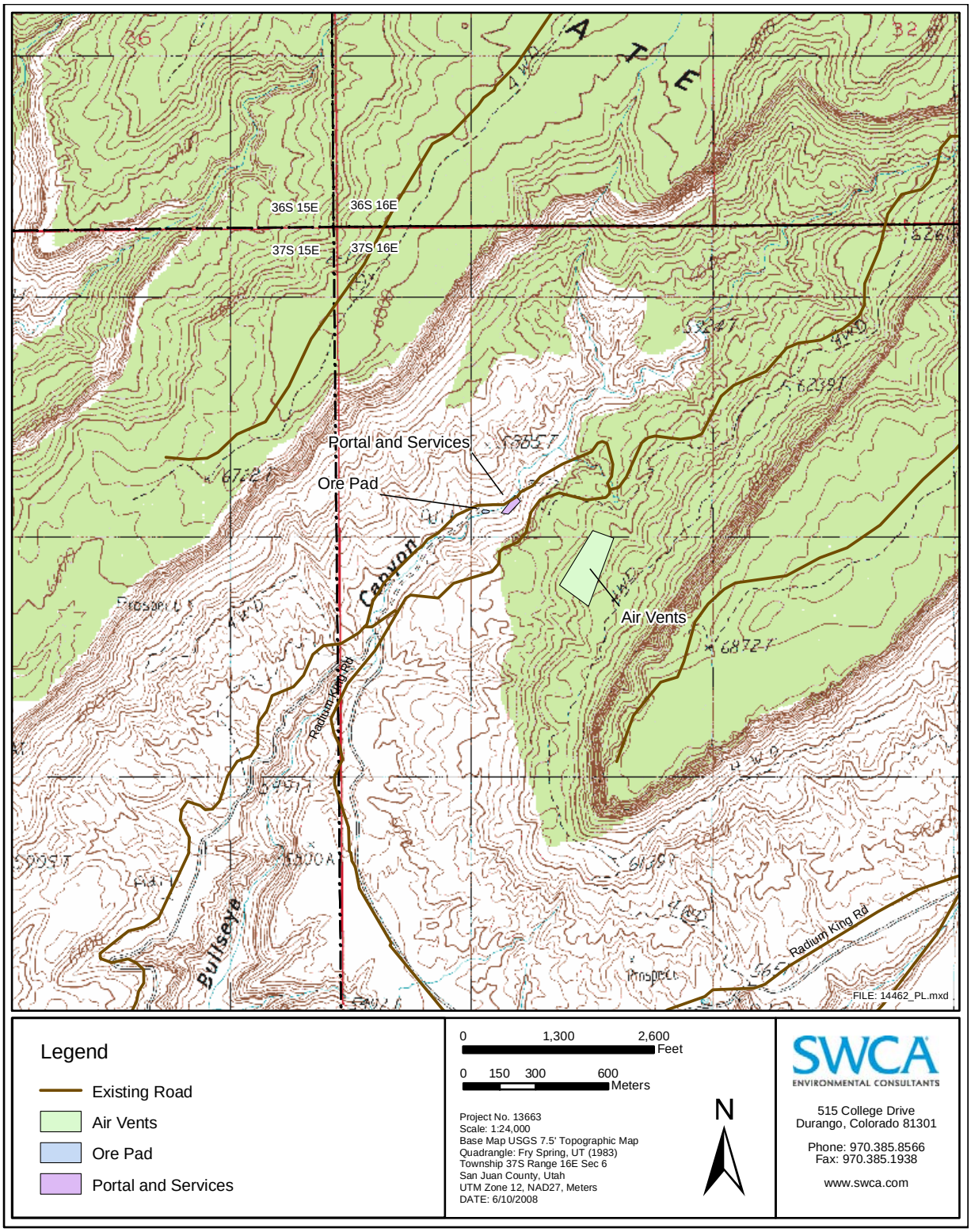


**Figure 2. Project Location Map**

# BSR – Appendix B
# Photographs of Survey Area

**Photograph 1. View of proposed air vent area, depicting piñon-juniper woodland. Taken from above looking north/northwest.**

**Photograph 2. View of proposed ore pad and waste area looking west.**

# BSR – Appendix C
# Plants and Wildlife Observed in the Survey Area

This list includes common plant species observed during the site visit. This does not represent a comprehensive summary of all species that may occur in the PPA.

| Common Name | Scientific Name |
|---|---|
| Banana yucca | *Yucca baccata* |
| Big sagebrush | *Artemisia tridentata* |
| Bigelow sage | *Artemisia biglovii* |
| Blue grama | *Bouteloua gracilis* |
| Brenda's yellow cryptantha | *Cryptantha flava* |
| Buckwheat | *Eriogonum* spp. |
| Cheatgrass* | *Bromus tectorum* |
| Cliffrose | *Purshia stansburiana* |
| Colorado four o' clock | *Mirabilis multiflora* |
| Cresent milkvetch | *Astragalus amphoixys* |
| Cushion buckwheat | *Eriogonum ovalifolium* |
| Desert paintbrush | *Castilleja chromosa* |
| Desert prince's plume | *Stanleya pinnata* |
| Desert Trumpet | *Eriognum inflatum* |
| Dwarf milkweed | *Asclepias involucrata* |
| Evening primrose | *Oenothera sp.* |
| Fender's spring parsley | *Cymopterus acaulis* |
| Fineleaf hymenopappus | *Hymenopappus filifolius* |
| Four-winged saltbush | *Atriplex canescens* |
| Fremont's mahonia | *Mahonia fremontii* |
| Hoary Townsend daisy | *Tonsendia incana* |
| Heartleaf twistflower | *Streptanthus cordatus* |
| Ive's fournerved daisy | *Tetraneuris ivesiana* |
| Larkspur | *Delphinium nattallianum* |
| Little Utah juniper | *Sabina osteosprma* |
| Lobeleaf groundsel | *Packera multilobata* |
| Milkvetch | *Astragalus sp.* |
| Mormon tea | *Ephedra sp.* |
| Mountain mahogany | *Cercocarpus montanus* |

| Common Name | Scientific Name |
|---|---|
| Mountain pepperweed | *Lepidium montanum* |
| Narrowleaf yucca | *Yucca sp.* |
| Palmer amaranth | *Amaranthus palmeri* |
| Piñon pine | *Pinus edulis* |
| Plantain | *Plantago* sp. |
| Plains pricklypear | *Opuntia polyacantha* |
| Rabbitbrush | *Chrysothamnus* sp, *Ericameria sp,* |
| Rayless tansyaster | *Machaeranthera grindeliodes* |
| Ribseed sandmat | *Chamaesyce glyptosperma* |
| Rose heath | *Chaetopappa ericoides* |
| Rubber rabbitbrush | *Ericameria nauseosa* |
| Russian thistle* | *Salsola tragus* |
| Scarlett globemallow | *Sphaeralcea coccinea* |
| Scarlet hedgehog | *Echinocerus coccineus var. coccineus* |
| Shadescale saltbush | *Atriplex confertifolia* |
| Snowberry | *Symphoricarpos rotundifolius* |
| Thrift mock goldenweed | *Stenotus armeriodes* |
| Tulip pricklypear | *Opuntia phaeacantha* |
| Utah serviceberry | *Amelanchair utahensis* |
| White prairie clover | *Dalea candida* |
| Yellow rabbitbrush | *Chrysothamnus viscidiflorus* |

*Indicates a non-native species.

This list includes those wildlife species detected directly (i.e., by sight) or indirectly (i.e., through sound or sign) during the site visit. This list does not represent a comprehensive summary of all species that may occur in the PPA.

| Common Name | Scientific Name |
|---|---|
| BIRDS* | |
| Turkey vulture | *Cathartes aura* |
| Red-tailed hawk | *Buteo jamaicensis* |
| Peregrine falcon | *Falco peregrinus* |
| White-throated swift | *Aeronautes saxatalis* |
| Broad-tailed hummingbird | *Selasphorus platycercus* |
| Flycatcher | *Empidonax sp.* |
| Ash-throated flycatcher | *Myiarchus cinerascens* |
| Northern raven | *Corvus corax* |
| Loggerhead shrike | *Lanius excubitor* |
| Juniper titmouse | *Baelophus ridgwayi* |
| Canyon wren | *Catherpes mexicanus* |
| Blue-gray gnatcatcher | *Polioptila caerulea* |
| Black-throated gray warbler | *Dendroica nigrescens* |
| Canyon towhee | *Pipilo fuscus* |
| Black-throated sparrow | *Amphispiza bilineata* |
| Scott's Oriole | *Icterus parisorum* |
| MAMMALS | |
| Bat | *Unkown sp.* |
| Deer (scat) | *Odocoileus sp.* |
| Mountain Cottontail (scat) | *Sylvilagus nuttallii* |
| Coyote (scat) | *Canis latrans* |

*Birds are listed in American Ornithologists' Union order.