
3.0 - AFFECTED ENVIRONMENT

3.1 INTRODUCTION

This chapter presents the potentially affected environment (i.e., the physical, biological, social, and economic values and resources) of the Project Area, and provides the baseline for comparison of impacts/consequences described in Chapter 4.

The Project Area is characterized by low rolling hills and rock outcrops representative of the high desert plains at the lowest to mid-elevations and tabletops with deeply incised drainages and canyons at the highest elevations. The vegetation in the Project Area is typical of the Uinta Basin floristic region, where precipitation and soil parent material are controlling factors for plant composition. Vegetation ranges from sparse, desert shrubs and grasses in the lowest elevations to woodland and conifer forest areas at the highest elevations. Elevations for the Project Area range between 5,050 feet, at the northern end of the Project Area, and approximately 8,000 feet at its southern end, at the Uintah-Carbon County line.

Resources considered in this EA include the environmental elements identified as “PI” in the IDT Analysis Record Checklist (refer to Appendix A). Other environmental elements were considered but dismissed from further analysis because the resources are not present in the Project Area, because the alternatives would have no measurable effect on the environmental element or issue, or because the specific actions and BMPs set out in the county’s Proposed Action, described in Chapter 2, would reduce the impacts of the alternatives to negligible levels. Dismissed issues are listed in the IDT Analysis Record Checklist, along with the rationale for their dismissal.

3.2 AIR QUALITY

3.2.1 WINDS AND ATMOSPHERIC STABILITY

The climate in the Project Area is characterized as arid, with cold winters and hot summers. Annual precipitation ranges from 8 inches (at the northern end of the Project Area) to more than 24 inches (at the southern end of the Project Area) and is dependent largely on elevation and aspect. Temperature inversions are common in the lower elevation areas of the Uinta Basin. Inversions commonly occur in winter when snow accumulation on the ground combines with short daylight hours. In summer, inversions dissipate rapidly when early morning sunlight warms the air near the ground surface. Inversions can hinder air pollutant dispersion by preventing dust and emissions from mixing with the ambient air in the vertical direction (BLM 2008c).

The transportation and dilution of air pollutants, including fugitive dust, are primarily a function of wind speed and direction. Winds dictate the direction in which pollutants are transported. As wind speed increases, the dispersion of emitted pollutants also increases, thereby reducing pollutant concentrations. Monthly wind data recorded from 1997 to present at the BLM’s Upper Sand Wash Remote Access Weather Station (RAWS), approximately 0.5 miles north of the Seep Ridge Road in section 10 T13S, R22E, indicates that the prevailing winds are out of the south-southwest.

3.2.2 AIR QUALITY

National and Utah Ambient Air Quality Standards (NAAQS) have been promulgated for the purpose of protecting human health and welfare with an adequate margin of safety. Pollutants for which standards have been set include sulfur dioxide (SO₂), nitrogen dioxide (NO₂), carbon monoxide (CO), and

particulate matter less than 10 or 2.5 microns in aerodynamic diameter (PM₁₀ and PM_{2.5}). Existing air quality in the region, including the Project Area, is acceptable based on U.S. Environmental Protection Agency (EPA) standards for the protection of human health. The Uinta Basin is designated as an “attainment area”, meaning that the concentrations of criteria pollutants in the ambient air are less than the NAAQS. Site-specific air quality monitoring data are not available for the Project Area; however, background criteria pollutant concentrations for the Uinta Basin are relatively low and consistent with a rural area having low levels of industrial development (UDEQ-DAQ 2005).

Under the Prevention of Significant Deterioration (PSD) provisions of the Federal Clean Air Act (CAA), incremental increases of specific pollutant concentrations are limited above a legally defined baseline level. The area surrounding the Project Area is designated as PSD Class II. For Class II areas, incremental increases in ambient pollutant concentrations are allowed as a result of controlled growth.

The EPA has primary regulatory authority for implementing various environmental statutes established by Congress. EPA retains the authority for implementing the CAA and the permitting and operational compliance of air emission sources within the Indian Country airshed which encompasses the Project Area.

Fugitive dust is the most prominent air pollutant in the region and in the Project Area, and is intermittent depending on winds and dust-causing activities. The VFO Approved RMP states that the Vernal Planning Area, including the Project Area, is located in a region designated as unclassifiable for Particulate Matter less than 10 microns in diameter (PM₁₀) (BLM 2008a). Particulate matter varies greatly in shape, size and chemical composition, and can be made up of many different materials, including dust.

3.3 CULTURAL RESOURCES

A Class I literature review was conducted to identify the extent of previous cultural resource surveys within the Project Area and to determine if any known cultural resource sites are present in the immediate Project Area. Record searches for this project were performed by archaeologists accessing the records of the Utah Division of State History (UDSH) in Salt Lake City and the BLM VFO. The record searches resulted in the identification of numerous previously conducted cultural resources studies and known cultural resource sites within the Project Area. While portions of the existing Seep Ridge road had been inspected for cultural resources during previous studies, the BLM determined that additional field studies were needed. As such, qualified archaeologists conducted intensive level pedestrian surveys (i.e., walked over the ground looking for archaeological materials) along the entire project corridor during March and April 2009. The cultural resource survey area is approximately 47 miles long and consists of the proposed roadway improvements and new road segments. The cultural resource survey consisted of 100% of the 300 foot wide corridor that extends 150 feet on both sides of the proposed edge of road. All cultural resources newly identified during the survey were recorded, and all previously recorded cultural resources within the Area of Proposed Effect (APE) were revisited. In addition to the survey for the roadway corridor, a single 20-acre pad for one new pond to be constructed and a single 40-acre pad for the relocation of the Monument Ridge Pasture Corral were surveyed April 29, 2009 for cultural resources.

As a result of both previous studies and studies conducted specifically for the Proposed Action, a total of 9 prehistoric and historic sites were identified and recorded in the cultural resources study area. One site, Site 42UN005506, is located within the APE but was not updated for the current project because it was recorded in 2006 and the site recording was still adequate. Prehistoric site types identified include lithic scatters and campsites. Historic site types include the Buck Canyon Road and campsites (Table 3.3-1). Four of the sites identified within the APE have been determined to be or are recommended eligible for

the National Register of Historic Places. As such these sites must be considered under the NHPA, and Federal agencies are required to evaluate and consider the effects and impacts to these resources. Sites for which a formal eligibility determination has not yet been made, including three sites recommended as not eligible, will be treated as eligible during mitigation efforts because their eligibility recommendations will not be reviewed by the Utah State Historic Preservation Office prior to implementation of the Proposed Action. A brief description and national register eligibility status for all sites within the project ROW are provided in Table 3.3-1.

Table 3.3-1. Cultural Resources Recorded or Updated within the Area of Proposed Effect (APE)

Site No.	Description	National Register Eligibility
42UN000646	Prehistoric lithic scatter composed of debitage (flakes) with tools in a 29 meter x 31 meter area.	*Recommended Not Eligible
42UN001782	Prehistoric campsite composed of hearth features and debitage in a 90 meter x 20 meter area.	Determined Eligible
42UN002487	Historic Buck Canyon Road with no associated historic artifacts.	Determined Eligible
42UN005506	Historic campsite composed of tin cans, glass, several diagnostic artifacts, and modern debris in a 56 meter x 30 meter area.	Determined Not Eligible
42UN007040	Multi-component site consisting of an historic debris scatter and small prehistoric flake scatter. Several diagnostic historic artifacts and historic features with one historic and prehistoric artifact concentration are present. Total site area is approximately 50 by 50 meters.	Determined Eligible
42UN007041	Historic debris scatter with several diagnostic artifacts in an approximate 25 meter squared area.	Determined Not Eligible
42UN007633	Prehistoric flake and ceramic sherd scatter with chipped stone tools in an approximate 57 meters by 42 meter area.	*Recommended Eligible
42UN007634	Multi-component site consisting of an historic debris scatter and prehistoric flake scatter. Several diagnostic historic artifacts and one prehistoric flake concentration are present. Total site area is approximately 79 by 67 meters.	*Recommended Not Eligible
42UN007635	Historic Monument Ridge Road Corral with no associated artifacts. Corral measures 154 feet x 109 feet	*Recommended Not Eligible

*Sites will be treated as Eligible during mitigation efforts because their eligibility recommendations will not be reviewed by the Utah State Historic Preservation Office prior to implementation of the Proposed Action.

In addition to the sites that have been documented as part of the 2009 cultural resource survey (Table 3.3-1), one possibly historic archaeological site, the Monument Ridge Pasture Corral, was fully documented as part of the cultural resource inventory. Even though this site is located outside of the project ROW, it was documented because it will be dismantled and moved as part of the Proposed Action. The corral will be moved to a 40-acre block located in section 26, T15S, R23E, and this block was surveyed for cultural resources April 29, 2009, and not cultural resources were identified. In addition, one 5-acre block was surveyed April 29, 2009, for the location of one new livestock watering pond/reservoir. This block is located in section 26, T15S, R23E.

3.4 PALEONTOLOGY

The Project Area contains three mapped bedrock geologic units (Cashion 1973), all of which are of middle Eocene age: lower Uinta Formation, and Parachute Creek and upper Douglas Creek members of the Green River Formation. In addition to these units, Holocene-age alluvium and colluvium were observed during the field survey conducted for this project. The geology of these units is described in greater detail in the technical reports prepared for the paleontological resource survey (Daitch et al. 2008).

The paleontological sensitivity of each geologic unit to be affected was evaluated using the Potential Fossil Yield Classification System (PFYC), adopted as policy by the BLM (BLM 2007). This system classifies geologic units based on the relative abundance of vertebrate fossils or scientifically-important invertebrate and plant fossils and their sensitivity to adverse impacts. This classification is applied to a geologic formation, member, or other distinguishable unit. This new classification system recognizes that although significant fossil localities may occasionally occur in a geologic unit, a few widely spaced localities do not necessarily indicate a higher class. Instead, the relative abundance of significant localities is intended to be the major determinant for the class assignment. Table 3.4-1 outlines the PFYC designations for the affected geologic units for this project.

Table 3.4-1. Paleontological Sensitivities of Geologic Units within the Project Area

Geologic Unit	Map Symbol*	Age	Typical Fossils	PFYC
Alluvium and colluvium	Qa	Holocene	Unfossilized remains of modern taxa, too young to contain fossils.	Class 2
Uinta Formation, lower Member	Tul	Eocene	Locally abundant plants (leaves, seeds, wood); invertebrates (insects, mollusks); and a highly diverse and scientifically important vertebrate fauna (reptiles, mammals)	Class 5
Green River Formation, Parachute Creek Member	Tgp	Middle Eocene	Ichnofossils (insect, bird and mammal tracks, inferred spider web with spiders and insects, and bird feathers); invertebrates (insects and mollusks); plants (leaves and wood); vertebrates (fish and less common reptiles and mammals)	Class 4/5
Green River Formation, upper Douglas Creek Member	Tgdu	Middle Eocene	Plants (leaves and wood); invertebrates (mollusks and arthropods); vertebrates (uncommon but include fish, reptiles, mammals)	Class 3

*Map abbreviations from Cashion 1973.

Daitch et al. conducted a field survey for the Proposed Action in 2008. A summary of their findings included:

- A total of 7 previously recorded fossil localities occur within one mile of the area of potential effect (APE) of the Proposed Action. Of these seven, only one occurs within the APE. This locality was identified during 2005 and consists of turtle shell fragments and bone fragments, possibly mammal.
- Three new fossil localities and five new fossil occurrences were identified and recorded from both the Uinta Formation and Parachute Creek Member of the Green River Formation (Daitch et al 2008). Fossils from the localities included plant leaf impressions and mammal bone fragments. Fossil occurrences included fragmentary plant fossils, wood impressions, turtle shell fragment and indeterminate bone fragments.

3.5 SOILS

The development of soils is governed by many factors, including climatic conditions (the amount and timing of precipitation, temperature, and wind), the parent material that the soil is derived from, topographic position (slope, elevation, and aspect), geomorphic processes, and vegetation type and cover. For evaluation of potential environmental impacts to soils, the key attributes are erosion potential and ease of reclamation after soil disturbance.

Soil mapping conducted by the U.S. Department of Agriculture's National Resource Conservation Service (USDA-NRCS) typically provides information about each soil type within the mapped area that can be used to evaluate the erosion potential and reclamation potential of each soil unit. These data include the slope and hydrologic group for erosion potential, and soil pH, salinity, clay content, and sodium-adsorption ratio for reclamation potential.

The USDA-NRCS soil data for Uintah County identifies 34 soil map units within the Project Area. A summary of these soils and their key properties and characteristics are provided in Appendix D (USDA-NRCS 2006 and 2007). Exhibit 2 in Appendix G provides a map of the soils involved in the Project Area.

Of the 34 identified soil map units, 11 are characterized as having their maximum slopes (40 percent slopes or greater) within the range classified as being highly susceptible to erosion. These soils primarily include rock outcrop formations that are resistant to erosion and/or contain slopes with soils that are defined as having low to moderate water erosion potential ($K_w < 0.20$). Soils map units with a maximum slope greater than 40 percent are 12, 36, 39, 85, 151, 198, 233, 234, 259, 263, and 264.

Of the soil map units identified within the Project Area, nine have a water erosion potential (K_w) value within the range defined as having high water erosion potential (or $K_w \geq 0.32$). Soil map units with a maximum K_w greater than 0.32 are: 21, 29, 31, 78, 138, 257, 263, 266, and 270.

Most soil map units within the Project Area with moderate to high water erosion potential ($K_w \geq 0.20$), have maximum slopes ranging from 2 to 25 percent (low to moderate susceptibility to erosion). Soil map units that are most susceptible to erosion based on both slope and water erosion potential values are soil map units 29, 31, 42, and 201 and involve approximately 130 acres, or 16 percent of the Project Area.

Soil map units 29 and 31 are the most susceptible to erosion of the 30 soil map units identified within the project corridor; as both have components with K_w ranging from 0.15 to 0.37 (moderate to high erosion potential) and slopes ranging from 2 to 25 percent (low to moderate susceptibility to erosion). However, soil map units 29 and 31 are characterized as "well drained," indicating that only a precipitation or run-off event that is large enough to exceed the relatively high drainage capacity of the soil is likely to cause significant erosion. Soil map units 42 and 201 have components with K_w ranging from 0.05 to 0.24 (low to moderate erosion potential) and slopes ranging from 2 to 25 percent (low to moderate susceptibility to erosion). Components of soil map units 42 and 201 are also characterized as "well drained" or "somewhat excessively drained."

Approximately 62 percent of the soils involved in the Project Area exhibit channery or parachannery soil textures. These textures are the major contributor to the very fine fugitive dust or "flour dust" conditions that occur along the Seep Ridge Road during dry periods.

3.6 WATER QUALITY (SURFACE/GROUND)

3.6.1 HYDROLOGIC SETTING

Streams can be classified as ephemeral, intermittent, or perennial. Ephemeral streams are those streams that flow only in direct response to a rainfall or runoff event and often have periods of no flow. The amount and timing of flow in ephemeral streams is dependent on the quantity and timing of precipitation, the watershed size, evaporation and transpiration rates, and the permeability of the surface materials. Intermittent streams receive some groundwater inflows in addition to direct surface runoff and contain flow at least part of the year in some portion of the stream. Perennial streams are streams and rivers that flow all year.

The Uinta Basin is drained by two perennial rivers: the Green River and the White River. The Green River originates in Wyoming along the Continental Divide and joins the Colorado River south of the Project Area. The White River originates in the mountains of Colorado, and drains the eastern portion of the Uinta Basin. These rivers receive runoff from several perennial streams and numerous ephemeral washes and intermittent streams. The largest of these streams near the Project Area are Hill Creek, Willow Creek and Bitter Creek.

Groundwater would not be affected by the Proposed Action or alternative and is not discussed further in this EA.

3.6.2 SURFACE WATER

Exhibit 3, in Appendix G, shows the surface water features in the Project Area. There are no perennial streams within the Project Area. Cottonwood Wash and Sand Wash and their ephemeral tributaries drain the northern and eastern portions of the Project Area. Major ephemeral drainages for the southern portion of the Project Area include Indian Ridge Canyon, Seep Canyon, PR Canyon and Black Horse Canyon, which drain into Sweet Water Canyon and then Bitter Creek. Cottonwood Wash, Sand Wash and Bitter Creek ultimately drain into the White River, approximately 12 miles to the north and northeast of the Project Area. Sunday School Canyon and Main Canyon are the major drainages on the west side of the Project Area. These drainages empty into the perennial Willow Creek, which ultimately drains into the Green River, approximately 7 miles to the northwest of the Project Area. With the exceptions of Bitter Creek and Willow Creek, all other streams affected by the Proposed Action are ephemeral and only flow in direct response to rainfall events.

3.6.2.1 Stream Classification

The Utah Water Quality Board classifies Utah surface water resources according to quality and degree of protection (UDEQ 2000). All streams and water bodies in Utah are assigned to one of five classes. Within the Project Area, all streams are classified as Class 2B, 3A, and 4. Class 2B streams are protected for secondary contact recreation such as boating, wading, or similar uses. Class 3A streams are protected for cold water species of game fish and other cold water aquatic life. Class 4 streams are protected for agricultural uses including irrigation of crops and stock watering.

3.6.2.2 Surface Water Flow

Two United States Geologic Service (USGS) gauging stations are located down-gradient from the Project Area on the White River. Table 3.6-1 presents summary flow data for the stations.

Table 3.6-1. Stream Flow Data for USGS Gauging Stations

USGS Gauging Station Name and Number	Range of Monthly Mean Discharge (cfs)	Peak Daily Discharge (cfs)	Mean Annual Discharge (cfs)	Period of Record
Sand Wash near Ouray, Utah 09306870	0.00 (January, May, June, November, and December) to 0.19 (February)	20 (February 20, 1980)	0.034	October 1974 – September 1981
Sand Wash at Mouth near Ouray, Utah 09306872	0.00 (November and December) to 2.7 (March)	86 (March 29, 1979)	0.417	October 1976 – September 1981

Source: USGS 2008.

Flow was measured in Sand Wash from October 1974 to September 1981. Flow is only present following cloudburst storms and during the snowmelt period. For the upstream station on Sand Wash, zero flow was recorded approximately 97 percent of the time during the brief period of record. The peak daily flow of 20 cubic feet per second (cfs) occurred on February 20, 1980. Flow was only present during the months of February – April (from snowmelt) and July – September (from storms) at this station. At the mouth of Sand Wash, zero flow was recorded approximately 95 percent of the time. The peak daily flow over the period of record was 86 cfs on March 29, 1979. Annual sediment loading of the White River is approximately 1,680,000 tons/year (Lentsch, et al. 2000).

Two USGS gauging stations are also located on the Green River. These data are useful for characterizing the total annual runoff from the Uinta Basin. Mean monthly stream flows at USGS station 09307000 on the Green River at Ouray range from 1,925 cfs to 17,000 cfs, and peak in June. Mean monthly stream flows further downstream at the town of Green River (USGS station 09315000) range from a low of 2,301 cfs to a high of 18,620 cfs. Annual sediment loading of the Green River is about 9,684,000 tons (Lentsch, et al. 2000).

3.6.2.3 Surface Water Quality

The EPA has established primary and secondary drinking water standards (EPA 2003) for approximately 90 water contaminants as required by the Safe Drinking Water Act, as amended in 1996, and Clean Water Act (CWA) of 1987, as amended. These regulations specify maximum contaminant levels (MCLs) and secondary standards for specific contaminants. The MCLs are health-based. Although these MCLs legally apply only to public drinking water supplies, they are also useful as general indicators of water quality. The secondary standards are for constituents that cause cosmetic effects (such as skin or tooth discoloration) or aesthetic affects (such as taste, odor, or color) in drinking water. The CWA delegated the administration of these standards to cooperating States and Tribes, so long as the State and Tribal standards were at least as stringent as the federal standards. In the Project Area, the EPA has primacy.

Water quality sampling has been conducted at USGS stations 09306870 and 09306872 on Sand Wash. Three samples were collected at the upper station and one sample was collected at the lower station. Water in Sand Wash, when present, can be described as sodium bicarbonate-sulfate-chloride type waters with low hardness, alkaline pH, and moderate SAR. Aluminum and iron exceeded standards for one sample each.

There are no streams listed on the State's Section 303(d) list within the Project Area.

3.7 FLOODPLAINS

The VFO Approved RMP directs that no surface disturbance or occupancy will be allowed within active floodplains, or 100 meters (328 feet) of riparian areas. Exceptions to this management prescription may be authorized if there are no practical alternatives, impacts could be fully mitigated, or the action is designed to enhance the riparian resources (BLM 2008a).

Identified 100-year floodplain found within the Project Area occurs along the West Fork of Cottonwood Wash, and have been designated by FEMA as a Zone A (refer to Exhibit 3 in Appendix G). This designation means that these areas are subject to inundation by the 1-percent-annual-chance flood event generally determined using approximation methodologies. Because detailed hydraulic analyses have not been performed, no Base Flood Elevations (BFEs) or flood depths are provided.

In 2008, Morrison-Maierle, Inc. (MMI) examined the Project Area for the presence and extent of wetlands, riparian areas, and waterways. The investigation resulted in the identification of 16 non-wetland waterways (ephemeral drainages) crossed by the existing Seep Ridge Road using culverts. No areas exhibiting hydric soils, hydrophytic vegetation, and hydrology indicators were identified throughout the Project Area; and, no wetlands were delineated. Two of the 16 ephemeral drainages are of a size to be named, i.e., the West and East Forks of Cottonwood Wash. The remaining 14 ephemeral drainages are unnamed.

Ten of the 16 ephemeral drainage crossings are associated with the West and East Forks of Cottonwood Wash and tributaries to these features are located between mile markers 40 and 45. Three of the remaining ephemeral drainages are located north of the West Fork and East Fork Cottonwood Washes (between mile markers 52 and 55) and three drainages are located south of these washes (at approximately mile markers 27 and 34). The ephemeral drainages identified within the Project Area were preliminarily observed to be jurisdictional (federally-regulated by the U.S. Army Corps of Engineers) as the aerial photos and topographic maps indicate that these landscape features have the potential to convey water from storm events down-gradient to the White River.

With the exception of the West and East Forks of Cottonwood Wash, the waterways associated with the Project Area exhibit some scouring and intermittent bed and bank with upland vegetation growing in the drainage bottoms (predominantly greasewood (*Sarcobatus vermiculatus*), big sagebrush (*Artemisia tridentata* var *tridentata*) and rubber rabbitbrush (*Chrysothamnus nauseosus* spp). The drainages associated with the West and East Forks of Cottonwood Wash exhibit a defined bed and bank with a predominantly unvegetated channel.

3.8 VEGETATION, INCLUDING INVASIVE PLANT AND NOXIOUS WEEDS, SPECIAL STATUS PLANT SPECIES AND FORESTRY/ WOODLANDS

3.8.1 GENERAL VEGETATION

Vegetation in the Project Area is dependent on soils, topography, aspect, elevation and precipitation. The predominant vegetation communities in the Project Area are briefly described below. Table 3.8-1 quantifies the total acres of the Project Area by vegetation community. Exhibit 4, in Appendix G, depicts the broad vegetation communities involved with the Project Area.

Table 3-8.1 Vegetation Communities In the Seep Ridge Road Project Area

Vegetation Community	Estimated Acres within Project Area	Percent of Project Area
Mixed Desert Shrub	172	21
Wyoming Sagebrush	292	36
Pinyon-Juniper-Sage/Woodland	284 ¹	35
Montane Brush/Woodland	65	8
Estimated Total	813²	100

¹Includes 3 acres outside of the proposed ROW for the two proposed watering ponds (reservoirs) and 2 acres outside of the proposed ROW for relocation of the Monument Ridge Pasture Corral

²Calculation does not include the existing roadway surface (142.9 acres)

A general discussion of the vegetation communities follows. Vegetation in the Project Area is dependent on soils, topography, aspect, elevation and precipitation.

Beginning at the northern end of the Project Area, the area of lowest elevation, is the mixed desert shrub community. This community is associated with shallow clay-loam and shaley to deep sandy soils. This community is widely variable in its composition and dominance, but may be characterized by shadscale (*Atriplex confertifolia*), Gardner saltbush (*A. gardeneri*), green rabbitbrush (*Chrysothamnus viscidiflorus*) and greasewood. This community provides open winter grazing areas for livestock, pronghorn antelope and wintering big game. Reclamation potential is poor due to poor soil structure, little topsoil and low precipitation.

The sagebrush community (*Artemisia tridentata* var *wyomingensis*) is associated with moderately deep sandy-loam to gravelly-loam soils associated with the Green River and Uinta formations. The majority of this community is associated with the middle portion of the Project Area. Other sagebrush sites include the moderately-deep alluvial soils in higher elevation drainages in the pinyon-juniper-sage/woodland community. The majority of this community can be characterized as mature to old age stands of sagebrush with varying compositions of understory vegetation. Dominate understory vegetation include a variety of perennial grasses such as Sandberg's bluegrass (*Poa secunda*), needle-and-thread grass (*Stipa comata*), and Indian ricegrass (*Oryzopsis hymenoides*). Numerous shrub and forb species include fleabanes (*Erigeron* spp.), milkvetch (*Astragalus* spp.), rabbitbrush (*Chrysothamnus* spp.), winterfat (*Ceratoides lanata*), and Mormon tea (*Ephedra* spp.). This community provides habitat for big game and numerous upland and avian wildlife species. Potential for successful reclamation following disturbance is moderate, depending on topsoil depth and texture and total annual precipitation.

The pinyon-juniper-sage/woodland community is associated with the shallow shaley and stony hillsides and ridges located throughout the middle and southern portion of the Project Area. Utah juniper (*Juniperus osteosperma*) and pinyon pine (*Pinus edulis*) occur on almost all slopes and aspects within the community. At lower elevations, pinyon decreases and Utah juniper dominates the overstory. Associated understory species include black sage (*Artemisia tridentata* spp *nova*), desert buckwheat species (*Eriogonium* spp.), Mormon tea (*Ephedra* spp.) and bull grass (*Elymus salina*). This community provides important habitat, including thermal cover, for numerous upland and avian wildlife species and big game. Potential for successful reclamation in this community is low to moderate, depending on depth of topsoil and total annual precipitation.

The montane brush/woodlands community occurs at the highest elevations at the southern end of the Project Area, occurring on all aspects on soils ranging from shallow sandy and stony loams to moderately deep mountain loams. In addition to pinyon woodlands, mountain mahogany (*Cercocarpus montanus*),

snowberry (*Symphoricarpos oreophilus*), Utah juniper (*Juniperus osteosperma*) dominate the overstory. Oregon grape (*Berberis repens*) rosy everlasting (*Antennaria rosea*) and bluebunch wheatgrass (*Pseudoroegneria spicata*) dominate the understory. Potential for successful reclamation in this community is low to moderate, depending on amount and depth of topsoil.

3.8.2 INVASIVE PLANTS AND NOXIOUS WEEDS

The most common invasive species in the Project Area are Russian thistle (*Salsola iberica*) and halogeton (*Halogeton glomeratus*). African mustard (*Malcolmia africana*), a newly emerging weed species, may also be present in the Project Area. Salt cedar (*Tamarix ramosissima*), cheatgrass (*Bromus tectorum*), and Russian olive (*Elaeagnus angustifolia*) are Uintah County listed noxious weeds that occur in the Project Area along drainages, ponds, and sites where water collects along roads.

The State of Utah has designated 18 noxious weed species that must be controlled under Utah Noxious Weed Act R68-9, Utah Code Annotated Title 4 Chapter 17. The definition for a “noxious weed” in Utah is any plant that has been determined to be especially injurious to public health, crops, livestock, land or other property (Utah Code Annotated Title 4 Chapter 17).

In addition to the 18 state-designated noxious weed species, Uintah County has designated two additional noxious weed species that must be controlled under the Uintah County Weed Control Policy (Billings 2008). A “county noxious weed” is defined as a plant that is not on the State noxious weed list, but is especially troublesome in a particular county and is declared by the county legislative body to be a noxious weed within its county (Uintah County Weed Department 2008).

A field investigation was conducted in July 2008 to inventory, collect and evaluate baseline biological data within and adjacent to the Project Area (MMI 2008). One state-listed noxious weed, field bindweed (*Convolvulus arvensis*), was identified within the existing ROW in a few scattered patches on the road’s shoulders, concentrated within previously disturbed areas.

The Uintah County Weed Department has identified 14 invasive weed species within the County. Invasive species are not required by law to be controlled but are a high priority for control. The most common weed locations include disturbed areas such as well pads, roadsides, pipeline ROWs, adjacent washes, and areas where grazing has removed native species. Roads facilitate biological invasion, where disturbed roadside habitats are invaded by exotic invasive plant and animal species, and weeds are dispersed by wind, water, vehicles, and other human activities.

Two invasive weed species were identified within and adjacent to the proposed Project Area during the July 2008 field investigation: Black henbane (*Hyoscyamus niger*) and halogeton. Black henbane was identified in a few small isolated patches associated with previously disturbed areas. Halogeton was extensively spread along the entire roadside, as well as in previously disturbed areas adjacent to the roadside.

3.8.3 SPECIAL STATUS PLANT SPECIES

Appendix E lists the threatened, endangered, candidate, and BLM-sensitive plant species that potentially occur within the BLM public lands, along with each species’ location/habitat, and whether each species has been eliminated from detailed analysis in this document due to known occurrence within the Project Area.

Appendix E lists two plant species that would be potentially involved with the project. They are the clay reed-mustard and the Graham beardtongue.

Clay reed-mustard

Known occupied habitat for clay reed-mustard (*Schoenocrambe argillacea*), a federally-listed as threatened species, is known to occur at two locations near the ROW: one population is located approximately 1,325 feet outside of the ROW, and the other population is located about 3,400 feet outside of the ROW. Habitat for this species is limited to the contact zone between the upper Uinta and Green River Shale formations. Potential habitat occurs on steep hillsides and canyon walls associated with Willow Creek (located west and outside the Project Area).

Graham beardtongue

Known occupied and potential habitat for Graham beardtongue (*Penstemon grahamii*), a BLM sensitive species, is located within and adjacent to the existing Seep Ridge Road. Habitat for Graham beardtongue is limited to oil shale outcrops on knolls and talus in semi-barren mixed desert shrub and pinyon-juniper sage/pinyon-juniper woodland vegetative habitats from 4,600 to 6,700 feet in elevation.

3.8.4 WOODLAND/FORESTRY

Woodland resources comprise lands producing forest tree species that may be used as non-saw timber products and sold in units other than board feet. Woodland resources begin at mid-elevations of the Uinta Basin, where sagebrush communities give way to pinyon pine and juniper (between 5,000 and 8,000 feet in elevation). Timber resources including ponderosa pine (*Pinus ponderosa*), quaking aspen (*Populus tremuloides*), Douglas fir (*Pseudotsuga menziesii*) and minor quantities of spruce (*Picea spp.*), white fir (*Abies concolor*), limber pine (*Pinus flexis*) and subalpine fir (*Abies bifolia*) occur at the southern most extent of the Project Area. Commercially valuable woodland resources and saw timber may be found within the mountain browse and pinyon-juniper woodlands associated with the Project Area. These two communities involve an estimated 349 acres (or about 43 percent) of the Project Area. BLM has no current data to estimate the quantity of woodland/forestry products that could exist on these lands.

The BLM has conducted extensive vegetation conversion projects in the Book Cliffs area, including areas adjacent to or near the Seep Ridge Road. These projects have converted pinyon-juniper woodlands to open grass and shrub parks to achieve management goals and objectives for wildlife, livestock, soils and as fire fuel reduction measures. The BLM conducts firewood sales and competitive timber sales in the Book Cliffs area to further its goals and objectives for woodland/forestry management.

3.9 WILDLIFE AND FISHERIES, INCLUDING SPECIAL STATUS ANIMAL SPECIES

3.9.1 GENERAL WILDLIFE

The Project Area supports a variety of general wildlife species. Species that occupy the Project Area are typically generalist species that are accustomed to a moderate to high amounts of human activity (including vehicular traffic) due to the oil and gas industry in the project's vicinity. Small mammal species that are expected to occur throughout the Project Area include, but are not limited to, the cottontail rabbit (*Sylvilagus spp.*), black-tailed jackrabbit (*Lepus californicus*), white-tailed prairie dog (*Cynomys leucurus*), coyote (*Canis latrans*), badger (*Taxidea taxus*), striped skunk (*Mephitis mephitis*), western spotted skunk (*Spilogale gracilis*), and other rodent species. Reptiles and amphibians potentially found in the region include the garter snake (*Thamnophis elegans vagrans*), great basin gopher snake (*Pituophis catenifer deserticola*), great basin spadefoot toad (*Scaphiopus intermontana*), western whiptail

(*Cnemidophorus tigris*), sagebrush lizard (*Sceloporus graciosus*), and short-horned lizard (*Phrynosoma douglassii*) (BLM 2008a).

Although all of these species are important members of wildland ecosystems and communities, most are common and have widespread distributions within the Uinta Basin. Consequently, the relationships of most of these species to the proposed development are not discussed in the same depth as those species that are threatened, endangered, candidate, sensitive, of special economic interest, or are otherwise of high interest or unique value.

3.9.2 BIG GAME

Four big game species are potentially found within the Project Area: pronghorn antelope (*Antilocapra americana*), mule deer (*Odocoileus hemionus*), elk (*Cervus elaphus*), and American bison (*Bison bison*). American bison occur on historical Uintah and Ouray Indian Reservation lands and were recently introduced by UDWR to the Book Cliffs area.

The Seep Ridge Road is located within the Book Cliffs Wildlife Management Unit (WMU). The Book Cliffs WMU encompasses the southern portion of Uintah County and extends into the northern portion of Grand County. The northern boundary of the Book Cliffs WMU is the White River from the Utah-Colorado border to its confluence with the Green River (approximately 2 miles south of Ouray, Utah). The eastern Book Cliffs WMU boundary is the Green River from the White River terminus south to the town of Green River. The southern Book Cliffs WMU boundary extends east from the town of Green River along I-70 to the Utah-Colorado border, which serves as the eastern boundary of the WMU. The Bitter Creek Subunit of the Book Cliffs WMU constitutes the northern portion of the WMU, extending (roughly) from the confluence of Coal Creek with the Green River east to the Uintah County-Grand County border at the state line.

The Project Area includes various types of seasonal ranges (e.g., year-long, fawning, winter) as identified by the UDWR. UDWR ranges are ranked according to their relative biological value and are defined in detail below. Under the VFO Approved RMP, the BLM has committed to managing big game ranges as defined by the UDWR (BLM 2008a).

- *Crucial*: Habitat on which the local population of a wildlife species depends for survival because there are no alternative ranges or habitats available. Crucial value habitat is essential to the life history requirements of a wildlife species. Degradation or unavailability of crucial value habitat will lead to significant declines in carrying capacity and/or numbers of the wildlife species in question.
- *Substantial*: Habitat that is used by a wildlife species but is not crucial for population survival. Degradation or unavailability of substantial value habitat will not lead to significant declines in carrying capacity and/or numbers of the wildlife species in question.

3.9.2.1 Pronghorn

Pronghorn are common in Utah and known to occupy desert, grassland, and sagebrush habitats throughout the state. The primary food source for pronghorn is shrubs (i.e., sagebrush) but they also consume grasses and forbs. Pronghorn breed in the fall with the females typically giving birth to two kids in the spring. Pronghorn are diurnal and are often found in small groups (UDWR-UNHP 2008). Home ranges for pronghorn can vary between 400 and 5,600 acres, according to factors including season, habitat quality, population characteristics, and local livestock occurrence. Typically daily movements do not exceed 6 miles. Some pronghorn make seasonal migrations between summer and winter habitats, but

these migrations are often triggered by availability of succulent plants and not local weather conditions (Fitzgerald et al. 1994).

A portion of the Project Area (from approximately mile marker 30.5 to 56.8) provides crucial year-long habitat for pronghorn. UDWR pronghorn population objectives for the Book Cliffs WMU are 450 individuals, with a current population estimate of 172 (UDWR 2008a). Pronghorn utilize the northern portion of the Project Area in sagebrush-dominated plant communities. BLM-designated crucial fawning habitat for pronghorn does not exist within the Project Area (BLM 2008a).

3.9.2.2 Mule Deer

Mule deer are common throughout Utah in a variety of habitat types ranging from open deserts, montane forests, and urban areas. Mule deer utilize high elevation montane habitats in the summer and migrate to lower elevations in the winter. Mule deer primarily browse on shrubs, woody material, and grasses. Mule deer breed in the fall and typically produce one or two fawns in the spring (UDWR-UNHP 2008). A total of approximately 403 acres of mule deer habitat are included in the Project Area. Of this amount, about 99 percent (or 400 acres) are managed as winter habitat, either as winter substantial (201 acres) or as winter crucial (199 acres). Only about 3 acres of the Project Area would involve crucial summer/fawning habitat (refer to Exhibit 5 in Appendix G).

UDWR mule deer population objectives for the Book Cliffs WMU are 10,000, with a current population estimate of 7,355 (UDWR 2008a). Mule deer are not evenly distributed within the crucial winter range designated by the UDWR. The winter range located between Seep Ridge Road and Atchee Ridge Road, south of the Kings Well Road, supports a large percentage of the wintering deer within the Book Cliffs WMU and Bitter Creek Wildlife Management Subunit. The primary drainages within this deer crucial winter range provide high-quality forage and cover to support the greatest number of deer (Karpowitz 1984). Deer winter ranges that typically exhibit higher use often include pinyon-juniper woodlands intersected by long drainages and open areas containing fourwing saltbush, sagebrush, winterfat), and native grasses. The lower limit of the deer winter range is described as the lower end of the pinyon-juniper belt (Karpowitz 1984).

The Seep Ridge Road bisects a major migratory corridor for mule deer. The migration corridor is located approximately from the Buck Canyon area (located at approximate mile marker 35.5) to the southern project boundary and mule deer migrate across the existing roadway. Mule deer migrate northeast from the Book Cliff divide area in the summer at the south end of the existing Seep Ridge Road to lower elevations in the winter (State of Utah 2008).

3.9.2.3 Elk

Elk are common throughout Utah in most mountainous regions. Seasonal elk habitat in Utah is identified as mountain meadows and forests in the summer and foothills and valley grasslands in the winter. Elk graze primarily on grasses but also consume forbs and woody plants. During the spring the females give birth to one or two calves (UDWR-UNHP 2008).

A total of approximately 397 acres of elk habitat are included in the Project Area. Of this amount, about 90 percent (or 356 acres) are managed as winter habitat, either as winter substantial (243 acres) or as winter crucial (113 acres). Approximately 41 acres of the Project Area provides crucial summer/calving habitat (refer to Exhibit 6 in Appendix G).

UDWR elk population objectives for the Book Cliffs WMU are 7,500, with a current population estimate of 4,776 (UDWR 2008a). The VFO Approved RMP does not identify an elk migration corridor in the Project Area; however, crucial winter range exists towards the southern end of the Project Area.

3.9.2.4 American Bison

An American bison herd exists within the Uintah and Ouray Indian Reservation that is located adjacent to the northern portion of the Project Area (UDWR 2009a). In addition, in 2008 UDWR released 45 bison into the Book Cliffs WMU, with a population objective within the WMU of 450 (UDWR 2009a). The UDWR expects to release additional bison to increase the size of the herd in accordance with their Herd Management Plan. Bison AUMs are not currently being accounted for within the Project Area.

3.9.3 RAPTORS

Some of the more common and visible birds within the Project Area include raptors, or birds of prey. The Project Area provides diverse breeding and foraging habitat for raptors: mixed desert shrub communities, rocky outcrops, and pinyon-juniper woodlands. Table 3.9-1 identifies raptor species with the potential to occur in the Project Area, and a description of typical nesting habitats.

Table 3.9-1. Raptor Species with the Potential to Occur in the Project Area

Common Name	Scientific Name	Nesting Habitat
American Kestrel	<i>Falco sparverius</i>	Tree cavities, cliff crevices
Bald Eagle	<i>Haliaeetus leucocephalus</i>	Large trees near rivers, lakes, marshes, or other wetland areas
Burrowing Owl	<i>Athene cuniculara</i>	Prairie dog colonies
Cooper's Hawk	<i>Accipiter cooperii</i>	Woodland areas and riparian zones
Ferruginous Hawk	<i>Buteo regalis</i>	Ground, pinyon-juniper woodlands, balanced pinnacles
Golden Eagle	<i>Aquila chrysaetos</i>	Cliff ledges and rock outcrops
Great-horned Owl	<i>Bubo virginianus</i>	Cliff ledges or nests of other species
Long-eared Owl	<i>Asio otus</i>	Coniferous and deciduous forests, and shrublands
Northern Harrier	<i>Circus cyaneus</i>	Ground nester within thick vegetation
Prairie Falcon	<i>Falco mexicanus</i>	Cliff ledges
Red-tailed Hawk	<i>Buteo jamaicensis</i>	Cliff ledges, rock outcrops, aspen, pinyon-juniper woodlands, etc.
Short-eared Owl	<i>Asio flammeus</i>	Ground nester
Swainson's Hawk	<i>Buteo swainsoni</i>	Solitary trees or bushes
Turkey Vulture	<i>Cathartes aura</i>	Rock outcrops, caves, and tree cavities
Western Screech Owl	<i>Megascops kennicottii</i>	Almost exclusively in tree cavities

All raptor species and their nests are protected from take or disturbance under the Migratory Bird Treaty Act (MBTA) (16 USC, 703 et seq.), as amended. However, bald eagles, golden eagles, ferruginous hawks, burrowing owls, and short-eared owls are also considered to be special status wildlife species.

Through a review of BLM data and correspondence with USFWS and UDWR, it was concluded that golden eagle and burrowing owl individuals or their potential nesting habitat may occur within the vicinity of the Project Area and these species are discussed in more detail in the following sections. In addition, BLM wildlife habitat surveys in the Book Cliffs area have identified and documented the locations of raptor nests (BLM 2002). Two red-tailed hawk nest locations were documented near mile markers 41.5 and 42.25 that occur within the Project Area and two additional nests were documented near mile markers 36.5 and 43.5 that are less than 0.5 mile from the Project Area boundary. BLM surveys also identified a single golden eagle nest occurring within 0.5 mile of the Project Area near mile marker 40 (BLM 2002). Although bald eagles, ferruginous hawks, and short-eared owls are not likely to nest within the Project Area or immediate vicinity, suitable foraging habitat for these three species does exist. Due to the unlikely occurrence of nesting bald eagles, ferruginous hawks, and short-eared owls within the Project Area, further analysis regarding potential project-related impacts to these species, or their habitat, is not included in this document.

3.9.4 MIGRATORY BIRDS

The Migratory Bird Treaty Act (MBTA), as amended, was implemented for the protection of migratory birds. Unless permitted by regulations, the MBTA makes it unlawful to pursue, hunt, kill, capture, possess, buy, sell, purchase, or barter any migratory bird, including the feathers or other parts, nests, eggs, or migratory bird products. In addition, Executive Order 13186 sets forth the responsibilities of federal agencies to further implement the provisions of the MBTA by integrating bird conservation principles and practices into agency activities and by ensuring that Federal actions evaluate the effects of actions and agency plans on migratory birds.

Numerous migratory bird species occupy the Project Area. This section addresses migratory birds that may inhabit the Project Area, including those species classified as Priority Species by Utah Partners in Flight (PIF). The purpose of the Utah PIF is to determine which Utah bird species and their habitats are most in need of conservation and to recommend conservation actions in accordance with strategies that are generated through the program (Parrish et al. 2002). PIF species are not subject to special protection by the state of Utah, though some PIF species are also designated as wildlife species of concern or listed under conservation agreements.

A number of bird species listed by the Utah PIF conservation program are known to occur, potentially occur, or suitable habitat for those species is located within the vicinity of the Project Area. Appendix E lists each of the PIF bird species, their habitat association, potential for occurrence within the Project Area and cumulative effect area, and whether the species has been eliminated from detailed analysis in this document. This section identifies all other migratory birds that may inhabit the Project Area, including those species classified as High-Priority birds by Utah Partners in Flight (UPIF 2002). High-Priority species are denoted by an asterisk (*).

3.9.4.1 Sagebrush Community

Migratory bird species commonly associated with mixed desert shrub/sagebrush habitat include: the Greater Sage-grouse* (*Centrocercus urophasianus*), Grasshopper sparrow* (*Ammodramus savannarum*), black-chinned sparrow (*Spizella atrogularis*), black-throated sparrow (*Amphispiza bilineata*), Brewer's sparrow* (*Spizella breweri*), gray flycatcher* (*Empidonax wrightii*), green-tailed towhee* (*Pipilo chlorurus*), horned lark (*Eremophila alpestris*), lark bunting (*Calamospiza melanocorys*), lark sparrow (*Chondestes grammacus*), loggerhead shrike (*Lanius ludovicianus*), gray vireo* (*Vireo vicinior*), mountain bluebird* (*Sialia currucoides*), northern mockingbird (*Mimus polyglottos*), sage sparrow* (*Amphispiza belli*), sage thrasher* (*Oreoscoptes montanus*), Say's phoebe (*Sayornis saya*), vesper sparrow (*Pooecetes gramineus*), and western meadowlark (*Sturnella neglecta*) (Parrish et al. 2002).

3.9.4.2 Pinyon-Juniper Woodlands

Migratory bird species commonly associated with juniper and pinyon-juniper habitats include: the ash-throated flycatcher (*Myiarchus cinerascens*), black-chinned hummingbird* (*Archilochus alexandri*), Broad-tailed hummingbird* (*Selasphorus playacercus*), Lewis's woodpecker* (*Melanerpes lewis*), black-throated gray warbler (*Dendroica nigrescens*), blue-gray gnatcatcher (*Polioptila caerulea*), juniper titmouse* (*Parus inornatus*), common nighthawk (*Chordeiles minor*), gray vireo* (*Vireo vicinior*), Cassin's kingbird* (*Tyrannus vociferan*), Cassin's finch* (*Carpodacus cassinii*), pinyon jay* (*Gymnorhinus cyanocephalus*), common poorwill (*Phalaenoptilus nuttallii*), Clark's nuthatch (*Nucifraga columbiana*) gray flycatcher* (*Empidonax wrightii*), loggerhead shrike (*Lanius ludovicianus*), Scott's oriole (*Icterus parisorum*), Virginia's warbler* (*Vermivora virginiae*), and western bluebird (*Sialia mexicana*) (Parrish et al. 2002).

3.9.5 SPECIAL STATUS WILDLIFE AND FISH SPECIES

In accordance with Section 7(a)(2) of the Endangered Species Act (ESA), the BLM must ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of any listed species or adversely modify designated critical habitat. The BLM has a commitment to ensure that actions requiring its authorization or approval are consistent with the conservation needs of special status species and do not contribute to the need to list any special status species, either under provisions of the ESA or other provisions of this policy (BLM 2008c).

An off-site literature review was completed to gather information concerning threatened and endangered (T&E) species, candidate species, and their habitat. The literature review consisted of an internet search to gather species information from applicable sources and publications. Internet web sites including the Utah Conservation Data Center (2008) were consulted. Information was also solicited from the U.S. Fish and Wildlife Service (USFWS) and the Utah Division of Wildlife Resources (UDWR). The information was utilized to identify the species present within or in the vicinity of the Project Area, assess potential impacts to the identified species, and identify and evaluate potential concerns of federal, state, and local agencies. Appendix E provides a list of the threatened, endangered, candidate, and Utah special status animal species, including Partners-In-Flight (PIF) species of concern, that potentially occur within BLM public lands. Appendix E also describes each species' habitat associations, potential for occurrence within the Project Area and cumulative effects area, and whether each species has been eliminated from detailed analysis in this document due to known occurrence within the Project Area.

3.9.5.1 Special Status Mammal Species

White-tailed Prairie Dog

The white-tailed prairie dog (*Cynomys leucurus*) is a State of Utah wildlife species of concern due to declining populations within the state. White-tailed prairie-dogs inhabit mountain valleys, semidesert grasslands, agricultural areas, and open shrublands in western North America (Fitzgerald et al. 1994; Hall 1981). In northeastern Utah, the species occurs in areas around Flaming Gorge, Manila, Diamond Mountain, and the Uinta Basin.

Management decisions in the VFO Approved RMP specify that the BLM, in cooperation with UDWR, will maintain and enhance white-tailed prairie dog and other foraging habitat as they are an obligate species to several other state sensitive species such as ferruginous hawk, mountain plover, and burrowing

owl, in that these species depend on them for food, shelter, and nesting habitat or habitat manipulation (BLM 2008a).

White-tailed prairie dogs are distributed in relatively large, sparsely populated complexes and live in loosely knit family groups or “clans” (Tileston and Lechleitner 1966). Clan boundaries are ill-defined with most activity concentrated around feeding sites. The white-tailed prairie dog breeds in the spring and hibernates underground through the winter. White-tailed prairie-dog population numbers are threatened by loss of habitat, poisoning, and plague (UDWR-UNHP 2008).

In coordination with UDWR and BLM, the Project Area would involve scattered white-tailed prairie dog colonies and individuals, but that any colonies in the area are relatively small as evidenced by the small size of observed areas of mounded soil. UDWR data also indicated that soils in the Project Area are not conducive for extensive prairie dog colonies (UDWR 2008b).

Bats

Four bat species identified as state-sensitive wildlife species of concern (WSC) may occur within the Project Area. These species include big free-tailed bat (*Nyctinomops macrotis*), fringed myotis (*Myotis thysanodes*), spotted bat (*Euderma maculatum*), and Townsend’s big-eared bat (*Corynorhinus townsendii*). Foraging habitat for each of these species occurs within the Project Area (refer to Appendix E).

3.9.5.2 Special Status Bird Species

Greater Sage Grouse

The greater sage-grouse (*Centrocercus urophasianus*), classified as a Utah sensitive species is one of two sage-grouse species known to occur within the State of Utah and is known to inhabit sagebrush plains, foothills, and mountain valleys in the Project Area vicinity. Sage-grouse population numbers in Utah have decreased 50 percent from the historical abundance of the species due to intensive agriculture and livestock use that has significantly reduced historical sage-grouse habitat (UDWR-UNHP 2008). In addition, the oil and gas development industry has been identified as a significant threat to sage-grouse populations due to habitat disturbance and vehicular traffic.

The availability of sagebrush habitat with an understory of grasses and forbs is essential for good sage-grouse habitat (UDWR-UNHP 2008). Nesting and brooding sites are typically located in or near the protective cover of sagebrush (UDWR 2002), which is also an important winter food source. Most hens typically nest within 2 miles of strutting grounds or breeding leks (Braun et al. 1977), and 74 to 80 percent of sage-grouse hens are found within 4 miles of a lek (Colorado Greater Sage Grouse Conservation Plan Steering Committee 2008). Based on this information and analysis of BLM GIS data, approximately 160 acres of sage-grouse nesting habitat would be involved in the Project Area (refer to Exhibit 7 in Appendix G) (BLM 2008a). Early brood-rearing habitat generally occurs relatively close to nest sites, but movements of individual broods may be highly variable. Sage-grouse broods occupy a variety of habitats during the summer including sagebrush, relatively small burned areas within sagebrush, wet meadows, farmland, and other irrigated areas adjacent to sagebrush habitats (Connelly et al. 2004). Brooding habitat exists throughout the entire Project Area within sagebrush communities (i.e., Wyoming big sagebrush and black sagebrush). There are approximately 293 acres of sagebrush communities within the Project Area.

Breeding activities occur on active leks in March and April, and nesting typically occurs in April (UDWR-UNHP 2008). Typically active leks are not used for sage-grouse breeding later than early June

(UDWR 2002). Active leks are defined as any lek that has been attended by male sage grouse during the strutting season. Presence can be documented by observation of birds using the site or by signs of strutting activities (BLM 2005). Inactive leks are defined as leks where it is known that there was no strutting activity through the course of a strutting season. A single visit, or even several visits, without strutting grouse being seen is not adequate documentation to designate a lek as inactive. This designation requires either an absence of birds on the lek during multiple ground visits under ideal conditions throughout the strutting season or a ground check of the exact lek site late in the strutting season that fails to find any sign (droppings/feathers) of strutting activity (BLM 2005).

Consultation with UDWR concluded that there are approximately three active leks located in the East Bench area several miles east of the existing Seep Ridge Road (UDWR 2008c). The hens and broods move across the Seep Ridge Road into the Willow Creek drainage approximately 1 to 2 miles north of the Willow Creek Overlook (at approximate mile markers 46 to 47). These populations maintain low numbers and have also been identified north of Kings Well Road. Analysis of BLM data from the VFO Approved RMP identified the Popewell Ridge Lek as occurring within the Project Area (approximate mile marker 48) and the Monument Ridge lek (near approximate mile marker 33) as occurring within 0.5 mile of the Project Area. The Popewell Ridge lek, occurring at approximate mile marker 48 (located on BLM land), and the Monument Ridge lek (located on BLM public lands), located within 0.5 mile of the Project Area, are determined by UDWR to be no longer active (UDWR 2008c). It should be noted that the above-mentioned lek data were erroneously included in the VFO Approved RMP and a subsequent No Surface Occupancy (NSO) was established for the leks. However, the Popewell Ridge and Monument Ridge leks have since been determined by BLM to be inactive. As such the No Surface Occupancy (NSO) restriction (outlined in the VFO Approved RMP) for surface-disturbing activities within 0.25 mile of active leks would not apply in this case.

Burrowing Owl

Burrowing owls are known to occur throughout the State of Utah (UDWR 2008d). The burrowing owl is a migratory species that winters in the southwestern United States, northern Mexico, Florida, and the West Indies, typically residing in Utah in the spring and summer. The preferred habitat for burrowing owls is arid grassland and shrubland regions, where the owl frequently nests in tunnels abandoned by burrowing mammals such as the white tailed prairie dog (UDWR 2008e). Consultation with UDWR and review of BLM data concluded that burrowing owl habitat is present in the northern portion of the Project Area associated with scattered white-tailed prairie dog colonies. Although burrowing owl surveys have not been completed for the Project Area, suitable habitat does exist for the species (BLM 2008a).

3.9.5.3 Special Status Fish Species

No perennial drainages or aquatic features occur along the Project Area and therefore, habitat for fish and other aquatic species does not exist within the Project Area. However, water from the Project Area could be carried downstream via the existing ephemeral drainage networks and ultimately empty into the White River and subsequently into the Green River.

Endangered Colorado River Fish

Four federally-listed as endangered fish species are historically associated with the Upper Colorado River Basin: The humpback chub (*Gila cypha*), bonytail (*Gila elegans*), Colorado pikeminnow (*Ptychocheilus lucius*), and razorback sucker (*Xyrauchen texanus*). The USFWS has designated critical habitat for the Colorado pikeminnow and razorback sucker in portions of the White River and its respective 100-year floodplain (59 CFR 13374). The Project Area is located approximately 12 miles south from critical habitat for the Colorado pikeminnow in the White River. The Project Area is located approximately 7

miles east of the Green River and critical habitats have been designated for the razorback sucker, humpback chub, and bonytail on this river (59 CFR 13374; USFWS 2008).

Utah State Sensitive Fish

Three fish species endemic to the Colorado River Basin have been affected by flow alternations, habitat loss or alternation, and the introduction of non-native fish: roundtail chub (*Gila robusta*), bluehead sucker (*Catostomus discobolus*), and flannelmouth sucker (*Catostomus latipinnis*). These species are classified by the State of Utah as conservation agreement species due to their declining populations within the state. Habitat for these species occurs downstream of the Project Area in the White and Green Rivers.

3.10 LIVESTOCK GRAZING

Three cattle and one sheep grazing allotment bisect the Project Area (refer to Exhibit 8 in Appendix G). Table 3.10-1 provides basic grazing information for these allotments. Within the Olsen AMP Allotment the permittee is permitted to graze approximately 6,200 sheep. It is estimated that on average 643 cattle graze the Sunday School Canyon Allotment; 1,191 cattle graze the Sand Wash Allotment; and 1,498 cattle graze the Sweet Water Allotment. The estimated average carrying capacity for these allotments are: 11.0 acres/Animal Unit Month (AUM) for the Olsen AMP Allotment; 9.1 acres/AUM for the Sand Wash Allotment; 12.6 acres/AUM for the Sunday School Canyon Allotment; and, 12.5 acres/AUM for the Sweet Water Allotment. Based on this information, a total of approximately 52 AUM’s would be involved in the Project Area.

Table 3.10-1. Grazing Allotments in the Project Area

Name	Type	Grazing Period	Total Allotment Acreage	Total Allotment AUMs ¹	Usable ² Acreage In Project Area	Usable ² AUMs In Project Area
Olsen AMP	Sheep ³	11/1 – 6/15	134,306	9,268	34	3
Sand Wash	Cattle	11/30 – 4/30	74,424	8,176	215	24.5
Sunday School Canyon	Cattle	11/1 – 4/30	51,597	4,106	163	12.9
Sweet Water	Cattle	5/1 – 10/31	104,572	8,391	143	11.2
TOTAL			364,899	29,941	555	51.6

¹ An animal unit month (AUM) is defined as “the amount of dry forage required by one animal unit for one month based on a forage allowance of 26 pounds per day” (BLM 2008a).

² Usable acreage on slopes less than or equal to 40 percent slope, and on BLM lands only.

³ This is a sheep allotment, 40% slopes are not a barrier to grazing.

Currently the existing Seep Ridge Road ROW is not entirely fenced, allowing livestock to move freely across the road in search of forage and water. There is an existing fence along the west side of the Seep Ridge Road starting in section 30, T12S, R22E running south for approximately 0.84 miles, terminating at the cattleguard at the Buck Canyon turnoff. Another fence bisects the road at a cattleguard crossing where the boundary of the Sunday School Canyon and Sweetwater Allotments meet (Sec. 23, T14S, R22E). Other existing rangeland improvement structures are shown in Table 3.10-2 (BLM 2008a). Efficient use of these improvements and effective control of free-roaming livestock in the area of the water sites and the Seep Ridge Road are significant concerns for the livestock operators on these allotments.

Table 3.10-2. Existing Rangeland Improvement Structures

Improvement Structure	Allotment	Location
Cattleguards on the Seep Ridge Road		
Mile Marker 56.8	Sand Wash	T10S, R20E section 11
Mile Marker 36	Sand Wash	T12S, R22E section 31
Mile Marker 24	Sunday School Canyon	T14S, R22E section 23
Mile Marker 14	Sweet Water	T15S, R23E section 27
Corrals		
Browns Corral	Olsen AMP	NW/4NW/4 sec. 30, T12S, R22E
McCoy Corral	Sunday School Canyon	SW/4NE/4 sec. 35, T13S, R22E
Seep Ridge Count Corral	Sunday School Canyon	NW/4NE/4 sec. 25, T14S, R22E
Monument Ridge Pasture Corral	Sweet Water	NW/4NW/4 sec. 26, T15S, R23E
Watering Ponds/Reservoirs		
	Sunday School Canyon	T13S, R22E section 26
	Sunday School Canyon	T13S, R22E section 35*
2 ponds at this site	Sunday School Canyon	NW/4NE/4 sec. 25 T14S, R22E
	Sweet Water	T15S, R23E section 35
	Sand Wash	SW/4SW/4 sec. 12, T10S, R20E
	Sand Wash	SW/4SE/4 sec. 7, T11S, R21E
	Sweet Water	NE/4 sec. 23, T14S, R22E
	Sweet Water	SW/4NE/4 sec. 25, T14S, R22E
	Sweet Water	SE/4NW/4 sec. 32, T14S, R23E*
	Sweet Water	SE/4NE/4 sec. 8, T15S, R23E
Water pipeline from well crossing the existing road	Sunday School Canyon	NW/4NW/4 sec 2, T14S, R22E

* Located on state land

3.11 RECREATION (INCLUDING TRAVEL MANAGEMENT)

The BLM's recreation management objective for the Book Cliffs area is to provide unlimited and unconfined recreation (BLM 2008a). The existing landscape in the Book Cliffs area could appropriately be characterized as remote, where currently human intrusions are substantially unnoticed. Accordingly, recreational use of the area consists primarily of dispersed hunting and limited off-highway vehicle (OHV) use where permitted. In addition to dispersed recreational use, the Second Nature Wilderness Program uses the area for some of their annual activities during the months of November to May.

Big game hunting extends from mid-August through mid-November (UDWR 2007a). The Book Cliffs area is an extremely popular hunting area and applications for the limited entry hunting permits for both elk and deer are highly sought. UDWR reports that a total of 8,413 applications were received for the 490 deer permits offered for the 2008 limited entry deer draw (UDWR 2009b). Black bear may also be hunted in the spring (mid-April through May (UDWR 2007b). Cougars may be pursued in the spring, with the hunt season beginning in late winter and extending into early summer (mid-February to June) (UDWR 2008f). Spring hunting and pursuit seasons for black bear and cougar may extend from early April through May. In the spring, antler collection is a popular activity by recreationists on foot, horseback, and ATV. In 2006, UDWR estimated a total of approximately 975 hunters were afield in the Book Cliffs, with an estimated average stay of approximately 8 days (UDWR 2007a,b and 2008f). The largest number of hunters afield generally occurs on the opening weekend of the hunt.

Two camping areas occur along the Seep Ridge Road within the Project Area: Pine Springs and Hideout (refer to Exhibit 9 in Appendix G). Six other areas are located outside of the Project Area in Grand

County. The closest camping area to the southern terminus of the Project Area is Lower Willow, about 0.5 miles east of the project's southern terminus. Additionally, there are an unknown number of dispersed camp sites that may occur within 0.5 mile of the Seep Ridge Road. It is a common practice for hunters and their families to return to their favorite camp sites year after year (BLM 1984). The BLM allows motorized camping vehicles to travel off designated routes on a single path up to 300 feet to access existing disturbed dispersed campsites (BLM 2008a).

Hunters and visitors to the Book Cliffs area have shown little interest for improved facilities such as sanitation or water systems. Other than placement of fire rings, the existing camping sites have seen little or no physical improvements (BLM 1984).

The Seep Ridge Road has been designated by the BLM as a Back Country Byway (BLM 2008a). A large network of unpaved roads and “two-track” routes also traverses the area, providing ample access for recreation users. The entire Project Area is designated as “limited” to OHV use to protect resource values including important wildlife habitat. Areas designated as “limited” restrict OHV use to designated trails and travel routes (BLM 2008a). BLM has installed a recreation/hunting information kiosk and a self-contained restroom on an area partially within the existing Seep Ridge Road ROW at the head of Buck Canyon (refer to Exhibit 9 in Appendix G). This site receives high visitation during hunting seasons and serves as a stopping point for heavy energy industry vehicles travelling on the Buck Canyon Road.

Overall, the Project Area receives relatively modest recreational use relative to other prominent recreation areas in the region such as Dinosaur National Monument, and the Flaming Gorge National Recreation Area.

3.12 LANDS/ACCESS

From the city of Vernal, the Seep Ridge Road is accessed by traveling west approximately 7 miles on U.S. Highway 40, then turning south onto Highway 88 toward the town of Ouray. At Ouray, Highway 88 becomes the Seep Ridge Road (Uintah County Road 2810). The Seep Ridge Road continues south, crossing approximately 9 miles of the historic Uintah and Ouray Indian Reservation, and then continuing in a southerly direction approximately 50 miles to its terminus with the Book Cliff Divide Road in Grand County, Utah.

Other major access tying in to the Seep Ridge Road include: Glen Bench Road (UCR 3260); West Sand Wash Road (UCR 4110); Buck Canyon Road (UCR 5460); Kings Wells Road (UCR 4190); Indian Ridge Road (UCF 4510); Pine Spring Canyon Road (UCF 5590); and Monument Ridge Road (UCR 4610). These roads serve primarily as major arterial routes for energy development activities in the Book Cliffs area. Of these roads, only the Glen Bench Road, north of the White River is currently paved.

County roads, including the Seep Ridge Road, are monitored by the Uintah County Roads Department (UCRD). The most recent data the estimates the average daily traffic (ADT) count of 569 or about 24 vehicles an hour, for the Seep Ridge Road (south bound at the cattleguard) (UCRD 2005). The type of vehicles using the Seep Ridge road include: Passenger vehicles, SUVs, pickup and light trucks, livestock hauling trucks, energy industry vehicles including heavy trucks and trailers. The majority of the traffic is during daylight hours, seven days a week. Vehicle numbers increase during hunting seasons.

Currently 41 ROWs are authorized on BLM-administered public lands that are parallel to, adjacent to, cross or are within the Project Area. These easements are principally surface and/or buried energy pipelines associated with ongoing energy development in the Book Cliffs and Willow-Hill Creeks areas. Table 3.13-1 provides a list of existing federal ROWs and their current holders.

Table 3.12-1. Existing Federal ROWs Affected by the Proposed Action

Federal ROW	Holder
UTU-47454	Slate River Resources, LLC
UTU-81566	“ “ “ “
UTU-82254	“ “ “ “
UTU-82765	“ “ “ “
UTU-76920	“ “ “ “
UTU-81567	“ “ “ “
UTU-82255	“ “ “ “
UTU-82270	“ “ “ “
UTU-72155	UBET Cellular
UTU-46776	ETC Canyon Pipeline, LLC
UTU-47466	“ “ “ “
UTU-46862	“ “ “ “
UTU-0092176	“ “ “ “
UTU-53906	“ “ “ “
UTU-76116	“ “ “ “
UTU-47454	“ “ “ “
UTU 50801	“ “ “ “
UTU 74565	“ “ “ “
UTU 85853	“ “ “ “
UTU-74592	Comet Resources LLC
UTU-53945	NW Pipeline Corporation
UTU-49205	XTO Energy, Inc.
UTU-76929	“ “ “ “
UTU-85542	“ “ “ “
UTU-57523	“ “ “ “
UTU-77736	“ “ “ “
UTU-49210	Newfield Production Company
UTU-50501	“ “ “ “
UTU-47454	Enduring Resources LLC
UTU-81566	“ “ “ “
UTU-82254	“ “ “ “
UTU-82765	“ “ “ “
UTU-76920	“ “ “ “
UTU-81567	“ “ “ “
UTU-82255	“ “ “ “
UTU-82270	“ “ “ “
UTU-77651	Rosewood Resources
UTU-77715	Pioneer Natural Resources USA, Inc.
UTU-79095	“ “ “ “ “ “
UTU-81233	“ “ “ “ “ “
UTU-77717	“ “ “ “ “ “
UTU-81232	“ “ “ “ “ “
UTU-85503	“ “ “ “ “ “

Source: BLM datafiles.