

### **3.0 AFFECTED ENVIRONMENT**

#### **3.1 INTRODUCTION**

This chapter describes the affected environment in the vicinity of the Proposed Action (the project area) as it exists today, where pertinent existing development, impacts, and disturbances which have occurred since the DR and FONSI for the CRNGDP EA was signed in 1998 are described. This description is organized by resource with descriptive information taken from a wide range of sources including the BLM and various other federal and state agencies.

A tiered approach was used in the preparation of this environmental analysis document and much of the information contained in the original CRNGDP EA (BLM 1998) has been incorporated into this document by reference. New information will be provided in this chapter where necessary and appropriate to reflect changes that have occurred in the human and natural environment since 1998. Otherwise, the reader will be directed to the narratives contained in Chapter 3.0 of the original CRNGDP EA (BLM 1998).

#### **3.1.1 Environmental Elements Not Present Within the Project Area**

For the purposes of this document, the following resources are still not present in the project area and, therefore, would not be adversely affected by implementation of the Proposed Action. Consequently, these resources will not be addressed in this chapter or in Chapter 4.0 (Environmental Consequences) to follow.

- **Floodplains, Wetlands and Prime or Unique Farm Lands**

Floodplains and/or wetlands as defined in Executive Orders 11988 and 11990 would not be affected by the Proposed Action. Likewise, there are no prime or unique farm lands that would be affected by the Proposed Action.

- **Wilderness Areas, Wilderness Study Areas and Areas of Critical Environmental Concern**

The project area is not located in either an existing or proposed wilderness/primitive area, a wilderness study area (WSA), or an area of critical environmental concern (ACEC).

- **Primary or Sole Sources of Drinking Water**

The Proposed Action would not affect any primary or sole sources of drinking water.

- **Wild and Scenic Rivers**

There are no designated or candidate wild and scenic rivers that would be affected by the Proposed Action.

### **3.1.2 Environmental Elements Considered With Minor Effects**

The following resources would not be adversely affected by implementation of the Proposed Action. Consequently, these resources will also not be addressed in this chapter or in Chapter 4.0 (*Environmental Consequences*) to follow.

- Fisheries - there are no perennial streams in or adjacent to the MCRNGDPA; consequently, there are no fisheries that could be affected by the Proposed Action.
- Paleontology - while the Eocene Wind River Formation is known to contain scientifically significant fossils throughout the Wind River Basin, bedrock outcrops that could contain significant fossils are noticeably absent throughout the majority of the project area. Moreover, past construction activity within the CRU has failed to encounter bedrock deposits or paleontological remains. Mitigation recommended in Section 4.3.4 should prove adequate to protect any isolated paleontologic resources that might be encountered as a result of additional oil/gas exploration and development activity in the MCRNGDPA.
- Recreation - the project area consists of a mosaic of fee (46.10%), state (18.62%), and federal (35.28%) lands (see Table 1.1 and Figure 1.3), with the isolated tracts of federal land in the northern portion of the MCRNGDPA being effectively “landlocked” due to the general lack of a public easement (right-of-way) thereto. Access to a large block of federal lands in the south/southwest portion of the MCRNGDPA is provided by Natrona County Road 212. However, considering that there are no special recreation management areas or developed recreational sites within the project area combined with existing ownership patterns, recreational opportunities within the MCRNGDPA are somewhat limited and would not be adversely affected by the Proposed Action.
- Socioeconomics - neither the economy of Natrona County nor the quality of life for the residents thereof will be adversely affected by the Proposed Action. As described in Chapter 2.0, additional oil/gas exploration and development activity in the MCRNGDPA would not result in an increase in the local workforce, with a concomitant burden on the resources of Natrona County and the infrastructure thereof. In point of fact, implementation of the Proposed Action would actually have a positive impact on the economy of Natrona County through increased revenues generated by additional hydrocarbon production from leases within the project area.
- Vegetation - considering that there are no T/E or candidate plant species known to occur within the MCRNGDPA, the long-term disturbance of 56.81 acres (1.39% of the total surface acreage) over the LOP does not represent a significant impact to plant communities within the MCRNGDPA.

### **3.2 GENERAL SETTING**

Please refer to Section 3.2 of the CRNGDP EA (BLM 1998) for a comprehensive discussion of the general project setting for the MCRNGDPA.

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### 3.3 AIR QUALITY

#### 3.3.1 Climate, Precipitation, and Winds

Please refer to Section 3.3.1 of the CRNGDP EA (BLM 1998) for a comprehensive discussion of climate, precipitation, and winds in the MCRNGDPA.

#### 3.3.2 Air Quality

Current and complete monitoring data for ambient air quality are not available for the Cumulative Impact Study Area. However, based on data collected in similar locations and reviewed by the State of Wyoming, Department of Environmental Quality, Air Quality Division (WDEQ/AQD), air quality levels are assumed to be in attainment for all Wyoming Ambient Air Quality Standards (WAAQS) and National Ambient Air Quality Standards (NAAQS).

Estimation of background air pollutant concentrations (reported in micrograms per cubic meter, or  $\mu\text{g}/\text{m}^3$ ) is necessary in order to compare potential total air quality impacts from the Proposed Action and Alternatives with applicable air quality standards. Thus, for comparison against an applicable standard, total impacts are the sum of the background concentration plus direct modeled impacts. It is important that individual background concentration values, model predictions, and applicable air quality standards are for the same averaging time period for each pollutant. Background air pollutant concentration data were provided by WDEQ/AQD (WDEQ 2003). Background concentrations of carbon monoxide (CO) are taken from representative data collected by WDEQ/AQD and commercial operators at Ryckman Creek for an 8-month period and summarized in the Riley Ridge EIS (BLM 1983). Sulfur dioxide (SO<sub>2</sub>) gaseous air pollutant data were gathered at the Lost Cabin Gas Plant site in Fremont County (1986-87). Nitrogen dioxide (NO<sub>2</sub>) and ozone data were collected at the Thunder Basin National Grasslands (2001-2002). Particulate matter less than 10 microns in diameter (PM<sub>10</sub>) and particulate matter less than 2.5 microns in diameter (PM<sub>2.5</sub>) were collected in an urban area at the Cheyenne State Office Building (2002). Background air pollutant concentrations and applicable air quality standards are summarized in Table 3.1 (WDEQ 2003).

### 3.4 CULTURAL RESOURCES

Approximately 698 acres (+/-) have been inventoried for cultural resources within the MCRNGDPA and surrounding areas (Brunette 2003) which represents 17% of the overall land area included within the project area. These inventories were conducted in compliance with the *National Historic Preservation Act* (NHPA) and included all lands that were potentially affected by surface disturbing activities within or directly adjacent to the MCRNGDPA. Table 3.2 provides a synopsis of the cultural inventories conducted in and/or adjacent to the MCRNGDPA by section. Copies of the individual cultural resource inventory reports are currently on file with both the BLM's Casper Field Office in Casper, Wyoming and the Wyoming State Historic Preservation Office (SHPO) in Laramie, Wyoming.

**Table 3.1**

**Background Air Quality Concentrations, Ambient Standards and PSD Increments ( $\mu\text{g}/\text{m}^3$ )**

Airborne Pollutant	Averaging Time <sup>1</sup>	Background Concentration	Air Quality Standards		PSD Increments	
			WAAQS	NAAQS	Class I	Class II
Carbon Monoxide (CO)	1-hour	3,336	40,000	40,000	None	None
	8-hour	1,381	10,000	10,000	None	None
Nitrogen Dioxide (NO <sub>2</sub> )	Annual	5.0	100	100	2.5	25
Ozone (O <sub>3</sub> )	1-hour	162	235	235	None	None
	8-hour	150	157	157	None	None
Sulfur Dioxide (SO <sub>2</sub> )	3-hour	93	1,300	1,300	25.0	512
	24-hour	32	260	365	5.0	91
	Annual	4	60	80	2.0	20
PM <sub>10</sub>	24-hour	47	150	150	8.0	30
	Annual	16	50	50	4.0	17
PM <sub>2.5</sub>	24-hour	15	65	65	None	None
	Annual	5	15	15	None	None

Source: WDEQ 2003.

1 Short-term concentrations reflect the maximum measured values during the entire period of record, except for ozone, which reflect the average of available 2001 and 2002 second high data (1-hour) and fourth-high data (8-hour). Short-term (1-hour, 3-hour, etc.) ambient standards allow not more than one expected exceedance per year. Long-term (annual) standards are not to be exceeded.

The cultural resource inventories referenced in Table 3.2 involved portions of 10 sections within the MCRNGDPA, 5 of which were located in T35N, R87W, with the remaining 5 sections located in T36N, R87W. These inventories identified 12 prehistoric and 5 historic cultural sites/properties. It should be noted that cultural sites identified in Section 9, T35N, R87W (prehistoric site) and Section 28, T36N, R87W (historic railroad grade) are located outside of the MCRNGDP area.

Please refer to Section 3.4 in the CRNGDP EA (BLM 1998) for information concerning cultural sites identified in conjunction with inventories conducted prior to June of 1998.

### 3.5 GEOLOGY AND MINERALS

Please refer to Section 3.5 of the CRNGDP EA (BLM 1998) for a general discussion of geology and minerals in the MCRNGDPA.

**Table 3.2**

**Cultural Inventories within the MCRNGDPA and Adjacent Areas**

Surveyed Areas			Survey Data		Total Sites	Site Classification			Isolated Finds
Section	Township	Range	Surveys	Acres		Eligible	Not Eligible	Unclassified	
3	35 North	87 West	19	148	1	0	0	1	0
4	35 North	87 West	12	122	1	1	0	0	0
9	35 North	87 West	3	10	1	1	0	0	1
10	35 North	87 West	27	246	3	1	2	0	0
15	35 North	87 West	5	30	0	0	0	0	1
27	36 North	87 West	4	10	1	1	0	0	1
28	36 North	87 West	4	10	4	1	3	0	1
32	36 North	87 West	0	---	--	--	--	--	0
33	36 North	87 West	10	132	5	0	3	2	4
34	36 North	87 West	2	???	1	1	0	0	0
<b>Totals</b>			<b>86</b>	<b>698</b>	<b>17</b>	<b>6</b>	<b>8</b>	<b>3</b>	<b>8</b>

NOTE: The acreages presented above are approximate as the May 30, 2003 file search of the SHPO database does not provide actual acreages for 36 of 86 total inventories listed for the sections listed above. In many cases, these inventories were linear surveys conducted in association with seismic lines (10), pipelines (9), access roads (6), and powerlines (1). The remaining inventories involved the hydrostatic testing of a pipeline (1) and block inventories for well locations and access road routes (9). In some cases, the SHPO either may not have received the final report or may not have had time to enter the report data into the database.

**3.5.1 Geology**

Please refer to Section 3.5.1 of the CRNGDP EA (BLM 1998) for a comprehensive discussion of the geology in the MCRNGDPA.

**3.5.2 Minerals**

As indicated in Section 2.1, a combined total of 38 wells have been drilled within the Cooper Reservoir Field subsequent to the issuance of the DR and FONSI for the CRNGDP EA (BLM 1998). These wells are identified in Table 3.3 (below). Of the 18 active/proposed wells identified in Table 3.3 of the CRNGDPA EA (BLM 1998), 6 wells are currently producing, 4 wells are now shut-in, 1 well remains a water disposal well, 6 wells have been plugged and abandoned, and 1 well was never drilled. There are currently 40 producing gas wells, 5 shut-in gas wells, 1 water injection well, and 3 wells recently drilled which are now waiting on completion operations within the MCRNGDPA (WOGCC 2003).

**Table 3.3**

**Wells Drilled in the MCRNGDPA Since the Issuance of the DR and FONSI for the CRNGDP EA in June 1998**

Well Name and Number	Legal Location of Well				Spud Date	Current Well Status
	Quarter	Section	Township	Range		
Cooper Reservoir Unit #15	NW¼SW¼	3	35 North	87 West	09/07/1998	Producing
Cooper Reservoir Unit #16	SE¼SW¼	3	35 North	87 West	10/07/1998	Producing
Cooper Reservoir Unit #28	NW¼NE¼	3	35 North	87 West	01/07/2000	Shut-In
Cooper Reservoir Unit #29	NW¼SW¼	3	35 North	87 West	03/01/2000	Producing
Cooper Reservoir Unit #30	SW¼NW¼	3	35 North	87 West	02/28/2000	Producing
Cooper Reservoir Unit #34	NE¼SW¼	3	35 North	87 West	11/18/2000	Producing
Federal #2-4	NE¼SW¼	4	35 North	87 West	06/11/1999	Producing
Cooper Reservoir Unit #22	NE¼SE¼	4	35 North	87 West	01/29/1999	Producing
Cooper Reservoir Unit #23	SW¼NE¼	4	35 North	87 West	05/10/1999	Producing
Cooper Reservoir Unit #25	NW¼NE¼	4	35 North	87 West	06/25/1999	Producing
Cooper Reservoir Unit #26	NW¼SE¼	4	35 North	87 West	07/16/1999	Producing
Cooper Reservoir Unit #35	SW¼NE¼	4	35 North	87 West	08/10/2001	Producing
Cooper Reservoir Unit #37	SW¼NE¼	4	35 North	87 West	07/08/2002	Producing
Cooper Reservoir Unit #40	SE¼SE¼	4	35 North	87 West	04/02/2003	Producing
Cooper Reservoir Unit #54	NE¼NE¼	4	35 North	87 West	11/28/2003	WOC
Cooper Reservoir Unit #55	SE¼NE¼	4	35 North	87 West	11/13/2003	WOC
Cooper Reservoir Unit #24	NE¼NE¼	9	35 North	87 West	05/27/1999	Producing
Cooper Reservoir Unit #17	NW¼SW¼	10	35 North	87 West	06/28/1998	Producing
Cooper Reservoir Unit #18	NW¼SE¼	10	35 North	87 West	08/07/1998	Producing
Cooper Reservoir Unit #19	SE¼SW¼	10	35 North	87 West	08/24/1998	Producing
Cooper Reservoir Unit #20	SW¼SE¼	10	35 North	87 West	12/04/1998	Producing
Cooper Reservoir Unit #21	SE¼NW¼	10	35 North	87 West	12/26/1998	Producing
Cooper Reservoir Unit #31	SW¼NW¼	10	35 North	87 West	01/08/2000	Producing
Cooper Reservoir Unit #32	NE¼NW¼	10	35 North	87 West	10/26/2000	Producing
Cooper Reservoir Unit #33	NW¼SW¼	10	35 North	87 West	12/10/2000	Producing
Cooper Reservoir Unit #36	SW¼NW¼	10	35 North	87 West	08/30/2001	Producing
Cooper Reservoir Unit #38	SW¼NE¼	10	35 North	87 West	09/18/2001	Producing
Cooper Reservoir Unit #41	NW¼NW¼	10	35 North	87 West	04/27/2003	Producing
Cooper Reservoir Unit #42	SW¼SE¼	10	35 North	87 West	02/27/2003	Producing
Cooper Reservoir Unit #52	NE¼SW¼	10	35 North	87 West	08/16/2003	Producing
Cooper Reservoir Unit #27	NE¼NW¼	15	35 North	87 West	08/06/1999	Producing
Cooper Reservoir Unit #43	NW¼NE¼	15	35 North	87 West	04/16/2003	Producing
Stone Cabin Unit #22-15	SE¼NW¼	15	35 North	87 West	09/11/2003	WOC
Federal #1-28	SE¼SE¼	28	36 North	87 West	02/04/2003	Producing
Cooper Reservoir Unit #39	SW¼SE¼	33	36 North	87 West	05/26/2003	Producing
Cooper Reservoir Unit #44	SE¼SE¼	33	36 North	87 West	05/15/2003	Producing
Federal #3-33	NE¼SW¼	33	36 North	87 West	06/21/2002	Producing
Federal #4-33	NE¼SE¼	33	36 North	87 West	03/13/2003	Producing

Source: Wyoming Oil and Gas Conservation Commission (WOGCC) Computerized Well Files and Database

Of the 38 wells that have been drilled in the overall project area since the DR and FONSI were issued for the CRNGDP EA (BLM 1998), 23 of the producing well locations have been reclaimed as of December 1, 2003 with 15 locations awaiting reclamation once the reserve pit(s) have dried sufficiently to allow backfilling. Based upon an average disturbance of 2.79 acres per well location, the construction of these 38 wells has resulted in approximately 106.02 acres of short-term surface disturbance within the overall project area. Reclamation of the unneeded (non-working) areas of the 23 producing wells locations has reduced the long-term (unreclaimed) disturbance to 67.52 acres to date, with an additional 25.11 acres scheduled for reclamation within the next 2 years.

For the purposes of this analysis, we will assume that access road and pipeline ROW's have not been fully reclaimed as yet. As a consequence, construction of the 70,085' of access road has resulted in total surface disturbance equal to 64.36 acres (assuming a total disturbed ROW width of 40 feet) and installation of the 54,078' of buried pipeline ROW has resulted in an additional 39.88 acres of surface disturbance (see Table 4.2). Reclamation of existing roads and pipelines within the MCRNGDPA (30% of roads and 100% of pipelines) will result in a long-term or LOP disturbance equal to 45.05 acres.

Please refer to Section 3.5.2 of the CRNGDP EA (BLM 1998) for a comprehensive discussion of the Cooper Reservoir Field including exploration and development activities conducted therein prior to June of 1998.

### **3.6 HYDROLOGY**

#### **3.6.1 Surface Hydrology**

The MCRNGDPA encompasses portions of 5 separate watersheds (see Figure 3.1). These watersheds are identified in Table 3.4 (below) along with both the approximate acreages of each watershed and percentages thereof within the overall MCRNGDPA.

**Table 3.4**

**Watersheds within the MCRNGDPA**

<b>Name of Watershed</b>	<b>Number of Acres</b>	<b>Percent of MCRNGDPA</b>
Adobe Reservoir	374.71	9.18%
Poison Creek Tributary	59.59	1.46%
Sand Draw	2,221.69	54.43%
South Fork Powder River	978.80	23.98%
Upper Sand Draw	446.95	10.95%
<b>TOTALS</b>	<b>4,081.74</b>	<b>100.00%</b>

Source: CRNGDP EA (BLM 1998)

[Link to Figure 3.1](#)

The 446.95 acres included in the Upper Sand Draw watershed were analyzed in the Cave Gulch-Bullfrog-Waltman Natural Gas Project EIS (BLM 1997).

Seventy-eight percent (3,200.40 acres) of the project area is located within the Sand Draw and South Fork Powder River watersheds (see Figure 3.1). As their names imply, these watersheds are drained primarily by ephemeral tributaries of both Sand Draw and the South Fork of the Powder River. The northwestern corner of the MCRNGDPA is included within the Adobe Reservoir and Poison Creek Tributary watersheds, which are drained by ephemeral tributaries of Poison Creek. All of these drainages are intermittent in nature and normally flow only during periods of spring runoff and/or localized periods of heavy rainfall. Runoff generated in the Sand Draw and South Fork Powder River watersheds would flow to the east/northeast out of the project area while runoff generated in the Adobe Reservoir and Poison Creek Tributary watersheds would flow to the west out of the project area. All four watersheds drain into the Missouri River system, which ultimately flows into the Gulf of Mexico via the Mississippi River. No runoff would flow into the North Platte River or any tributaries thereof.

Topographic maps of the MCRNGDPA reveal that 3 separate stock reservoirs (surface impoundments) existed within the project area at the time the area was originally mapped by the U.S. Geological Survey (ca. 1952). A review of aerial photographs taken of the overall project area on September 22, 2001 revealed that none of these 3 stock reservoirs were holding water at the time of the overflight. Please refer to Section 3.6.1 of the CRNGDP EA (BLM 1998) for additional information in this regard.

### **3.6.2 Sub-Surface Hydrology**

There have been no new water wells drilled within the project area since 1998. Please refer to Section 3.6.2 of the CRNGDP EA (BLM 1998) for a comprehensive discussion of the sub-surface hydrology within the MCRNGDPA.

## **3.7 RANGE MANAGEMENT**

Modifications to the boundaries of the CRNGDPA as presented in 1998 have resulted in the elimination of the Springsteen allotment from the MCRNGDPA. The 1,440 acres of public land included within the MCRNGDPA now encompass portions of two separate grazing allotments, each of which are currently subject to a separate grazing lease. Table 3.5 provides general information concerning each grazing allotment within the MCRNGDPA including allotment name and number, grazing lessee, lease number, total acres, and total Animal Unit Months (AUM's). Table 3.6 provides more specific information concerning both of these grazing leases including the legal description of each lease, the number of acres within each lease parcel, and the acres per AUM. On the average, the public rangelands within the project area have a carrying capacity of 6.53 acres per AUM for domestic livestock and are generally utilized as year-round pasture by the permittees.

**Table 3.5**

**Grazing Allotments in the MCRNGDPA**

Allotment Name	Allotment Number	Grazing Lessee(s)	Grazing Lease Number	Total Acres in MCRNGDPA	Total AUM's in MCRNGDPA
South Hiland	10030	Deer Creek Ranch, Inc.	496071	640.00	91.59
Skyline	10145	David O. Mackenzie	496179	800.00	129.08
<b>TOTALS</b>				<b>1,440.00</b>	<b>220.67</b>

**Table 3.6**

**Description of Grazing Leases on Public Lands within the MCRNGDPA**

Grazing Lessee	Lease Number	Legal Location of Grazing Lease				# Acres	Acres/AUM
		Quarter	Section	Township	Range		
Deer Creek Ranch, Inc.	496071	NE¼NE¼	9	35 North	87 West	40.00	6.15
Deer Creek Ranch, Inc.	496071	N½	10	35 North	87 West	320.00	6.15
Deer Creek Ranch, Inc.	496071	S½SW¼, SW¼SE¼	27	36 North	87 West	120.00	8.47
Deer Creek Ranch, Inc.	496071	SE¼	28	36 North	87 West	160.00	8.47
David O. Mackenzie	496179	S½	10	35 North	87 West	320.00	6.27
David O. Mackenzie	496179	N½, N½S½	15	35 North	87 West	480.00	6.15

We may assume that similar, state and/or privately-owned, rangelands within the project area would also have an average carrying capacity of approximately 6.53 AUM's and that grazing practices would be similar to those currently being utilized on public lands. Range improvements within the MCRNGDPA consist primarily of cross fencing along property and/or allotment boundaries, as well as the stock reservoirs and water wells identified in Sections 3.6.1 and 3.6.2.

No site specific surveys have been conducted within the MCRNGDPA to determine the presence of invasive non-native species. However, it is possible that Canadian thistle (*Cirsium arvense*), musk thistle (*Carduus nutans*), cheatgrass (*Bromus tectorum*), Russian knapweed (*Acroptilon repens*), and halogeton (*Halogeton glomeratus*) occur on or adjacent to previously disturbed areas within the overall project area.

**3.8 SOILS**

As indicated in Section 1.1, approximately 2,200 acres originally included in the CRNGDP EA have been eliminated from the modified project description for the MCRNGDPA. This modification has resulted in the elimination of four of the soil mapping units (112, 236, 282, and 293) discussed in the

original CRNGDP EA (BLM 1998). Table 3.7 provides information concerning those soil mapping units which remain within the MCRNGDPA including total acres, the percentage of total acres, and sensitivity of these soils (refer to Figure 3.2).

As indicated in Table 3.7, sensitive soils constitute approximately 21% (842 acres) of the overall MCRNGDPA. A summary of the physical characteristics of individual soils within each soil mapping unit (SMU) was provided in Table 3.7 of the original CRNGDP EA (BLM) and these descriptions remain valid for the soils identified below.

**Table 3.7**

**Soil Mapping Units within the MCRNGDPA**

<b>Map Unit</b>	<b>Name of Soil Mapping Unit</b>	<b># Acres</b>	<b>% of Area</b>	<b>Sensitive Soil</b>
130	Bosler-Alcova complex, 2 to 10% slopes	97.96	2.40	Yes
132	Bowbac-Hiland fine sandy loams, 3 to 10% slopes	978.80	23.98	No
194	Haverdad-Clarkelen complex, 0 to 3% slopes	15.10	0.37	No
201	Hiland sandy loam, 0 to 6% slopes	1,958.01	47.97	No
207	Keeline-Taluce-Rock Outcrop complex, 6 to 20% slopes	241.64	5.92	No
209	Keyner-Absted-Slickspots complex, 0 to 6% slopes	525.73	12.88	Yes
227	Orella-Cadoma-Petrie clay loams, 3 to 30% slopes	139.19	3.41	Yes
301	Vonalee-Hiland complex, 3 to 15% slopes	78.78	1.93	Yes
310	Zigweid loam, 2 to 9% slopes	46.53	1.14	No
<b>TOTALS</b>		<b>4,081.74</b>	<b>100.00</b>	

Please refer to Section 3.8 of the CRNGDP EA (BLM 1998) for more detailed information concerning soils within the MCRNGDPA.

**3.9 VISUAL RESOURCES**

As indicated in Section 3.9 of the CRNGDP EA (BLM 1998), the northern portion of the MCRNGDPA falls within a 3 mile buffer zone established along U.S. Highway 20-26 which was included within Visual Resource Management (VRM) Class III by the Platte River Resource Area (PRRA) Office in their *Oil & Gas Environmental Assessment* dated March, 1982. Under this VRM class, changes in the basic elements (form, line, color, or texture) may be evident in the characteristic landscape. However, the changes should remain subordinate to the visual strength of the existing (land) character. The natural landscape in this 3-mile corridor along either side of U.S. Highway 20-26 has been subjected to some extensive cultural modifications, all of which contribute to the degradation of the scenic values in the area directly north and east of the MCRNGDPA.

[Link to Figure 3.2](#)

These cultural modifications include, but are not limited to, the facilities identified in the original CRNGDP EA (BLM 1998) as well as additional modifications as follows.

1. Installation of an extensive “man-camp” in conjunction with water hauling activities associated with the industrial water well located approximately 1/2 mile south of the community of Waltman in the NE¼SW¼ of Section 30, T36N, R86W.
2. An area of extensive rangeland vegetative treatment including tilling and probable dry land crop farming in an area directly south of U.S. Highway 20-26 and east of Natrona County Road 212.

The remaining portions of the MCRNGDPA that are outside of the 3-mile corridor along U.S. Highway 20-26 fall within VRM Class IV. Under this VRM Class, changes may subordinate the original composition and character of the landscape, but must reflect what could be a natural occurrence within the characteristic landscape (BLM 1982). Cultural modifications to the existing landscape along Natrona County Road 212 include many of the facilities listed above, in conjunction with existing development within the CRU (refer to Table 3.3 and Figure 1.2).

Please refer to Section 3.9 of the CRNGDP EA (BLM 1998) for additional information concerning existing visual intrusions within the overall project area.

### **3.10 WILDLIFE**

Please refer to Sections 3.10, 3.10.1, and 3.10.2 of the original CRNGDP EA (BLM 1998) for introductory remarks (Section 3.10) and a comprehensive discussion of the two life zones (Sections 3.10.1 and 3.10.2) encountered within the MCRNGDPA.

#### **3.10.1 Economically Important Wildlife Species**

The economically important wildlife species discussed in Section 3.10.3 of the CRNGDP EA (BLM 1998) have not changed in the intervening period of time. Population objectives for both pronghorn antelope and mule deer in the Rattlesnake Herd Unit remain at 12,000 and 5,500 animals respectively (WGFD 2003a). Likewise, population objectives for both species in the Beaver Rim Herd Unit also remain at 25,000 and 2,600 post-hunt animals respectively (WGFD 2003b). Table 3.8 provides current population data for both antelope and mule deer in the Beaver Rim and Rattlesnake Herd Units. There are no population data estimates for sage grouse within the MCRNGDPA and there are no known leks within two miles of the MCRNGDPA boundary (WGFD 2002).

Please refer to Section 3.10.3 of the CRNGDP EA (BLM 1998) for additional information concerning economically important wildlife species that may occur within the MCRNGDPA, herd unit designations (as appropriate), and their respective habitats.

**Table 3.8**

**Population Objectives, 2002 Post-Hunt Population Estimates, and Population Trends in Antelope and Mule Deer Populations in the Beaver Rim and Rattlesnake Herd Units**

Herd Unit	Antelope			Mule Deer		
	Objective	Actual	Pop. Trend	Objective	Actual	Pop. Trend
Beaver Rim	25,000	18,263	↓ 27%	2,600	650	↓ 75%
Rattlesnake	12,000	15,260	↑ 27%	5,500	3,773	↓ 31%

Source: WGFD Annual Big Game Herd Unit Completion Reports for the Casper and Lander Regions (WGFD 2003a, 2003b)

**3.10.2 Raptor Species**

Please refer to Section 3.10.4 of the CRNGDP EA (BLM 1998) for a comprehensive discussion of raptors and historic raptor nesting activity within the MCRNGDPA. It should be noted that Intoil, Inc. installed three artificial nesting structures (ANS) within or directly adjacent to the overall project area subsequent to the completion of the CRNGDPA EA (BLM 1998). These ANS' are located as follows:

- CR #1: NE¼NE¼SW¼NW¼ of Section 9, T35N, R87W.
- CR #2: SW¼SW¼NE¼SW¼ of Section 9, T35N, R87W.
- CR #3: NW¼SE¼SW¼NE¼ of Section 3, T35N, R87W.

Inventories of raptor nesting activity at selected nests within the MCRNGDPA during the spring of 2003 indicated that CR #1 was occupied by a ferruginous hawk on April 27, 2003, with incubation still in progress as of May 28, 2003. These same inventories revealed that CR #2 showed some signs of past activity although a defined nest structure was not present, which would suggest that nest tending/construction activity had occurred prior to April 27. While nesting platforms were installed on both the CR #2 and CR #3 structures, field observations made during the spring of 2003 would suggest that nesting materials and/or replacement nests were apparently not included as an inducement to nesting upon installation thereof, which may explain why these ANS' have received little or no attention to date.

The historic raptor nests identified in conjunction with the CRNGDP EA (BLM 1998) and subsequently inventoried showed no signs of any tending/nesting activity during the 2003 nesting period with the following caveats:

- historic nest number 192 was a historic golden eagle (*Aquila chrysaetos*) nest which was constructed on a 400 barrel tank installed at the Federal #1-33 well location. Subsequent to

1998, the nest was taken over by a pair of common ravens (*Corvus corax*) who then utilized the nest for a period of several years. The 2003 inventory revealed that nest number 192 is now gone.

- historic nest numbers 168 and 171 were vestigial nests back in 1998 and consisted of a mere scattered collection of sticks with absolutely no nest cup definition or evidence of historic use. Subsequent inventories have failed to identify any nesting activity thereon and these nests are now considered to be relicts. As a consequence, these nests were not inventoried in 2003 and will no longer be included in any raptor nesting inventories within the overall analysis area.
- Nest numbers 140, 143, 195, 196, and 197 were not inventoried in 2003 as no development activity was proposed by BBC within a 0.25 mile radius of these nests during the nesting season.

### 3.10.3 Threatened, Endangered and Candidate Species

#### 3.10.3.1 Threatened and Endangered Species

Threatened and/or endangered (T/E) species include those species which are in danger of extinction due to drastic population declines and which have subsequently been listed as threatened or endangered pursuant to the *Endangered Species Act* (ESA) of 1973 (as amended). Those T/E species identified by either the U.S. Fish and Wildlife Service (USFWS) or Bureau of Land Management which may potentially occur within the project area include:

- **Bald eagle** (*Haliaeetus leucocephalus*) - Status: Threatened.

Migrant through the area during the fall and spring migrational periods, seasonal resident during the winter months along the North Platte River.

Historic habitat for bald eagles migrating through or wintering in central Wyoming would include riparian area(s) along the North Platte River in Natrona County and both the Big and Little Wind Rivers in Fremont County, which provide roosting and perching areas for eagles foraging along the river course and their adjacent uplands. Roosting areas for bald eagles are also known to occur on the west end of Casper Mountain (Jackson Canyon) and on Pine Mountain (both of which are located in Natrona County).

Survey flights during the early 1980's found a smaller portion of bald eagles along the river compared to the number of eagles within roosts on nights before the flights which would suggest that a larger number of bald eagles were foraging in the rangelands than along the river and other large water bodies. In this regard, open rangelands throughout east-central Wyoming are probably being used opportunistically by bald eagles for foraging; however, no bald eagles have been observed in the area in conjunction with BLM or BLM-approved inventories within the project area since 1998 (BLM 2004).

- **Black-footed ferret** (*Mustela nigripes*) - Status: Endangered.

Potential resident in prairie dog (*Cynomys sp.*) colonies.

As there are no known prairie dog towns within the MCRNGDPA, impacts to black-footed ferrets are not expected to occur.

- **Preble's meadow jumping mouse** (*Zapus hudsonius preblei*) - Status: Threatened.

Potential resident in riparian habitats east of the Laramie Mountains and south of the North Platte River drainages.

There are no perennial or intermittent streams with associated riparian habitats within the MCRNGDPA and the project area is not within the area of expected occurrence for the Preble's Meadow jumping mouse.

- **Ute ladies'-tresses** (*Spiranthes diluvialis*) - Status: Threatened.

Potential resident in seasonally moist soils and wet meadows below 7,000 feet. Locally found in the North Platte River drainage below Alcova Reservoir and in the drainages of the Cheyenne and Niobrara Rivers in southeastern Wyoming.

As indicated above, there are no perennial or intermittent streams with associated riparian habitats within the MCRNGDPA. Furthermore, as the MCRNGDPA does not occur in the drainages of the North Platte, Cheyenne, or Niobrara Rivers, the expected area(s) of occurrence, impacts to Ute ladies'-tresses are not expected to occur.

- **Colorado butterfly plant** (*Gaura neomexicana* spp. *coloradensis*) - Status: Threatened.

Potential resident on sub-irrigated, alluvial soils on level or slightly sloping floodplains and drainage bottoms at elevations of 5,000-6,400 feet). Colonies are often found in low depressions or along bends in wide, meandering stream channels. Known populations of this species are restricted to approximately 1,700 acres of habitat in Laramie County, Wyoming, western Kimball County, Nebraska, and Weld County, Colorado within the drainages of both the North and South Platte Rivers (Fertig 2000a).

As indicated above, there are no perennial or intermittent streams with associated sub-irrigated alluvial soils or floodplains within the MCRNGDPA. Furthermore, as the MCRNGDPA does not occur within the drainage of the North Platte River, the expected area of occurrence, impacts to the Colorado butterfly plant are not expected to occur.

- **Blowout penstemon** (*Penstemon haydenii*) - Status: Endangered.

Potential resident in "blowouts" - sparsely vegetated depressions in active sand dunes created by wind erosion which typically form on windward sandy slopes where the vegetation has been

removed or disturbed (Fertig 2000b). In Wyoming, the only known populations of blowout penstemon are located at the eastern end of the Ferris sand dune system at the head of Schoolhouse Creek and the west side of Bradley Peak in Carbon County (BLM 2003).

As there are no active sand dunes within the MCRNGDPA, this species is not expected to occur within the overall project area.

- **North Platte River Species**

In addition to the species listed above, the U.S. Fish and Wildlife Service also identified five T/E species which may occur in the downstream riverine habitats of the North Platte River in Nebraska as follows:

- 1) Interior least tern (*Sterna antillarum*) - Status: Endangered;
- 2) Piping plover (*Charadrium melodus*) - Status: Threatened;
- 3) Pallid sturgeon (*Scaphirhynchus albus*) - Status: Endangered;
- 4) Eskimo curlew (*Numenius borealis*) - Status: Endangered; and
- 5) Western prairie fringed orchid (*Platanthera praeclara*) - Status: Threatened.

These species could be adversely affected by water depletions (consumption) in the North Platte River system resulting from project-related activities.

### 3.10.3.2 Candidate Species

Species that are candidates for listing as threatened or endangered that may occur within the project area include:

- **Black-tailed prairie dog** (*Cynomys ludovicianus*)

Expected occurrence includes grasslands generally east of the continental divide.

As indicated in Section 3.10.3.1 (above), there are no known prairie dog towns within the MCRNGDPA; consequently, this species will not be addressed further in this analysis document.

### 3.10.4 Special Status Species

Special status species would include those plants/animals that do not currently warrant protection under the *Endangered Species Act* of 1973 (as amended), yet are considered by the Bureau of Land Management as sensitive species. The CRNGDP EA (BLM 1998) included a discussion of both

swift fox (*Vulpes nigripes*) and mountain plover (*Charadrius montanus*) as candidate species. While both species have since been removed from further consideration as T/E species by the USFWS, BLM considers these species to be “sensitive” and management decisions should consider impacts thereto. The discussions contained in Sections 3.10.5.2 and 4.9.3.6 of the CRNGDP EA (BLM 1998) regarding swift fox are considered more than adequate for the current proposal and we do not expect the revised project proposal to adversely affect swift fox. Regarding potential impacts to mountain plover, inventories of the MCRNGDPA by both BLM and AEC in 2002 and again in 2003 have revealed that there is no suitable mountain plover habitat within the modified project area. Consequently, we do not anticipate any impacts to mountain plover breeding or nesting activity within the MCRNGDPA as a result of project related activities. Considering the above, these two species will not be addressed further in this document.

### 3.10.5 Migratory and Non-Migratory Birds

Habitats in the MCRNGDPA and immediate vicinity are primarily sagebrush-dominated uplands (shrub-steppe) with interspersed shortgrass prairie. Wyoming Partners in Flight (PIF) priority species potentially occurring in the shrub-steppe (SS) and shortgrass prairie (SGP) habitat types are listed in Table 3.9 (Nicholoff 2003).

In this regard, the majority of the MCRNGDPA lies within an area directly north of latitude 43°00'N and west of longitude 107°12'30"W, with a small portion of the project area falling directly to the south of latitude 43°00'N. Species distribution as reported in *The Atlas of Birds, Mammals, Reptiles and Amphibians in Wyoming* (WGFD 1999) includes a compilation of observations mapped by latitude and longitude, with the State of Wyoming divided into 28 different regions, where these observations are reported within a specific region of the state. These regions are based upon a one degree separation of both latitude and longitude. As a consequence, the MCRNGDPA falls with Wyoming Distribution Areas (latilongs) 11 and 18 as defined by WGFD (1999). Avian distribution data contained in *The Atlas of Birds, Mammals, Reptiles and Amphibians in Wyoming* (WGFD 1999) for the PIF priority species potentially occurring within the MCRNGDPA is included in Table 3.9. Only those birds that have been classified by WGFD (1999) as confirmed breeders (nest and/or young observed), with circumstantial evidence of breeding (nest and/or young not located), or that have been observed at any time (season) within the general area (but without any evidence of breeding) are included in the list. Breeding Bird Survey (BBS) data for survey routes within Wyoming were included in this database (WGFD 1999). Definitions for those symbols used in Table 3.9 to report Wyoming distribution are as follows:

- B: Nest or young dependent upon parent birds observed.
- b: Circumstantial evidence of breeding.
- O: The species has been observed, but there was no evidence of nesting.
- N: The species has not been observed in the area.

**Table 3.9**

**List of Partners In Flight (PIF) Priority Bird Species  
Potentially Found Within the MCRNGDPA**

Common Name	Scientific Name	Habitat Type	WGFD Distribution	
			Area 11	Area 18
<b>Level I Species (Conservation Action)</b>				
Ferruginous Hawk	<i>Buteo regalis</i>	SS/SGP	B	B
Greater Sage Grouse	<i>Centrocercus urophasianus</i>	SS	B	B
Mountain Plover	<i>Charadrius montanus</i>	SS/SGP	B	B
Upland Sandpiper	<i>Bartramia longicauda</i>	SGP	N	B
Long-billed Curlew	<i>Numenius Americana</i>	SGP	O	b
Burrowing Owl	<i>Athene cunicularia</i>	SGP	O	B
Short-eared Owl	<i>Asio flammeus</i>	SGP	O	O
Baird's Sparrow	<i>Ammodramus bairdii</i>	SGP	O	N
Brewer's Sparrow	<i>Spizella breweri</i>	SS	O	B
Sage Sparrow	<i>Amphispiza belli</i>	SS	O	B
McCown's Longspur	<i>Calcarius mccownii</i>	SS/SGP	B	B
<b>Level II Species (Monitoring)</b>				
Black-chinned Hummingbird	<i>Archilochus alexandri</i>	SS	O	N
Loggerhead Shrike	<i>Lanius ludovicianus</i>	SS	B	B
Sage Thrasher	<i>Oreoscoptes montanus</i>	SS	B	B
Vesper Sparrow	<i>Pooecetes gramineus</i>	SS	B	B
Lark Sparrow	<i>Chondestes grammacus</i>	SS	B	B
Lark Bunting	<i>Calamospiza melanocorys</i>	SGP	B	B
Grasshopper Sparrow	<i>Ammodramus savannarum</i>	SGP	N	O
Dickcissel	<i>Spiza Americana</i>	SGP	N	O
Bobolink	<i>Dolichonyx oryzivorus</i>	SGP	O	O
<b>Level III Species (Local Interest)</b>				
Common Poorwill	<i>Phalaenoptilus nuttallii</i>	SS	B	B
Say's Phoebe	<i>Sayornis saya</i>	SS	B	B

Source: Wyoming Bird Conservation Plan, Version 2.0 (Nicholoff 2003)

Note: Chestnut-collared Longspur (*Calcarius ornatus*) was removed from the PIF Level II list for SGP as the species has not been observed in either Area 11 or Area 18 (WGFD 1999)

Most of the birds listed in Table 3.9 typically nest either on the ground or in shrubs; thus activities associated with the Proposed Action may have the potential to destroy individual nests, eggs, and/or young of some of these species. Projected losses are indeterminate as there are no Breeding Bird Survey (BBS) routes located within the immediate vicinity of the MCRNGDPA which could provide information on breeding bird densities within the shrub-steppe and shortgrass prairie habitats encountered within the MCRNGDPA.

Concerns regarding the decline of both migratory and non-migratory bird populations both locally and on a continental scale have resulted in a nationwide bird conservation planning effort. Management goals and objectives for bird conservation are found in the following documents:

- 1) Land Bird Strategic Plan, and
- 2) Presidential Executive Order (EO) 13186 dated January 17, 2001; and
- 3) Proposed Memorandum of Understanding associated with the above Presidential EO.

Bird Conservation Plans prepared at the state and regional levels also include objectives for bird conservation. As evidenced by EO 13186, there has been national direction to implement actions that incorporate these goals.

### **3.11 ENVIRONMENTAL JUSTICE**

Neither the Proposed Action nor the No Action Alternative would disproportionately affect minority or low income people, and is not discussed further in this EA. The proposed project would provide some additional employment opportunities for a small number of workers in Natrona County, and would add to the local economy.