TRI-STATE

March 6, 2023

Mr. Clayton Wein
Environmental Protection Specialist
Colorado Division of Reclamation, Mining and Safety
1313 Sherman Street, Room 215
Denver, CO 80203

RE: New Horizon Mine
Permit No. C-1981-008
Permit Renewal No. 8
Adequacy Response

Dear Mr. Wein:

Tri-State Generation and Transmission Association Inc. (Tri-State), is the parent company to Elk Ridge Mining and Reclamation, LCC (ERMR), which owns and operates the New Horizon Mine. The New Horizon Mine operates under the Division of Reclamation, Mining and Safety (DRMS) Permit No. C-1981-008. Therefore, Tri-State on behalf of ERMR is submitting this adequacy response to Permit Renewal No. 08 (RN-08) for Permit No. C-1981-008.

Tri-State received the Division's adequacy letter dated January 20, 2023, and has the following responses to the Division's concerns:

1. *Please update as necessary the information contained in Section 2.03. This section of the permit contains the names and addresses of the mine operator, the resident agent, surface land owners, subsurface landowners and contiguous surface and subsurface owners.*

   Response: Section 2.03 was updated and provided to the Division with the original permit renewal application submitted on November 22, 2022.

2. *Rule 2.03.4: Please update as needed the officer and control information provided in Section 2.03, including tables and exhibits.*

   Response: Officer and control information was updated and provided to the Division with the permit renewal application submitted on November 22, 2022.

3. *Please review Attachments 2.03.6-1, 2.03.7-1, 2.03.8-1, 2.03.9-1, and 2.03.12-1 of the permit and update the maps related to section 2.03 as necessary to reflect any changes that may have occurred.*

   Response: All attachments cited by the Division are current for the permit term.

4. *Rule 2.03.5: There have been no violations issued from the division since 2011.*

   Response: No response required.

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DENVER, CO 80233-0695
303-452-6111
WWW.TRISTATE.COOP

5. *Please review the right of entry information in Section 2.03.6, and Attachment 2.03.6-1. Please update any text or exhibit as necessary.*

   Response: Section 2.03.6 and Attachment 2.03.6-1 are current for the permit term.

6. *Please review the information in Section 2.03.8 and update the permit term information as necessary.*

   Response: The New Horizon permit (Permit No. C-1981-008) does not contain a section 2.03.8 as cited by the Division. It is assumed the Division is referring to Section 2.04.8 - Climatological Information, which is baseline documentation that does not change as it provides the description of pre-mining climate conditions within the permit boundary.

7. *Please review the information provided in Section 2.03.10 and update any information on other licenses and permits if necessary.*

   Response: The New Horizon permit (Permit No. C-1981-008) does not contain a section 2.03.10 as cited by the Division. It is assumed the Division is referring to Section 2.04.10 - Vegetation Information, which is baseline documentation that does not change as it provides the description of pre-mining vegetation within the permit boundary.

8. *Please review Section 2.04.10 for information regarding the threatened and endangered species list for the plant species that are applicable to the New Horizon 2 Mine and update as necessary.*

   Response: Section 2.04.10 has been updated with threatened and endangered plant species that are appliable to the New Horizon Mine as requested.

9. *Please review Section 2.04.11 of the permit and update as necessary. Please ensure that the Threatened and Endangered Species list is updated if necessary.*

   Response: Section 2.04.11 has been updated with threatened and endangered species that are appliable to the New Horizon Mine as requested.

10. *Please Update Section 2.05.3 as necessary to reflect any changes made to the Operations Plan since RN-7.*

    Response: Section 2.05.3-Operations Plan has already been updated to reflect historical mining operations and when mining ceased. No changes are required.

11. *P.2.05.3-7 contains the same information outlined on p. 2.05.3-4. Please remove this page from the permit since the information on p.2.05.3-4 is from a more recent revision.*

    Response: The New Horizon permit (Permit No. C-1981-008) does not contain the page numbers cited by the Division. It appears the Division is referencing outdated materials.

12. *Please update any Tables and Maps associated with Section 2.05.3 as necessary.*

    Response: Please refer to the response for comment 10.

13. *The Division is currently updating the reclamation cost estimate for the New Horizon 2 Mine. The updated estimate will be sent to the operator under a separate letter in the near future.*

    Response: No response required.

14. *Please ensure all information in Section 2.05.6 is up to date. Please revise any sections if necessary.*

    Response: The New Horizon permit (Permit No. C-1981-008) does not have a Section 2.05.6 as cited by the Division. If the Division is referring to Section 2.05.6(1)-Air Pollution Control Plan, that section of the permit is current.

If you have any questions about the enclosed adequacy response for the New Horizon Mine, please contact Tony Tennyson at (970) 824-1232 or ttennyson@tristategt.org.

Sincerely,

DocuSigned by:
Chris Gilbreath
D250C711D0BF450...

Chris Gilbreath
Senior Manager,
Remediation & Reclamation

CG:TT:der

Enclosures

cc: Tony Tennyson (via email)
Chris Gilbreath (via email)
File: G474-11.3(21)b-4

CHANGE SHEET FOR PERMIT REVISIONS, TECHNICAL REVISION, AND MINOR REVISIONS

Mine Company Name: **New Horizon Mine**

Permit Number: **C-1981-008**

Date: **March 6, 2023**

Revision Description: **RN-08 Permit Renewal**

Volume Number	Page, Map or other Permit Entry to be REMOVED		Page, Map or other Permit Entry to be ADDED		Description of Change
1					No change
2					No change
3					No change
4	Section 2.04.10, Page 2.04.10-62 (1 page)		Section 2.04.10, Page 2.04.10-62 (1 page)		T&E Plants species have been updated.
5	Section 2.04.11, All pages execpt cover page (35 total pages)		Section 2.04.11, Pages 2.04.11-2 through 2.04.11-36 (34 pages)		Section 2.04.11 electronically was in a file format of Word Perfect; therefore, to update the T&E species the entire Section was updated into Microsoft Word and refomatted some to ease the transition. The only updated materials are the T&E narrative, and Table 2.04.11-10.
6					No change
7					No change
8					No change
9					No change
10					No change

The search of the Colorado Natural Areas Inventory data base indicated that no data are available for the locality in which the study area occurs. However, both the Colorado Department of Natural Resources and the U.S. Fish and Wildlife Service indicated that Lupinus crassus (Payson lupine) could possibly occur on the site. Payson lupine is a U.S. Fish and Wildlife Service category 2 species. Category 2 species are candidates for listing as endangered or threatened for which additional data are needed before listing can proceed. Thorough searches of the study area, including searches of likely microhabitats, failed to produce any specimens of Lupinus crassus.

In 2023, the threatened and endangered plant species were again evaluated for the New Horizon Mine. As noted on the table below two threatened and endangered plant species occur within Montrose County but lack suitable habitat within the New Horizon Permit Area.

Table: Threatened and Endagered Plant Species Potentially Occurring within Montrose County, CO

Common Name (Latin Name)	Federal Status	State Status	Habitat	Potential for Occurrence within New Horizon Permit Area
Clay-loving Wild Buckwheat (*Eriogonum pelinophilum*)	Endangered	N/A	Endemic to Delta and Montrose counties. Grows in calcareous soils derived from the Mancos Formation shales, typified by rolling adobe hills and flats. Codominant with other subshrubs like black sagebrush, shadscale, mat saltbrush. Elevation 5,220 - 6,378 feet. 7-10 inches of rainfall.	None due to the current extent of the species and lack of preferred soil conditions. Populations exist in Montrose county approximately 40 miles to the west.
Colorado Hookless Cactus (*Sclerocactus glaucus*)	Threatened	N/A	Occurs primarily on alluvial benches beside the Colorado and Gunnison Rivers and their tributaries. Generally found on rocky or gravelley surfaces. More abundant on south-facing slopes. Associates are typical of the desert scrub community and include galleta, indian rice-grass, shadscale, and black sage. Elevation 4,646 - 7,126 feet	None due to the current extent of the species and lack of preferred soil conditions. Populations exist in Northern Montrose, Delta, Garfield, and Mesa Counties

Sources: Colorado Natural Heritage Program County Tracking Lists (downloaded February 2023), Colorado Natural Heritage Program Rare Plant Guide (Accessed February 2023)

Table of Contents

Attachments

Attachment 2.04.11-1 Wildlife Baseline Report – Nucla Mine from Peabody Tab 11-1993 Permit Volume (1979 Peabody Wildlife Study)

Attachment 2.04.11-2 Small Mammal, Avifauna and Mammalian Predator Data (Formerly Peabody Tab 11-Appendix B 1993 Permit Volume)

Section 2.04.11

Fish and Wildlife Resources Information

Western Fuels Colorado, A Limited Liability Company (WFC) is revising Permit No. C-81-008. WFC's New Horizon 1 & 2 Mine is the old Peabody Coal Company Nucla & Nucla East Mine which operated under the same permit. Peabody performed detailed wildlife studies at the New Horizon 1 & 2 mine areas (formerly called the Nucla and Nucla East mine areas respectively). WFC refers the reader to the Wildlife Baseline Report from the original Peabody permit application: Volume D - Tab 11, a copy of which is also included in Attachment 2.04.11-1. When a reference is made to a table, chart, appendix or other types of data sources in the Peabody documents, the word "Peabody" will immediately precede the reference.

Introduction

Wildlife baseline studies were conducted on properties associated with WFC's proposed New Horizon 2 Mine. These studies were conducted during 1987 and early 1988. The majority of the baseline studies were conducted by Peabody Coal Company personnel. However, Peabody retained Cedar Creek Associates, Inc. to conduct a prairie dog and black-footed ferret survey in August 1987. The approximately 630-acre study area covers substantially more acreage than the proposed permit area in anticipation of future mine expansion to the west. The study area is used primarily for various types of agricultural production with irrigated hay, pasture, and crops providing the basis for this production. These studies augment the original baseline work conducted by Mariah Associates, Inc., for Peabody as reported in Peabody Volume 6, Tab 11. A copy of the original Wildlife Baseline Report conducted for Peabody is also included in Attachment 2.04.11-1.

The purpose of the baseline wildlife studies was to quantify the wildlife populations, habitats, and habitat use by the wildlife groups occurring in the study area. From this information, mining related impacts can be assessed.

In 1999, an amendment area west and north of the original permit area was added. Since the lands added were almost identical in land use to that of the study area of 1987 and 1988, no additional studies were conducted. A revised Map 2.04.11 shows the existing land uses within ½ mile of the amendment area boundary. Irrigated pasture is primarily the pre-mining and post-mining land use. Irrigated pasture was not analyzed in the original studies due its limited wildlife use. The 1999 amendment disturbed area does contain 67.0 acres of dryland pasture consisting of some sagebrush but all of this area has been highly disturbed through ranch/farm activity. Most if not all of the palatable and desirable species have been removed, therefore, these areas are not valuable to wildlife. The amendment area avoids both Tuttle and Calamity Draw, which does provide water, food and shelter to mammals and birds. There are no migratory paths for large game such as deer and elk in the amendment area.

There are no unique wildlife use areas within the amendment area that requires additional study. The local Colorado Division of Wildlife officer in Nucla did not feel that the amendment area mining and reclamation would have any significant impacts on wildlife. A letter describing the pre-mine and planned post-mine uses for the amendment area (with maps) is being sent to the Colorado Division of wildlife Office in Montrose for comments on the proposed plan.

General Description of the 1987 and 1988 Study Area

The New Horizon 2 study area is located in Montrose County on the western edge of the town of Nucla. The study area is situated on bench lands below the southern edge of the Uncompahgre Plateau. The San Miguel River canyon lays a few miles to the south (see Exhibit 12-1). The elevation of the study area ranges from 5,650 to 5,800 feet (1,722-1,768 m). The study area includes portions of the following sections:

Section 6, T46N, R15W

NW¼
W½NE¼
W½SE¼NE¼
W½NE¼NE¼

Section 1, T46N, R16W

NE½NE¼SE¼
NE¼
W½NW¼

Section 6, T46N, R15W

N½NE¼SW¼
Portions of N½SE¼

The climate of the study area is semi-arid. Precipitation is distributed throughout the year, although the greatest amounts are received in summer. Convectional showers are typical in summer and cyclonic rains and snows are characteristic of the remainder of the year. Annual precipitation averages approximately 12 to 13 inches (303-330mm). Temperatures are moderate. The mean annual temperature is approximately 48℉ (8.9℃). Further information concerning the climate of the Nucla area may be found in Section 2.04.8, Climatological Information.

The native vegetation of the Nucla area is characteristic of the moderate elevations of the Colorado Plateau. Pinyon-Juniper woodlands cover extensive areas in the region where shallow rocky soils persist on the mesas and ridges. Sagebrush and other shrublands occur on deeper soils in the
valleys and basins. Cottonwood and willow-dominated gallery forests (Populus sp. and Salix sp.) are present along the San Miguel River.

The native vegetation in the study area has been extensively altered through irrigation. Only remnants of the pinyon-juniper woodland and sagebrush shrubland remain in the complex of irrigated pastures, hay fields, and croplands. These remnant native sites are situated on small rises where irrigation is not possible. A complete description of the vegetation in the study area may be found in Section 2.04.10.

Existing Wildlife Habitat Descriptions

The majority of the native habitat in the New Horizon 2 study area has been converted to agricultural production through an extensive irrigation network which draws water from the San Miguel River. The wildlife habitats designated herein, while comparable to the vegetation communities recognized and mapped in Section 2.04.10 were further defined based on major structural differences of the canopy. The selection and utilization of a habitat by a particular species or species group is typically based on the physiognomic characterization of that habitat (Ricklefs 1979). Therefore, the low stature and dominance of herbaceous vegetation justified combining the irrigated hayland/pasture, irrigated pasture, and irrigated cropland into a single wildlife habitat type. The intensive utilization and frequent flood irrigation of all three of these types

limited their significant use by wildlife. Map 2.04.11-1 does, however, differentiate among irrigated pasture, irrigated hay and cropland.

The wildlife habitat acreages as presented in this section vary from those presented in the Vegetation and Land Use sections (Sections 2.04.10 and 2.04.3). This is accounted for by the manner in which the habitats were stratified and the slightly differing mapped boundaries of certain habitats, particularly in the eastern portion of the study and proposed permit area. In addition, the wildlife study area encompassed the Nucla sewage lagoons because of the importance of these facilities to migratory waterfowl. The vegetation study boundary did not include this area. Generally, the mapped wildlife habitats are not resolved on as fine a scale as the vegetative communities because of the fragmented nature of the native vegetation and the small areal extent of some of the vegetal map unit components. The acreages of each vegetation/wildlife type from Map 2.04.11-1 are presented in Table 2.04.11-1A and B.

The fragmented and interdigitated nature of the designated habitats, as well as their limited extent (the entire study area is 628.2 acres), made the location of areas sufficiently large for wildlife sampling purposes difficult. Furthermore, many species (particularly birds) could literally occur in all the habitat types in a matter of seconds, which tends to cloud determinations of habitat affinities.
Consequently, sampling efforts were concentrated in the largest, most representative habitat blocks that could be found in the study area. A brief description of each habitat found in the New Horizon 2 study area follows.

Farmsteads and Orchards

The farmstead and orchard habitat is characterized by trees and large ornamental shrubs. This habitat occurs in association with farmsteads and support buildings or exists as small acreages or clusters of trees that are not associated with any residential structures. The trees comprising this habitat consist of several native and exotic species (see Peabody, Appendix 10-1) none of which probably occurred in the study area prior to the introduction of the irrigation network. Cottonwoods and other large shade trees are present near homes or along irrigation ditches where sufficient water is available. Orchards, in various states of abandonment, contain apple, pear, and apricot and are usually situated adjacent to abandoned or occupied homesites. Approximately 5.9 percent of the study area and 4.7 percent of the original permit area is comprised of this habitat type (Table 2.04.11-1A).

Swales

The swale habitat is distributed along small drainageways and in other low-lying spots where irrigation tail water collects. The vegetation of such areas is comprised of sedges (Carex spp. and Scirpus spp.), rushes (Juncus spp.) cattail (Typha latifolia), and willows (Salix exigua). A given area is typically dominated by only one of the above species such that cattails may be prevalent in one spot, willows in another, and hydrophytic graminoids codominate in yet another. Wildlife use was judged to be very limited in the graminoid dominated situations because of limited structural complexity. Therefore, quantitative wildlife sampling efforts were concentrated in a large tract of swale where a substantial willow and cattail component occurred in association with graminoid dominated vegetation. The swale habitat covers approximately 13.6 percent of the study area and 16.8 percent of the original permit area (Table 2.04.11-1A). The amendment area has few drainage areas and any swale characterized land is due to irrigation water collecting in certain spots.)

Agricultural Areas

The agricultural habitat consists of the irrigated hayland, irrigated pasture, and irrigated cropland vegetation types as presented and discussed in Section 2.04.10. This habitat comprises the majority of both the study and original permit areas, covering 64.9 and 67.5 percent of those areas, respectively (Table 2.04.11-1A). This habitat consists of low-statured annual

and perennial herbaceous species that have significant agricultural value. In the cropland areas, annual small grains and corn used for silage are the principal crops. This intensively managed and structurally simple habitat was qualitatively evaluated as receiving little wildlife use. Therefore, only limited quantitative wildlife sampling was conducted in it.

Ponds and Streams

All of the ponds in the study area, except the Nucla sewage lagoons, occur as a direct result or process of the extensive irrigation practices. Several small ponds, used primarily for livestock watering, are maintained by the irrigation network in the study area (Map 2.04.11-1). Water persistence is permanent in the ponds because the main irrigation supply ditch is turned on intermittently during the non-growing season to keep them full. All streams are small and restricted to irrigation ditches or small natural drainages. Tuttle Draw to the north of the study area and Calamity Draw at the southern edge, support small base flows during the October to April period when the main irrigation supply ditch is dry. The remaining ditches are dry in this period. The flows of the smaller ditches are intermittent during the growing season depending on changes in irrigation demands.

Rangeland

The rangeland habitat is composed of fragmented remnant stands of native sagebrush (Artemisia sp.) shrubland with scattered junipers (Juniperus osteosperma) and pinyons (Pinus edulis) in some blocks. These stands are interspersed throughout the other habitats (Map 2.04.11-1). The situations where the rangeland habitat occurs is usually on slightly elevated knolls and/or ridges that are inaccessible to irrigation water. The rangeland habitat is typically used as dryland pastures and is, therefore, heavily grazed. The largest tract of rangeland is situated in the eastern end of the study area where a tree component of Siberian elm (Ulmus pumila) has become established in conjunction with the pinyon and juniper.

Adjacent Habitats

The habitat in areas immediately adjacent to the study area include habitats that are essentially the same as those previously discussed, reclaimed ground at the existing Nucla Mine and Pinyon/Juniper woodlands (Map 2.04.11-1). Irrigation waters supply hayfields, pastures, and croplands. Farmsteads and orchards are present throughout the Nucla vicinity. Low-lying areas and drainages support swale vegetation. Native stands of pinyon-juniper woodland and sagebrush predominate on the bluffs above Tuttle Draw and continue to the north toward the Uncompahgre Plateau. The town of Nucla borders the study area to the east. Adjacent habitats within 0.5 miles of the study area are given on Map 2.04.11-1.

Methods and Materials

Site Reconnaissance and General Sampling Outline

A site reconnaissance was conducted on 20-22 May, 1987 to assess the various habitats and their distribution and to develop a baseline sampling plan. From this visit, the following general sampling outline was implemented:

Sampling Periods: A spring/summer sample would take place in late May. This period would include late migrant bird species yet would cover most breeding species in the study area. Summer observational records would be made during the course of summer vegetational surveys. A fall sample would take place in early October. A winter raptor roosting and feeding area survey would be conducted in early January 1988.

Habitats: The habitats to receive most of the sampling effort would be the farmsteads and orchards, swales, and rangelands. Lesser sampling efforts would be conducted in the remaining habitats.

The proposed sampling outline was transmitted to Mr. Peter O'Connor of the Office of Mined Land Reclamation (OMLR) via letter correspondence dated July 6, 1987 for concurrence. Concurrence was received from the OMLR on July 31, 1987. This correspondence is documented in Peabody Attachment 11-1. Additional work was done in assessing the habitats and vegetative communities during the summer of 1999 in order to revise Map 2.04.11.

Literature Survey and Information Acquisition

A literature survey was conducted to determine the historical, actual or potential occurrence of wildlife species in the Nucla area. The reports accessed and utilized included: 1) Armstrong (1972); 2) the Colorado Mammal Distribution Latilong Study (CDOW 1982); 3) the Colorado Bird Distribution Latilong Study (Denver Museum of Natural History 1982); 4) the Colorado Reptile and Amphibian Distribution Latilong Study (CDOW 1981); 5) Stebbins (1966); and 6) the Durango Bird Club's checklist of birds of southwestern Colorado
(Durange Bird Club, no date). Therefore, each vertebrate class noted above was covered by two regional distribution documents. Identifications were made with the aid of Armstrong (1972), Burt and Grossenheider (1952), Murie (1954), National Geographic Society (1987), and Stebbins (1966). Mammal common and Latin names follow the Colorado Mammal Distribution Latilong Study. The common names of birds follow the American Ornithologists Union (1983) checklist (plus the 1985 and 1987 supplements), and reptile and amphibian names follow Stebbins (1966). Latin names are presented in Tables 2.04.11-2 and 2.04.11-9 and for sake of brevity, are not used in the text except where discussing species not listed in the tables.

Throughout the course of the baseline surveys, contact was made with several different wildlife agency personnel. This correspondence provided Peabody and its successor, WFC, with additional information concerning the status of specific species or species groups in the study area. The following personnel were contacted during the course of this study: Rick Sherman of the Colorado Division of Wildlife (CDOW), Ron Arant (CDOW), Bob Clark (CDOW), Jeffrey Opdyke of the United States Fish and Wildlife Service (USFWS), Bob Leachman (USFWS), and Peter O'Connor (OMLR).

Dates of Field Work

Wildlife field sampling and observation activities were conducted in the Nucla East study area on the following dates: 20-22 May 1987, 26-29 May 1987, 9-10 July 1987, 19-22 July 1987, 17-18 August 1987, 15-16 September 1987, 7-10 October 1987, 28 October 1987, and 12-13 January 1988. The specific methods used in the study for each wildlife group are discussed below.

Mammals

Mammals were surveyed on the study area by direct observation, capture, or detection of tracks, scats, dens, or nests. Conversations with Mr. Ron Arant provided information on several furbearing species and game species.

Small mammals were sampled using Sherman live traps, Woodstream museum special snap traps, and Victor rat snap traps. Live traps were baited with oatmeal and snap traps were baited with peanut butter and oatmeal. Spring trapping was conducted on the evenings of 27-29 May 1987. Trapline locations are shown on Map 2.04.11-1. The following sampling designs were used:

LINE NUMBER	HABITAT OR SUB-HABITAT	NO. AND TYPE OF TRAP(S)	SPACING INTERVAL	NUMBER OF NIGHTS TRAPPED	DATES
1	Rangeland	40-live	15 yds.	3	27-29 May 1987

2	Swale	35-live	15 yds.	3	27-29 May 1987		
3	Agriculture	35-live	15 yds.	3	27-29 May 1987		
4	Rangeland 10-live	15 yds.	3	27-29 May 1987			
5	Orchard	16-Museum Special	variable	1	28 May 1987		
6	Swale	8 rat snap 9 Museum Special	variable	1	28 May 1987		
7	Rangeland (Pinyon-juniper/ Special rockbluff)	33 Museum Special 7 rat snap	variable	1	29 May 1987		

The fall trapping period was conducted on the evenings of 7-9 October 1987. Trapline locations are shown on Map 2.04.11-1. The following sampling design was used:

NUMBER	HABITAT	NO. & TYPE OF TRAP(S)	INTERVAL	NIGHTS TRAPPED	DATES
1	Rangeland	45-live	15 yds.	3	7-9 October 1987
2	Swale	45-live	15 yds.	3	7-9 October 1987
8	Agriculture	45-live	15 yds.	3	7-9 October 1987

The weather throughout the trapping periods was clear, mild, and calm with early morning temperatures reaching near freezing.

All captures were identified before release. Those specimens caught in snap traps and those that succumbed to hypothermia in live traps were saved as voucher specimens. Results are reported as number of captures per trap-night. Small mammal species diversity values of each habitat are calculated after MacArthur (1964) as $H = P_i \log_e P_i$, where, in this report, P_i is the proportion of the number of each species to the total number of captures.

A prairie dog and black-footed ferret survey was conducted in the study area in compliance with U.S. Fish and Wildlife Service standards and requirements. The survey methods are presented in Peabody Attachment 11-2. All observations of mammal species seen during the course of this survey and during the baseline vegetation survey were recorded in field notebooks and later transferred to a permanent species account log. With these notes, incidental observations noted during the ferret survey, small mammal trapping results, the literature survey, and information supplied by Mr. Ron Arant, an assessment of the mammal fauna of the study area was completed.

Birds

Bird species were sampled by a variety of techniques. Observations (either incidental or concurrent with surveying activities) indicating breeding, significant migratory behavior, and significant utilization of one or more habitats in the study area were noted in field books. These notes were later transferred to permanent species accounts journals.

The general frequency of bird species occurrence was determined using road cruise counts. A 4.2 mile (6.7 km) route was established in the study area (Map 2.04.11-1). The route was traversed by vehicle twice in spring (27-28 May 1987) and twice in fall (8-9 October 1987). Each count began about 1.5 hours before sunset and ended at sunset. Fifteen three-minute stops were made on each replication. All birds detected at each stop were recorded. Results are reported as the proportion of all stops at which a species was detected in each season to the total of 30 station stops to provide an index of relative abundance. The road count was also used to quantify the occurrence of three upland game bird species: the ring-necked pheasant, common snipe, and mourning dove.

Winter raptor use of the study area and vicinity was assessed during an afternoon and morning of cruising roads and glassing fields, trees, and skylines on 12-13 January 1988. The effort was directed toward locating key roosting and/or hunting areas. Road cruises and glassing were also conducted during the spring survey period (20-22 and 26-29 May 1987) to locate raptor nest sites. In addition, all observations of raptors made during the course of field work were recorded.

Seasonal small bird densities were determined in the farmsteads/orchards, swale, and rangeland habitats. The small, fragmented nature of these habitats in the study area necessitated the use of differing census techniques in each. Both the swale and farmsteads/orchards habitats had blocks in the study area that were of sufficient size to allow absolute sampling of all birds found in them. The swale habitat block selected for study was present as a linear stringer of willows surrounded by hydrophytic graminoids (Map 2.04.11-1). By walking first one side and then the other, all the birds present could be counted. The total count of individuals of a given species for each side of the swale was recorded. The higher of the two numbers was retained as the number of individuals present for that particular census day. The census was repeated on three consecutive days and the three day average for each species was used as the number of individuals present. The swale densities were converted to number of individuals /100 ac (40 ha) after the area of the block was determined. The farmstead/orchard habitat allowed complete sampling since, like the swale habitat, it presented a small discrete unit in which all birds could be counted (Map 2.04.11-1). A single pass through this habitat was repeated on three consecutive days and the average number of individuals of each species was retained as the number of individuals present. After determining the area sampled, the densities were converted to number of individuals/100 ac (40 ha).

The small bird fauna of the rangeland habitat was censured using a 525 x 55 yard (480 x 50m) belt transect (Map 2.04.11-1). All individuals present in the 5.96 acre (2.4 ha) belt were recorded. The belt was traversed on three consecutive days and the three-day average of each species was retained as the number present. The results were converted to number of individuals/100 ac (40 ha).

The small bird censuses were conducted in the spring and fall. The spring censuses were conducted on 27-29 May 1987. The fall censuses were conducted on 8-10 October 1987. All censuring took place from 0.5 hours before sunrise to approximately 3-3.5 hours after sunrise. The sequence in which each of the three habitats were censured during each three-day sampling period was altered so that each habitat was sampled at different times during the 3.5 to 4.0 hour daily sampling period. The weather during all censuring was clear and mild, with some breezes during the spring.

The small bird density data was evaluated and compared using Whittaker's (1975) index of species diversity/richness (d) as follows:

d = s/log A where,

s = number of species (species richness) and

A = area sampled in square meters.

Reptiles and Amphibians

The occurrence and habitat affinities of reptiles and amphibians in the New Horizon 2 study area was determined through incidental observations and specific searches. Habitats within and adjacent to the study area were searched by perambulating slowly through them turning rocks, logs, boards, etc. All reptile and amphibian observations made during the course of this study were recorded in species accounts journals.

Fishes

No quantitative sampling of fishes or other aquatic vertebrates or invertebrates was conducted in the study area. An ocular reconnaissance of ponds and ditches and interviews with local residents were conducted to determine the fish species present in the study area.

Results and Discussion of the Fish and Wildlife Studies

Mammals

A list of the mammal species of confirmed or possible occurrence in the New Horizon 2 study area is presented, along with species habitat preference, in Table 2.04.11-2. A total of 67 mammalian species could conceivably occur in the study area. The occurrence of 21 species is confirmed for the New Horizon 2 area and the immediate vicinity. This total excludes bats (Order Chiroptera) for which no positive identifications were made. These 21 species represent four orders and ten families of mammals.

The results of the spring small mammal trapping survey are presented in Table 2.04.11-3. The undisturbed pinyon-juniper/sagebrush rocky bluff supported the most diverse small mammal fauna. The agricultural area (Line No. 3) was also relatively diverse. The rangeland habitat had the lowest diversity value and the lowest capture rate. The orchard site with only 16 trap nights had the highest capture rate. A total of five species were found during this trapping period. Two of these, the Colorado chipmunk and white-throated woodrat were found only on the undisturbed pinyon-juniper/sagebrush bluff. The pinyon mouse and house mouse were found only during the spring.

The fall small mammal trapping results are presented in Table 2.04.11-4. The agricultural area (Line No. 8) had the greatest diversity and capture rate. The rangeland, as in the spring, again had the lowest diversity and capture rate. The western harvest mouse, deer mouse, and long-tailed vole were found during both survey periods.

Mule deer was the only large mammal species observed in the study area. The number of deer observed per day in the study area and immediate vicinity varied from zero to 15 with a mean daily observation rate of 5.63 (st. dev. = 9.95; n [observation days] = 22). Most observations made in the daylight hours were in the willow component of the swales, in old orchards, and in rangeland habitats. In the early evenings and mornings, deer were occasionally observed foraging in irrigated pastures and meadows. Observational records indicate that deer are present in the study area all year. Deer move into the San Miguel Valley in winter from neighboring plateaus (R. Arant pers. comm.), but winter observations indicate no notable concentrations in the study area at that time.

Elk winter in the San Miguel River Valley, having descended from adjacent plateaus and mountains. Elk are occasionally seen in the Nucla area (R. Arant pers. comm.). No elk or elk sign was observed in the New Horizon 2 study area during the course of conducting baseline studies.

The muskrat, raccoon, striped skunk, and coyote are the furbearing mammals that were confirmed in the New Horizon 2 study area. The red fox and the long-tailed weasel were reported at the New Horizon 1 Mine in 1980 (Peabody Tab 11, Wildlife Baseline Report - Nucla Mine). The occurrence of these species was not quantified but observations indicate that striped skunks and muskrats are numerous in the study area. The bobcat, gray fox, and ring-tailed cat also occur in the San Miguel River Valley (R. Arant pers. comm.), but none were observed during the course of conducting baseline studies.Other medium-sized mammalian species confirmed in or near the study area include the desert cottontail, rock squirrel, and Gunnison's prairie dog. The cottontail showed a pronounced affinity for the rangeland habitat especially where stands of sagebrush were well developed. Nearly 94 percent (32 of 34) of the cottontail observations recorded during this study were made in or near stands of sagebrush within the rangeland habitat. Rock squirrels were commonly observed on rocky bluffs along Calamity and Tuttle Draws and on spoil piles at the New Horizon 1 Mine. None were seen in the study area itself. Gunnison's prairie dogs were a common and conspicuous element of the mammalian fauna in the study area. Prairie dog occurrence and distribution is quantified in detail in Peabody Attachment 11-2. Most of the 43 prairie dog colonies in this survey were situated in dryland pasture or hay meadows.

Birds

A list of the bird species of confirmed or potential occurrence in the New Horizon 2 study area is presented along with their habitat preferences and relative seasonal abundanes in Table 2.04.11-5. During the course of field studies, 133 species of birds were identified in the study area. These species are taxonomically aligned in 33 families belonging 14 orders. Well represented families include the Anatidae, Accipitridae, Picidae, Tyrannidae, Hirundinidae, Corudae, Muscapidae, and Emberizidae.

The road cruise frequency results are presented in Table 2.04.11-6. In the spring, 43 species were observed. Thirty-eight species were recorded in the fall. Species detected on at least one-half of the stops in the spring were the ring-necked pheasant, violet-green swallow, American robin, European starling, red-winged blackbird, and western meadowlark. Other frequently detected species (detected on 30 percent or more of the station stops) included the common snipe, mourning dove, northern rough-winged swallow, yellow warbler, Brewer's blackbird, and northern oriole. During the fall road count, the common raven, European starling, and white-crowned sparrow were detected on one-half or more of the station stops. Those detected on at least 30 percent of the stops in the fall included the red-tailed hawk, yellow-rumped warbler, red-winged blackbird, and Brewer's blackbird.

Fifteen species of raptors were recorded on or near the New Horizon 2 study area (Tables 2.04.11-5 and 2.04.11-7). Of these, only the red-tailed hawk was found nesting (site identified on Map 2.04.11-1) in the area. American kestrels were present during the breeding season and probably nest in the area. The presence of prairie dog colonies and the observation of a single burrowing owl on 19 August 1987 (site identified on Map 2.04.11-1) suggest this owl may breed in the area. Observational records (Table 2.04.11-7) indicate that raptor utilization of the study area during the breeding season is limited, but increases during post-breeding periods (fall and winter). An adult peregrine falcon was seen on 15 September 1987 (site identified on Map 2.04.11-1). Northern harriers, red-tailed hawks, and rough-legged hawks were common wintering species through the Nucla area. An adult and immature bald eagle were observed resting in a tree near Calamity Draw on 12 January 1988. Two adult bald eagles were seen perched in a tree about two miles south of Nucla on 13 January 1988. However, no significant winter raptor feeding and/or roosting areas were identified.

Three upland game bird species were recorded in the study area: the ring-necked pheasant, common snipe, and mourning dove. Crowing rooster pheasants were recorded on 77 percent of the station stops on the spring road count (see Table 2.04.11-6). Pheasants were observed throughout the study area in all habitats where dense vegetative cover was present.

Pheasants were also seen in irrigated pastures and haylands. Mourning doves were present throughout the study area. Doves were recorded on 30 percent of the station stops in the spring. Heavy utilization of the trees around farmsteads and orchards as perching sites was noted during the Spring census period as reflected in the density estimates of 160 individuals/100 ac (see Table 2.04.11-8). These doves appeared concentrated in this particular area because of adjacent fallow cropland which provided a food source. Common snipe were recorded on 33 percent of the station stops on the spring road count. Snipe were found nesting in swale areas dominated by Carex sp. and Scirpus sp. Observational records indicate that snipe are the only bird species nesting in these situations.

The waterfowl species of actual or potential occurrence in the New Horizon 2 study area are listed in Table 2.04.11-5. Probably all the species listed from the Canada goose through the ruddy duck are frequent migrants in the Nucla area (Denver Museum of Natural History 1982), although nearly half were not recorded during the baseline studies. Small numbers (less than five broods of each species) of the mallard, cinnamon teal, and ruddy duck were observed. The majority of the broods were observed at the Nucla sewage lagoons. It appeared that several non-breeding individuals of mallards and cinnamon teal summered in the study area.

The results of the seasonal small bird censuses for the farmsteads/orchards, swale, and rangeland habitats are presented in Table 2.04.11-8. The swale habitat supported the lowest richness/diversity index of the three habitats during both sampling periods. Eight species were recorded in the spring and 15 were recorded in the fall. The spring (and summer) breeding bird composition in areas of the swale habitat typified by cattails and willows is dominated by yellow warblers, common yellowthroats, and red-winged blackbirds which comprise 3.5 percent, 3.9 percent, and 88.3 percent of the total bird density, respectively. Sparrows of several species made up 36 percent of the total fall density.

The farmsteads/orchards habitat supported the highest bird densities during both census periods and the highest richness/diversity index in the fall (Table 2.04.11-8). European starlings made up 45.8 percent of the total spring density and mourning doves comprised 18.7 percent. European starlings, white-crowned sparrows, dark-eyed junco, and Brewer's blackbirds comprised 30.1 percent, 18.3 percent, 8.2 percent, and 129.4 percent of the total fall density, respectively.

The rangeland habitat supported total densities comparable to the farmsteads and orchards (Table 2.04.11-8). This habitat supported the highest richness/diversity index in the spring as well. Spring densities were dominated by black-billed magpies (7.3 percent), European starlings (15.4 percent), Brewer's blackbirds (7.3 percent), brown-headed cowbirds (6.2 percent), and pine siskins (6.2 percent). Species predominating the fall censuring were the ruby-crowned kinglet (10.3 percent), American robin (15.9 percent), European starling (10.3 percent), yellow-rumped warbler (18.6 percent), and red-winged blackbird (9.7 percent).

The overall densities and species composition of the farmsteads/orchards and the rangeland habitats are similar. Bark gleaning, foliage gleaning, and sallying species are present in both types. This similarity of the rangeland avifauna to that of the farmsteads and orchards is due to the tree component present in the habitat block where the belt transect was located. This situation was unavoidable while locating a sampling site sufficiently large to gather meaningful data. Bird densities in components of the rangeland with only a shrub overstory would be substantially less.

Reptiles and Amphibians

A list of the reptiles and amphibians of actual and/or potential occurrence in the New Horizon 2 study area is presented in Table 2.04.11-9. Only three species, the woodhouse's toad, smooth green snake, and western terrestrial garter snake were identified from within the study area. The garter snake was by far the most frequently observed species being noted across

the study area in all the habitats. The smooth green snake was found on 22 May 1987 at the edge of an irrigated pasture. The woodhouse's toad was occasionally seen in irrigated agricultural areas. The remaining confirmed species (the collared lizard, eastern fence lizard, sagebrush lizard, tree lizard, plateau whiptail, and gopher snake) were all found outside the study area. They were present in undisturbed rangeland situations containing sagebrush shrubland and pinyon-juniper woodland with scattered rocky outcrops in both Calamity and Tuttle Draws.

Fishes

General reconnaissance, and interviews with local residents produced little information regarding fishes or other aquatic vertebrates and invertebrates. A single individual of an unidentified fish species (probably a Cyprinid) was observed in a small lateral irrigation ditch in the study area. In addition, carp (Cyprinus carpio) were observed "mouthing" the water surface on several stock ponds in the area. On one occasion, two young boys were observed fishing for carp at a pond located to the west of the study area. It is possible that some of the ponds may have been stocked with other warm water fishes (Centrarchids and Ictalurids) by the local residents, although this could not be confirmed. It is extremely doubtful that the ponds could sustain populations of cold water Salmonids. The irrigation ditches and natural drainages probably do not support breeding populations of any fish species because of their intermittent nature.

Important Habitats

The New Horizon 2 Wildlife Study area, as described above, is predominantly the result of agricultural and urban related land uses. On a regional scale, land under such intensive use is of limited value to native wildlife populations. As such, additional impacts to native wildlife populations and habitats within the region from the proposed mining operation will be minimal.

In 1999 an additional disturbance of 375.8 acres was proposed. Reasons why this additional disturbance and reclamation should have minimal impact to wildlife populations in the area are given below:

1) Niether of the Tuttle Draw or Calamity Draw drainages or their floodplains will be disturbed as a result of the new mining.

2) While mining occurs on the amendment area, the existing mining area will be reclaimed to more or less its original land use, thus no significant additional disturbance will occur. Disturbed acreage over the life of mine will barely change since the operation reclaims behind itself on a continual basis.

3) As shown on Table 2.04.11B, the amendment area contains 59.3 acres of sagebrush 2 vegetation type which will be primarily restored as dryland pasture.

4) Total irrigated acreage will increase after reclamation from 267.2 cares to 319.6 acres. The irrigated lands provide better soil cover and nutritious plants which are beneficial to wildlife.

5) The existing sagebrush areas within the amendment area are of poor wildlife value since they are isolated areas among much larger tracts of irrigated land and these sage areas have been heavily disturbed by farm and ranch activity, which has eliminated most if not all the palatable species that wildlife uses in the habitat.

6) The dryland pasture to be restored for post-mining use will provide a greater diversity of grass species for wildlife as compared to the existing sage communities.

7) 13.0 acres of current disturbed land will be restored as vegetated areas, which will enhance wildlife use.

8) Of the communities to be disturbed in the amendment area, all are found in significant amounts in the area adjacent to the permit.

Furthermore, no habitat(s) of critical importance to any Federal threatened or endangered species were identified within the study area.

The farmsteads and orchards are important within the study area because of their structural complexity. The tree stratum provides resting, foraging, and/or nesting cover for a variety of birds from smaller passerines to raptors. In addition, mule deer occasionally seek shelter and food in old orchards. The swale habitat is important to the study area wildlife in areas where the willow and cattail components are established. These thickets provide cover for mule deer and ring-necked pheasant.

Affected acreages and the vegetation types (habitat) that will be replaced as a result of mining activities are found in Section 2.05.4.

Important Wildlife Species and/or Species Groups

Threatened or Endangered Species

Two Federally listed endangered species were recorded in the study area during the baseline surveys. An adult (female?) peregrine falcon was observed on 17 August 1987. The peregrine falcon is known to nest along the Dolores River Canyon (see USDI, Fish and Wildlife Service correspondence in Peabody Attachment 11-1). No nesting pairs are known from the San Miguel River Canyon near Nucla (Bob Clark pers. comm.). No suitable nesting habitat is present in or near the study area. The individual observed above was probably a post-breeding bird wandering from a nesting territory, perhaps from along the Dolores River. Because of the distance to the nearest nesting habitat, no impacts will occur to this species as a result of mining activities.

The bald eagle has been identified as a winter resident in the San Miguel River Valley (Peabody Attachment 11-1). No communal roosting and/or feeding areas were identified in the study area. The lack of such areas, proximity to the town of Nucla, and the small size of the permit area precludes impacts to this species.

Mr. Ron Arant, Colorado Division of Wildlife, Wildlife Conservation Officer, stated (pers. comm.) that a third endangered species, the whooping crane, was seen once at the Nucla sewage lagoons. This individual was probably a member of the Gray's Lake, Idaho experimental flock in route to or from the Basque del Apache National Wildlife Refuge in New Mexico. Such an occurrence in the study area is unlikely to happen again. Consequently, no mining-related impacts to this species will occur.

In 2023, the threatened and endangered wildlife species were again evaluated for the New Horizon Mine. Table 2.04.11 denotes all species of concerns for mammals, fish, insects, and birds. Overall, due to a lack of suitable habitat none of the species of concern occur within the New Horizon Mine Permit Area.

Table 2.04.11-1a Wildlife Habitat Acreages At The New Horizon 2 Study Area And The New Horizon 2 Original Permit Area

Habitat	Study Area	%	Original Permit Area	%
Ponds	18.55	3.0	1.33	0.4
Farmsteads & Orchards	37.03	5.9	15.52	4.7
Rangeland	79.43	12.6	35.88	10.8
Swales	85.35	13.6	55.03	16.6
Agric. Area	407.85	64.9	224.32	67.5
TOTAL*	**628.20**	**100.0**	**332.08**	**100.0**

*Acreages differ from those presented in the Vegetation Baseline and Land Use Sections. Certain habitats are combined and/or mapped differently for purposes of the Wildlife Baseline Studies.

Table 2.04.11-1b Total Acreage Of The Various Pre-Mine and Post- Mine Vegetation Types Found In The New Horizon 2 Permit Disturbance Area - 1987 AND 1999

	1987 - DISTURBANCE AREA		1999 - DISTURBANCE AREA	
VEGETATION TYPE	PRE-MINE ACREAGE	POST-MINE ACREAGE	PRE-MINE ACREAGE	POST-MINE ACREAGE
Sagebrush (SG)	25.52	0.0	0.0	0.0
Sagebrush -1 (SG-1)	0.0	0.0	69.36	0.0
Sagebrush -2 (SG-2)	0.0	0.0	6.20	0.0
Swale/Drainage (SW)	54.76	7.52	20.21	0.0
Irrigated Pasture (IP)	68.76	234.25	231.18	291.83
Irrigated Hayland (IH)	130.86	6.73	73.45	21.92
Irrigated Cropland (IC)	25.02	0.0	0.0	0.0
Dryland Pasture (DP)	0.0	69.49	0.0	104.68
Farms/Roads/Disturbed (F, R, & D)	23.67	4.23	5.07	11.68
Ponds (P)	2.62	1.29	1.52	2.0
Orchards (O)	0.89	0.0	0.0	0.0
TOTAL	332.08	329.28	430.11*	430.11*

* See Exhibit 2.04.11-1

Table 2.04.11-2 Mammal Species of Confirmed or Possible Occurrence On Or Near the New Horizon 2 Study Area

Species[2]	Scientific Name[2]	Habitat Preference[3]
Virginia Opossum	(Didelphis virginiana)	ALL
Wandering Shrew	(Sorex vagrans)	S
Dusky Shrew	(Sorex monticolus)	S
Water Shrew	(Sorex palustris)	P/S
Desert Shrew	(Notiosorex crawordi)	R
Little Brown Myostis	(Myotis lucifungus)	F/O
Yuma Myotis	(Myotis yumanensis)	R
Long-eared Myotis	(Myotis evotis)	F/O
Fringed Myotis	(Myotis thysanodes)	ALL
Long-legged Myotis	(Myotis volans)	F/O R
California Myotis	(Myotis californicus)	R
Small-footed Myotis	(Myotis leibii)	F/O
Silver-haired Bat	(Lasionycteris noctivagans)	ALL
Western Pipistrelle	(Pipistrellus hesperus)	F/O
Big Brown Bat	(Eptesicus fuscus)	F/O
Hoary Bat	(Lasiurus cinereus)	R
Townshed's Big-eared Bat	(Plecotus townsendii)	R F/O
Pallid Bat	(Antrozous pallidus)	R
Nuttail's Cottontail	(Sylvilagus nuttallii)	R F/O
Desert Cottontail	(Sylvilagus auduboni)*	R F/O
White-tailed Jackrabbit	(Lepus townsendii)	ALL
Black-tailed Jackrabbit	(Lepus californicus)*	ALL
Least chipmunk	(Eutamias minimus)	R
Colorado Chipmunk	(Eutamias quadrivitattus)*	R
Yellow-bellied Marmot	(Marmota flaviventris)	ALL
White-tailed Antelope Squirrel	(Ammospermophilus leucurus)	R
Rock Squirrel	(Spermophilus variegatus)*	R, F/O
Golden-mantled Ground Squirrel	(Spermophilus lateralis)	R
Gunnison's Prairie Dog	(Cynomys gunnisoni)	R, A
Botta's Pocket Gopher	(Thomomys bottae)	F/O R, A
Nothern Pocket Gopher	(Thomomys talpoides)	ALL
Apache Pocket Mouse	(Perognathus apache)	R
Ord's Knagaroo Rat	(Dipodomys ordii)	R
Beaver	(Caster canadensis)*	P/S
Western Harvest Rat	(Reithrodontomys megalotis)*	ALL
Deer Mouse	(Peromyscus maniculutus)*	ALL
Canyon Mouse	(Peromyscus crinitus)	R
Brush Mouse	(Peromyscus boylii)	ALL
Pinyon Mouse	(Peromyscus truei)*	R
Northern Grasshoper Mouse	(Onychomys leucogaster)	R
White-throated Woodrat	(Neotoma albigula)*	R
Mexican Woodrat	(Neotoma mexicana)	R
Bushy-tailed Woodrat	(Neotoma cinerea)	R
Montane Vole	(Microtus montanus)	S
Long-tailed Vole	(Microtus longicaudus)*	S
Muskrat	(Ondatra zibethicus)*	P/S
House Mouse	(Mus musculus)*	ALL
Western Jumping Mouse	(Zapus princeps)*	S
Porcupine	(Erethizon dorsatum)*	R, F/O

Coyote	(Canis latrans)*	ALL
Red Fox	(Vulpes vulpes)*	ALL
Kit Fox	(Vulups macrotis)	R
Gray Fox	(Urocyon cinereoargenteus)	ALL
Black Bear	(Ursus americanus)	ALL
Ringtail	(Bassariscus astutus)	P/S
Raccoon	(Procyon lotor)*	ALL
Ermine	(Mustela erminea)	P/S
Long-tailed Weasel	(Mustela frenata)	ALL
Mink	(Mustela vison)	P/S
Badger	(Taxidea taxus)	R/A
Spotted skunk	(Spilogale putorius)	ALL
Striped skunk	(Mephitis mephitis)*	ALL
Mountain Lion	(Felis concolor)	ALL
Bobcat	(Lynx rufus)	ALL
Elk	(Cervus elaphus)*	ALL
Mule Deer	(Odocoileus hemionus)*	ALL
Pronghorn	(Antilocapra americana)	R

List compiled from baseline field studies, the Nucla Mine Baseline Wildlife Study, Armstrong (1972) and the Colorado Mammal Distribution Lat/Long Study (CDOW 1982).

[2] Names follow Armstrong (1972). * denotes confirmed occurrence.

[3] F/O= Farmsteads and orchards and large tree groupings
S= Swales (corresponds to Map Unit "SW" on Map 2.04.11-1
R = Rangeland (corresponds to Map Unit "SC/R" on Map 2.04.11-1
A= Agricultural areas (corresponds to Map Unit "AC" on Map 2.04.11-1
P/S=Ponds and streams (corresponds to Map Unit "P" on Map 2.04.11-1

Table 2.04.11-3 Spring Small Mammal Trappings Results (Captures/Trap-Night) At The New Horizon 2 Study Area

	HABITAT TYPE				
SPECIES	AGRICULTURE	SWALE	RANGELAND	OLD ORCHARD	PJ/SAGE BLUFF
Colorado chipmunk	-	-	-	-	0.025
Western Harvest Mouse	0.01	0.016	-	0.125	0.025
Deer Mouse	0.01	-	-	0.063	0.025
Pinyon Mouse	-	-	0.007	-	0.025
White-throated Woodrat	-	-	-	-	0.025
Long-tailed Vole	0.01	0.049	-	-	-
House Mouse	0.01	-	-	0.125	-
Capture Rate					
(Total Capture/Trap Night)	0.040	0.065	0.007	0.313	0.125
No. Species	4	2	1	3	5
Diversity (H)	1.386	0.563	0.000	0.694	1.610
No. Trap Nights	105	122	150	16	40

Table 2.04.11-4 Fall Small Mammal Trapping Results (Captures/trap Night) At The New Horizon 2 Study Area

HABITAT TYPE

Species	Agriculture	Swale	Rangeland
Western Harvest Mouse	0.044	0.030	-
Deer Mouse	0.067	0.030	0.044
Long-tailed Vole	0.007	0.007	-
Capture Rate (Total Capture/Trap Night)	0.118	0.067	1
No. Species	3	135	135

Table 2.04.11-5
Bird Species of Confirmed or Possible Occurrence
On Or near the New Horizon 2 Study Area[1]

Species[2]	Habitat Status[3]	Habitat Preference[4]	Relative Seasonal Abundance[5] Spring	Summer	Fall	Winter
Common Loon	M	P/S	-	-	-	-
Pied-billed Grebe*	S	P/S	C	C	C	-
Horned Grebe	M	P/S	-	-	-	-
Eared Grebe	M	P/S	C	-	C	-
Western Grebe	M	P/S	-	-	-	-
Clark's Grebe	M	P/S	-	-	-	-
American White Pelican	M	P/S	-	-	-	-
Double-creasted Cormorant	M	P/S	-	-	-	-
Great Blue Heron	M	P/S	C	C	C	UC
Gret Egret	M	P/S	-	-	-	-
Snowy Egret	M	P/S	-	-	-	-
Cattle Egret	M	A	S	-	-	-
Green-backed Heron	M	P/S	-	-	-	-
Black-crowned Night Heron	M	P/S	-	-	-	-
White-faced ibis	M	P/S	C	C	C	-
Tundra Swan	M	P/S	-	-	-	-
Snow Goose	M	P/S	-	-	-	-
Ross' Goose	M	PS	-	-	-	-
Canada Goose	M	P/S,A	-	-	-	FC
Wood Duck	M	P/S	S	-	-	-
Green-winged Teal	M,S?	P/S	C	C	C	FC
Mallard*	P?	P/S	C	C	C	C
Northern Pintail	M	P/S	-	-	-	-
Blue-winged Teal	M	P/S	UC	-	UC	-
Cinnamon Teal	S	P/S	C	C	C	-
Northern Shoveler	M	P/S	C	-	C	-
Gadwall	M	P/S	-	-	-	-
American Wigeon	M	P/S	-	-	-	-
Canvasback	M	P/S	-	-	-	-
Redhead	M	P/S	-	-	-	-
Ring-necked Duck	M	PS	C	-	C	-
Lesser Scaup	M	P/S	-	-	-	-
Common Goldeneye	M	P/S	-	-	-	UC
Bufflehead	M	P/S	-	-	-	-
Common Merganser	M	P/S	-	-	-	-
Red-brested Merganser	M	P/S	-	-	-	-

Table 2.04. 11-5 (Cont.)
Bird Species Of Confirmed or Possible Occureence
On Or Near the New Horizon 2 Study Area[1]

Species	Habitat Status[3]	Habitat Preference[4]	Relative Seasonal Abundance Spring	Summer	Fall	Winter
Ruddy Duck*	S	P/S	C	C	C	-
Turkey Vulture	S	ALL	C	C	C	-
Osprey	M	P/S	-	-	-	-
Bald Eagle	W	ALL	-	-	-	FC
Northern Harrier	M,W	ALL	C	-	C	C
Sharo-shinned Hawk	M	ALL	C	C	C	-
Cooper's Hawk	M	ALL	C	-	C	-
Northern Coshawk	M,W	ALL	-	-	-	-
Swainson's Hawk	M	A	-	-	-	-
Red-tailed Hawk*	P	ALL	C	C	C	C
Ferruginous Hawk	M,W	ALL	-	-	-	UC
Rough-legged Hawk	W	R,A	-	-	-	C
Golden Eagle	P	ALL	FC	FC	FC	FC
American Kestrel*	P	ALL	C	C	C	FC
Merlin	M	ALL	-	-	FC	-
Peregrine Falcon	M	P/S	-	S	-	-
Prairie Falcon	M	A	S	-	-	-
Chukar	P	R	-	-	-	-
Ring-necked Pheasants*	P	ALL	C	C	C	C
Virginia Rail	S	S	-	-	-	-
Sora	S	S	C	C	C	C
American Coot*	S	P/S	C	C	C	C
Sandhill Crane	M	A	-	-	-	-
Whooping Crane	M	P/S	-	-	S	-
Balck-bellied Plover	M	P/S	-	-	-	-
Semipalmated Plover	M	P/S	-	-	-	-
Killdeer*	S	P/S	C	C	C	-
Black-necked Stilt	M	P/S	-	-	-	-
American Avocet	M	P/S	-	-	-	-
Greater Yellowlegs	M	P/S	-	-	-	-
Solitary Sandpiper	M	P/S	-	FC	FC	-
Willet	M	P/S	-	FC	-	-
Spotted Sandpiper	M	P/S	-	-	-	-
Long-billed Curlew	M,S?	P/S	C	FC	C	-
Marbled Curlew	M	P/S	-	-	-	-
Western Sandpiper	M	P/S	-	-	-	-
Least Sandpiper	M	P/S	-	-	-	-
Baird's Sandpiper	M	PS	-	-	-	-
Pectoral Sandpiper	M	PS	-	-	-	-
Long-billed Dowitcher	M	PS	-	-	-	-
	M	P/S	-	-	-	-

Table 2.04.11-5 (CONT.)
Bird Species of Confirmed or Possible Occurrence
On Or near the New Horizon 2 Study Area[1]

Species[2]	Status[3]	Habitat Preference[4]	Relative Seasonal Abundance[5] Spring	Summer	Fall	Winter
	S	S/R	C	C	C	-
Common Snipe	M	PS	C	C	-	-
Wilson's Phalarope	M	PS	-	-	-	-
Red-necked Phalarope	M	PS	-	-	-	-
Franklin's Gull	M	P/S	-	-	-	-
Bonaparte's Gell	M	P/S	-	-	-	-
Ring-billed Gull	M	P/S	-	-	-	-
California Gull	M	P/S	-	-	-	-
Herring Gull	M	P/S	-	-	-	-
Forster's Tern	M	P/S	C	C	C	-
Black Tern	P	F/O	C	C	C	C
Rock Dove	M	F/O	-	-	-	-
Band-billed Pigeon	S	F/O,R,A	C	C	C	-
Mourning Dove	M	F/O	-	-	-	-
Black-billed Cuckoo	M	F/O	-	-	-	-
Yellow-billed Cuckoo	M	F/O	-	-	-	-
Common Barn Owl	M	F/O	-	-	-	-
Flammulated Owl	R	F/O	-	-	-	-
Western Screech-Owl	R	F/O	C	C	C	C
Great Horned Owl	M,W	F/O	-	-	-	-
Northern Pygmy-Owl	S	R	-	S	-	-
Burrowing Owl?	M,W	F/O,S	-	-	-	-
Lon-eared Owl	M,W	S,R	-	-	-	-
Short-eared Owl	S	ALL	UC	C	C	-
Common Nighthawk	S	R	-	-	-	-
Common Poorwill	M	A	-	S	-	-
Black Swift	M	F/O	S	-	-	-
Chimney Swift	M	ALL	C	C	C	-
White-throat Swift	S	F/O	C	C	C	-
Black-chinned Hummingbird	S	F/O	C	C	-	-
Broad-tailed Hummingbird	M	F/O	-	FC	C	-
Rufous Hummingbird	R	P/S	C	C	C	-
Belted Kingfisher	M	F/O	FC	FC	FC	-
Lewis' Woodpecker	M	F/O	-	-	-	-
Red-headed Woodpecker	M	F/O,R	C	-	C	-
Red-naped Sapsucker	M	F/O	C	-	C	-
Williamson's Sapsucker	M	F/O,R	C	-	C	UC
Downy Woodpecker	M	F/O	C	-	C	-
Hairy Woodpecker	P	F/O	C	C	C	C
Northern Flicker	M	F/O	-	-	-	-
Olive-sided Flycatcher	S	F/O,R	C	C	FC	-
Western Wood-Pewee?						

Table 2.04.11-5 (Cont.)
Bird Species of Confirmed or Possible Occurrence on or Near the New Hnorizon 2 Study Plan Area[1]

Species[2]	Status[3]	Habitat Preference[4]	Relative Seasonal Abundance[5] Spring	Summer	Fall	Winter
Willow Fly-catcher	S	S	UC	UC	-	-
Hammond's flycatcher	M	F/O,SR	-	-	-	-
Dusky flycatcher	M	F/O	FC	-	FC	-
Gray Flycatcher	M	F/O,R	-	-	-	-
Western Flycatcher	M	F/O	C	-	C	-
Say's Phoebe?	S	F/O,R	C	C	C	-
Ash-throated Flycatcher	S	F/O,R	C	C	-	-
Cassin's Kingbird	S	F/O	-	-	-	-
Western Kingbird	S	F/O	C	C	C	-
Eastern Kingbird	M	F/O	-	-	-	-
Horned Lark	P	A,R	C	C	C	C
Purple Martin	M	P/S	UC	-	-	-
Tree Swallow	M	P/S	C	C	C	-
Violet-green Swallow	M	P/S	C	C	FC	-
Northern Rough-winged Swallow	S	P/S	C	C	FC	-
Bank Swallow	M	P/S	C	-	FC	-
Cliff Swallow	M	P/S	FC	-	FC	-
Barn Swallow	S	P/S,F/O	C	C	FC	-
Steller's Jay	M	F/O	-	-	-	-
Scrub Jay	P	F/O,S/R,R	C	C	C	C
Pinyon Jay	P	F/O,R	C	C	C	C
Clark's Nutcracker	M	F/O,R	-	-	-	-
Black-billed Magpie	P	ALL	C	C	C	C
American Crow?	P	ALL	FC	FC	FC	C
Common Raven	P	ALL	C	C	C	C
Black-capped Chickadee	M,W	F/O,S/R	-	-	FC	UC
Mountain Chickadee	M,W	F/O,S/R	-	-	FC	UC
Plain Titmouse	P	R	-	-	-	-
Bushit	P	R	-	-	-	-
Red-breasted Nuthatch	M	F/O	-	-	FC	-
White-breasted Nuthatch	M	F/O	-	-	-	-
Brown Creeper	M	F/O	-	-	-	-
Rock Wren	S	R	C	C	C	-
Canyon Wren	P	R	-	-	-	-
Bewick's Wren	S	R	FC	FC	FC	-
House Wren	S	F/O	FC	FC	FC	UC
Marsh Wren	M	S	-	-	C	-
American Dipper	M	P/S	-	-	-	-
Golden-crowned Kinglet	M,W	F/O,S/R	-	-	-	-
Ruby-crowned Kinglet	M	F/O	C	-	C	-
Blue-gray Gnatcatcher	S	F/O	UC	UC	-	-
Westeern Bluebird	M	F/O	-	-	-	-

Table 2.04.11-5 (Cont.)
Bird Species of Confirmed or Possible Occurrence
On Or Near the New Horizon 2 Study Area[1]

Species[2]	Status[3]	Habitat Preference[4]	Relative Seasonal Abundance[5] Spring	Summer	Fall	Winter
Mountain Bluebird			FC	FC	FC	-
Townshed's Solitaire	M	F/O	-	-	-	-
Swainson's Thrush	M	F/O,S/R	-	-	-	-
Hermit Thrush	M	F/O,S/R	-	-	-	-
American Robin			C	C	C	-
Gray Catbird	M	F/O,S/R	-	-	-	-
Northern Mockingbird	M	F/O	-	-	-	-
Sage Thrasher	M	R	-	-	-	-
Brown Thrasher	M	S,F/O	-	-	-	-
Water Pipit	M	P/S,S	-	-	-	-
Bohemian Waxwing	W	F/O	-	-	-	-
Cedar Waxwing	M	F/O	-	-	-	-
Northern Shrike	W	F/O,R	-	-	-	-
Loggerhead Shrike	P	R	-	-	-	-
European Starling	P	ALL	A	A	A	A
Gray Vireo	S	R	-	-	-	-
Solitary Vireo	M	F/O	C	-	C	-
Warbling Vireo	M	F/O	FC	-	FC	-
Red-eyed Vireo	M	F/O	-	-	S	-
Tennessee Warbler	M	F/O	-	-	-	-
Orange-crowned Warbler	M	F/O	C	-	C	-
Nashville Warbler	M	F/O,S	-	-	-	-
Virginia's Warbler	M	F/O,S	-	-	-	-
Yellow Warbler	S	F/O,S	C	C	FC	-
Black-throated Blue Warbler	M	F/O	-	-	Ca	-
Yellow-rumped Warbler	M	F/O	C	-	C	-
Black-throated Gray Warbler	M	F/O	-	-	-	-
Townshed's Warbler	M	F/O,S	-	-	S	-
American Redstart	M	F/O	-	-	-	-
Northern Waterthrush	M	F/O,S	-	-	-	-
MacGillivray's Warbler	M	F/O,S	C	-	C	-
Common Yellowthroat?	S	S	C	C	C	-
Wilson's Tanager	M	F/O	C	-	C	-
Yellow-breasted Chat?	S	S	C	C	-	-
Western Tanager	M	F/O	C	-	C	-
Black-headed Grosbeak	M	F/O	FC	-	-	-
Blue Grosbeak?	S?	S	UC	UC	-	-
Lazuli Bunting	M	S,F/O	FC	-	FC	-
Indigo Bunting	M	F/O	-	-	-	-
Dickissel	M	A	-	-	UC	-
Green-tailed Towhee	M	S,R	FC	-	FC	-

Table 2.04.11-5 (Cont.)
Bird Species of Confirmed or Possible Occurrence
On Or Near the New Horizon 2 Study Area[1]

Species[2]	Abundance[5]	Status[3]	Preference[4]	Habitat	Relative Seasonal		
				Spring	Summer	Fall	Winter
Rufous-sided Towhee	M	F/O	FC	-	FC	-	
American Tree Sparrow	W	F/O	-	-	-	C	
Chipping Sparrow?*	S	F/O,R	C	C	C	-	
Clay-colored Sparrow	M	A,F/O	-	-	-	-	
Brewer's Sparrow	M	A,F/O	C	-	C	-	
Vesper Sparrow	M	A	C	-	C	-	
Lark Sparrow?*	S	F/O,R	FC	FC	-	-	
Black-throated Sparrow	S	R	-	-	-	-	
Sage Sparrow	S	R	-	-	-	-	
Lark Bunting	M	R	-	-	-	-	
Savannah Sparrow	M	R,S	-	-	-	-	
Fox Sparrow	M,W	S	-	-	-	-	
Song Sparrow*	P	S	C	C	C	C	
Lincoln's Sparrow	M	S	FC	-	FC	-	
Swamp Sparrow	M	S	-	-	S	-	
White-throated Sparrow	M	S	-	-	-	-	
White-crowned Sparrow	M	S,F/O	C	-	C	FC	
Harris' Sparrow	W	S,F/O	-	-	-	S	
Dark-eyed Junco	W	ALL	FC	-	FC	C	
Lapland Longspur	W	A	-	-	-	-	
Bobolink	M	A	-	-	-	-	
Red-winged Blackbird*	P	S	A	A	A	A	
Western Meadowlark*	P	S,A	C	C	C	C	
Yellow-headed Blackbird*	S	S	C	C	-	-	
Brewer's Blackbird*	S	S	C	C	C	FC	
Common Grackle	M	F/O	-	-	UC	-	
Brown-headed Cowbird	S	F/O,A	C	C	C	-	
Northern Oriole*	S	F/O	C	C	C	-	
Scott's Oriole	M	F/O	-	-	-	-	
Rosy Finch	W	F/O,A	-	-	-	-	
Pine Grosbeak	W	F/O	-	-	-	-	
Cassin's Finch	W	F/O	-	-	-	-	
House Finch?*	P	F/O	C	C	C	-	
Red Grossbill	W	F/O	-	-	-	-	
Pine Siskin	M	F/O	-	-	FC	-	
Lesser Goldfinch	S	F/O	C	C	C	-	
American Goldfinch	P	F/O,S	S	S	S	FC	
Evening Grosbeak	W	F/O	-	-	UC	UC	
House Sparrow*	P	F/O,A	C	C	C	C	

1 List compiled from field studies, discussion with local resisdents, the Nucla Mine baseline study, the Colorado Bird Distributation Latilong Study (Denver Museum of Natural History 1982), and the Durango Bird Club checklist od southern Colorado birds (no date).

[2] Common names follow the sequence and spelling if the American Ornithologists Union checklist (1983) and the 1985 and 1987 supplements. * = breeding confirmed for the Nucla East study area. ?* = breeding probable. Underlined species are of confirmed occurence in the study area.

[3] P = Permanent Resident
M = Migrant
S = Summer Resident
W = Winter Resident
Primary is status presented first.

[4] F/O = Farmsteads and orchards
R = Rangeland ("SG/R" on Map 2.04.11-1)
P/S = Ponds and Streams ("P" on Map 2.04.11-1)
S = Swales ("SW" on Map 2.04.11-1)
A = Agricultural Areas ("AG" on Exhibit 11-3)

Primary habitat is presented first.

[5] A = Abundant: always seen in numbers
C = Common: always seen, but not in numbers
FC = Fairly Common: very small numbers or not always seen
UC = Uncommon: seldom seen but not a surprise
S = Sparse: a surprise but not out of normal range
Ca = Casual: a surprise but out of usual range

Table 2.04.11-6
Results of Bird Road Cruise Frequency Counts
At The New Horizon 2 Study Area

SPECIES	FREQUENCY SPRING/SUMMER	FALL
Cattle Egret	0.03	-
Green-winged Teal	-	0.10
Mallard	0.10	0.20
Blue-winged Teal	-	0.07
Cinnamon Teal	0.13	0.03
Turkey Vulture	0.13	0.03
Red-tailed Hawk	-	0.30
American Kestrel	0.17	-
Ring-necked Pheasant	0.77	0.20
American Coot	0.03	0.07
Killdeer	0.17	-
Common Snipe	0.33	-
Rock Dove	-	0.03
Mourning Dove	0.30	-
Chimmey Swift	0.03	-
White-throated Swift	0.03	-
Broad-tailed Hummingbird	0.07	-
Belted Kingfisher	0.03	-
Red-naped Sapsucker	-	0.03
Downy Woodpecker	-	0.07
Hairy Woodpecker	0.03	-
Northern Flicker	0.03	0.20
Western Wood-Pewee	0.07	-
Say's Phoebe	0.10	-
Western Kingbird	0.17	-
Horned Lark	-	0.07
Tree Swallow	0.17	-
Violet-gree Swallow	0.50	-
Northern Rough-winged Swallow	0.43	-
Bank Swallow	0.07	-
Cliff Swallow	0.07	-
Barn Swallow	0.23	0.07
Pinyon Jay	-	0.07
Black-billed Magpie	0.23	0.27
American Crow	0.03	0.17
Common Raven	0.03	0.57
Mountain Chickadee	-	0.10

Table 2.04.11-6 (CONT.)
Results of Bird Road Cruise Frequency Counts
At The New Horizon 2 Study Area

SPECIES	FREQUENCY SPRING/SUMMER	FALL
Bewick's Wren	-	0.03
Marsh Wren	-	0.03
Ruby-crowned Kinglet	-	0.03
Mountain Bluebird	-	0.03
American Robin	0.57	0.07
European Starling	0.67	0.97
Warbling Vireo	0.03	0.77
Yellow Warbler	0.33	-
Yellow-rumped Warbler	-	-
Common Yellowthroat	0.07	0.40
Yellow-breasted Chat	0.03	-
Blue Grosbeak	0.07	-
Song Sparrow	-	-
Lincoln's Sparrow	-	0.20
White-crowned Sparrow	-	0.03
Dark-eyed Junco	-	0.50
Red-winged Blackbird	0.77	0.27
Western Meadowlark	0.73	0.43
Yellow-headed Blackbird	0.10	0.13
Brewer's Blackbird	0.37	-
Common Grackle	-	0.33
Brown-headed Cowbird	-	0.03
Northern Oriole	0.33	-
House Finch	0.10	-
Pine Siskin	-	0.07
American Goldfinch	0.07	0.03
Evening Grosbeak	-	-
House Sparrow	0.10	0.03
Total No. of Species Counted	43	0.07
		38

Table 2.04.11-7 Raptors At The New Horizon 2 Study Area And Vicinity

SPECIES	DATES OF OBSERVATION AND NUMBER OF INDIVIDUALS
Bald Eagle	1988 - 1/12 (2), 1/13 (2)
Northern Harrier	1988 - 1/12 (2), 1/13 (2) 1987 - 9/16 (1), 10/8 (1), 10/9 (6), 10/10 (3) 1988 - 1/12 (6)
Sharp-shinned Hawk	1987 - 7/10 (1), 10/7 (2)
Cooper's Hawk	1987 - 9/15 (1), 9/16 (1)
Red-tailed Hawk	1987 - 5/27 (2), 5/28 (1), 7/9 (1), 7/20 (1), 7/21 (1), 9/15 (3), 10/7 (4), 10/8 (4), 10/9 (5), 10/10 (4) 1988 - 1/12 (7), 1/13 (2)
Ferruginous Hawk	1988 - 1/12 (1)
Rough-legged Hawk	1988 - 1/12 (3), 1/12 (2)
Golden Eagle 1988	1/12 (4)
Merlin	1987- 10/9 (1)
Peregrine Falcon	1987 - 8/17 (1)
Prairie Falcon	1987 - 5/21 (2)
Burrowing Owl	1987 - 8/19 (1)

Does not include Turkey Vulture, American Kestrel and Great-Horned Owl. The latter species occurrence is based on a single molted feather while conducting field work.

Table 2.04.11-8
Bird Densities At The New Horizon 2 Study Area
(Number Of Individuals/100 Acres)

	FARMSTEADS/ORCHARDS		HABITAT SWALE			
SPECIES	SPRING/SUMMER	FALL	SPRING/SUMMER			FALL
	RANGELAND SPRING/SUMMER	FALL				
Green-winged Teal	-	-	-	3.3	-	-
Mallard	-	-	7.8	-	-	-
Cinnamon Teal	-	-	14.4	-	-	-
Red-tailed Hawk	-	11.8	-	-	-	-
American Kestrel	10.2	-	-	-	-	-
Ring-necked Pheasant	-	11.8	-	47.8	21.7	-
Sora	-	-	3.3	-	-	-
Killdeer	-	-	-	-	11.7	-
Common Snipe	-	-	-	-	-	5.0
Mourning Dove	159.2	-	-	-	-	-
Red-naped Sapsucker-	-	10.2	-	-	-	5.0
Williamson's Sapsucker	-	5.5	-	-	-	5.0
Downy Woodpecker	-	29.0	-	-	-	5.0
Hairy Woodpecker	-	2.4	-	-	-	5.0
Northern Flicker	15.7	23.5	-	3.3	-	38.3
Western Wood-Pewee	10.2	-	-	-	11.7	-
Dusky Flycatcher	7.0	-	-	-	-	-
Western Flycatcher	-	-	-	-	11.7	-
Say's Phoebe	5.5	-	-	-	-	-
Ash-throated Flycatcher	5.5	-	-	-	16.7	-
Western Kingbird	21.2	-	-	-	5.5	-
Barn Swallow	-	-	-	-	5.0	-
American Crow	-	5.5	-	-	-	-
Black-billed Magpie	-	10.2	-	-	45.0	21.7
Northern Raven	-	29.0	-	-	-	-
Black-capped Chickadee	-	-	-	-	-	16.7
Mountain Chickadee	-	7.0	-	-	-	16.7
Red-breasted Nuthatch	-	2.4	-	-	-	-
Bewick's Wren	-	15.7	-	-	5.0	11.7
House Wren	15.7	-	-	-	11.7	-
Marsh Wren	-	-	-	14.4	-	-
Ruby-crowned Kinglet	-	44.7	-	-	-	83.3
American Robin	23.5	7.0	3.3	-	28.3	128.3
European Starling389.8	441.6	-	-	95.1	83.3	
Warbling Vireo	10.2	-	-	-	11.7	-
Red-eyed Vireo	-	5.5	-	-	-	-
Orange-crowned Warbler	-	2.4	-	-	-	-
Yellow Warbler	29.0	-	33.3	-	21.7	-
Yellow-rumped Warbler	-	29.0	-	11.1	-	150.0

Table 2.04.11-8 (Cont.)
Bird Densities At The New Horizon 2 Study Area
(NUMBER OF INDIVIDUALS/100 ACRES)

RANGELAND SPECIES	FARMSTEADS/ORCHARDS		HABITAT		SWALE	
	SPRING/SUMMER	FALL	SPRING/SUMMER	FALL	SPRING/SUMMER	FALL
Townshed's Warbler	-	-	-	-	-	5.0
MacGillivray's Warbler	2.4	-	-	-	-	-
Common Yellowthroat	-	-	36.7	3.3	76.7	-
Wilson's Warbler	5.5	2.4	-	3.3	-	-
Yellow-breasted Grosbeak	-	-	-	-	11.7	-
Western Tanager	-	-	-	-	5.0	-
Black-headed Grosbeak	-	-	-	-	5.0	-
Rufous-sided Towhee	-	-	-	-	-	5.0
Chipping Sparrow	-	18.0	-	-	5.0	11.7
Song Sparrow	-	-	-	58.9	21.7	11.7
Lincoln's Sparrow	-	2.4	-	7.8	-	-
Swamp Sparrow	-	-	-	3.3	-	-
White-crowned Sparrow	2.4	269.0	-	22.2	11.7	33.3
Dark-eyed Junco	-	120.0	-	7.8	-	33.3
Red-winged Blackbird	5.5	-	833.0	66.7	61.7	78.3
Western Meadowlark	13.3	7.0	11.1	30.0	16.7	33.3
Brewer's Blackbird	15.7	284.7	-	-	46.0	-
Brown-headed Cowbird	29.0	-	-	-	38.3	-
Northern Oriole	13.3	-	-	-	16.7	-
House Finch	15.7	21.2	-	3.3	-	-
Pine Siskin	-	-	-	-	38.3	-
American Goldfinch	-	-	-	-	21.7	-
Evening Grosbeak	-	2.4	-	-	-	21.7
House Sparrow	44.7	47.1	-	-	-	-
Total	**850.2**	**1468.4**	**942.9**	**286.5**	**617.1**	**808.3**
Richness/Diversity Index	2.12	2.68	0.76	1.43	2.78	2.28

Table 2.04.11-9 Amphibian and Reptile Species Of Confirmed Or Possible Occurrence On Or Near The New Horizon 2 Study Area

Species[2]	Habitat Preference
Tiger Salamander (Ambystoma tigrinum)	P
Great Basin Spadefoot Toad (Scaphiopus intermontanus)	R
Western Spadefoot Toad (S. hammondi)	R
Woodhouse's Toad (Bufo woodhousei)*	P, F/O
Red-spotted Toad (B. punctatus)	P, F/O
Chorus Frog (Pseudacris triseriata)	P
Leopard Frog (Rana pipiens)	P
Collared Lizard (Cratophytus collaris)*	R
Eastern Fence Lizard (Sceloporus undulatus)*	R
Sagebrush Lizard (S. graciosus)*	R
Tree Lizard (Urosaurus ornatus)*	R
Side-blotched Lizard (Uta stansburiana)	R
Short-horned Lizard (Phrynosoma douglassi)	R
Western Shiptail (Cnemidophorus tigris)	R
Plateau Whiptail (C. velox)*	R
Striped Whipsnake (Masticophis taeniatus)	R
Smooth Green Snake (Opheodrys vernalis)*	A
Gopher Snake (Pituophis melanoleucus)*	ALL
Corn Snake (Elaphe guttata)	ALL
Milk Snake (Lampropeltis triangulum)	ALL
Western Terrestrial Garter Snake (Thamnophis elegans)*	ALL
Western Rattlesnake (Crotalus viridis)	R

List compiled from field studies, Nucla Mine Baseline Wildlife Study, Stebbins (1966) and CDOW (1981).

*Denotes Confirms occurrence

[2]Common and Scientific Names follow Stebbins 1996

[3]F/O = Farmsteads and Orchards, R=Rangeland ("SG/R on Exhibit 11-3), S=Swales ("SW" on Map 2.04.11-1), P=Ponds and Steams, A=Agricultural Areas ("AG" on Map 2.04.11-1)

Table 2.04.11-10 2023 Threatened and Endangered Wildlife Species Potentially Occurring within Montrose County, Colorado

Table: Threatened and Endangered Wildlife Species Potentially Occurring within Montrose County, CO				
Common Name (Latin Name)	**Federal Status**	**State Status**	**Habitat**	**Potential for Occurrence within New Horizon Permit Area**
Mammals				
Gray Wolf (*Canis lupus*)	Endangered	N/A	Wide range of habitats. Temperate forests, mountains, tundra, taiga, and grasslands.	Low, but slowly increasing. Lone gray wolves that are dispersing may be found anywhere in the state of Colorado, which is part of their native range. There have been recent sightings in Jackson County, CO.
Kit Fox (*Vulpes macrotis*)	N/A	Endangered	Primarily open desert, shrubby or shrub-grass habitat. Usually shadscale, greasewood, or sagebrush in the Great Basin.	Possible based on vegetation communties and landscape. Western Colorado represents the northeastern extent of the current range. There are currently populations in Delta, Mesa, and Eastern Montrose Counties.
Birds				
Gunnison Sage Grouse (*Centrocircus minimus*)	Threatened	N/A	Sagebrush, plains and moutain valleys. Important brood-rearing habitats are wet meadows and riparian areas in sagebrush shrublands.	Low because of lack of leks and significant segments of suitable habitat. There is designated critical habitat approximately 10 miles to the SW.
Yellow-billed Cuckoo (*Coccyzus americans*)	Threatened	N/A	Extensive tracts of lowland riparian characterized by mature cottonwood-willow stands with a dense sub-canopy.	None due to lack of suitable habitat. Known to nest along the Uncompaghre River, approximately 40 miles to the west.
Mexican Spotted Owl (*Strix occidentalis lucida*)	Threatened	N/A	Mixed coniferous forest types dominated by Douglas fir, pine, true fir, and pine-oak communities. Also steep, narrow canyons with cliffs and perennial water.	None due to lack of suitable habitat. Very rare in Colorado.
Fish				
Bonytail Chub (*Gila elegans*)	Endangered	N/A	Large, warm rivers, usually turbid and swift moving; prefers pools and eddies within these rivers.	None due to lack of suitable habitat. There is designated critical habitat approximately 60 miles to the NW, on the Colorado River.
Colorado Pikeminnow (*Ptychocheilus lucius*)	Endangered	N/A	Large, swift flowing, turbid rivers with quiet, warm backwaters	None due to lack of suitable habitat. There is designated critical habitat approximately 35 miles to the NE, on the Gunnison River.
Humpback Chub (*Gila cypha*)	Threatened	N/A	Deep, fast moving, whitewater, usually turbid, and often associated with large boulders or canyons with steep cliffs. Within these areas, usually found in slower eddies and pools.	None due to lack of suitable habitat. There is designated critical habitat approximately 60 miles to the NW, on the Colorado River.
Razorback Sucker (*Xyrauchen texanus*)	Endangered	N/A	Large rivers four to ten feet deep with strong current and backwaters; also off-stream impoundments and reservoirs.	None due to lack of suitable habitat. There is designated critical habitat approximately 35 miles to the NE, on the Gunnison River.
Insects				
Monarch Butterfly (*Danaus plexippus*)	Candidate	N/A	During the breeding season, monarchs lay their eggs on their obligate milkweed host plant (primarily *Asclepias* spp.).	Milkweed was not obsevred during the baseline studies. It is possible that milkweed could be in the mesic areas of the permit, which have not been disturbed.
Silverspot (*Speyeria nokomis nokomis*)	Proposed Threatened	N/A	Occurs in permanent spring-fed meadows, seeps, marshes, and boggy streamside meadows.	None due to lack of suitable habitat and absence of the host plant (*Viola nephrophylla* / *V. sororia* var. *affinis* [bog violet]).
Sources: Colorado Natural Heritage Program County Tracking Lists (downloaded February 2023); and US Fish and Wildlife Service Information for Planning and Consultation (IPaC) Query (completed February				