

APPENDIX L

Biological Assessment

BIOLOGICAL ASSESSMENT FOR THE TONGUE RIVER RAILROAD ENVIRONMENTAL IMPACT STATEMENT

March 2015



Summary

Tongue River Railroad Company, Inc. (TRRC) filed an application with the Surface Transportation Board (Board) to construct and operate a new rail line in southeastern Montana. The proposed action is the potential approval of the construction and operation of a rail line, the proposed primary purpose of which would be to transport low-sulfur, subbituminous coal from mine sites to be developed in Rosebud and Powder River Counties, Montana, including the proposed Otter Creek Mine if it is approved. TRRC would construct and BNSF Railway Company (BNSF) would operate the single-track rail line.

As part of the application process, the Board's Office of Environmental Analysis (OEA) is preparing an environmental impact statement (EIS) under the National Environmental Policy Act (NEPA) to address potential effects of the proposed project. After screening multiple alternatives, OEA analyzed the environmental impacts of five build alternatives and a No-Action Alternative in the EIS. Each build alternative is modified by a variation, resulting in 10 point-to-point build alternatives. All of these build alternatives would connect two terminus points south of Ashland, Montana, to an existing BNSF rail line.

The purpose of this biological assessment (BA) is to fulfill OEA's obligations under Section 7(a)(2) of the federal Endangered Species Act (ESA) and NEPA to determine the proposed project's potential effects on federally listed species and designated critical habitat.

Based on the analysis of the potential effects of the proposed project on federally listed species that may occur in the action area, it was determined that the proposed project ***May Affect, but is Not Likely to Adversely Affect*** black-footed ferret, interior least tern, and whooping crane and would have ***No Effect*** on pallid sturgeon. Red knot is currently proposed to be listed as threatened, but because the species and its habitat have not been documented in the action area, the proposed project would ***Not Jeopardize the Continued Existence*** of this species. The northern long-eared bat is currently proposed to be listed as endangered, but because the species has not been documented in the action area, the proposed project would ***Not Jeopardize the Continued Existence*** of this species.

Two candidate species are listed in the action area: greater sage-grouse and Sprague's pipit. Greater sage-grouse and its habitat are documented in the action area, and a small area of Sprague's pipit habitat has been documented in the action area. OEA recognizes that candidate species are provided no statutory protection under the ESA and, accordingly, no consultation or effect determination is required for Sprague's pipit or greater sage-grouse. However, OEA addresses these two species in this BA should they be listed as threatened or endangered in the future and require consultation under Section 7(a)(2).

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Acronyms and Abbreviations

BA	biological assessment
BLM	Bureau of Land Management
Board	Surface Transportation Board
BNSF	BNSF Railway Company
C.F.R.	Code of Federal Regulations
EIS	environmental impact statement
ESA	Endangered Species Act
Fort Keogh	U.S. Department of Agriculture–Fort Keogh Livestock and Range Research Laboratory
Fed. Reg.	Federal Register
ICF	ICF International
IDDP	Intake Diversion Dam Project
MCA	Montana Code Annotated
MCFH	Miles City Fish Hatchery
MEPA	Montana Environmental Policy Act
MNHP	Montana Natural Heritage Program
Montana DEQ	Montana Department of Environmental Quality
Montana FWP	Montana Fish, Wildlife & Parks
NEPA	National Environmental Policy Act
OEA	Office of Environmental Analysis
TRRC	Tongue River Railroad Company, Inc.
USFWS	U.S. Fish and Wildlife Services

Chapter 1

Introduction

Tongue River Railroad Company, Inc. (TRRC) filed an application with the Surface Transportation Board (Board) to construct and operate a new rail line in southeastern Montana. The proposed action is the potential approval of the construction and operation of a rail line, the primary purpose of which would be to transport low-sulfur, subbituminous coal from mine sites to be developed in Rosebud and Powder River Counties, Montana, including the proposed Otter Creek Mine if it is approved. TRRC would construct and BNSF Railway Company (BNSF) would operate the single-track rail line. The Board's Office of Environmental Analysis (OEA) analyzed the environmental impacts of five alternatives in the EIS. Each alternative could be modified by a *variation*—that is, a short segment of a rail alignment that could be used to replace a segment of an alternative—resulting in 10 point-to-point build alternatives.

The Board's licensing of the rail line project is a federal action requiring compliance with the federal Endangered Species Act (ESA) of 1973, as amended (16 United States Code [U.S.C.] §1536). This law provides for the listing, conservation, and recovery of endangered and threatened species of plants and wildlife. Under the ESA, the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service is mandated to monitor and protect listed species. Section 7(a)(2) of ESA requires federal agencies to ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of designated critical habitat. Section 9 of ESA prohibits the take of listed species. *Take* is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect" [16 U.S.C. 1532(19)]. USFWS further defines *harm* to include significant habitat modification or degradation. Actions of federal agencies that do not result in jeopardy or adverse modification, but that could result in take, must be addressed under Section 7.

The proposed project is a *major construction activity* as defined under ESA regulations. This biological assessment (BA) was prepared in accordance with 50 Code of Federal Regulations (C.F.R.) Part 402, Interagency Cooperation—ESA of 1973, as amended, which interprets and implements 16 U.S.C. §1536(a)–(d). At the request of USFWS, the proposed Otter Creek Mine is being treated in this BA as an interdependent action under the ESA (50 C.F.R. Part 402.02) and is covered in Chapter 8.¹

1.1 Proposed Rail Line Alternatives

OEA analyzed the environmental impacts of five build alternatives and a No-Action Alternative in the EIS. Each build alternative is modified by a variation, resulting in 10 point-to-point build alternatives. All of these build alternatives would connect two terminus points south of Ashland, Montana, to an existing BNSF rail line. Figure 1-1 and Table 1-1 present the 10 build alternatives and show how variations would be used in the build alternatives.

¹ The definitions and analysis of actions and effects under the National Environmental Policy Act and the Endangered Species Act differ and, as a result, the proposed Otter Creek Mine is considered as a cumulative impact in the Draft Environmental Impact Statement.

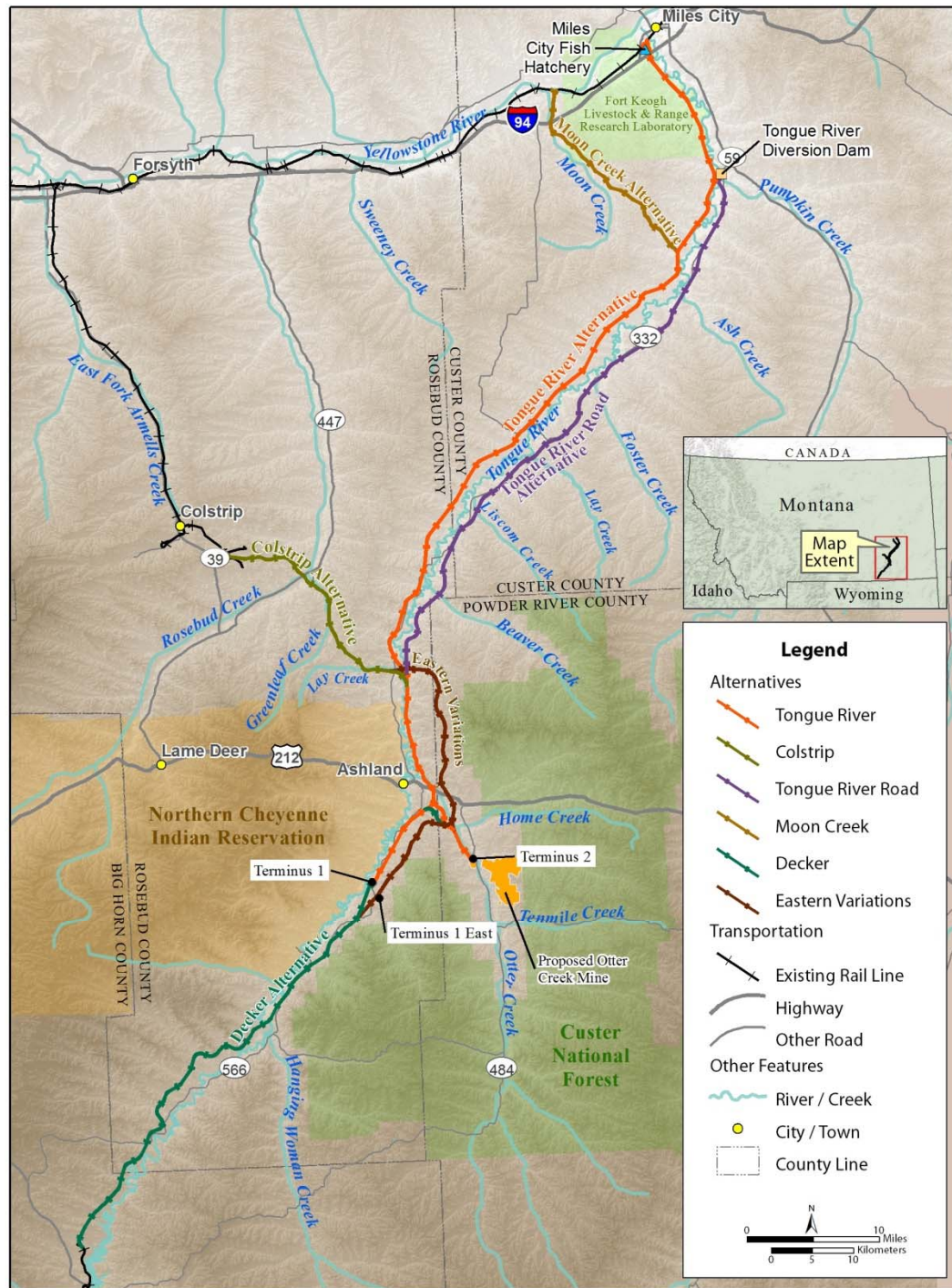


Figure 1-1. Project Vicinity

Table 1-1. Build Alternatives: Route and Variation Combinations

Build Alternative	Primary Route and Variation Combinations
Tongue River	Tongue River Alternative
Tongue River East	Tongue River Alternative + Eastern Variation
Colstrip	Colstrip Alternative
Colstrip East	Colstrip Alternative + Eastern Variation
Tongue River Road	Tongue River Road Alternative
Tongue River Road East	Tongue River Road Alternative + Eastern Variation
Moon Creek	Moon Creek Alternative
Moon Creek East	Moon Creek Alternative + Eastern Variation
Decker	Decker Alternative
Decker East	Decker Alternative + Terminus 1 Variation

Chapter 2

Description of the Proposed Project

2.1 Right-of-Way

Unless otherwise indicated, TRRC would perform all construction activities within the rail right-of-way. The width of the right-of-way would vary depending on site-specific conditions such as topography, soil slope stability, and other geotechnical conditions. Table 2-1 provides the right-of-way measurements for each build alternative.

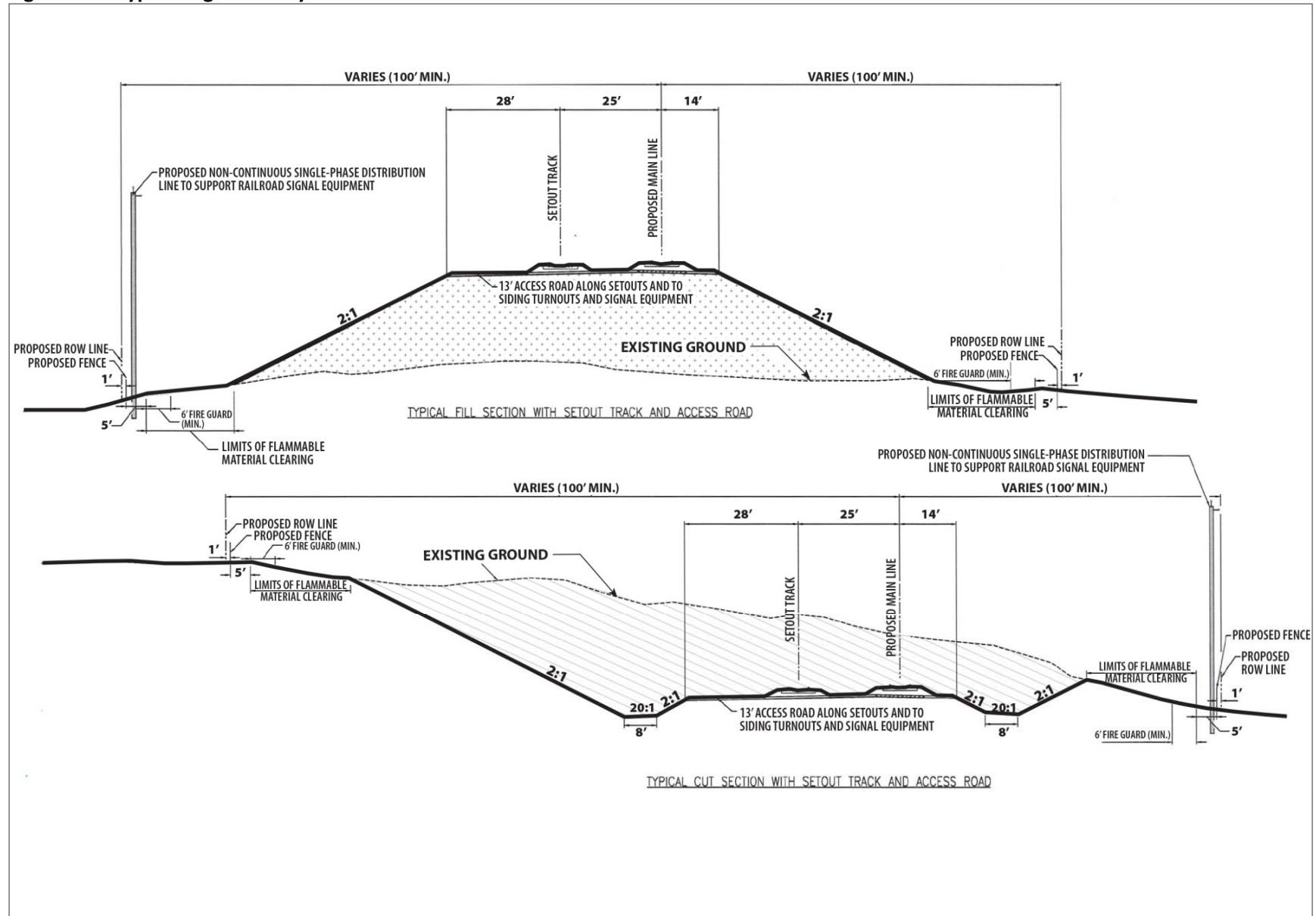
Table 2-1. Right-of-Way Measurements by Build Alternative

Build Alternative	Right-of-Way Length (miles)	Average Right-of-Way Width (feet)	Maximum Right-of-Way Width (feet)	Right-of-Way Area (acres)
Tongue River	83.7	376	1,200	3,783
Tongue River East	86.3	367	1,200	3,803
Colstrip	42.3	400	1,000	2,040
Colstrip East	45.4	385	1,050	2,094
Tongue River Road	83.7	420	1,000	4,234
Tongue River Road East	85.9	410	1,050	4,218
Moon Creek	82.1	405	1,200	4,026
Moon Creek East	84.7	396	1,200	4,047
Decker	51.1	455	1,450	2,826
Decker East	49.6	449	1,450	2,695

OEA assumed that the entire right-of-way would be acquired by TRRC. However, only the rail line footprint would be permanently cleared of vegetation for construction and operation of the proposed rail line. TRRC might not need to use the entire right-of-way after construction. As part of OEA's proposed mitigation, TRRC would be required to reclaim and restore areas temporarily disturbed during construction within the right-of-way after construction is completed.

The footprint for the proposed rail line would include the railbed as well as the full width of the area cleared and cut or filled. The footprint would include other physical structures installed as part of the proposed rail line such as access roads, staging areas, fence lines, and associated facilities in some locations. These facilities could include communications towers, siding tracks and set-out tracks, and power distribution lines. There could be minor disturbances outside of the proposed rail line footprint during construction for activities such as bridge material and crane staging, installation of erosion control, and seeding. Figure 2-1 presents the cross-sections of the right-of-way and illustrates features such as an access road and set-out tracks that would not be constructed in all locations.

Figure 2-1. Typical Right-of-Way Cross Section



TRRC has indicated that the right-of-way for build alternatives would be fenced continuously except at bridges, crossings, and cattle passes. As required by Montana Code Annotated (MCA) 69-14-701, railroad corporations must build and maintain fences on both sides of their track and property except where water ditches, embankments, terrain, or other sufficient protection prevents domestic animals from straying into the right-of-way. MCA 69-14-702 requires that a railroad corporation makes an opening in the fence every 4 miles or as practicable in grazing lands.

2.2 Rail Line Access Roads

For rail line construction and post-construction operations, TRRC would build rail line access roads parallel to the track within the right-of-way to provide access to siding tracks, set-out tracks, bridge abutments, signals, and detectors. TRRC would use existing roads crossing the build alternative as ingress and egress points to the rail line access roads and does not anticipate the need to construct any new lateral access roads. Additionally, TRRC would not construct the rail line access roads continuously along any of the build alternatives; rather, the roads would connect to the nearest existing road crossing to minimize their length. Therefore, the rail line access roads would represent a relatively small percentage of the overall project length regardless of the build alternative. The rail line access roads would be 13 feet wide and would be constructed with 6 inches of aggregate similar to track subballast. The connections to public roads would be reviewed to determine locations based on coordination and approval of the roadway owner, operator, or agency with jurisdiction.

2.3 Railbed Construction

Before any track could be placed, TRRC would construct a suitable railbed. The railbed would form the base on which TRRC would lay the subballast, ballast, rail ties, and rail. The railbed would typically measure 28 feet wide. Railbed construction would include clearing and excavating earth and rock on previously undisturbed land. Because the natural topography is variable, construction would require both cuts and fills. To the extent practicable, TRRC would adjust the design to balance cut and fill quantities such that the amount of cut would equal the amount of fill and no export or import of cut or fill would be required. TRRC would remove any excess fill material and would transport and deposit it appropriately.

2.4 Track Construction

Track would be built on 12 inches of compacted granite ballast. The subballast layered beneath the ballast would consist of 12 or more inches of graded rock with a maximum allowable size of 2 inches. Subballast could also consist of 2 to 6 inches of hot-mix asphalt track bed, depending on the availability of materials at the time of bidding and construction. The railroad would be designed to accommodate gross car weights of up to 315,000 pounds.

2.5 Material Acquisition for Rail Line Construction

TRRC would require ballast, subballast, fill material, rail ties, and rail for construction of the proposed rail line. TRRC would obtain fill material from cut-and-fill activities during railbed construction. If site-specific cut volumes were not sufficient to balance fill volume requirements, TRRC might need to import fill material. In such instances, TRRC would obtain additional fill material from sources within the right-of-way or from off site.

Subballast material is available at most rock quarries in the area. Quarries near Forsyth are capable of producing the subballast material in the quality and quantity needed for the proposed rail line. Subballast would be transported by truck, train, or a combination of both, as determined by construction contractors based on economic evaluation. Construction contractors would also evaluate the potential cost savings of using asphalt beneath the track ballast in lieu of subballast.

TRRC would transport ballast to the construction site and apply it to the rail line after the ties and rails have been installed. The ballast material used in construction would be acquired from the Pipestone Quarry near Whitehall, Montana; transported to the work site by trains; and dumped into place on new skeletonized track constructed by a track-laying machine.

TRRC plans to use water for dust suppression and soil compaction during construction. The construction contractor would coordinate the purchase of water rights from the Tongue River, the Yellowstone River, water wells, or a combination thereof.

2.6 Construction Staging Areas

The proposed rail line might require construction staging areas to store equipment and materials, provide space to weld sections of the rail line, and otherwise support rail line construction activities. TRRC anticipates that most, if not all, staging areas would be located within the railroad right-of-way in generally level areas with public access. Construction contractors would determine the locations and sizes of staging areas during final engineering. In accordance with OEA's proposed mitigation, staging areas located inside the right-of-way would be reclaimed and restored after construction.

2.7 Worker Housing

TRRC does not anticipate needing construction camps to provide temporary housing for construction workers. TRRC anticipates that construction workers from outside the area would locate appropriate temporary housing in communities near the proposed rail line.

2.8 Bridges, Culverts, and Other Surface Water Crossings

The proposed rail line, its access roads, and associated road relocations would require bridges, culverts, and other undesignated drainage structures to cross streams and other surface waters. Livestock would also require large culverts in some locations to serve as underpasses. The locations, types, and sizes of all proposed bridges and culverts are approximate and preliminary; the

exact locations, types, and sizes would be determined during the final design and permitting process, at which time TRRC would provide final designs for any bridges or culverts to federal, state, and local agencies for review as applicable.

For the purposes of crossing surface waters, TRRC would install culverts consisting of either structural plate pipe or a corrugated metal pipe ranging from 36 to 180 inches in diameter. Depending on the build alternative, between 54 and 147 culverts would be required to cross surface waters. In addition to culverts, from 26 to 68 other drainage structures would be required at other identified surface waters. The undesignated drainage structures have yet to be designed and would most likely consist of either a culvert at the surface water crossing, or the surface water would be diverted along the railbed for a distance to the next closest surface water crossing with a conveyance structures. All culverts and other drainage structures would comply with the design criteria guidelines of the American Railway Engineering and Maintenance of Way Association and BNSF to minimize impacts on railroad facilities and adjacent properties during flood events. In regulated floodplain areas, these design criteria would be superseded by state and federal floodplain development requirements. In addition, culverts would be installed in areas where there are no surface waters to convey surface runoff through the railbed.

Livestock pass locations would be determined by agreements with landowners based on topography. In general, livestock passes are best located in areas where the proposed track is about 15 feet higher than the surrounding land. The typical livestock pass would be approximately 12 feet wide, with a 9-foot-wide bed of flat, crushed aggregate. The typical livestock pass would have over 9.5 feet of vertical clearance at the center and over 7.5 feet of vertical clearance along the left and right edges of the aggregate floor.

TRRC would construct up to eight bridge crossings, depending on the build alternative, potentially across Rosebud Creek, Lay creek, Otter Creek, Tongue River, Ash Creek, Foster Creek, Liscom Creek, Beaver Creek, and Moon Creek. With the exception of the bridge over the Tongue River required for the Decker Alternatives, all bridges would be designed to span water bodies completely with no permanent in-water structures; however, a temporary in-water structure could be required to construct a bridge over the Tongue River. Because the Decker Alternatives would require a longer bridge across the Tongue River, the design may include in-water structures.

TRRC would size bridges crossing rivers and streams in accordance with BNSF hydraulic design criteria, which require that each bridge is designed based on site-specific 50-year and 100-year flood events. The lowest structural element of any bridge would be above the water surface elevation associated with 50-year flood events, and water elevation associated with 100-year flood events would not overtop the rail track subgrade at its lowest point on either side of the bridge. Additionally, the hydraulic conveyance through the structure would be designed to minimize adverse impacts during a 100-year flood event.

2.9 Construction Schedule

The construction season in Montana typically begins in April and ends in October, depending on weather. Assuming a construction season of 8 months per year, construction of the build alternatives would range from 20 months over a period of 2.5 years to nearly 50 months over approximately 6 years. It is likely that an 8-month schedule would be used to construct the proposed rail line; however, TRRC has indicated that a year-round schedule may be considered if

project economics and conditions dictate. Assuming a year-round construction schedule, the construction duration would range from 16 to almost 40 consecutive months. Table 2-2 identifies the construction duration for all build alternatives under both the 8-month and the year-round construction schedules.

Table 2-2. Build Alternative Construction Schedules

Build Alternative	8-Month Construction Schedule		12-Month Construction Schedule	
	Months	Years	Months	Years
Tongue River	24.0	3.0	20.1	1.7
Tongue River East	38.0	4.7	30.4	2.5
Colstrip	20.0	2.5	16.0	1.3
Colstrip East	30.0	4.0	22.1	1.8
Tongue River Road	36.0	5.0	30.0	2.5
Tongue River Road East	45.2	5.6	36.2	3.0
Moon Creek	36.0	5.0	29.5	2.5
Moon Creek East	49.7	6.2	39.8	3.3
Decker	45.0	6.0	35.3	2.9
Decker East	45.0	6.0	35.3	2.9

Winter grading activities that would take place during a 12-month construction schedule would require around-the-clock construction to prevent the graded embankment from freezing. The around-the-clock construction would likely be required from early November to early March.

TRRC anticipates that the proposed rail line could be constructed and operational by the time that coal production from the Otter Creek Mine would begin. The estimated date of first coal production at Otter Creek Mine is no earlier than 2018. The timing and sequence of rail line construction would depend on funding, final design, and permit conditions.

2.10 Grade Crossings

To maintain access to existing public and private roads across the rail line, TRRC would install grade crossings where the rail line would cross a roadway. For public roads, TRRC proposes at-grade crossings except where the rail line would cross Highway 212 or Interstate 94, which would be grade-separated crossings. TRRC would determine the number and location of grade crossings across private roads during final design. TRRC would determine appropriate warning devices through diagnostic evaluation with the public agency governing each public roadway. Private crossings would have passive protection in the form of crossbuck signs.

2.11 Road Relocations

TRRC has identified existing public and private roads that would be relocated in order to accommodate the proposed rail line. The number of roads proposed for relocation would range from 10 to 49, and the length of any given relocation would range from 0.05 to 2.7 miles, depending on the build alternative. Assuming that the present width of the road would be maintained along the

relocation, from 15.4 acres to 38.7 acres of land outside the railroad right-of-way would be disturbed, depending on the build alternative.

2.12 Associated Facilities

TRRC would construct and operate permanent facilities such as support facilities, communications towers, and track siding along the proposed rail line in connection with the proposed rail line.

2.12.1 Support Facilities

TRRC proposes a small expansion of the existing BNSF maintenance-of-way headquarters in Forsyth to support the operation of the Colstrip Alternatives. The location of the building is yet to be determined, but it would be adjacent to public access and available public utilities. Both the Forsyth and Ashland facilities would accommodate train crews, maintenance-of-way, signal, and other employees as needed. A similar expansion of the existing maintenance-of-way facility in Miles City would be required to support the Tongue River Alternatives, Tongue River Road Alternatives, and Moon Creek Alternatives. An expansion of the existing maintenance-of-way facility in Sheridan, Wyoming would be required to support the Decker Alternatives. For any build alternative, TRRC would construct a new 1,100-square-foot building in Ashland, Montana to support rail operations.

2.12.2 Communications Towers

TRRC would construct from four to six new communications towers to support rail line operations, depending on the build alternative. TRRC would construct five towers ranging from 50 to 150 feet tall to support the Colstrip Alternative and six 150-foot towers to support the Tongue River Alternatives, Tongue River Road Alternatives, and Moon Creek Alternatives. The Decker Alternatives would likely require the construction of four 150-foot towers. All towers would be self-supported steel lattice towers (no guy wires).

2.12.3 Sidings Tracks and Set-Out Tracks

Depending on the build alternative licensed, TRRC would construct one or two 8,500-foot passing sidings at locations to be determined. One siding would be constructed to support the Colstrip Alternatives, which would be located somewhere along the southern half of the alignment. Two sidings would be constructed to allow passing along any of the Tongue River Alternatives, Tongue River Road Alternatives, and Moon Creek Alternatives. One siding would be located along the northern third and one siding would be located along the southern third of the licensed build alternative. Two sidings would be constructed to allow passing along the Decker Alternatives with one siding located in each half of either build alternative. The sidings would be constructed within the right-of-way of continuously welded rail and would be equipped with power switches compliant with Federal Railroad Administration (FRA) regulations.

TRRC would construct set-out tracks to provide temporary storage for repair and maintenance. The set-out tracks would range in length from 500 to 4,000 feet in the right-of-way, depending on the alternative. The precise number and location of the set-out tracks would be determined during final engineering and would be based on operational requirements, topography, and access. The Colstrip Build alternatives would require two set-out tracks in the northern half of the alignment and one in

the southern half. The Tongue River Alternatives, Tongue River Road Alternatives, and Moon Creek Alternatives would each require two set-out tracks in each third of the alignment. The Decker Alternatives would require two set-out tracks in each half of the alignment. Set-out tracks would be constructed of continuously welded rail.

2.12.4 Power Distribution Lines

The proposed rail line would require power distribution lines of relatively low voltage to support the signal system and detectors that identify dragging rail equipment and hot wheel bearings, as well as automatic equipment identification detectors. The power lines would consist of two conductors carrying between 12.5 kilovolts and 14.4 kilovolts and would be strung along wood-pole structures between 30 and 50 feet in height, spaced no more than 250 feet apart. Existing single-phase distribution lines are parallel to most public roadways in the Tongue River region. New power lines would be located to tie into the closest existing line in order to minimize the need for new power lines.

2.13 Colstrip Subdivision Upgrades

The Colstrip Subdivision is an approximately 30-mile BNSF rail line that runs north from Colstrip and connects to the BNSF main line along the Forsyth Subdivision near Nichols. An average of three trains per day travel the Colstrip Subdivision. Either of the Colstrip Alternatives would continue north along the Colstrip Subdivision to reach the BNSF main line. Although the Colstrip Subdivision is presently capable of supporting the reintroduction of train traffic in its existing condition, TRRC would likely upgrade all sections of the Colstrip Subdivision track constructed with a 5.5-inch rail base and weighing 112 to 115 pounds per yard to a 6-inch rail base and a weight of 136 pounds per yard. Approximately 18 miles of track would require this upgrade. TRRC would also replace existing ties on the full length of the Colstrip Subdivision at a rate of approximately 1,500 ties per mile. One new set-out track of 500 feet is planned within the existing right-of-way. Existing support tracks would serve as two additional set-out tracks, each 500 feet long. Six timber bridges would be upgraded with minor repairs made to the timber structures. TRRC would make signal and communications upgrades to the Colstrip Subdivision to support the proposed rail line, including three telecommunications towers at distances of 17 to 22 miles apart. No culvert or at-grade crossing upgrades are planned. All Colstrip Subdivision upgrades are anticipated to be contained within the existing BNSF right-of-way.

The construction schedule for Colstrip Subdivision upgrades is not known at this time. If one of the Colstrip Alternatives is authorized and constructed, routine inspections of the Colstrip Subdivision track and structures would determine the need for the proposed upgrades, which could be incrementally implemented and may or may not be concurrent with the construction of one of the Colstrip Alternatives.

2.14 Proposed Rail Line Operation

After construction, trains operating along the proposed rail line would transport primarily low-sulfur, subbituminous coal from mines in Rosebud and Powder River Counties, including the proposed Otter Creek Mine. Trains would operate 7 days per week, 365 days per year if the Otter

Creek Mine reaches full production. Up to four 4,000-horsepower locomotives would be used to move the unit trains. TRRC has indicated that the proposed rail line would be built to accommodate maximum train lengths of 150 cars; however, the actual train size and locomotive configuration would be determined by destination, and the average train would have 125 cars.

Trains on the proposed rail line would operate at Federal Railroad Administration Class 3 standards (49 C.F.R. Part 213). The maximum safe operating speed on a Class 3 rail line is 40 miles per hour for freight rail. TRRC anticipates that average operating speeds would range from 29.7 to 39.5 miles per hour, depending on the build alternative licensed and whether the train is loaded or empty.

2.14.1 Maintenance

TRRC would construct the proposed rail line using new materials, which would initially require a minimum amount of maintenance. TRRC has indicated that in some locations during the first year of operation, the newly constructed railroad could develop low spots requiring spot surfacing—a process that fills in low spots that develop as the rail settles immediately after construction. TRRC would also perform periodic maintenance and inspections to ensure safe and reliable rail line operation.

2.14.2 Rail Traffic

TRRC anticipates rail traffic along the proposed rail line would average approximately 7.4 trains per day (3.7 in each direction), with 125 coal cars per train. TRRC bases this estimate on the estimated maximum coal production level of 20 million tons per year at full production from the proposed Otter Creek Mine. .

2.15 Action Area

Per ESA regulations, the action area is defined as all areas to be affected directly or indirectly by the proposed project and not merely the area immediately adjacent to the action. Therefore, the action area includes each build alternative's right-of-way plus all areas surrounding the right-of-way where construction or operational activities could potentially affect the environment, either directly, indirectly, or through interrelated or interdependent actions.

The action area for federally listed wildlife species includes the right-of-way of each build alternative plus a 1-mile distance from the right-of-way edge. This delineation of the action area is based on OEA consultations with state and federal agencies and established agency survey protocols that determined the appropriate distances from each right-of-way for surveying wildlife. These distances account for the area in which wildlife could be affected by construction and operation of the proposed project. In addition, the winter greater sage-grouse concentration areas and lek survey areas were extended to 2 miles from the right-of-way, and known leks out to 4 miles from the right-of-way; consequently, the action area for these specific species is extended to these distances.

The action area for pallid sturgeon includes areas where this species is known to be present or potentially present. Pallid sturgeon is not currently documented in the Tongue River, but it is present in the Miles City Fish Hatchery (MCFH), which is adjacent to the proposed Tongue River Alternatives and Tongue River Road Alternatives. For the purposes of this BA, pallid sturgeon is

assumed to be potentially present in the Tongue River below the Tongue River Diversion Dam, also known as the Tongue/Yellowstone Dam or the Twelve Mile Dam (Figure 1-1). This assumption is based on the potential for pallid sturgeon to migrate into the Tongue River because of the proposed Intake Diversion Dam Project (IDDP) on the Yellowstone River (about 90 miles downstream of Miles City). The IDDP would allow pallid sturgeon to access 165 miles of the river and tributaries within this reach (including Tongue River). The IDDP would likely be completed in 2019. There is no basis to conclude that pallid sturgeon has ever migrated up the Tongue River, but a few have been documented (more than 60 years ago) at the river's confluence with the Yellowstone River. If pallid sturgeon were to migrate up the Tongue River because of the IDDP, they would not get beyond the Tongue River Diversion Dam because the current state of the fish bypass channel does not allow for pallid sturgeon passage. Therefore, the action area for pallid sturgeon is the MCFH and the Tongue River below the Tongue River Diversion Dam.

The Intake Diversion Dam is a complete blockage to pallid sturgeon migrating up the Yellowstone River. However, in June 2011, Montana Fish, Wildlife & Parks (Montana FWP) radio-tracked five adults migrating around and above the dam through a historic side channel (Backes pers. comm.). Previously, there had been no pallid sturgeon sampling of the historic side channel, but the tracking study confirmed that under high flow conditions, pallid sturgeon are able to migrate around and above the dam through the historic side channel. Three of the pallid sturgeon (one female and two males) migrated up the Yellowstone River to the confluence with the Powder River (78 river miles upstream of the Intake Diversion Dam). The males migrated to river mile 5 of the Powder River while the females migrated to river mile 20. It was also documented that the female deposited eggs in the Powder River or in the Yellowstone River near the Powder River confluence. The Powder River is approximately 35 miles downstream from the confluence of the Tongue River with the Yellowstone River. Based on this tracking study, it is conceivable that a pallid sturgeon that is able to migrate through the historic side channel during a high flow event could migrate to the Tongue River. However, successful passage of adult pallid sturgeon in the side channel should be considered a rare event and would be unlikely to occur under normal or low-flow conditions.

Chapter 3

Federally Listed Species in Action Area

3.1 ESA Consultation History

October 22, 2012. OEA sent a scoping letter to Montana USFWS Ecological Field Services Office in Helena requesting information regarding presence of federally listed species and designated critical habitat that may be in the project vicinity. OEA requested confirmation of species list provided by OEA in the letter and any additional comments USFWS may have on the proposed project's potential effects on federally listed species.

December 12, 2012. OEA's biologists (from OEA's third-party contractor, ICF International [ICF]) met with state and federal agencies (including one representative from USFWS) to discuss and develop the wildlife baseline field studies to be conducted for the proposed project in 2013.

December 19, 2012. USFWS responded to OEA's October 12, 2012, letter confirming the species list and providing information on federally listed species in the project vicinity.

February 15, 2013. ICF met with state and federal agencies (including one representative from USFWS) to discuss recent aerial surveys and planning for greater sage-grouse and black-footed ferret spring surveys.

March 12, 2013. ICF met with state and federal agencies (including one representative from USFWS) to provide final data and a survey summary for winter aerial surveys, to discuss black-footed ferret surveys, and to finalize the survey areas for grouse leks.

August 12, 2013. ICF met with state and federal agencies (including two representatives from USFWS) to discuss the final data and survey summary for the baseline field studies and to discuss any issues.

January 29, 2014. OEA and ICF held a teleconference with USFWS (three representatives) and Montana FWP to present OEA's preliminary impact analysis and effects determinations for federally listed species in the action area.

February 26, 2014. ICF representative called USFWS to discuss the Bureau of Reclamation's proposal to provide pallid sturgeon passage at the IDDP on the Yellowstone River and the implications the proposed project may have on pallid sturgeon accessing the Tongue River. USFWS also identified the primary impact concern with pallid sturgeon should they ever migrate into the Tongue River.

April 18, 2014. An ICF representative called USFWS to discuss the recent proposed listing of red knot in Rosebud County and potential implications of this listing on the proposed project.

January 6, 2015. OEA, USFWS, and ICF held teleconference to discuss the proposed northern long-eared bat and the proposed Otter Creek Mine implications.

3.2 Federally Listed Species Considered

The group of federally listed species considered is based on consultations with USFWS and the most recent USFWS species lists for Custer, Rosebud, Big Horn, and Powder River Counties. This information revealed four endangered species—one mammal, one fish, and two birds—as listed for one or more of these counties (Table 3-1). In addition, two proposed species and two candidate species are listed for one or more of these counties. Proposed species are provided protection under Section 7(a)(4) of the ESA, which requires federal agencies to *confer* with the USFWS on any action that is likely to jeopardize the continued existence of any species proposed for listing or result in adverse modification of critical habitat proposed to be designated. Candidate species are provided no statutory protection under the ESA and no consultation or effect determination is required; however, this BA addresses these species. There is no designated or proposed critical habitat in the four counties.

Table 3-1. Federally Listed Species for Custer, Rosebud, Big Horn, and Powder River Counties

Listed Species	Status	Counties	Build Alternatives that Could Affect Species ^a
Black-footed ferret	E	Custer, Rosebud, Big Horn, Powder River	All
Pallid sturgeon	E	Custer, Rosebud	All
Interior least tern	E	Custer, Rosebud	All
Whooping crane	E	Custer	Tongue River, Tongue River Road, Moon Creek,
Red knot	P	Rosebud	All
Northern long-eared bat	P	Custer, Powder River	All
Greater sage-grouse	C	Custer, Rosebud, Big Horn, Powder River	All
Sprague's pipit	C	Custer, Rosebud, Big Horn, Powder River	All

Notes:

^aA build alternative could affect a species only if the alternative is within a county where the species is listed.

Source: U.S. Fish and Wildlife Service 2015

E = endangered; P = proposed; C = candidate

3.2.1 Species Dismissed from Further Consideration

3.2.1.1 Red Knot

The proposed red knot was eliminated from further consideration because the habitat requirements for this species are not present in the action area and there have been no documented occurrences of this species in the action area. In the United States, red knot is primarily found along the Atlantic Coast and Gulf Coast as it migrates between the Canadian Arctic and South America in fall and spring. Habitats used during migration are generally coastal marine and estuarine habitats with large areas of exposed intertidal sediments. They are commonly found along sandy, gravel, or cobble beaches, tidal mudflats, salt marshes, shallow coastal impoundments, lagoons, and peat banks (*Federal Register* [Fed. Reg.] 78 60025). Some red knots have also been documented migrating farther inland in the United States, and the northern Great Plains is a potential migration stopover area. The Montana Natural Heritage Program (MNHP) has identified one historical occurrence (transient) of a red knot in Rosebud County, farther than 60 miles from the action area.

However, this MNHP data point is questionable at this time due to the absence of precise data or observer information from the data archives and records for this location (Maxell pers. comm.). In addition, 2013 baseline surveys (Section 3.3.1.2, *Baseline Surveys*) did not identify any red knots, and there is no habitat in the action area that would meet the requirements of red knot migration stopover habitat (e.g., large sandy, gravel, or cobble beaches). Consequently, the proposed project would **Not Jeopardize the Continued Existence** of red knot.

3.2.1.2 Pallid Sturgeon

Pallid sturgeon was eliminated from further consideration after OEA determined there would be no potential for the species to be affected by construction or operation of the proposed action. In making this determination, OEA accounted for the presence of the species in the MCFH, the assumed potential presence of the species in the Tongue River (below and up to the Tongue River Diversion Dam) after completion of the IDDP on the Yellowstone River, and the identified potential impacts from the proposed project based on OEA consultations with USFWS. As previously described, the action area for pallid sturgeon is the MCFH and the Tongue River below the Tongue River Diversion Dam, which is based on the presence (MCFH) or assumed potential presence of pallid sturgeon (Tongue River after IDDP). Four build alternatives are associated with these action areas, including the Tongue River Alternatives (Tongue River Alternative and Tongue River East Alternative) and Tongue River Road Alternatives (Tongue River Road Alternative and Tongue River Road East Alternative).

Based on consultations with USFWS, OEA had identified two potential impacts on pallid sturgeon that could result from construction and operation of the proposed project: 1) vibration and noise impacts on pallid sturgeon at the MCFH during construction and operation of the rail line and 2) placement of engineered bank structures along the Tongue River.

Pallid sturgeon is present in the MCFH, and there were noise and vibration concerns identified during the previous Section 7(a)(2) consultation for the Tongue River III EIS (USFWS consultation #6MT-06-F02B), where one of the build alternatives was sited adjacent to the MCFH. The MCFH is a critical component of the USFWS recovery plan for pallid sturgeon, and any loss of production at this facility would degrade recovery efforts. Elevated vibration and noise in the MCFH could cause a stress response in adult pallid sturgeons, impede reproduction by reducing gamete and/or progeny quality, impede immunological response of adult pallid sturgeon, and/or impact embryo development or larval and juvenile growth. As a result of the Tongue River III Section 7(a)(2) consultation, there was an agreement to conduct a detailed noise and vibration analysis to determine if construction or operation of the rail line would impact pallid sturgeon in the MCFH. In 2007 the vibration and noise analysis was conducted at the MCFH by Wilson Ihrig & Associates, and the results showed that noise generated by rail construction and operation would be less than the ambient noise and vibration levels at the hatchery where pallid sturgeon are located (McDonald jars, hatchery tanks). OEA conducted an independent review of the vibration and noise analysis and determined that the methods were sound and results applicable to the current proposed project. Thus, construction and operation of any of the Tongue River Alternatives or Tongue River Road Alternatives would have **No Effect** on pallid sturgeon at the MCFH.

Pallid sturgeon is not currently documented in the Tongue River, but the IDDP could potentially result in pallid sturgeon migrating up the Tongue River to the Tongue River Diversion Dam. Any engineered bank structures placed along the Tongue River could affect pallid sturgeon were the species to be present. Engineered bank structures would alter instream and riparian habitats,

affecting fish habitat, cover, food, in-stream habitat complexity, streambank stability, and temperature regulation. However, the proposed project would not require any engineered bank structures along the Tongue River below the Tongue River Diversion Dam, so there would be no impact on pallid sturgeon should it ever be present in the Tongue River. In addition, no part of the proposed project would be constructed within the Tongue River below the Tongue River Diversion Dam; the bridge crossings for the build alternatives are all upstream of the Tongue River Diversion Dam and outside of the pallid sturgeon action area. Therefore, construction or operation of any of the Tongue River Alternatives or Tongue River Road Alternatives would have **No Effect** on pallid sturgeon in the Tongue River, should the species ever migrate into the Tongue River upon completion of the IDDP.

3.2.1.3 Northern Long-Eared Bat

Northern long-eared bat was eliminated from further consideration after OEA determined there would be no potential for the species to be affected by construction or operation of the proposed project. In making this determination, OEA reviewed the latest USFWS range map for the species, bat data from surveys conducted by OEA's biologists for the proposed project, recent MNHP bat surveys that are near the action area or overlap the action area, and surveys conducted as part of the proposed Otter Creek Mine permit application.²

The current USFWS northern long-eared bat range map (2015) that is associated with the proposed listing of the species indicates the species has an extensive range throughout the eastern United States, spanning from the Atlantic Coast westward to the eastern edge Montana and Wyoming (Figure 3-1). In Montana, the USFWS range map partially covers several of Montana's eastern border counties. However, the range map does not cover Powder River County and only covers a very small area of Custer County's northeastern corner. The proposed project is not within the current USFWS range map for the northern long-eared bat; the proposed project is approximately 44 miles west of the species' range at its closest point (Tongue River Road Alternative just south of the Tongue River Diversion Dam).

OEA's biologists conducted acoustic bat surveys in Custer and Rosebud Counties along the Tongue River as part of the wildlife surveys conducted for the EIS (Batworks LLC 2013). Five bat survey points were established along the Tongue River from just north of Ashland, Montana to Miles City, Montana. The survey locations were specifically located in bat habitat, covering foraging areas and flyways. Ten bat species were identified during the course of the surveys. However, the northern long-eared bat was not detected.

² Arch Coal submitted a permit application to the Montana Department of Environmental Quality (Montana DEQ) to construct and operate a surface coal mine near Ashland, Montana (the proposed Otter Creek Mine). Montana DEQ is responsible for the permitting actions required by Arch Coal for the proposed Otter Creek Mine and is currently preparing an EIS pursuant to the Montana Environmental Policy Act (MEPA), which will analyze and disclose the potential environmental impacts related to the development of the proposed Otter Creek Mine. The mine permit application contains the information that Montana DEQ will use to conduct their MEPA and permit review.

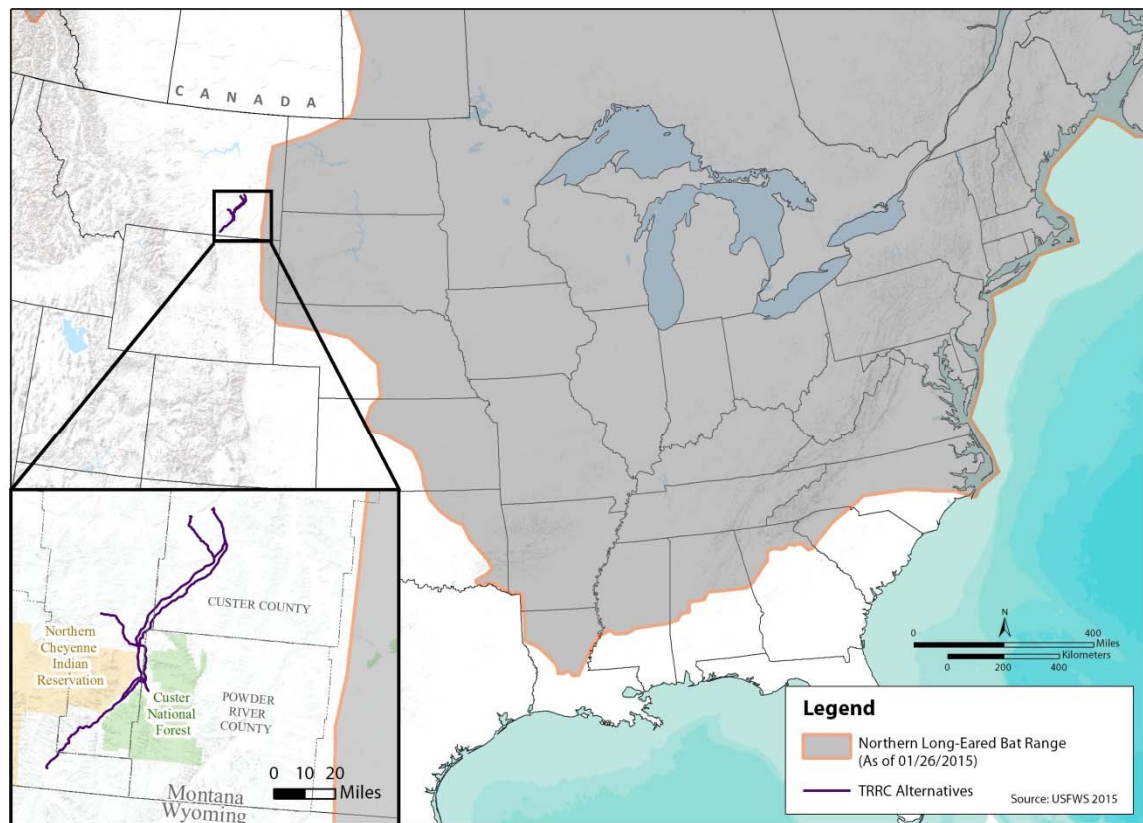


Figure 3-1. Northern Long-Eared Bat Range

The MNHP conducts and coordinates (with other state and federal agencies) bat surveys across Montana to monitor year-round bat activity and roost habitats. Data from 68 bat survey sites throughout Montana are currently collected as part of this monitoring effort (Montana Natural Heritage Program 2015). Three of these survey sites—Ashland, Stag Rock, and Otter Creek Coal Tract survey sites—are in or near the action area. The Ashland survey site is in Rosebud County (U.S. Highway 212 at Tongue River), where the northern long-eared bat is not listed; and the Stag Rock survey site is outside of the action area but in Powder River County (in Custer National Forest), where the species is listed. The Otter Creek Coal Tract site is within the action area along Otter Creek at the proposed Otter Creek Mine. The Ashland and Stag Rock sites have available monitoring data spanning from 2012 to present (the end of 2014), and the Otter Creek Coal Tract Site has data spanning from 2013 to present (the end of 2014). While several bat species have been detected at each of these survey sites over the survey periods, there have been no detections of northern long-eared bat, and as of the end of 2014, none of the 68 bat survey sites across the state have detected any northern long-eared bats in Montana (Montana Natural Heritage Program 2015).

The proposed Otter Creek Mine permit application provides further bat surveying information for the action area. Bats were inventoried in 2011 in Tract 2 where eight bat species were documented, and in 2012 a ninth bat species was documented. However, the northern long-eared bat was not detected, and the 2011 surveys were considered adequate to address bat species richness and habitat use at Tract 2 (Montana Department of Environmental Quality 2014b).

Based on the current USFWS range map for the northern long-eared bat as part of the USFWS's proposed listing and the absence of northern long-eared bat detections from multiple bat surveys conducted by OEA, MNHP, and the Otter Creek Mine applicant, OEA has determined that the proposed project would **Not Jeopardize the Continued Existence** of the species.

3.3 Methods

The following discusses the methods used to determine the current status and habitat use of federally listed and candidate wildlife species in the action area.

3.3.1 Literature Search and Consultation

OEA reviewed wildlife studies and data from various agencies to document what is known about wildlife populations in southeast Montana and in the action area. Prior to project initiation, OEA also consulted various agencies and entities knowledgeable of wildlife in the region to discuss the proposed project, public data available through wildlife studies and various agencies, and proposed surveys and methodologies. Those consulted included representatives from the Montana Department of Natural Resources and Conservation; MNHP; U.S. Department of Agriculture–Fort Keogh Livestock and Range Research Laboratory (Fort Keogh); USFWS–Montana Ecological Services Field Office; Bureau of Land Management (BLM)–Miles City Field Office; U.S. Forest Service–Ashland Ranger District; Montana FWP; and the Northern Cheyenne Tribe. Surveys were conducted using appropriate methods established by federal and state wildlife agencies, including USFWS, BLM, Montana FWP, and the MNHP. The methods were approved by consulted entities.

The MNHP provides information on Montana's wildlife species and maintains a long-term data set tracking these species throughout the state. Data provided through this program was used to determine the historical occurrence and population levels for the action area. The MNHP compiles and manages data made available from federal and state agency personnel, private consultants, museum specimens, published and unpublished scientific literature, and field surveys.

3.3.2 Baseline Surveys

OEA conducted baseline surveys between January and September 2013, using aerial and ground methods to cover the entire action area. Aerial surveys and visual observations from distances (using scopes and binoculars) were used to cover land parcels where OEA was not permitted access by landowners (OEA was permitted to access 43 percent of the action area). All observations were recorded using hand-held global positioning system units.

3.4 Species Descriptions and Occurrences

3.4.1 Black-Footed Ferret

Black-footed ferret (*Mustela nigripes*) was listed as endangered under the ESA on March 11, 1967 (32 Fed. Reg. 4001). Black-footed ferret (ferret) is the only ferret species native to North America, with a distribution and persistence intricately linked to the distribution and presence of prairie dog (*Cynomys* spp.) colonies. The ferret preys almost exclusively on prairie dogs and relies on their colonies for shelter, hunting sites, and parturition sites. Historically, the black-footed ferret range

included much of the western Great Plains, extending north into Canada and as far south as Texas and Arizona. In southeastern Montana, the ferret coincides with black-tailed prairie dog colonies, which are commonly found in semi-desert and short- to mid-grass prairies (Esch et al. 2005). USFWS has established that at a minimum, a single 80-acre black-tailed prairie dog colony or two or more colonies totaling 80 acres and within 7 kilometers (4.34 miles) of one another is required to support ferrets (U.S. Fish and Wildlife Service 1989).

No ferret population exists in the action area, and only two recorded observations from 1923 exist in the action area (Montana Natural Heritage Program 2013a, 2013b). Ferrets were reintroduced on the Northern Cheyenne Reservation between 2008 and 2010, where 88 ferrets were released over the 3-year period; however, by 2011, only one ferret was detected (U.S. Fish and Wildlife Service 2012). Reintroduction efforts took place on a 2,000-acre black-tailed prairie dog complex located 5 miles south of Ashland and just west of Birney Road (Montana Natural Heritage Program 2013a, Montana Prairie Dog Working Group 2002). This area overlaps the action area; however, ferret reintroductions failed in this area, and prairie dog colonies in the region have seen declines since 2009 due to an ongoing outbreak of Sylvatic plague (Farmer 2012, FaunaWest Wildlife Consultants 2012). In 2005, nocturnal spotlight surveys and diurnal searches were conducted at an active prairie dog colony on Fort Keogh in the action area; no ferrets were detected, and no sign was detected during diurnal searches of the colony (Thunderbird Wildlife Consulting 2005). This area was remapped in 2013 as part of the baseline surveys. The 168-acre colony surveyed in 2005 has divided into two smaller colonies of 10.2 acres and 114.6 acres.

Ferret habitat in the action area is limited to three active prairie dog colonies larger than the 80-acre stipulation; these colonies are associated only with the Tongue River Alternatives and Tongue River Road Alternatives. Other prairie dog colonies are associated with all build alternatives, but they are too small to support ferrets. A few areas along all of the build alternatives contain colonies less than 7 kilometers apart; however, no large complexes of prairie dog colonies were noted as most colonies were small (average colony size in the action area was 29.3 acres) and separated by great distances.

No ferrets or sign thereof were recorded in any prairie dog colonies in the action area during the 2013 baseline surveys.

3.4.2 Interior Least Tern

Interior least tern (*Sterna antillarum athalassos*) was listed as endangered under the ESA on May 28, 1985 (50 Fed. Reg. 21792). Interior least tern is a migratory water bird occurring throughout the central United States, from Texas to Montana and eastern Colorado to southern Indiana, during the breeding season (April to August). Known breeding sites occur in isolated areas along major rivers, including the Arkansas, Missouri, Mississippi, Ohio, Platte, Red, and Rio Grande. Interior least terns use barren to sparsely vegetated riverine sandbars, sand, gravel pits, and lake and reservoir shorelines for nesting sites. Sandbars, the most common nesting substrate, are dynamic and change annually with the river dynamics. Most major rivers in the United States have been engineered for the purpose of navigation, hydropower, irrigation, and flood control, resulting in changes to river dynamics and in the elimination of most suitable nesting habitat throughout the interior least tern's range (U.S. Fish and Wildlife Service 1990).

Eastern Montana is at the extreme western edge of the interior least tern's range, and most known populations occur along the Missouri River in North Dakota and at the confluence of the Yellowstone River and Missouri River at the Montana–North Dakota border (U.S. Fish and Wildlife Service 1990). Montana does support a small breeding population of interior least terns (approximately 50 adult

birds), which are found along the Missouri River between Fort Peck Reservoir and the North Dakota border as well as along the Yellowstone River below Miles City (Atkinson and Dood 2006). In the early 1990s, breeding interior least terns (containing multiple breeding pairs) were documented in an area approximately 9 miles northeast of the action area (from Miles City) along the Yellowstone River (Montana Natural Heritage Program 2013a, 2013b).

Habitat along the Tongue River is inadequate to host breeding populations of interior least terns. Two dams between Decker and Miles City regulate the flow of the river and divert water for irrigation, which degrades minimally available habitats. Available sandbars along the Tongue River are small, low-lying, frequently flooded, and contain substrate that is inadequate for nesting interior least terns.

In the action area, interior least terns could use habitat along the Tongue River during migration in mid- to late May and mid-August (Bureau of Land Management 2013), as migration patterns for the species typically follow major river systems to breeding sites (primarily the Missouri River in this part of the species' range). There is one record of a migrating interior least tern 4 miles from the action area at Castle Rock Lake near Colstrip (Atkinson and Dood 2006). Even though no interior least terns have ever been documented within the Tongue River Valley or the action area, it is possible (although it would be extremely rare) that one could migrate through the action area.

No observations of migrating or breeding interior least terns were observed during the 2013 baseline surveys.

3.4.3 Whooping Crane

Whooping crane (*Grus americana*) was listed as endangered under the ESA on March 11, 1967 (32 Fed. Reg. 4001). Whooping crane is one of two migratory cranes in the United States. There are four wild populations of the crane in the world: three experimental populations and one natural population. Two of the experimental populations occur in Florida and only one of these is migratory, moving between Florida and Wisconsin. The third experimental population is nonmigratory and is located in Louisiana. The natural population is the only self-sustaining population. This population winters along the Gulf Coast of Texas on the Aransas National Wildlife Refuge and breeds on the Wood Buffalo National Park in northern Alberta Canada and adjacent Northwest Territories (U.S. Fish and Wildlife Service 2012).

Whooping crane uses agricultural fields and marshy wetlands on their migration route between the Texas Gulf Coast and Canada. Suitable stopover habitat consists of a mosaic of wetlands, including shallow seasonally flooded marshy wetlands for roosting and agricultural fields and emergent wetlands for feeding. However, riverine habitat is more important in certain areas along the Platte, North and Middle Loup, and Niobrara Rivers in Nebraska and the Missouri River in North Dakota. Cranes use submerged sandbars along these rivers as roosting sites (Canadian Wildlife Service and U.S. Fish and Wildlife Service 2007).

The USFWS identified a whooping crane migration corridor based on over 2,000 confirmed sightings and radio telemetry data for nine whooping cranes. This 200-mile-wide corridor encompasses 95 percent of observational data (Canadian Wildlife Service and U.S. Fish and Wildlife Service 2007, U.S. Fish and Wildlife Service 2012). The corridor covers a very small area of the northeast corner of Montana, more than 100 miles from the closest point of the action area (around Miles City).

Within the action area, adequate migration stopover habitat (marshy wetlands needed for roosting and feeding) is extremely limited along the Tongue River. While whooping crane migration and stopovers cannot be ruled out entirely in the action area, it would be extremely rare that a whooping crane would fly through the action area during migration, as the vast majority of the migration corridor is located approximately 200 miles east of the action area.

While two migrant whooping cranes have been documented historically in the vicinity of the proposed project, no species observations exist in the action area (Montana Natural Heritage Program 2013a, 2013b), and no whooping cranes were observed during the 2013 baseline surveys.

3.4.4 Greater Sage-Grouse

Greater sage-grouse (*Centrocercus urophasianus*) was listed as a candidate species on March 23, 2010 (75 Fed. Reg. 13910). The greater sage-grouse range is present throughout sagebrush habitats in the western United States and southern Canada. Once a common sight in 12 western states and three Canadian provinces, the sage-grouse has suffered population declines throughout its range and is now extinct in five states and one Canadian province. Population declines are, in large part, due to habitat loss and alteration from natural causes (e.g., fire, drought) and human causes (Connelly and Braun 1997, Connelly et al. 2004).

Greater sage-grouse is physically the largest grouse species in North America and relies on a variety of habitats in sagebrush-dominated landscapes to reproduce and survive. Sage-grouse is one of the many birds that use a lek mating system, in which males congregate at specific locations to compete for mates. These locations are open areas in relatively flat terrain surrounded by sagebrush stands (Connelly et al. 2004, Montana Sage-Grouse Work Group 2005). Nesting habitats are in moderately dense sagebrush stands with suitable nonwoody vegetation understory (Aldridge 2005, Connelly et al. 2004). In Montana, more than half of nesting sites are within 2 miles of a lek (Montana Sage-Grouse Work Group 2005). Brood-rearing habitat consists of areas with high abundance and diversity of flowering plants. The species also needs moist areas or water that persists through the summer to support wildflower species (Aldridge and Boyce 2007, Aldridge 2005, Bureau of Land Management 2009, Connelly et al. 2004). Winter habitat consists of areas of dense sagebrush with an average height of 10 inches in gentle topography. Sagebrush height is important for adequate cover. In increasing snow depths, sage-grouse require more mature stands of sagebrush that are taller (Bureau of Land Management 2009, Connelly et al. 2004, Doherty et al. 2008, Montana Sage-Grouse Work Group 2005). The action area lies in Montana FWP Region 7, where more than 11 million acres are classified as sage-grouse habitat or 42 percent of the state-wide total; however, only 4.7 million acres are regularly monitored (Montana Sage-Grouse Work Group 2005).

Currently sage-grouse populations are stable in Montana (Bureau of Land Management 2013). Sage-grouse populations are strongly cyclic, meaning they experience alternating periods of increases and decreases (Connelly and Braun 1997, Connelly et al. 2004, Fedy and Aldridge 2011). State-wide populations have been monitored continually since the early 1960s. Since monitoring began, sage-grouse populations at the state level increased, reaching an all-time high in 1984. Sharp declines were documented from 1991 to 1996; however, populations were again increasing through the early 2000s (Montana Sage-Grouse Work Group 2005). Region 7 currently has 353 active leks, of which 80 are monitored on an annual basis, and the 25-year average is 22 males per lek (Bureau of Land Management 2013, Montana Sage-Grouse Work Group 2005). Populations in Region 7 peaked in 2006, with 988 males observed, then declined through 2009, and increased in 2010. Grouse populations in 2013 were approximately 50 percent lower than the long-term average. The

population appears to be declining at a rate similar to declines seen in the 1990s (Montana Fish, Wildlife & Parks 2013).

Based on 2013 baseline surveys, the vast majority of the action area hosts habitats that are inadequate for supporting greater sage-grouse. The available sagebrush-grasslands provide marginal breeding and brood rearing habitat; however, these areas are surrounded by trees and steep terrain that provide greater potential for predation. Marginal habitat is present in the northernmost part of the action area, just south of Miles City, and at the extreme southern end, near Decker. Also, no large, dense, contiguous sagebrush stands exist in the action area to support wintering grouse. Core habitat, as delineated by Montana FWP to encompass areas with the largest population concentrations and associated habitats, is mapped in the extreme southern end of the action area. The proposed project would not disturb any habitats delineated as core habitat. Much of the remaining areas within the action area are defined by Montana FWP as general habitat.

The action area does support a small population of greater sage-grouse. Thirty-seven historical observations were recorded between 1974 and 2011 in the action area; the majority of these observations were at known leks that were checked during baseline surveys in 2013 (Montana Natural Heritage Program 2013a, 2013b). Two observations of a total of six birds were made during winter aerial surveys. Observations were made near where the Moon Creek Alternatives meet the Tongue River Alternatives. Of the 20 known leks in the action area, 11 are confirmed active, 1 is confirmed inactive, and 8 are unconfirmed. Only three leks located in the northernmost portion of the action area were active during spring 2013, with two males being the highest peak male count recorded.

No new leks were documented during spring 2013 baseline surveys. Only three other sage-grouse were observed during spring baseline surveys.

3.4.5 Sprague's Pipit

Sprague's pipit (*Anthis spragueii*) was listed as a candidate species on September 15, 2010 (75 Fed. Reg. 56028). Sprague's pipit is a small migratory passerine bird that winters in the south-central United States and breeds in the northern Great Plains and southern Canada. Sprague's pipit is endemic to large, open, native mixed-grass prairies, and populations are declining as habitat is converted for agricultural fields and livestock overgrazing (Jones 2010). Reduced fire frequency may lead to the degradation of suitable habitats as shrubs and vegetative litter encroach on open grasslands in the absence of historical fire intervals (Jones 2010).

Sprague's pipit requires large contiguous habitat with a low edge-to-area ratio for breeding. Evidence suggests that areas between 70 and 470 acres of contiguous habitat are needed to support Sprague's pipit. Sprague's pipits nest in well-drained native grasslands with higher grass and sedge cover and less bare ground. Nest sites in Montana are positively associated with clubmoss cover and native grass species and negatively associated with cactus and low-growing shrubs. Sprague's pipits are not known to nest in croplands but have been documented in some areas using hayfields in which the vegetation structure was similar to native grasslands (Jones 2010; Montana Natural Heritage Program and Montana Fish, Wildlife & Parks n.d.).

Sprague's pipit populations in Montana are relatively stable and occur at low levels in the project vicinity (Bureau of Land Management 2013; Montana Natural Heritage Program and Montana Fish, Wildlife & Parks n.d.; Montana Natural Heritage Program 2013a, 2013b). Minimal habitat to support Sprague's pipit exists in the northern portion of the action area (associated with the Tongue River,

Tongue River Road, and Moon Creek Alternatives), where areas of native prairie and mixed grass agriculture occur; however, these areas are classified as having low suitability (Montana Natural Heritage Program 2012). Only one historical record observed in 1998 on Fort Keogh exists in the action area (Montana Natural Heritage Program 2013b).

No pipits were documented in the action area during 2013 baseline surveys.

Chapter 4

Environmental Baseline

Topography varies throughout the action area. Elevations range from 2,362 to 4,134 feet. Lower elevations occur in the northern portions of the action area with increasing elevations southward. Badland topography—or barren land characterized by roughly eroded ridges, peaks, and mesas with no to sparse vegetation—characterizes the northern and northwestern portion of the action area. Gently rolling hills dominate the action area between Ashland and Foster Creek Road (approximately 35 miles north of Ashland along Tongue River Road). Steeper hills and higher elevations occur between Colstrip and Ashland, where open plains with exposed sandstone outcrops are present east of Colstrip. Steep hills leading to plateaus interspersed with wide valleys dominate the action area south to Decker.

There are five major habitat types in the action area: riparian, grassland, shrublands, woodlands, and agricultural fields.

- **Riparian habitat** occurs primarily along the Tongue River, as well as along major and some minor tributaries. This habitat consists of cottonwood (*Populus* spp.), green ash (*Fraxinus pennsylvanica*), and box elder (*Acer negundo*), with willow (*Salix* spp.), chokecherry (*Prunus virginiana*), western snowberry (*Symphoricarpos occidentalis*), Osage orange (*Maclura pomifera*), buffaloberry (*Shepherdia* spp.), and wild rose (*Rosa* spp.) understory. Large swaths of riparian habitat occur at the confluence of the Tongue River and Yellowstone River as well as just north of Ashland. Isolated patches of riparian habitat occur along the major tributaries of the Tongue River with small stands of cottonwood, green ash, and willow. Riparian habitat is also present along Rosebud Creek in the central western extreme of the action area. Riparian habitat is a small component of the southern part of the action area, occurring in small patches along the Tongue River and along some of the minor tributaries.
- **Grasslands** are widespread and interspersed with shrublands and woodlands. Grasslands occur within the floodplain and in gentler terrain. Small isolated grasslands do occur at the higher elevations in the southern part of the action area. Common species include western wheatgrass (*Elymus smithii*), bluebunch wheatgrass (*Elymus spicatus*), little bluestem (*Schizachyrium scoparium*), needle and thread (*Stipa comata*), side-oats grama (*Bouteloua curtipendula*), smooth brome (*Bromus inermis*), great basin wildrye (*Elymus cinereus*), and cheat grass (*Bromus tectorum*).
- **Shrublands** occur throughout the action area and are intermixed with grasslands and woodlands. Shrublands primarily consist of silver sagebrush (*Artemisia cana*) and black greasewood (*Sarcobatus vermiculatus*) in the low-lying areas and big sagebrush (*Artemisia tridentata*) and saltbush (*Atriplex* spp.) in the upland areas.
- **Woodlands** are found at higher elevations and along canyons and cliffs. Sparse woodlands are found in the badland topography in the northern and northwestern portions of the action area. They also occur at higher elevations between Ashland and Colstrip and dominate the southern portion of the action area. Woodlands are primarily ponderosa pine (*Pinus ponderosa*). Juniper (*Juniperus scopulorum*) groves occur on lower slopes and at lower elevations.

- **Agricultural fields** dominate the floodplain along the Tongue River and the major tributaries. Agricultural fields consist of alfalfa hay meadows, mixed grass hay fields, corn, sorghum, wheat, and barley.

In addition to the major habitat types, wetlands are found throughout the action area but make up a very small portion of the action area; of this small wetland area, riverine (vegetated and unvegetated) and palustrine emergent wetlands dominate.

- **Palustrine emergent wetlands** typically occur in the floodplains of larger rivers and streams (e.g., Tongue River, Moon Creek), in old oxbows and meander scars, in ephemeral swales, and below the earthen impoundments of reservoirs and stock ponds. Typical vegetation, as observed in the field, includes pale spikerush (*Eleocharis palustris*), Kentucky bluegrass (*Poa pratensis*), fowl bluegrass (*Poa palustris*), Baltic rush (*Juncus balticus*), various sedges (*Carex* spp.), common three-square bulrush (*Schoenoplectus pungens*), foxtail barley (*Hordeum jubatum*), common cocklebur (*Xanthium strumarium*), prairie cordgrass (*Spartina pectinata*), and cattail (*Typha latifolia*). These wetlands are typically flooded temporarily to seasonally.
- **Riverine wetland-unvegetated** is a wetland type that includes intermittent and ephemeral drainages that lack vegetation within their channels. These wetlands are typically located on the slopes above valley floors, with established channels from 1 to 6 feet in width. Substrate is a combination of bedrock, boulders, sand, and gravel. Many of these drainages flow into artificially created reservoirs and stock ponds formed by artificial impoundments.
- **Riverine wetland-vegetated** is a wetland type that occurs in ephemeral, intermittent, and perennial stream channels in areas where the gradient is relatively flat to gently sloping and includes wetlands in the riverine HGM class. Channels typically range from 3 to 20 feet wide, with some (Tongue River) extending over 100 feet wide. Substrates are typically dominated by mud, sand, gravel, and some cobble. Hydrologic regimes typically include temporary/ephemeral, seasonal/intermittent, and permanent/perennial. Instream vegetation is primarily emergent and includes such species as Kentucky bluegrass, fowl bluegrass, pale spikerush, common three-square bulrush, foxtail barley, and dock-leaf smartweed. Small patches of cattails and reed canarygrass are also present in wetter locations, and common cocklebur is occasionally present in seasonally exposed areas.

Chapter 5

Effects Analysis

This chapter describes the potential effects associated with the proposed project and Otter Creek Mine on federally listed species. Direct effects are defined as the direct or immediate effects of the proposed project and include all immediate impacts from project-related actions (e.g., construction-related impacts such as loss of habitat) and those disturbances that are directly related to project elements that occur very close to the time of the action itself. Indirect effects include those effects that are caused by or will result from the proposed project and are later in time (generally after the construction period), but are still reasonably certain to occur.

5.1 Black-Footed Ferret

No black-footed ferrets were documented in the action area during 2013 baseline surveys, but a small area of suitable habitat (active prairie dog colonies) was documented. Because active prairie dog colonies are present in sufficient size to support black-footed ferret, there is potential that this habitat could become occupied by black-footed ferret before construction of the proposed project begins.

Construction of any of the build alternatives would remove active prairie dog colonies in the right-of-way, but only the Tongue River Alternatives and Tongue River Road Alternatives would remove areas of colonies that are considered large enough to support black-footed ferret (colonies F, S, and CC in Figure 5-1; Table 5-1). Removing portions of these colonies in the right-of-way during construction would directly remove black-footed ferret habitat through clearing, filling, or cutting activities to construct the rail line. In the event black-footed ferret is present in the action area, construction impacts on habitat and species adjacent to the right-of-way would include noise and displacement and habitat degradation and alteration. Construction-related noise and human presence would displace prairie dogs and black-footed ferrets (should they be present), which could reduce survival and productivity because displacement requires species to expend energy to locate replacement habitat, which may have fewer resources and be of lower value. Lower-value habitats might include areas where forage is not as nutritious or forage and refuge are not as available. Prairie dogs and black-footed ferrets would be less familiar with new areas and at greater risk of predation, thus limiting survival of offspring or adults.

Construction could also alter and degrade habitat through the disturbance of the vegetation communities and leading to the colonization of invasive species. Invasive species can outcompete native vegetation and contribute to larger-scale vegetation changes, resulting in altered vegetation communities, a reduction in plant species richness, and overall disruption of the ecosystem. Construction would create habitat edge (abrupt changes in habitat type), which could decrease reproductive output for black-footed ferrets because they require large contiguous blocks of more complex (e.g., prairie dog colonies) habitat. Petro-chemical spills during construction could also degrade habitat should a spill extend into black-footed ferret habitat.

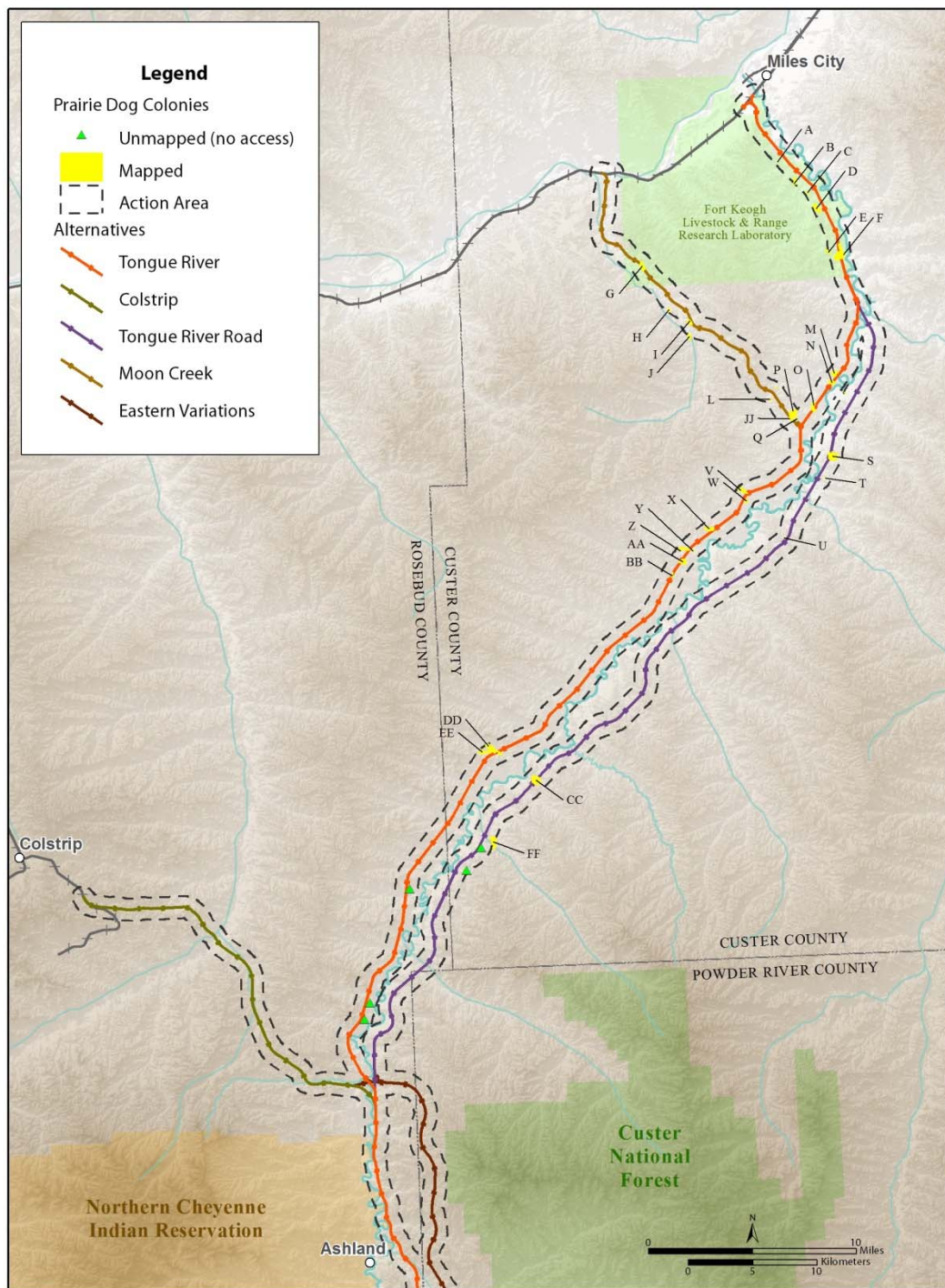


Figure 5-1a. Black-tailed Prairie Dog Colonies

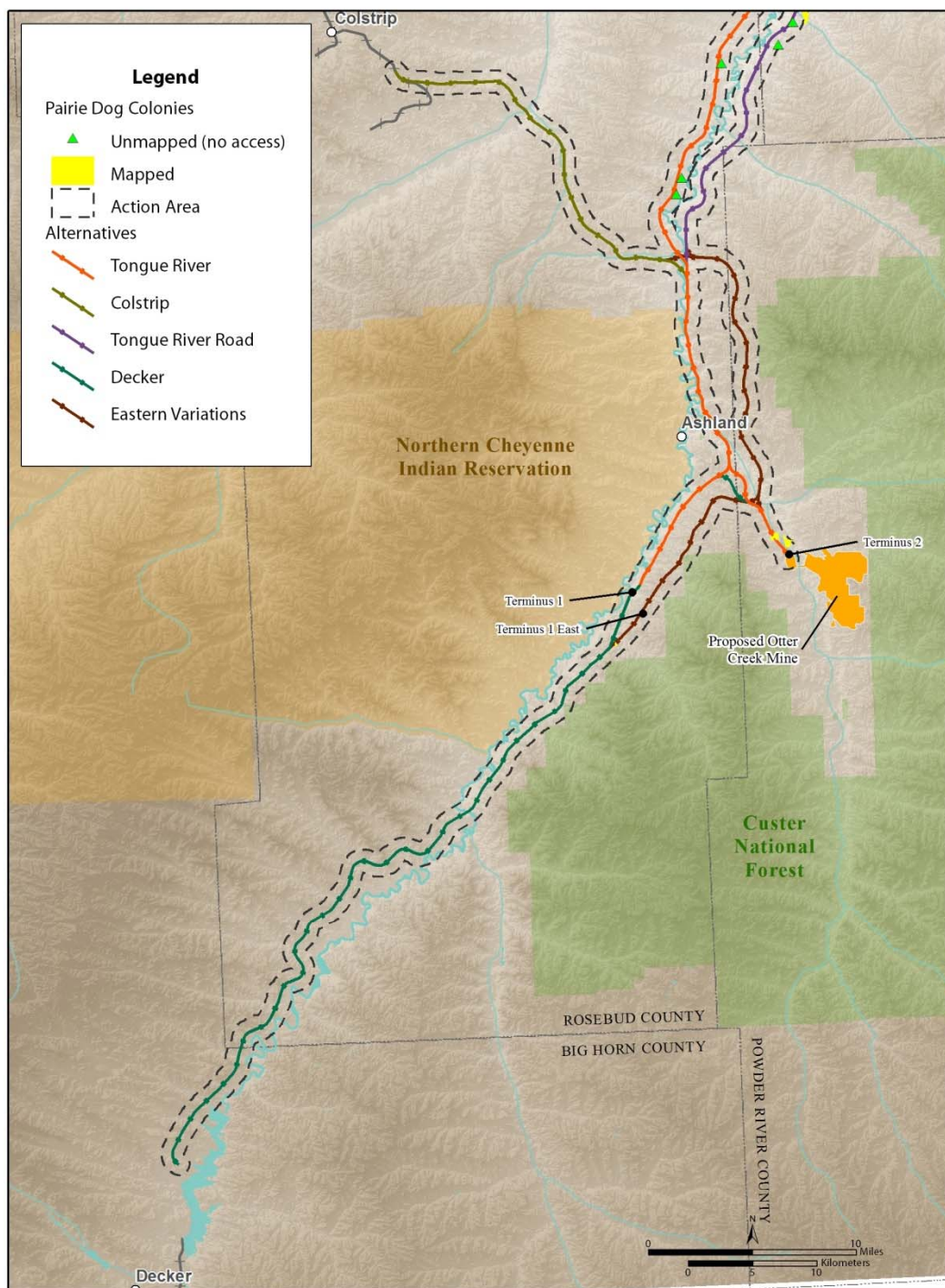


Figure 5-1b. Black-Tailed Prairie Dog Colonies

Operational impacts would include noise during train operation and maintenance activities, as well as potential petro-chemical spills during maintenance activities. These impacts on black-footed ferret would be the same as described for construction noise and petro-chemical spill impacts.

Despite the potential construction and operation impacts on black-footed ferret, the species is not known to occur in the action area, reintroduction efforts near the action area have failed, noise impacts would be short-term and temporary, and best management practices would reduce and minimize invasive species infestations and effects from petro-chemical spills during construction. Therefore, the likelihood of construction and operation impacts on black-footed ferret is low and the impacts discountable.

Table 5-1. Active Prairie Dog Colonies Documented during 2013 Baseline Surveys

Build Alternative	Number of Colonies in the Action Area	Number of Colonies in the Right-of-Way	Number of Colonies in Right-of-Way that Exceed 80 Acres^a
Tongue River	26	10	1
Tongue River East	26	10	1
Colstrip	2	1	0
Colstrip East	2	1	0
Tongue River Road	16	5	3
Tongue River Road East	16	5	3
Moon Creek	23	11	0
Moon Creek East	23	11	0
Decker	3	1	0
Decker East	3	2	0

Notes:

^a Number of active colonies in the right-of-way that exceed 80 acres needed to support black-footed ferret. There are no colonies that exceed 80 acres outside of the right-of-way within the 0.5 mile action area; therefore, the only alternatives that could affect black-footed ferrets are the Tongue River Alternatives and Tongue River Road Alternatives.

5.2 Interior Least Tern

The presence of an interior least tern in the action area would be extremely rare, but it is possible that a (migrating/transient) bird could fly through the action area during the species' migration periods (May or August). In the event an interior least tern was to migrate through the action area, the primary impact on this individual would be elevated noise levels during project construction and operation. As with any sound in the atmospheric environment, the type and intensity of the sound and the distance it travels depends on multiple factors and can vary greatly. This increased noise level and human presence could potentially displace a migrating interior least tern, causing it to change course and expend energy it otherwise would not have expended. The interior least tern's reaction to elevated noise levels could range from mild annoyance to escape behavior. However, potential noise impacts would be short-term and temporary during construction, lasting only the duration of project construction. During operation, if an interior least tern were migrating through the action area while a train were operating, the potential noise impacts would be short-term and temporary, lasting only as long as it would take the train or bird to move so that the noise would no longer be heard. In addition, interior least terns are highly mobile and would be able to avoid the

construction area or operating train; and the noise is not anticipated to affect the overall migratory movement or migratory behavior of these species through the action area. Given that the presence of an interior least tern in the action area would be extremely rare, that the birds are highly mobile, and the elevated noise would be temporary, it is anticipated that the likelihood of an interior least tern being affected by noise is extremely low and the impact discountable.

Another impact on interior least terns could result from the presence of new communications towers and power distribution lines that would be constructed for rail operation. While the locations of these towers and power distribution lines would not be determined until a build alternative is licensed by the Board, if one is licensed, and a design is finalized by TRRC, there would be several new communications towers near the proposed project and new distribution lines in the right-of-way. Bird collisions with communications towers and electrocutions at power lines are well documented (Longcore et al. 2012, U.S. Fish and Wildlife Service 2005), and the presence of communications towers could result in migratory bird collisions during migration, potentially leading to injury or death. Guy-wired towers can further increase the potential for bird strikes.

Tower lighting placed on communications towers for aviation safety purposes is another risk factor affecting bird collisions. Any communications tower over 200 feet high requires Federal Aviation Administration–approved lighting schemes, which can include a combination of flashing, strobing, or steady-burning red or white lights placed at specific locations along the tower. Under poor visibility conditions (fog and rain), some migrating birds may become disoriented and circle lighted communications towers instead of continuing on their migratory path, greatly increasing their risk of collision (Huppopp et al. 2006). Longcore et al. (2012) found that steady-burning red lights on towers create the highest risk for bird collisions. However, communications towers for the proposed rail line would be free-standing lattice towers with no guy-wires. They would be designed using USFWS’s guidance on siting, constructing, and operating communications towers to minimize impacts on birds, which include lighting configurations to reduce and minimize bird strikes. In addition, in the event an interior least tern were migrating through the action area, it is likely that it would be flying at an elevation much higher than the communications towers. The proposed heights of the communications towers range from 50 to 150 feet and power distribution line towers no greater than 50 feet; migrating birds typically fly at an altitude of 300 feet or greater (Cornell Laboratory of Ornithology 2007). Because the towers would be less than 200 feet, it would be unlikely that FAA would require tower lighting, unless the tower is near an airport. Given that the presence of an interior least tern would be extremely rare in the action area, that the birds are highly mobile, that typical migratory flight altitudes exceed the height of the towers, and that the towers would likely not require lighting, it is anticipated that the likelihood of an interior least tern colliding with a tower is extremely low and discountable.

Potential impacts on this species cannot be tied to a specific build alternative. In the event the species were present in the action area at some point during construction or operation, it would be transient and there is no way to predict where the species would fly or temporarily land in reference to a specific build alternative. Therefore, the species presence cannot be tied to a particular build alternative, and the potential impact on the species is assumed to be the same across all build alternatives.

5.3 Whooping Crane

Construction and operation impacts on whooping crane would be the same as those described for interior least tern because, like interior least tern, whooping crane would be extremely rare in the action area (migrating transient far away from the identified flyway), there is limited stopover habitat in the action area, and the potential impacts would be the same—temporary noise impacts associated with construction and operation, and collisions with communications towers and distribution lines. Based on the analysis, it is anticipated that the likelihood of a whooping crane being affected by these impacts is extremely low and the impacts discountable. As with interior least tern, the potential impacts on whooping crane cannot be tied to a specific build alternative. In addition, the species is not listed in the counties of the Decker or Colstrip Alternatives; therefore, the analysis in this BA for whooping crane does not apply to those build alternatives. In the event the species were present in the action area of the remaining build alternatives at some point during construction or operation, it would be transient and there is no way to predict where the species would fly or temporarily land in reference to a specific build alternative. Therefore, the species presence cannot be tied to a particular build alternative, and the potential impact on the species is assumed to be the same for any of the Moon Creek Alternatives, Tongue River Alternatives, and Tongue River Road Alternatives.

5.4 Greater Sage-Grouse

The 2013 baseline surveys concluded that the vast majority of the habitat in the action area is inadequate for supporting greater sage-grouse, but some habitat does support a small population. However, only two observations of a total of six birds were made during winter aerial surveys near where either of the Moon Creek Alternatives would meet either of the Tongue River Alternatives, and only three other sage-grouse were observed during spring baseline surveys. Marginal habitat is present to support greater sage-grouse through the breeding and brood rearing seasons, and inadequate habitat exists for wintering grouse. Lek observations during 2013 baseline surveys are summarized in Table 5-2 and Figure 5-2. No leks were identified in the right-of-way of any build alternative, but several leks were identified in the action area outside of the right-of-way. Only three leks were active during spring 2013, with two males representing the highest peak male count recorded in a lek.

Table 5-2. Greater Sage-Grouse Leks and Male Activity in the Action Area

Build Alternative	Distance from Right-of-Way		Active Leks ^a	Total Peak Male Count ^b
	2 miles	4 miles		
Tongue River	7	12	1	1
Tongue River East	8	13	1	1
Colstrip	3	4	0	—
Colstrip East	4	5	0	—
Tongue River Road	4	12	2	2
Tongue River Road East	5	13	2	2
Moon Creek	5	10	2	3
Moon Creek East	6	11	2	3
Decker	3	4	0	—
Decker East	3	4	0	—

Notes:

^a Number of active leks within 4 miles of the right-of-way in 2013.

^b Sum of peak male counts at the various leks within 4 miles of the right-of-way in 2013.

Impacts on greater sage-grouse from construction and operation would include loss of nesting and brood rearing habitat; collisions from vehicles and train traffic as well as associated infrastructure (fences, communications towers, power distribution lines); animal displacement due to noise, associated infrastructure, and increased human activity; and increased raptor, corvid, and mammalian predation. Loss of habitat would result from the permanent removal of existing habitat during project construction. Collisions with construction equipment, trains, and rail infrastructure would result in injury or death. Displacement from noise, infrastructure, and human activities could cause the flushing of birds which would cause expenditure of energy that otherwise would not have occurred and would decrease reproductive success of incubating birds. Flushed birds could alert predators to the presence of a nest, and communications towers and distribution lines can provide perching areas for predators, thereby increasing the rate of predation. Also, flushing could contribute to nest failure if the incubating bird is flushed enough times or is kept away for longer periods causing the eggs or nestlings to freeze. It is generally accepted that development negatively affects local greater sage-grouse populations (Aldridge and Boyce 2007, Aldridge 2005, Doherty et al. 2008, Holloran 2005, Lyon and Anderson 2003, Walker et al. 2007). However, these studies were conducted in oil and gas fields with associated activities, roads, and infrastructure and where causation for the decrease in local populations cannot be isolated. Recent evidence suggests that greater sage-grouse avoid anthropogenic noise independent of disturbance, associated infrastructure, and habitat fragmentation. Also, intermittent noise, such as traffic noise, has more of an effect on distribution than continuous noise (Blickley et al. 2012).

Impacts from construction and operation activities would negatively affect local greater sage-grouse population levels; however, species occurrence is low, habitat is largely unsuitable, regional population levels are low, and noise from construction and operation would be short-term and temporary. Therefore, potential impacts from construction and operation of a build alternative would not adversely affect greater sage-grouse populations or persistence of the species.

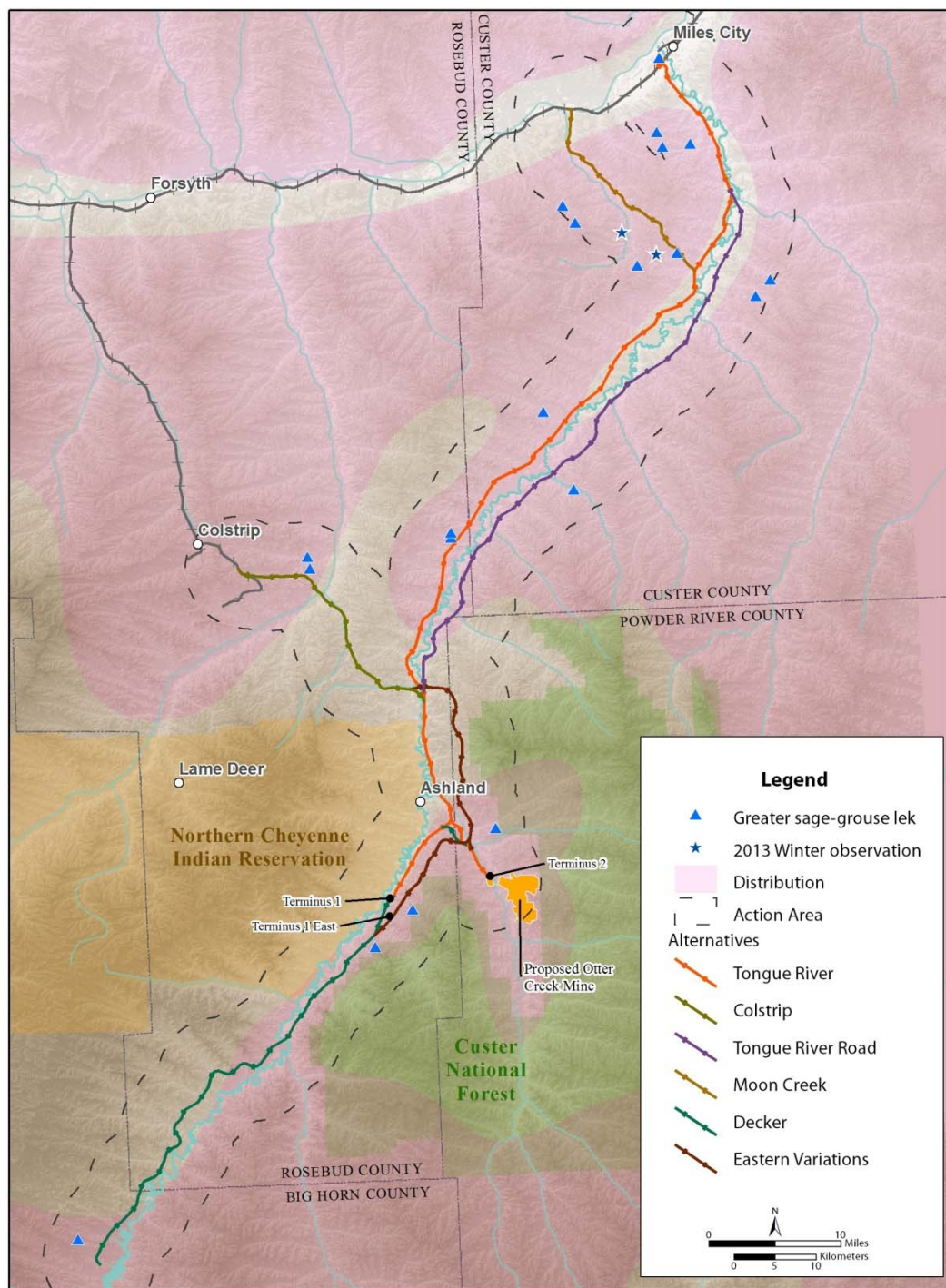


Figure 5.2. Greater Sage-Grouse

5.5 Sprague's Pipit

Sprague's pipit habitat is very limited in the action area, with a few marginal habitat areas in the northern portion of the action area (associated with the Tongue River, Tongue River Road, and Moon Creek Alternatives), where areas of native prairie and mixed grass agriculture occur. However, these areas are classified as having low suitability (Montana Natural Heritage Program 2012). Only one historical record observed in 1998 on Fort Keogh exists in the action area (Montana Natural Heritage Program 2013b), and no pipits were documented in the action area during 2013 baseline surveys.

Construction of the Tongue River, Tongue River Road, and Moon Creek Alternatives would remove Sprague's pipit habitat through clearing, filling, or cutting activities to construct the rail line. In the event Sprague's pipits were present in the action area, construction impacts on habitat and species adjacent to the right-of-way would include noise and displacement and habitat degradation and alteration. Construction-related noise and human presence would displace Sprague's pipits, which could reduce survival and productivity because displacement requires species to expend energy to locate replacement habitat, which may have fewer resources and be of lower value. Construction could also alter and degrade habitat through the disturbance of the vegetation communities, which could lead to the colonization of invasive species. Invasive species can outcompete native vegetation and contribute to larger-scale vegetation changes, resulting in altered vegetation communities, a reduction in plant species richness, and overall disruption of the ecosystem. Petro-chemical spills during construction could also degrade habitat should a spill extend into Sprague's pipit habitat.

Construction of communications towers and distribution lines could also affect Sprague's pipits. The impacts would be the same as those described for interior least tern.

Operational impacts would include noise during train operation and maintenance activities, as well as potential petro-chemical spills during maintenance activities. These impacts on Sprague's pipit would be the same as those described for construction noise and petro-chemical spill impacts.

Given the unlikelihood of Sprague's pipit occurring in the action area, the limited and low suitable habitat in the action area, the high mobility of the species, the relative stability of the populations in Montana, the short-term and temporary nature of noise impacts, and the best management practices that would reduce and minimize invasive species infestations and effects from petrochemical spills, it is anticipated that potential impacts from the proposed project on Sprague's pipit would be low and discountable.

Chapter 6

Mitigation and Minimization Measures

OEA is recommending that the Board impose the following mitigation measures for the proposed project, which would minimize the proposed rail line's impacts on the species addressed in this BA. These measures are a combination of measures TRRC has voluntarily proposed and measures that OEA will recommend to the Board.

1. TRRC shall implement measures to reduce avian collision and electrocution risks from project-related power lines and communications towers. Measures shall include but not be limited to the following actions.
 - a. TRRC shall consult with USFWS and Montana FWP for current guidelines on communications tower siting, marking, and guy lines.
 - b. TRRC shall incorporate standard raptor-proof features (Avian Power Line Interaction Committee and U.S. Fish and Wildlife Service 2005) into the design of electrical distribution lines to minimize the likelihood of collisions or electrocutions of bird species. These designs shall include the following features.
 - 1) TRRC shall use marking devices to increase power distribution line visibility in areas of potential collision risk.
 - 2) TRRC shall maintain a minimum 60-inch separation between conductors and/or grounded hardware and use insulation materials and other applicable measures to prevent electrical points of contact.
2. Black-footed ferret surveys of prairie dog colonies that are large enough to support black-footed ferret shall be conducted by TRRC prior to construction, in coordination with USFWS.
3. TRRC shall clear vegetation in preparation for project-related construction before or after the breeding bird nesting season (April 15 to July 15) to avoid inadvertent removal of active nests (nesting adults, young, or eggs) and to ensure compliance with the Migratory Bird Treaty Act. If clearing is required during the nesting season, TRRC shall consult with the BLM (for BLM-administered lands) and with USFWS on appropriate nest survey methods. TRRC shall conduct a survey of all habitats that will be disturbed by project-related construction during the breeding bird nesting season (April 15 to July 15). This measure provides mitigation for Sprague's pipit as it is a bird that is protected under the act.
4. During project-related construction, TRRC shall comply with weed control plans developed for Rosebud, Big Horn, Custer, and Powder River Counties, Montana. TRRC, in consultation with county weed districts, shall develop a reasonable noxious weed control program prior to commencing project-related rail construction activities. Prior to construction, TRRC shall submit this program to OEA and the weed districts of Rosebud, Big Horn, Custer, and Powder River Counties to ensure consistency with county weed control plans. The program shall require construction methods that minimize the introduction and spread of noxious weeds, including the use of sterile ballast, weed-free seed straw, mulching, and hydroseeding materials. TRRC shall minimize digging in areas where the rhizomes of rhizomatous weed species such as leafy spurge might be cut and spread.

5. TRRC shall require BNSF or any operators using the rail line to comply with the requirements of the Hazardous Materials Transportation Act and governing regulations of the U.S. Department of Transportation for operation on the p line, to the extent that hazardous materials are transported on the TRRC line.
6. To maintain greater sage-grouse populations, habitats, and essential migration routes, TRRC shall, prior to beginning project-related construction, consult with the Montana Sage Grouse Oversight Team regarding the requirements of the Montana Sage Grouse Habitat Conservation Program, established by State of Montana Executive Order No. 10-2014.

7.1 Black-Footed Ferret

The information, analysis, mitigation, and minimization presented in this BA was the basis of the finding that the proposed project warrants an effect determination of ***May Affect, Not Likely to Adversely Affect*** for black-footed ferret.

A determination of ***May Affect*** is warranted based on the following rationale.

- The presence of active prairie dog colonies of sufficient size to support black-footed ferret was documented in the action areas of the Tongue River Alternatives and Tongue River Road Alternatives. This habitat would be permanently removed through clearing, filling, or cutting activities during rail line construction
- The potential for disturbance from construction and operation noise and human activities that could result in disturbance or displacement of black-footed ferret, in the event they are present.

A determination of ***Not Likely to Adversely Affect*** is warranted based on the following rationale.

- No ferrets or sign thereof were recorded in any prairie dog colonies in the action area during the 2013 baseline surveys.
- Reintroduction on nearby Northern Cheyenne Reservation failed. The build alternatives would be separated by a ridgeline and river from these reintroduction areas.
- Sylvatic plague is present in the region, and two recent epidemics have devastated prairie dog colonies in the area.
- Most of the existing prairie dog colonies recently surveyed in the action area are too small to be considered suitable ferret habitat.
- Preconstruction surveys of prairie dog colonies large enough to support black-footed ferret would be conducted to determine presence/absence of black-footed ferret.

7.2 Interior Least Tern

The information, analysis, mitigation, and minimization presented in this BA was the basis of the finding that the proposed project warrants an effect determination of ***May Affect, Not Likely to Adversely Affect*** for interior least tern.

A determination of ***May Affect*** is warranted based on the following rationale.

- Interior least terns could migrate through the action area.
- Presence of rail infrastructure, including communications towers and power distribution lines could cause collisions with interior least tern, resulting in injury or death.
- Construction and operation noise could cause interior least tern to change course during migration, resulting in additional energy expenditure.

A determination of ***Not Likely to Adversely Affect*** is warranted based on the following rationale.

- The occurrence of a migrating interior least tern in the action area would be extremely rare.
- Habitats in the action area do not support breeding interior least terns.
- The only known occurrences of interior least terns in this area of Montana are along the Yellowstone River and Castle Rock Lake, all outside of the action area. No interior least terns were observed during 2013 baseline surveys.
- Limited stopover habitat is available in the action area.
- Construction and operation noise would be temporary and short-term.
- Communications towers and power distribution lines would be designed per USFWS guidance to reduce potential collision impacts.
- All communications towers would be less than 150 feet high and would not likely require lighting, and typical migration altitude is greater than 300 feet.

7.3 Whooping Crane

The information, analysis, mitigation, and minimization presented in this BA was the basis of the finding that the proposed project warrants an effect determination of ***May Affect, Not Likely to Adversely Affect*** for whooping crane.

A determination of ***May Affect*** is warranted based on the following rationale.

- Whooping crane could migrate through the action area.
- Presence of rail infrastructure, including communications towers and power distribution lines could cause collisions with whooping cranes, resulting in injury or death.
- Construction and operation noise could cause whooping crane to change course during migration, resulting in additional energy expenditure.

A determination of ***Not Likely to Adversely Affect*** is warranted based on the following rationale.

- The occurrence of a migrating whooping crane in the action areas would be extremely rare.
- The action area is not within the known whooping crane flyway, which is in central Nebraska, eastern South Dakota, southeastern North Dakota, and northeastern Montana.
- Only two known occurrences of whooping cranes in this area of Montana exist, and both are outside of the action area. No whooping cranes were observed during 2013 baseline surveys.
- Limited stopover habitat is available in the action area.
- Construction and operation noise would be temporary and short-term.
- Communications towers and power distribution lines would be designed per USFWS guidance to reduce potential collision impacts.
- All communications towers would be less than 150 feet high and would not likely require lighting, and typical migration altitude is greater than 300 feet.

7.4 Greater Sage-Grouse

The information, analysis, mitigation, and minimization presented in this BA was the basis of the finding that the proposed project warrants an effect determination of ***May Affect, Not Likely to Adversely Affect***³ for greater sage-grouse.

A determination of ***May Affect*** is warranted based on the following rationale.

- Greater sage-grouse have been documented in the action area.
- Suitable habitat is present that supports greater sage-grouse through the breeding and brood rearing seasons; some of this habitat would be removed during construction of the proposed rail line.
- Presence of rail infrastructure, including the rail line, communications towers, fences, and power distribution lines, could cause strikes/collisions and increase predation with greater sage-grouse, resulting in injury or death.
- Proposed rail line construction and operation noise could cause greater sage-grouse to flush from the area, resulting in energy expenditure, reduced reproductive success, and predation.

A determination of ***Not Likely to Adversely Affect*** is warranted based on the following rationale.

- The number of greater sage-grouse documented in the action area is small.
- Overall, greater sage-grouse habitat throughout the action area is largely unsuitable; breeding and brood rearing habitat is marginal.
- No large, dense contiguous sagebrush patches exist in the action area to support wintering greater sage-grouse.
- No greater sage-grouse core habitat would be affected.
- Proposed rail line construction and operation noise would be temporary and short-term.
- Communications towers and power distribution lines for the proposed rail line would be designed to reduce collision impacts.

7.5 Sprague's Pipit

The information, analysis, mitigation, and minimization presented in this BA was the basis of the finding that the proposed project warrants an effect determination of ***May Affect, Not Likely to Adversely Affect***¹ for Sprague's pipit.

A determination of ***May Affect*** is warranted based on the following rationale.

- Suitable Sprague's pipit habitat has been identified and would be removed within the right-of-way of the Tongue River, Tongue River Road, and Moon Creek Alternatives.

³ Under the ESA, candidate species are provided no statutory protection, and effects determinations are not required. However, OEA has made an effects determination for each federal candidate species should it be listed in the future before the Record of Decision on the proposed rail line is issued.

- The potential for disturbance from construction and operation noise and human activities that could result in disturbance or displacement of Sprague's pipit, if present.

A determination of ***Not Likely to Adversely Affect*** is warranted based on the following rationale.

- The occurrence of a Sprague's pipit in the action areas would be extremely rare. Only one historical record of Sprague's Pipit exists in the action area. No Sprague's pipits were observed during 2013 baseline surveys for the proposed rail line.
- The identified Sprague's pipit habitat is marginal and is classified as low sustainability by MNHP; most native grassland has been converted to agricultural fields, which are generally unsuitable.
- Proposed rail line construction and operation noise would be temporary and short term.
- Communications towers and power distribution lines for the proposed rail line would be designed to reduce collision impacts.
- All communications towers for the proposed rail line would be less than 150 feet high and would not likely require lighting.

Chapter 8

Interdependent Action

Arch Coal submitted a permit application to the Montana Department of Environmental Quality (Montana DEQ) to construct and operate a surface coal mine near Ashland, Montana (the proposed Otter Creek Mine). The proposed Otter Creek Mine would be located approximately 5 miles southeast of Ashland, Montana, in Powder River County (Figure 1-1). The proposed Otter Creek Mine consists of three tracts totaling 7,639 acres. The proposed Otter Creek Mine does not have any current coal contracts. Only Tract 2 is currently being proposed for development in the permit application. Under Arch Coal's mine plan, mining on Tract 2 would begin in 2018 and continue through 2037. At its peak operation under the current plan, Arch Coal estimates that Tract 2 of the Otter Creek Mine would produce 20 million tons of coal per year if approved and built (Montana Department of Environmental Quality 2014b). This production level would require an average of 7.4 trains per day to transport the coal.

Montana DEQ is responsible for the permitting actions required by Arch Coal for the proposed Otter Creek Mine. Montana DEQ and the Montana Department of Natural Resources and Conservation are currently preparing an EIS pursuant to the Montana Environmental Policy Act (MEPA), which will analyze and disclose the potential environmental impacts related to the development of the proposed Otter Creek Mine. OEA used information on federally listed species (e.g., field survey summaries, descriptions of species habitats) in Arch Coal's Otter Creek Mine permit application for Tract 2 to support the analysis in this BA of the mine's potential impacts on federally listed species.

8.1 Description of the Interdependent Action

Development of Tract 2 of the proposed Otter Creek Mine would include land disturbance activities for infrastructure to support mining operations. The Otter Creek Mine permit application submitted to Montana DEQ includes a map of the mine plan, which shows the facilities and mining infrastructure that would be developed to support mining operations (Montana Department of Environmental Quality 2014a). Features of this mine plan include access roads, haul roads and ramps, soil and temporary burden storage areas, a scoria (burnt coal) stockpile area, mining cuts, office and maintenance buildings, a transfer station, a rail loop, a coal crusher facility, and a surface water drainage control system that includes ponds, sediment traps, and discharge points. The total projected disturbance area for Tract 2 of the proposed Otter Creek Mine is 4,723 acres (Figure 1-1). The mining area itself covers 3,477 acres, while the remaining facilities and infrastructure would disturb an additional 1,246 acres.

Part of the proposed Otter Creek Mine permit application includes a reclamation plan required by Montana statutes and regulations. The Montana Strip and Underground Mine Reclamation Act (MCA 82-4 Part 2) and associated regulations require that all mines be reclaimed under a plan approved by the Montana DEQ "to make those lands capable of supporting the uses that those lands were capable of supporting prior to any mining or to higher or better uses." Under the act, prior to receiving a mining permit, operators must present a detailed and comprehensive plan for reclaiming the land after mining has been completed. The reclamation plan must describe the premining condition and use of the land to be mined, the proposed use of the land after reclamation, an

estimated timetable for the reclamation, and the steps that will be taken to comply with the relevant water quality laws. The statutory and regulatory reclamation requirements must be met by Arch Coal before, during, and after mining operations; and the reclamation plan for the proposed Otter Creek Mine has been included as part of the permit application (Montana Department of Environmental Quality 2014b).

Reclamation occurs concurrently with mining; once a tract is mined, reclamation begins as mining moves forward. At the end of the proposed Otter Creek Mine's Tract 2 life, all disturbed mining areas will have been reclaimed and vegetation communities and habitats re-established.

8.2 Action Area

Per ESA regulations, the action area is defined as all areas to be affected directly or indirectly by the proposed project and not merely the area immediately adjacent to the action. Therefore, the action area includes the mine disturbance area (4,723 acres) plus all areas surrounding the disturbance area where construction or operational activities could affect the environment.

8.3 Federally Listed Species Considered

The group of federally listed species considered is based on consultations with USFWS and the most recent USFWS species list for Powder River County. This information revealed one endangered species listed in Powder River County—the black-footed ferret. In addition, the northern long-eared bat (proposed species) and greater sage-grouse and Sprague's pipit (both candidate species) are listed in Powder River County. There is no designated or proposed critical habitat in Powder River County.

8.3.1 Species Dismissed from Further Consideration

The northern long-eared bat was dismissed from further consideration. The justification provided in Section 3.2.1.3, *Northern Long-Eared Bat*, also applies for the proposed Otter Creek Mine. One difference is that the proposed Otter Creek Mine is even further away than the proposed rail line from the USFWS-delineated range boundary in Montana. Based on the current USFWS range map for the northern long-eared bat as part of the USFWS's proposed listing and the absence of northern long-eared bat detections from multiple bat surveys conducted by OEA, MNHP, and the Otter Creek Mine applicant, OEA has determined that the proposed Otter Creek Mine would **Not Jeopardize the Continued Existence** of the species.

8.4 Methods

OEA used the Otter Creek Mine permit application's information on federally listed species (e.g., field survey summaries, descriptions of species habitats) to support this BA's analysis of the mine's potential impacts on the black-footed ferret, greater sage-grouse, and Sprague's pipit. The permit application includes the current status and habitat use of these species in the action area.

8.5 Species Descriptions and Occurrences

8.5.1 Black-Footed Ferret

The Otter Creek Mine permit application (Montana Department of Environmental Quality 2014b) reports that in autumn 2010 there were about 1,278 acres of active black-tailed prairie dog colonies in the Otter Creek Mine baseline inventory area (an area larger than the Tract 2 disturbance area), and that there were substantial reductions in the acreages of active black-tailed prairie dog colonies from winter 2010 to summer 2011. Many prairie dog colonies appeared to be completely extirpated, while others contained a few prairie dogs and some colonies appeared to be unaffected. Within Tract 2 there were about 375 acres of active black-tailed prairie dog colonies in October 2010; by July 2011 only about 80 acres remained active (Farmer 2012 in Montana Department of Environmental Quality 2014b). Prairie dog colonies in Tract 2 were visited in spring 2012, and there appeared to be little change from summer 2011. By autumn, however, it appeared that some colonies had increased slightly. In spring 2013, some colonies remained completely extirpated, some appeared unchanged from 2012, and several colonies appeared to be recovering. There was an estimated total of about 100 acres of active prairie dog colonies in spring 2013. Because 80 acres of active prairie dog colonies were documented in 2011 (the minimum area that could support black-footed ferrets), Arch Coal's environmental consultant contacted USFWS to determine if black-footed ferret surveys should be conducted at the proposed Otter Creek Mine. In August 2011, USFWS indicated that black-footed ferret surveys were not necessary at the proposed Otter Creek Mine unless much larger prairie dog colonies (more than 500 acres) were encountered (Wilson 2011 in Farmer 2012). Consequently, no surveys for black-footed ferrets were conducted during baseline surveys for the proposed Otter Creek Mine as it was determined that the documented prairie dog habitat, as presented to USFWS, was unlikely to support black-footed ferrets.

8.5.2 Greater Sage-Grouse

In 3 years of field studies to support the proposed Otter Creek Mine permit application, there has only been one observation of greater sage-grouse during field surveys for the proposed Otter Creek Mine (Montana Department of Environmental Quality 2014b). Farmer (2012) reported that the proposed Otter Creek Mine has areas of sagebrush habitat capable of sustaining greater sage-grouse seasonally, but in the last 30 years the area appears to have been used by only small numbers of greater sage-grouse. There are no known active leks in the proposed Otter Creek Mine, but the occasional observation of greater sage-grouse in the area suggests that there may be a lek present within 10 miles. No greater sage-grouse were observed during the 2012 and 2013 field studies. An old lek location approximately 3.5 miles north of the proposed Otter Creek mine disturbance area, mapped by Montana FWP in the 1980s, was examined from both the air (aerial survey) and ground in late April, and no greater sage-grouse or their evidence were observed. All greater sage-grouse habitat in the proposed Otter Creek Mine is defined by Montana FWP as general habitat; there is no greater sage-grouse core habitat mapped by Montana FWP in or around the proposed Otter Creek Mine.

8.5.3 Sprague's Pipit

Sprague's pipit habitat has been documented and surveys were conducted as part of the wildlife studies that support the proposed Otter Creek Mine permit application (Montana Department of

Environmental Quality 2014b). The highest potential for Sprague's pipit habitat was identified in the areas of rolling grasslands within 1.5 miles of Otter Creek and its major tributaries. In most years, these areas probably do not provide adequate grass cover to support Sprague's pipit, especially if the area is grazed. In 2011, however, the grasslands in the southern portion of Tract 2 were ungrazed and in some places, grass height reached 4 to 10 inches. These areas were searched for Sprague's pipits in 2011 by looking and listening for display flights of males from late May through July; two land bird survey plots were also placed in potential Sprague's pipit habitat.

No Sprague's pipits were observed during the 2010 and 2011 Otter Creek Mine baseline inventory. The MNHP (2012) data base contains only a few records from western Powder River County, and none within 10 miles of the Otter Creek Mine inventory area.

8.6 Environmental Baseline

Topography in the action area varies from nearly flat benches in the Otter Creek valley; gently-to-moderately rolling dissected uplands; and steep, rugged hills. Elevations in Tract 2 range between approximately 3,020 feet along lower Threemile Creek to about 3,500 feet in the rugged hills along the east boundary. Habitat types mapped for Tract 2 include xerophytic shrubland, grassland, woodlands, agricultural, mesophytic shrub.

The predominant habitat types in Tract 2 are xerophytic shrubland (approximately 45 percent of Tract 2) and grassland (about 31 percent of Tract 2), combining for about 76 percent of the area. These two habitats form a mosaic, but shrubland is generally dominant in the northern and southern quarters of the area, while grasslands are generally more common in the central half.

Woodlands comprise about 12 percent of the area. With the exception of riparian tree habitat subtype, which occurs along Otter Creek and Threemile Creek, woodlands are primarily composed of ponderosa pine and juniper habitat subtypes, and are primarily found at higher elevations and on steeper slopes, particularly in the eastern third of Tract 2.

Agricultural habitats total about 10 percent of Tract 2 and are mostly located adjacent to drainages. Mesophytic shrub habitat is generally restricted to narrow, incised drainages and total about one percent of Tract 2, while miscellaneous features (roads, rock outcrop, ponds, impoundments, streams) total less than 1 percent of the area.

8.7 Effects Analysis

8.7.1 Black-Footed Ferret

Field surveys to support the proposed Otter Creek Mine permit application documented 80 acres of active prairie dog colonies in 2011, the minimum area that USFWS states could support black-footed ferrets. Consequently, Arch Coal's environmental consultant contacted the USFWS to determine if black-footed ferret surveys should be conducted at the proposed Otter Creek Mine. In August 2011, USFWS stated in correspondence that black-footed ferret surveys were not necessary at the proposed Otter Creek Mine unless much larger prairie dog colonies (more than 500 acres) were encountered (Wilson 2011 in Farmer 2012). Consequently, no surveys for black-footed ferrets were

conducted during field surveys for the proposed Otter Creek Mine as it was determined that the documented prairie dog habitat, as presented to USFWS, was unlikely to support black-footed ferrets. In previous survey years (October 2010), there were up to 375 acres of active black-tailed prairie dog colonies in Tract 2 (Farmer 2012 in Montana Department of Environmental Quality 2014b), and in 2013 there was an estimated total of 100 acres of active prairie dog colonies. Over multiple years of surveys, prairie dog colonies greater than 500 acres have not been documented. Therefore, based on the prairie dog colony survey information that supports the proposed Otter Creek Mine permit application and the lack of colonies more than 500 acres (per USFWS guidance for proposed Otter Creek Mine), OEA determined that the proposed Otter Creek Mine would not likely support black-footed ferrets and, therefore, would have **No Effect** on the black-footed ferret. Hence, this species is dismissed from further discussion in this BA.

8.7.2 Greater Sage-Grouse

Farmer (2012) reported that the proposed Otter Creek Mine appears to have been used by only a small number of greater sage-grouse in the last 30 years, and there are no known leks in the proposed Otter Creek Mine disturbance area (the nearest lek is 3.5 miles north of the disturbance area). However, some sagebrush habitat in Tract 2 is capable of sustaining greater sage-grouse, at least seasonally. In addition, the proposed Otter Creek Mine's disturbance area overlaps Montana FWP-mapped general greater sage-grouse habitat. Therefore, development of the proposed Otter Creek Mine would affect greater sage-grouse primarily through habitat loss, degradation, and alteration of greater sage-grouse habitat. Impacts to greater sage-grouse, should they be present during construction and operation of the proposed mine, would be similar to the impacts described for the proposed project, where applicable (Section 5.4, *Greater Sage-Grouse*).

As mine reclamation occurs, it is anticipated that suitable greater sage-grouse habitat would be re-established per MCA 82-4 Part 2 and associated regulations. The proposed Otter Creek Mine revegetation plan outlines several vegetation communities that would be re-established in the disturbance area, including 1,435 acres of shrub habitat (silver sagebrush and big sagebrush) and 2,024 acres of grassland habitat (Montana Department of Environmental Quality 2014b). Full re-establishment of sagebrush in a large area where sagebrush has been removed is a slow process that can take as long as 50 years (U.S. Department of Agriculture 2011). While mining would result in long-term greater-sage grouse habitat loss that could span several decades, it would not result in a permanent habitat loss once reclamation is complete and habitat is fully re-established.

Impacts from construction and operation of the proposed Otter Creek Mine would negatively affect local greater sage-grouse population levels; however, species occurrence is very low, habitat is limited, regional population levels are low, and lost habitat would eventually be re-established through reclamation requirements. Therefore, potential impacts from construction and operation of the proposed Otter Creek Mine would not adversely affect greater sage-grouse populations or persistence of the species.

8.7.3 Sprague's Pipit

Field surveys to support the proposed Otter Creek Mine permit application did not document any Sprague's pipits; however, limited Sprague's pipit habitat was documented in Tract 2 (Montana Department of Environmental Quality 2014b). Therefore, development of the proposed Otter Creek Mine would affect Sprague's pipit primarily through habitat loss, degradation, and alteration of Sprague's pipit habitat. Impacts on Sprague's pipit, should one be present during construction and

operation of the proposed mine, would be similar to the impacts described for the proposed project, where applicable (Section 5.5, *Sprague's Pipit*).

As mine reclamation occurs, some suitable Sprague's pipit habitat would be re-established per MCA 82-4 Part 2 and associated regulations. The proposed Otter Creek Mine revegetation plan outlines several vegetation communities that would be re-established in the disturbance area, including 2,024 acres of grassland habitat (Montana Department of Environmental Quality 2014b). Grasslands would likely readily re-establish compared to shrub and forest habitats that are reclaimed. While mining would result in some long-term habitat loss, it would not be a permanent habitat loss once reclamation is complete and habitat is fully re-established.

Given the limited and low suitable Sprague's pipit habitat in the action area, the high mobility of the species, the relative stability of the populations in Montana, and habitat that would be restored through reclamation, it is anticipated that potential impacts from the proposed project on Sprague's pipit would be low and discountable.

8.8 Mitigation and Minimization Measures

The Board has no jurisdiction over the proposed Otter Creek Mine and cannot impose any mitigation measures on the proposed Otter Creek Mine applicant. However, the proposed Otter Creek Mine applicant would be required to implement any mitigation measures imposed by Montana DEQ through the MEPA process. In addition, Arch Coal would need to comply with Section 10 of the ESA during construction and operation of the proposed Otter Creek Mine, and the U.S. Army Corps of Engineers would need to comply with Section 7 of the ESA for any Section 404 permit they issue to Arch Coal for development of the proposed Otter Creek Mine.

8.9 Effects Determination

8.9.1 Greater Sage-Grouse

The information, analysis, and mine reclamation requirements presented in this BA was the basis of the finding that the interdependent action warrants an effect determination of ***May Affect, Not Likely to Adversely Affect***⁴ for greater sage-grouse.

A determination of ***May Affect*** is warranted based on the following rationale.

- Greater sage-grouse have been documented in the action area.
- Suitable habitat is present that supports greater sage-grouse, at least seasonally; this habitat would be removed during development of the Otter Creek Mine.
- Presence of proposed Otter Creek Mine infrastructure could cause strikes or collisions and increase predation with greater sage-grouse, resulting in injury or death.

⁴ Under the Endangered Species Act, candidate species are provided no statutory protection, and effects determinations are not required. However, OEA has made an effects determination for each federal candidate species.

- Noise associated with the proposed Otter Creek Mine development could cause greater sage-grouse to flush from the area, resulting in energy expenditure, reduced reproductive success, and predation.

A determination of ***Not Likely to Adversely Affect*** is warranted based on the following rationale.

- The number of greater sage-grouse documented in the action area is very small.
- Overall, greater sage-grouse habitat throughout the action area is largely unsuitable.
- No large, dense contiguous sagebrush patches exist in the action area to support wintering greater sage-grouse.
- No greater sage-grouse core habitat would be affected.
- Proposed Otter Creek Mine reclamation requirements would re-establish greater sage-grouse habitat, limiting or avoiding permanent greater sage-grouse habitat loss.

8.9.2 Sprague's Pipit

The information, analysis, and reclamation requirements presented in this BA was the basis of the finding that the proposed project warrants an effect determination of ***May Affect, Not Likely to Adversely Affect***⁵ for Sprague's pipit.

A determination of ***May Affect*** is warranted based on the following rationale.

- Suitable Sprague's pipit habitat has been identified and would be removed within the proposed Otter Creek Mine.
- The potential for disturbance from construction and operation noise and human activities that could result in disturbance or displacement of Sprague's pipit, if present.

A determination of ***Not Likely to Adversely Affect*** is warranted based on the following rationale.

- The occurrence of a Sprague's pipit in the action areas would be rare. No Sprague's pipits were observed during 2013 baseline surveys for the proposed rail line or during surveys conducted to support the proposed Otter Creek Mine permit application.
- Proposed Otter Creek Mine reclamation requirements would re-establish Sprague's pipit habitat, limiting or avoiding permanent Sprague's pipit habitat loss.

⁵ Under the Endangered Species Act, candidate species are provided no statutory protection, and effects determinations are not required. However, OEA has made an effects determination for each federal candidate species.

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