

DRAFT ENVIRONMENTAL ASSESSMENT



BAIR-COLLINS MINE RECLAMATION AND MUSSELSHELL RIVER RESTORATION PROJECT MUSSELSHELL COUNTY, MONTANA

PREPARED BY:

MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY

ABANDONED MINE LANDS PROGRAM

REMEDIATION DIVISION

P.O. BOX 200901

HELENA, MONTANA 59620

IN COOPERATION WITH

UNITED STATES DEPARTMENT OF THE INTERIOR

OFFICE OF SURFACE MINING RECLAMATION AND ENFORCEMENT

CASPER, WYOMING FIELD OFFICE

December 2018

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Acronym List

<u>Acronym</u>	<u>Meaning</u>
AML	Abandoned Mine Lands
amsl	above mean sea level
ATP	Authorization to Proceed
bgs	Below Ground Surface
BMP	Best Management Practices
CFS	cubic feet per second
DEQ	Department of Environmental Quality
EA	Environmental Assessment
EE/CA	Expanded Engineering Evaluation/Cost Analysis
EPA	Environmental Protection Agency
EIQ	Environmental Impact Quotients
Ft	Feet/Foot
FONSI	Finding of No Significant Impact
gpm	gallon per minute
LMCD	Lower Musselshell Conservation District
MWC	Musselshell Watershed Coalition
NRHP	National Register of Historic Places
OSMRE	Office of Surface Mining Reclamation and Enforcement
PABFh	Palustrine, Aquatic Bed, Semi-Permanently Flooded
RCRA	Resource Conservation and Recovery
Rp1FO	Riparian Forested
Rp1SS	Riparian Scrub-Shrub

SMCRA	Surface Mining Control and Reclamation Act
SPA 124	Stormwater Permit
TMDL	Total Maximum Daily Load
USFS	United States Forest Service
USGS	United States Geological Survey
uS/cm	Micro Siemens per Centimeter
mg/L	Milligrams per Liter
ug/L	Micrograms per Liter
USFWS	United States Fish and Wildlife Services
USBLM	United States Bureau of Land Management
SHPO	State Historic Preservation Office

DESCRIPTION OF PROPOSED ACTION AND NEED FOR PROPOSED ACTION

The purpose of this Environmental Assessment (EA) is to document the potential environmental impacts that could result from the proposed Meathouse Road/Bair-Collins Mine Reclamation Project (Figure 1). In accordance with the Montana Abandoned Mine Reclamation Plan, as amended July 19, 1995 (Federal Register Vol. 60 No. 138 pg. 36998), the Montana Department of Environmental Quality, Abandoned Mine Lands (DEQ AML), is proposing to complete the removal of coal waste and mine-related structures followed by the restoration of the Musselshell River floodplain. The site includes extensive coal waste placed during operation of the Bair-Collins Mine. Modifications to the flood plain during and after mining have prevented the Musselshell River from reaching its floodplain during flood conditions. Current site conditions exacerbate flooding in the City of Roundup, Montana. Flooding occurred in 2011 and 2014. The floods caused \$3.4 million in damage. DEQ AML has determined that there are negative potential impacts to the area due to the modifications to the Musselshell River during mining activities. The proposal will need to be approved by an Authorization to Proceed (ATP) issued by the Office of Surface Mining Reclamation and Enforcement (OSMRE) after issuance of a Finding of No Significant Impact (FONSI) before grant funds can be expended to fund this project.

This effort will improve the quality of both public (City of Roundup) and private lands. Eligibility for the abandoned mine reclamation fund is based on extensive coal mining which included mine entries and coal loading area for the Chicago, Milwaukee and St. Paul Railroad (C.M. & St. Paul). No previous reclamation has been completed at this site. Mine entries and structures were sealed and removed after mining ceased.

Mining activities took place prior to August 3, 1977 (Figure 2). Mining began in 1907 with the arrival of the C.M. & St. Paul Railroad. Mine development started with the Republic No. 1 mine followed by Mine Nos. 2 and 3, and the Bair-Collins Mine (Mine No.4). The underground mines were located on the south side of the river with entries and surface structures located on the north side of the river (Figure 2). The development of the City of Roundup was based on the location of the railroad and the coal mines (Montana State Historic Preservation Office, 2007). Coal production spiked during the two world wars. The coal boom during World War II ended quickly. Coal production continued until the early 1960s when coal lost its place as a primary fuel for industrial activities.

Following the 2011 flooding, the Musselshell Watershed Coalition (MWC) and the Lower Musselshell Conservation District (LMCD) completed an Engineering Evaluation and Cost Analysis (EE/CA) on the Roundup Reach (Pioneer, 2016). The EE/CA evaluated five projects along the Musselshell River including the Bair-Collins Mine site. The EE/CA states that under current conditions the area is inundated due to backwater downstream of the existing berm and levee that isolates this portion of the floodplain. The existing berm, levee, and high floodplain area restrict the floodplain width to approximately 250 feet where the floodplain width downstream of this constriction is on the order of 1,100 feet. The feature has been categorized as a Priority 1 Clogged Stream due to its potential risk to downstream resources including property, and environmental degradation.

Project Location

Bair-Collins Mine is located on Meathouse Road south of the City of Roundup between the city and the Musselshell River (Figures 1 and 2). Four coal mines were developed just south of the Musselshell River, the Williams, Bair-Collins, Butler, and Republic Coal No. 1 Mines. The elevation of the site is approximately 3,190 feet above mean sea level



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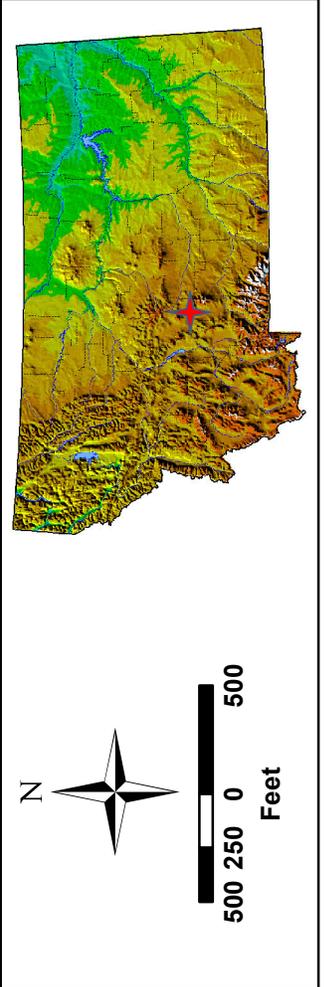


Figure 1
Bair-Collins Mine
Site Location Map
Roundup, Montana

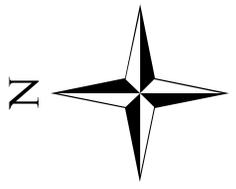
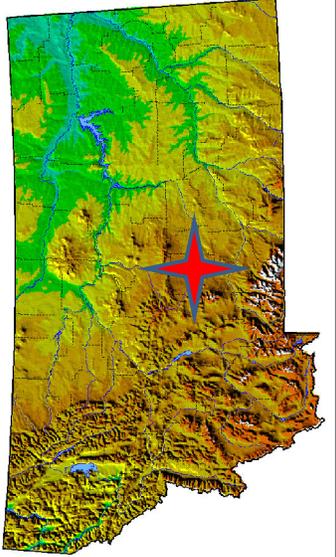
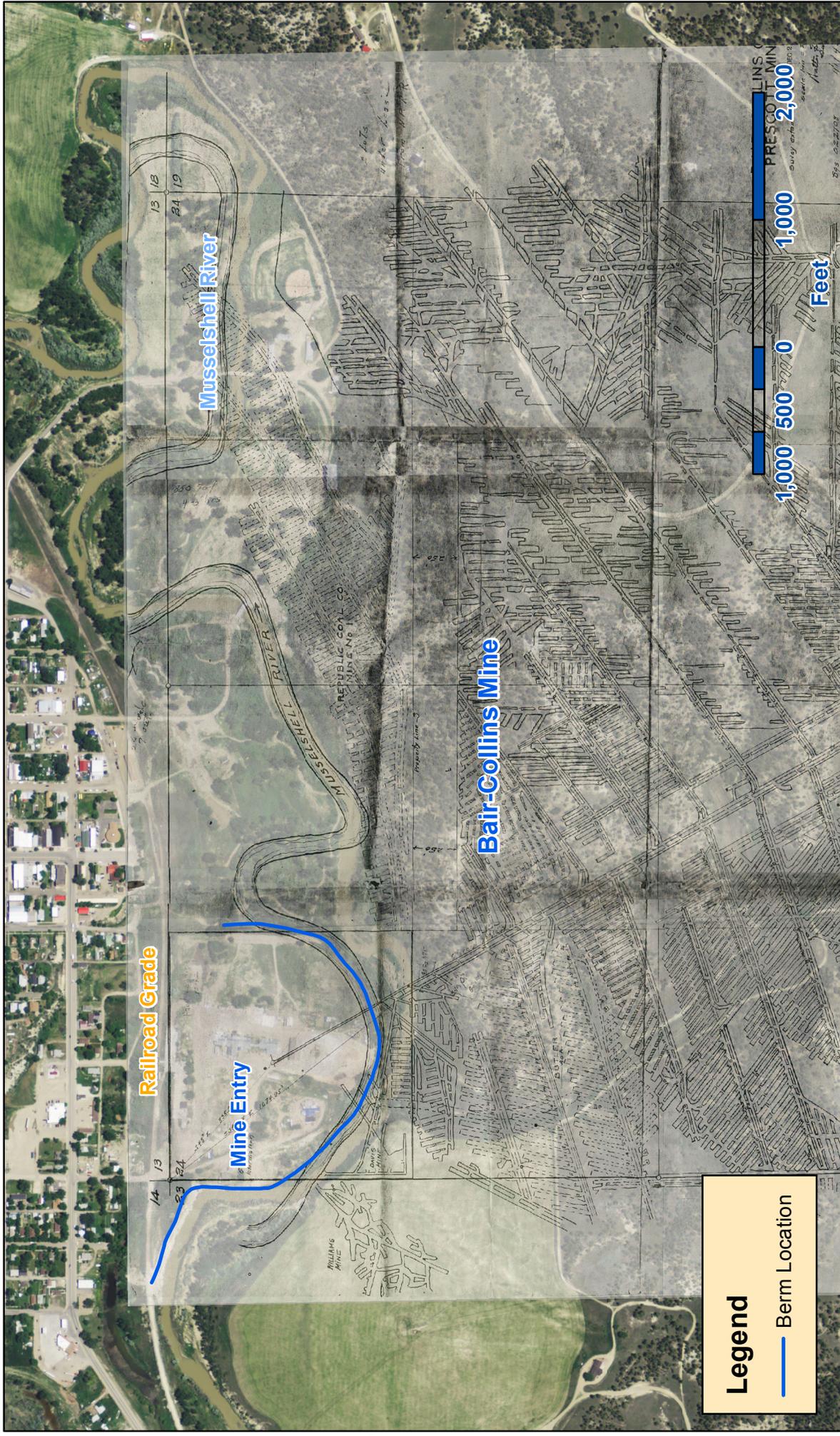


Figure 2 Bair-Collins Mine Map Roundup, Montana

(amsl). The site is in the Northwest ¼ of the Northwest ¼ of Section 24, Township 8 North, Range 25 East in Musselshell County, Montana. The centroid of the quarter section is located at 46.436719o north and -108.548859o west. The site is located on the floodplain of the Musselshell River. The Musselshell River flows east-northeast to the Missouri River and Fort Peck Reservoir.

Project History

The Bair-Collins Mine was established in 1923 by Albert Johnson (USGS, 1923) (Figure 2). Production at the mine began in 1924. The original entry to the Bair-Collins Mine was located on the south side of the Musselshell River and was accessed via a bridge from the north side (AD Johnson photograph 1926). The Bair-Collins Company took over the mine in the early 1930s. By 1931 the mine entry and a new tibble were located on the floodplain north of the river (Figure 2). Mining south of the river expanded rapidly after the lease was acquired by Bair-Collins. By the end of 1932, more than 9,000 ft of mine workings had been developed. The Musselshell River flooded the mine in 1932, active mining stopped at that time and collapses were noted in inspection reports (USGS, 1936). Retreat mining began in 1936. Mining was complete in 1946. Bair-Collins satisfactorily abandoned the slope and the airway and relinquished the lease in 1954 (BLM, 1954).

Alternatives Considered

Alternative 1 – Removal of Berm, Waste Coal, and River Restoration

Under this alternative, the OSMRE Field Office Director would approve removal of the berm, waste coal, and restoration of the Musselshell River in the amount of \$1.3 million. Under this alternative, OSMRE would authorize construction activities by Montana DEQ AML in implementing the abandoned mine land reclamation proposal described below.

The purpose of this restoration project is to limit reduce the flooding impacts to the City of Roundup. The restoration project includes excavation and disposal of approximately 80,000 cubic yards of waste material from the berm and floodplain in and adjacent to the Musselshell River, and restoration of the Musselshell River through excavation, shaping, and grading the floodplain to its approximate pre-mining condition.

Once the berm and waste coal are removed, the Musselshell River floodplain will be reconstructed and the site will be vegetated. Plans include the construction of future fisheries ponds to improve wildlife habitat and site access.

Excavated material not required for grading the site will be properly disposed of offsite. Disturbed areas will be seeded, fertilized and mulched.

Work will include incidentals necessary to complete the project.

The proposed time schedule for this alternative is:

Spring 2018

Completed site survey to determine volume of material, disposal opportunities for waste material, and collect samples to determine if there are any contaminants present in the shallow soil.

Complete draft grading plans and assist Musselshell County in applying for additional funding sources for additional construction and restoration of the site.

Notified of award of future fisheries funding.

Winter 2019

Submit this Draft Environmental Assessment for public comment.

Conduct a public meeting in Roundup to present preferred reclamation alternative.

Musselshell County will present plans and additional funding request to Montana State Legislature.

Complete bid packages and award AML phase of the construction project.

Summer 2019

Receive additional construction grant funding from State Legislature.

Fall 2019 Complete construction activities and complete construction completion report.

2020-2023 Project monitoring to include weed spraying as necessary

Under the oversight of DEQ AML, a professional engineering firm licensed in Montana will complete an engineering design for the project and construction services will be solicited by a public bidding process. After the construction contract is awarded, and construction begins, a full-time construction inspector will be on-site to ensure quality control. Construction will be completed in a single construction season. Weed control and long-term operations and maintenance will be completed by Musselshell County.

This alternative is considered in conjunction with other efforts planned by Musselshell County, which include floodplain restoration at the Jeffries No. 18 Mine.

Alternative 2 – No Action

Under this alternative, would not request OSMRE funding. Under this scenario, the pre-Surface Mining Control and Reclamation Act (SMCRA) era disturbances within the Musselshell River would continue to exacerbate flooding in the City of Roundup and waste coal would continue to impact the surface water quality of the Musselshell River.

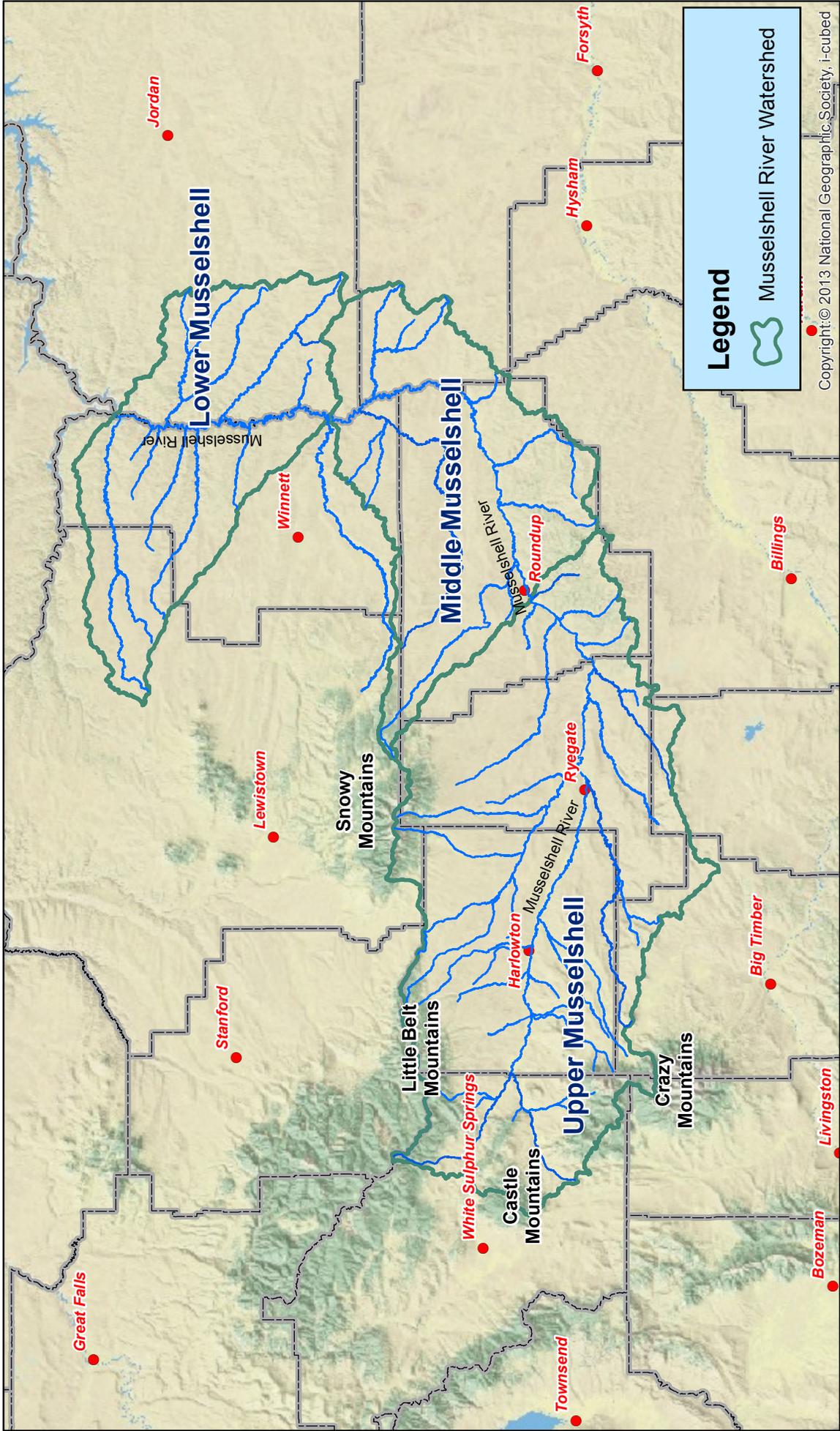
AFFECTED ENVIRONMENT

General Setting

The Musselshell River watershed covers 9,471 square miles. The watershed basin area from the headwaters to downstream of the City of Roundup is 3,998 square miles (Pioneer, 2016). Snowpack in the Crazy, Castle, Little Belt, and Big Belt mountain ranges are the primary source of water to the river (Figure 3).

The Bair-Collins Mine entry is in the Musselshell River floodplain on Meathouse Road in the City of Roundup. The project area has been developed but is bounded by riparian forest and riparian scrub-shrub wetland. The elevation of the site is approximately 3,191 ft. amsl. It is bounded to the north by a former C.M. & St. Paul railroad grade and to the south by the Musselshell River.

The Musselshell River flows eastward in this reach. Flooding occurs throughout the drainage; however, it is exacerbated near the City of Roundup due to flow restrictions at the Bair-Collins Mine. The restrictions are caused by changes in elevation of the floodplain during development of mining structures. The lowest flows in the river are during December and January (median flows 63 cubic feet per second (cfs)). The highest flows are in May and June (median flows of 352 and 701 cfs respectively). The highest flows recorded at the City of Roundup occurred in May 2011 (15,000 cfs) and May 2014 (10,800 cfs), each 100-year flood events ([U.S. Geologic Survey Water Data](#)) (Figures 4, 5, and 6). In 2011, the City of Roundup had two 100-year flood events in May and June respectively. The annual median discharge for the City of Roundup area from 1947 through 2016 is 161.25 cfs (USGS, 2017)



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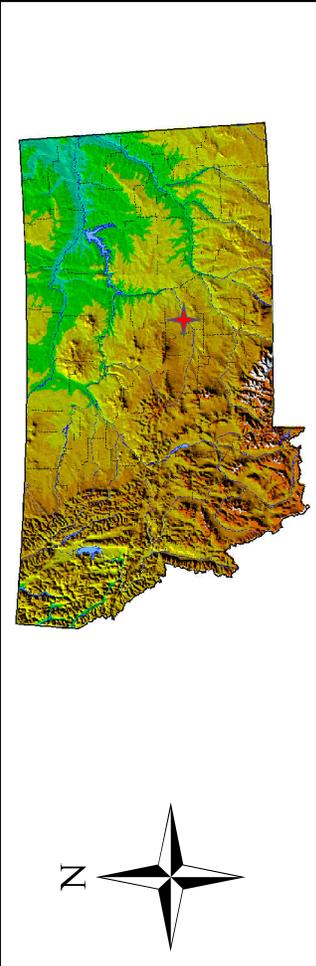


Figure 3 Musselshell River Watershed Map Montana

50 25 0 50
Miles



Figure 4 Aerial photo of City of Roundup during 2011 flood (Kestrel Aerial 2011).

The flood plain at the Bair-Collins Mine was modified accommodate mining activities. Coal was mined south of the river; however, the mine entry was on the north side of the river adjacent to the lumber mill buildings (Figure 7) and transported across the river to the tipple where it was loaded on train cars. The modifications included placing a berm between the river and mine structures. The highest point on the berm is 10 to 15 feet above the base flow of the river.

The Musselshell River is classified as a Class C-3 stream. Waters classified C-3 are to be maintained suitable for bathing, swimming and recreation, and growth and propagation of non-salmonid fishes and associated aquatic life, waterfowl and furbearers. The quality of these waters is naturally marginal for drinking, culinary and food processing purposes, agriculture and industrial water supply. Degradation which will impact established beneficial uses will not be allowed (DEQ, 2007). The Musselshell River is fully supporting primary contact recreation, but not fully supporting aquatic life due to alteration in stream-side covers with probable sources including hydrostructure flow regulation-modification, channelization, streambank modifications-destabilization, habitat alterations and various metals impacts.

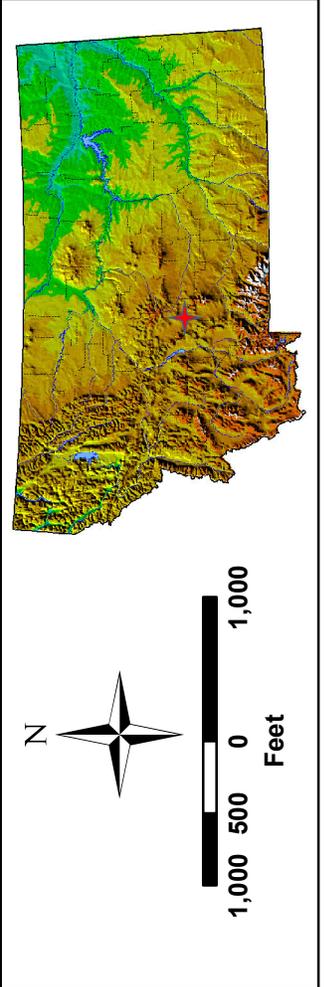
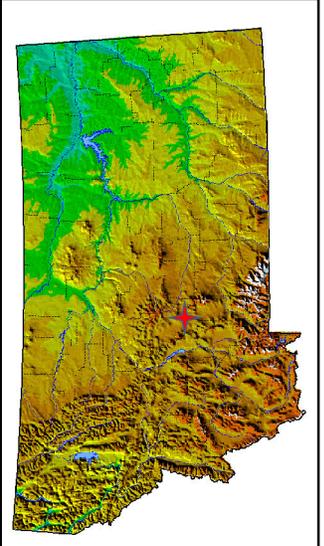
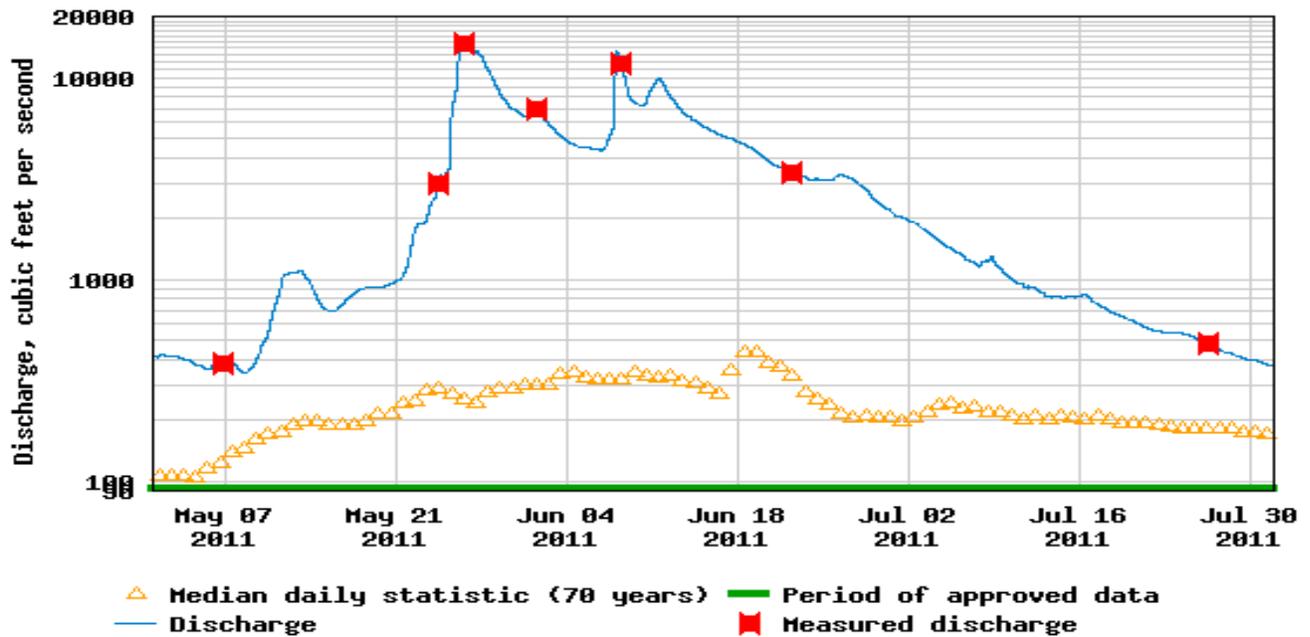


Figure 5
Bair-Collins Mine
Extent of 2011 Flooding
Roundup, Montana





USGS 06126500 Musselshell River near Roundup MT



USGS 06126500 Musselshell River near Roundup MT

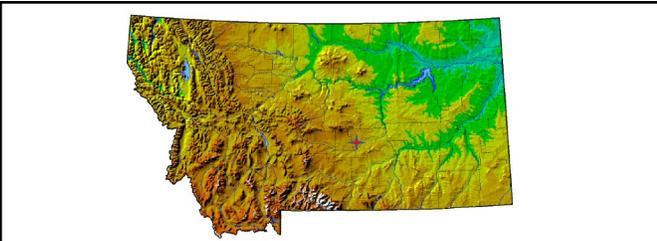
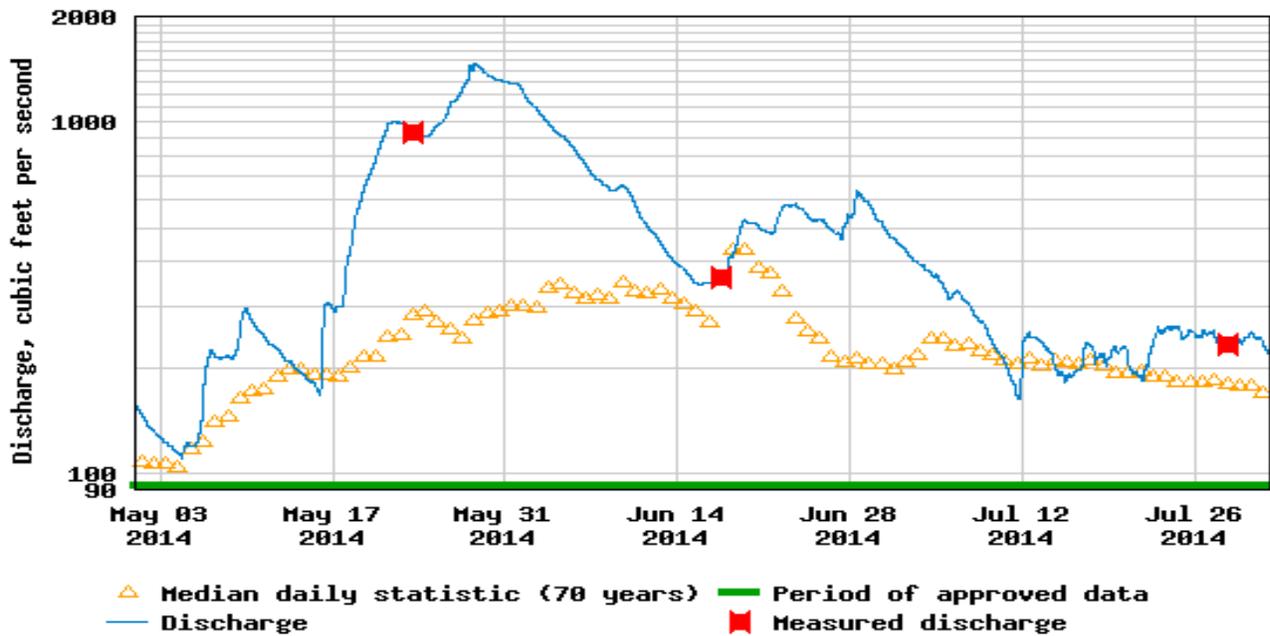


Figure 6
Davis Mine
2011 and 2014
Discharge Data
Roundup, Montana

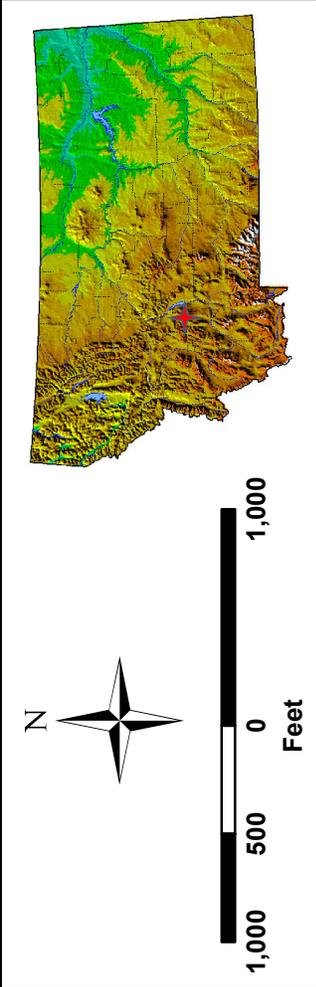


Figure 7
Bair-Collins Mine Map
Roundup, Montana

Regional and Local Geology

The City of Roundup and the Bair-Collins Mine are in the Bull Mountain Basin (USGS, 1999). The Bull Mountain Basin is an east-west trending asymmetrical syncline within the Paleocene Fort Union Formation. The basin is relatively small (750 square miles) relative to other coal-producing basins in the region (e.g. Powder River) and the coal seam is thinner (approximately 17 feet). Coal was produced continuously in the Bull Mountain Basin between 1907 and 1960 and between 1970 and mid-1997. Stratigraphically, the Bull Mountain Basin is located with the Tongue River member of the Fort Union Formation. The Tongue River is underlain by the Lebo Member.

Hydrogeologic Setting

The Bair-Collins Mine is located within the floodplain of the Musselshell River. Well logs indicate that alluvial deposits are found on the north side of the river. These deposits include clay, silt, and sand at the surface and gravels at depth. Overburden in the area is approximately 16 to 30 feet (ft.) in depth. The overburden overlays shale and siltstone of the Fort Union Formation. Depth to groundwater ranges from 6 to 15 ft. below ground surface (bgs) north of the river. Groundwater and surface water interaction varies with the time of year and the amount of rain and snow melt. The shallow depth to groundwater may result in some input into the river during periods of high precipitation. During late summer and fall the river is likely losing water to the subsurface.

Surface Water Hydrology

The Bair-Collins Mine lies within the floodplain of the Musselshell River. The Musselshell River flows east from its headwaters in the Snowy, Crazy, Little Belt, and Castle Mountains and then northeast to its confluence with the Missouri River at the Fort Peck Reservoir (Figure 3). The Musselshell River watershed includes mountains, valleys, and plains. The areas in the headwaters and along reaches of the river and its tributaries are forested while the plains are dominated by rangeland and cultivated lands. Elevations range from 8,000 feet in the mountains to approximately 2,000 feet at the Fort Peck Reservoir. Average precipitation in the City of Roundup, Montana since 1938 is [12.79 inches \(U.S. Department of Agriculture, 2017\)](#). Precipitation in the basin generally increases with elevation ranging from less than 15 inches on the plains to more than 50 inches annually in the mountains (USBR, 1998). Stream flows in the river are supplied by snowmelt. Peak flows occur in May and June and low flows occur in late summer and fall. Natural flow patterns have been altered by irrigation practices including the development of three reservoirs in the 1930s – Deadmans Basin, Martinsdale, and Bair. From upstream to downstream the towns of Ryegate, Roundup, and Melstone draw water from the river for public use.

A summary of peak discharges of the Musselshell River is provided in Figure 8 from 1946 to 2016. Figure 6 illustrates the peak flows from the 2011 and 2014 floods.

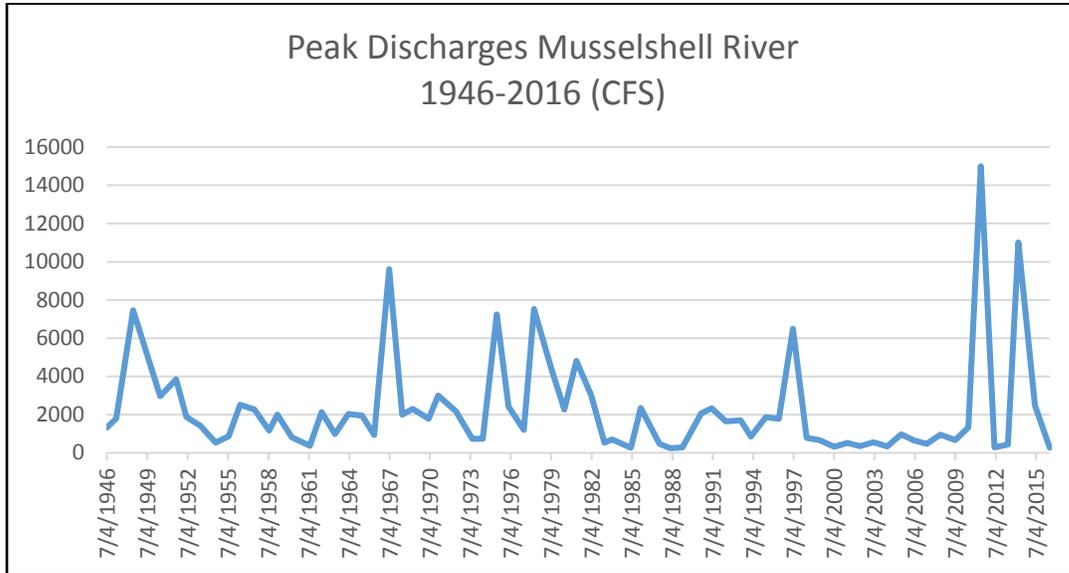


Figure 8 Peak discharges in Musselshell River near Roundup, Montana, 1946-2016. (USGS, 2018)

Alteration of the Musselshell River occurred during the construction of the C.M. & St. Paul Railroad. The railroad extended from Melstone upstream through Harlowton and up the South Fork Musselshell to Ringling (Pioneer, 2015). During construction, the river was straightened and shortened to accommodate the railroad right of way. The right of way isolated portions of the historic river channel and floodplain from the active channel. Approximately 35 miles of channel length was removed. The result was the entrenchment of the river and elimination of its access to its floodplain. The river continues to migrate trying to access its floodplains. This is especially true in the downstream alluvial portions of the river. During floods in 2011 and 2014, the river breached portions of the railroad right of way flooding land adjacent beyond the railroad.

Vegetation

Riparian and emergent wetland communities occur in the area immediately adjacent to the Musselshell River. The river is narrowly bounded by various wetland types including riparian scrub-shrub/forested (Rp1SS and Rp1FO), freshwater emergent wetlands (PEMF), and freshwater scrub-shrub (Figure 9). Rp1SS wetlands are located adjacent to streams with intermittent or perennial water flow that is dominated by woody vegetation that is less than 20 feet tall. An example of an Rp1SS wetland would be a wetland adjacent to a stream and dominated by willows. Rp1FO wetlands are also located adjacent to streams. However, the woody vegetation (typically cottonwoods) is greater than 20 feet tall. In Montana, PEMF wetlands includes all wetlands dominated by trees, shrubs, and emergent herbaceous vegetation with surface water present throughout the growing season. A good example is a cattail marsh with standing water most of the year.

Other groundcover in the area includes introduced vegetation, agricultural crops (hay), conifer and great-plains dominated woodlands, shrub lands/sagebrush steppe, and lowland prairie grasslands.



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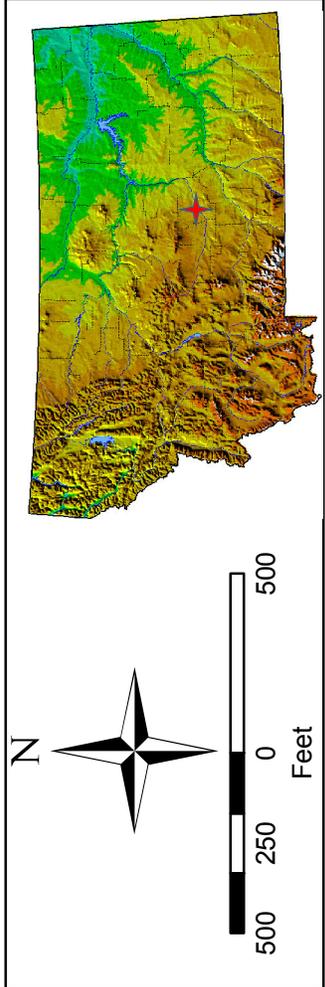


Figure 9 Bair-Collins Mine Riparian and Wetland Map Roundup, Montana

Fish and Wildlife

Fish in the Musselshell River include Brown Trout, Goldeye, Stonecat, Flathead Chub, Green Sunfish, Mountain Sucker, Sand Shiner, Flathead Minnow, and Channel Catfish. United States Fish and Wildlife Service (USFWS) consultation indicated that there are no threatened or endangered species within the area of the Bair-Collins Mine. The USFWS consultation also indicated that there were no sensitive habitats in the areas. Though consultation with Montana Natural Heritage consultation noted six species as sensitive either by Montana, United States Forest Service (USFS), or United States Bureau of Land Management (USBLM), no threatened or endangered species were identified. After consultation with the Montana Sage Grouse Habitat Conservation Program it was determined that the site does lie within potential sage grouse habitat. Copies of the consultations are included in Attachment A.

Historic or Archeologically Significant Features

The Project site is located on county owned property affected by past coal mining activity and meets the criteria for abandonment. The first mining on the site took place in the 1920s and continued until 1954. The mine changed ownership and expanded under the ownership of the Bair-Collins Company in 1931. Bair-Collins operated the mine until it closed in 1954 (BLM Cancelled lease, December 31, 1954). There are no mine structures left at the site. There is no physical evidence from the mine facility of significant historical or technological interest, therefore, the site was not recommended for listing on the National Register of Historic Places.

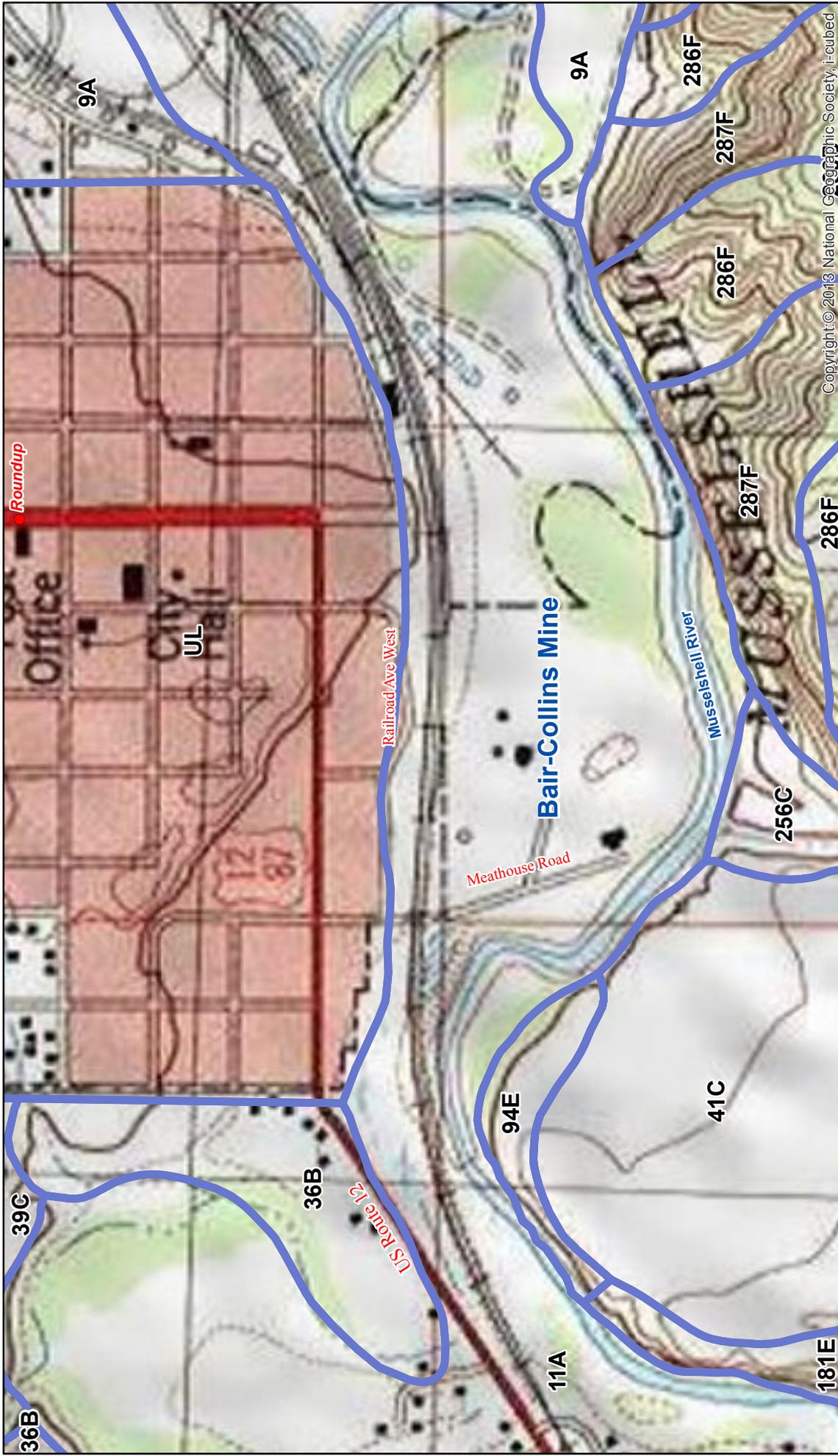


Figure 10 Current site conditions (DEQ, 2016).

Soils

There are six soil types within the vicinity of Jeffries No. 18 Mine tipple (NRCS, 2017, Figure 11)

- Havre-Glendive Complex (Map Unit symbol 11A, National Map Unit Symbol cghh). This silt dominated soil is found on 0 to 2 percent slopes and is rarely flooded (Figure 11). This soil type is not considered prime farmland.
- Havre Loam (Map Symbol 9A, National Map Unit Symbol cgm7). This soil is composed of silt, sand, and clay and is located on 0 to 2 percent slopes and is rarely flooded. This soil type is considered prime farmland.
- Yamacall Loam (Map Symbol 41B, National Map Unit Symbol cgk7). This calcareous soil consists of silt and sand on 2 to 8 percent slopes. This soil type is not considered prime farmland.
- Yamacall -Delpoint Loams (Map Symbol 41C, National Map Symbol cgk8). A calcareous soil found on alluvial fans, stream terraces, and low hills at 2 to 8 percent slopes is not considered prime farmland.
- Crago Gravelly Loam (Map Symbol 94E, National Map Unit Symbol cgly). Found on stream terraces and fan remnants, at 8 to 35 percent slopes, it is not considered prime farmland.



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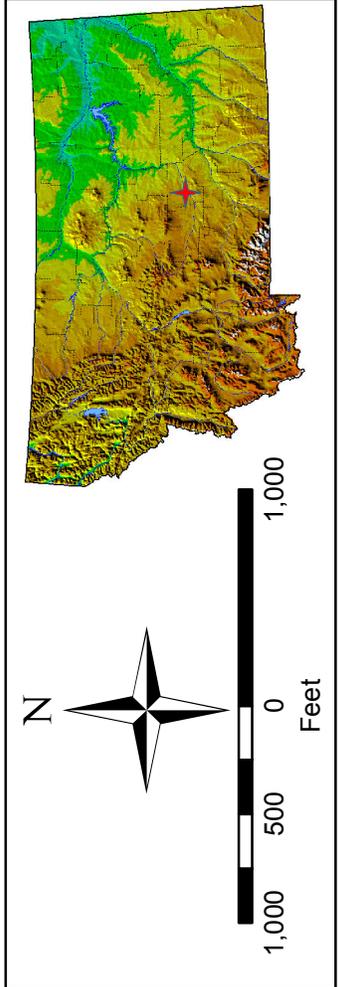


Figure 11
Bair-Collins Mine
Soils Map
Roundup, Montana

- Yamacall-Delpoint Loams (Map Symbol 36B, National Map Unit Symbol 36B). A well-drained soil, found on alluvial fans and derived from interbedded sedimentary rock. Found on 2 to 8 percent slopes and is rarely flooded. This soil type is not considered prime farmland.

Recreational Resource Values

The current land use of the area surrounding the Bair-Collins Mine is commercial, residential/recreational, and agricultural (Figure 12). Recreational use of the Musselshell River includes fishing and swimming. Next to the eastern boundary of the site is an area that is recreationally used for hiking and fishing access.

The selected alternative will return this site to recreational use.

Air Quality

The Air Quality Index for Musselshell County was 4.84 in 2002 which was better than the national average of 74.67, during the period from 1999 to 2009 ([Roundup, MT City Data](#), 2018).

Noise

This site is situated in a combination of agricultural and commercially/residentially developed land on the southern boundary of the City of Roundup. Noise in the area is limited to traffic noise associated with Route 12/87 that is north of the site. Additional noise is likely from the operation of agricultural machinery across the river.

Topography

Access to the area is from Meathouse Road. The top of the berm varies but is at approximately 3,193 ft. amsl roughly 8 to 10 ft above the base of the river. Total relief within the proposed reclamation area is approximately 15 ft.

The area has been extensively altered through development of mines, roads, a lumber mill, bentonite bagging plant, and agricultural activities.

Social and Economic Values

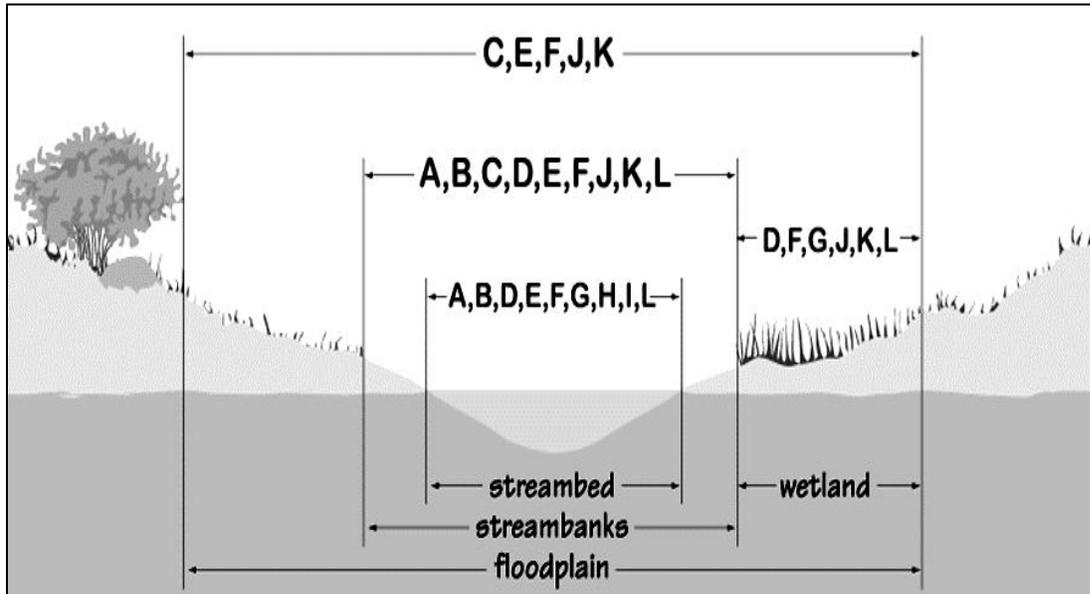
Bair-Collins Mine is on private property bounded by the former C.M. & St. Paul Railroad tracks to the north and the river to the south. The river is used recreationally for fishing and swimming. The river is also the primary source of irrigation water for ranches throughout its drainage area (Musselshell Watershed Coalition, 2018).

The economic impact of flooding in the watershed is notable. Flooding from 2011 to 2014 caused \$5 million in public and private property damage within the City of Roundup and Musselshell County (Musselshell Watershed Coalition and Musselshell County Department of Emergency Services, 2017).

Conformance with Federal, State, Regional, and/or Local Land Use Plans, Programs and Policies

Reclamation construction activities associated with Alternative 1 would comply with Montana's Abandoned Mine Reclamation State Plan. Two permits have been identified that will apply to this effort: The Joint Application for Proposed Work in Montana's Streams, Wetlands, Floodplains, and Other Water Bodies; and a DEQ Storm Water Discharge Permit. The Joint Application can be used for Conservation Districts 310 Permit; Montana Fish, Wildlife and Parks SP 124 Permit; floodplain permits; US Army Corps of Engineers 404 Permit; MT DEQ 318 Permit; and the DNRC navigable river and land use licenses and easements. The following schematic identifies the potential required permits (DNRC 2018).

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The streambank and floodplain within the Musselshell River will be affected by the project, therefore permits highlighted above are listed as potential permits. The name and contacts for each permit are listed below, with the underlined permits being required for the project.

- A. Montana Natural Streambed and Land Preservation Act (310), Local Conservation District
- B. Montana Stream Protection Act (SPA 124 Permit), MT Fish Wildlife and Parks
- C. County Floodplain Development Permit, County Floodplain Administrator
- D. Federal Clean Water Act (404 Permit), US Army Corps of Engineers
- E. Federal Rivers and Harbors Act (Section 10 Permit), US Army Corps of Engineers
- F. Short-Term Water Quality Standard for Turbidity (318 Authorization), Montana Department of Environmental Quality Water Protection Bureau
- G. Montana Land-Use License of Easement on Navigable Waters, Department of Natural Resources and Conservation or Real Estate Management Bureau
- H. Montana Water Use Act (Water Right Permit and Change Authorization), Department of Natural Resources and Conservation Water Rights Bureau
- I. Montana Water Use Act (Water Reservation), Department of Natural Resources and Conservation Water Reservation or Local Conservation District
- J. Storm Water Discharge General Permit, Montana Department of Environmental Quality Water Protection Bureau
- K. Streamside Management Zone Law, Department of Natural Resources and Conservation Forestry Division or Local Department of Natural Resources and Conservation Land Office
- L. Other Laws that May Apply.

Any other permits later identified as necessary for the project will be acquired, and DEQ AML and its contractors will adhere to the applicable statutory or regulatory requirements for the project.

Environmental Justice

Based on [United States Government Census](#) figures the median household income in Musselshell County is \$57,519 (City Data.Com, 2018). The dominant race in Musselshell County is white with 98.3% of the population.

DRAFT

ENVIRONMENTAL IMPACTS OF THE PROPOSED ALTERNATIVES

Alternative 1 – Approval of the Proposed Abandoned Mine Restoration Project (The “Preferred Alternative”)

Alternative 1 will result in the removal of the berm and waste coal and restore of the floodplain to natural conditions through modifications in the current topography and revegetation. Restoration of the site will improve river flow through (e.g. across the flood plain) and reduce flooding in this area. This work will have a direct economic impact on the City of Roundup by reducing impacts of flooding. It will also limit the erosion of waste coal into the river.

Resource Values

a. Cultural or Historic

Bair-Collins Mine was not eligible for listing in the NRHP (GCM, 1984). The C.M. & St. Paul Railroad grade was determined eligible under Criterion A. After consultation with Montana SHPO, it was determined that the proposed alternatives will have no adverse effect on historic properties (SHPO, 2017).

b. Hydrology

Removal of mining related structures (the berm) and waste coal will allow the Musselshell River to return to its approximate original morphology and create connectivity to the floodplain. By lowering the floodplain, the energy of the floodwater is dissipated, reducing the velocity of the water thereby reducing potential downstream damage. Short-term impacts to the stream channel and floodplain during construction are considered limited negative impacts considering the long-term benefits of restoring the floodplain and reducing flooding downstream. Storm water runoff from construction activities may also cause short-term adverse impacts to water quality in the Musselshell River. AML will apply for and meet short-term turbidity standards required in the 318 Permit. Construction best management practices (BMPs) as required by the stormwater pollution prevention permit will be employed to address these sources, and will effectively reduce adverse impacts on surface water from the construction activities. Therefore Alternative 1 could have a minor, short-term, local negative impact to hydrology, but would have a long-term, regional positive impact to water quality and flood reduction once the restoration of the Musselshell River is achieved.

c. Fish and Wildlife

Based on consultations with the Montana Natural Heritage Program, Montana Sage Grouse Conservation Program, and USFWS no impact of federally listed species, designated critical habitat, or sage grouse habitat would occur with completion of either considered alternative. Within the vicinity of the project, Consultations were requested with USFS, USBLM, and the State of Montana Natural Heritage Program. Montana Natural Heritage Program identified seven species as sensitive. These include: Great Blue Heron, Golden Eagle, Greater Sage Grouse, Spotted Bat, Black-tailed Prairie Dog, Spiny Softshell Turtle, and Greater Short-horned Lizard (Appendix A). No threatened or endangered species were identified in the project location.

Salinity and sedimentation are the basin’s most common impacts. Sedimentation stems from the basin’s natural characteristics and land uses. Median sediment concentrations in the lower Musselshell had median concentrations of suspended sediment of 100 mg/L (DEQ, 2003). Short-term increases in sedimentation downstream of the site are possible. Erosion and sedimentation control best management practices will be implemented to limit the impacts to fish habitat.

Under Alternative 1, removing the mine structures and restoring the Musselshell River will improve the riparian vegetation and habitat for wildlife species. Therefore, there will be no negative impact to wildlife species because of the project. Any impacts to the species in the area by disturbance from construction will be minor and short term. In addition, the site will improve recreational access to the river corridor in this area.

d. Grazing

The site is not used for grazing. The impacts to grazing will be non-existent.

e. Soils and Vegetation

The project itself is located within a riparian scrub-shrub area (Figure 10). This area is bounded by agriculture or otherwise developed land (Figure 12). Alternative 1 will remove mining structures and restore the river. Restoring the river will result in long-term improvement to soils and vegetation in the project area. The negative impacts to soils and vegetation in the project area will be minor, local, and short term. Once revegetation is completed, the soils will be placed on a trajectory to restore the natural soil properties of floodplain soils.

f. Recreational Resource Values

Alternative 1 would have a long-term benefit on public recreational resources. The reclamation project is on property owned by Musselshell County. The County purchased this site using Federal Emergency Management Agency (FEMA) funds. Following completion of construction activities, the site will be available for public access. Short-term, local and temporary impacts include increased traffic and construction noise.

g. Air Quality

Alternative 1 is not expected to impact air quality through the implementation of construction. BMPs such as water application for dust control during reclamation activities would be implemented. Impacts would be minor, local and short term.

h. Noise

Alternative 1 would result in a slight increase in noise during construction. This impact would be minor, local and short-term. Noise increase will be a result of heavy equipment operation.

i. Topography

Alternative 1 will eliminate the berm and restore the site to its original topographic condition. These alterations will be permanent and improve water flow through the area. The long-term benefit of this project will be improvement in riparian and river habitat.

j. Social and Economic Values

Alternative 1 would mitigate public health and safety hazards by reducing flooding hazards. Jobs related to the construction project will provide a short-term economic boost to the local economy. Long-term benefits include a local economic boost, beneficial reuse of the property which will provide public access to the river, parks, and new fishing access area upstream of the site.

Environmental Compliance with Federal, State, Regional, and/or Local Land Use Programs Completion of Alternative 1 would be in accordance with the Montana Abandoned Mine Reclamation Plan. In addition, the preferred alternative will be completed in accordance with applicable federal, state and local permitting; specifically, a Joint Application for Proposed Work in Montana's Streams, Wetlands, Floodplains, and Other Water Bodies; and Storm Water Discharge Permit.

k. Environmental Justice

Neither of the proposed alternatives in the Bair-Collins Mine and Musselshell River Stream Restoration Project will have a disproportionate effect on any demographic population regarding either income level or minority status. DEQ AML has provided the public with the opportunity for meaningful participation through a standardized public participation and comment process. Reclamation project reports, studies and work plans will be available for public inspection at the DEQ office at 1225 Cedar Street, Helena, MT 59620 or by request in writing to the Abandoned Mine Lands Program at the same address.

Cumulative Impacts

For each of the resource values identified in the section above, cumulative impacts are considered. Each activity is evaluated to determine its short and long-term impacts to associated resources. The planned and/or ongoing projects near the Bair-Collins Mine include road improvements, recreational activities, and the reclamation of the Jeffries No. 18 Mine site on No. 4 Road. In addition, the County is purchasing other properties within the floodplain. Purchase of the property will include the removal of structures from within the floodplain. Each of the resource values identified above may not be relevant in the cumulative effects analysis. The resource values are considered in the following section.

Alternative 1

Removal of the berm and waste coal and restoration of the river and its floodplain would mitigate impacts from runoff associated with flooding. Currently, the berm limits the drainage of any floodwaters that are trapped behind the berm. Under the preferred alternative, the flood plain on which would be restored to its original elevation and vegetation would be replaced to reproduce native scrub-shrub habitat. In addition, bank stabilization would allow the river to access its floodplain, thereby removing flood water restrictions in this area. Stream bank vegetation would stabilize the river and allow it to withstand increased flows and sediment inputs.

River restoration work will also be completed at the Jeffries No. 18 Mine site on No. 4 Road. Jeffries No. 18 Mine is approximately 1.25 miles downstream of Bair-Collins Mine. During mining operations at Jeffries No. 18 Mine, the river was disconnected from the floodplain through the construction of a road, tipple, and railroad grade. Currently, floodwaters get diverted around this location impacting the eastern portion of the City of Roundup. This is also a potential source of additional sediment downstream. Planned road improvements in the area include the obliteration of the current Number 4 Road and replacing it with an access road that connects with State Route 12 east of the tipple. Changing the road location will also improve the Musselshell River's access to its flood plain north of the current location of Number 4 Road.

Recreational activities in the river will not be affected once the construction phase of the project is complete.

Alternative 2 – Disapproval of the Proposed Abandoned Mine Construction Project (The “No Action Alternative”)

Under the No-Action Alternative, the DEQ AML would not perform removal of the mine structures (the berm) or restoration of the river in this area, as described under Alternative 1. Presence of the pre-SMCRA mining structures

exacerbates flooding in the area and impact water quality of the stream. Under the No-Action alternative, the structures and waste coal would continue to be a risk to public safety through flooding, fisheries, and water quality.

Resource Values

a. Cultural or Historic

Alternative 2 will result in no changes to the railroad grade in this area. The railroad grade would continue to be a factor in exacerbating flooding in this area.

b. Hydrology

Alternative 2 will result in continued water quality impacts and exacerbation of flooding. This would result in decreased stream and floodplain function of the river. The no-action alternative could have long-term, regional negative impacts to water quality and flooding.

c. Fish and Wildlife

While the no-action alternative would not create any temporary disturbance from construction, it would not improve riparian wildlife habitat.

d. Grazing

Alternative 2 would result in no changes in grazing uses of the property.

e. Soils and Vegetation

The no action alternative will leave the mine structure in place and not restore the stream to more natural conditions. Soils and vegetation would not return to more natural conditions.

f. Recreational Resource Values

Alternative 2 would have no impact on public recreational resources.

g. Air Quality

Alternative 2 would have no impact to air quality.

h. Noise

Alternative 2 would have no impact to noise values.

i. Topography

Alternative 2 would result in continued impacts from flooding and water quality issues from waste coal and sediment.

j. Social and Economic Values

Alternative 2 would not improve social or economic values the Musselshell River watershed.

k. Environmental Compliance with Federal, State, Regional and/or Local Land Use Programs

Alternative 2 would not be in accordance with the goals of the Montana Abandoned Mine Reclamation Plan.

I. Environmental Justice

Neither of the proposed alternatives in the Bair-Collins Mine and Musselshell River Stream Restoration Project will have a disproportionate effect on any demographic population regarding either income level or minority status. DEQ AML has provided the public with the opportunity for meaningful participation through a standardized public participation and comment process. Reclamation project reports, studies and work plans will be available for public inspection at the DEQ office at 1225 Cedar Street, Helena, MT 59620 or by request in writing to the Abandoned Mine Lands Program at the same address.

Cumulative Impacts

Alternative 2

Alternative 2 will result in severe flooding and continued impacts to surface water quality, resulting in economic impacts to the City of Roundup and Musselshell County. This alternative will result in decreased stream function and floodplain function in the project area and downstream.

Ongoing road improvements undertaken by the City and County would not impact any of the resource values specified under Alternative 2.

SUMMARY

The purpose of the Bair-Collins Mine Reclamation and Musselshell River Restoration Project, is to reduce the mobility of coal waste and sediment; and mitigate flooding impacts to the local population. The restoration project includes removal of the berm and waste coal and restoration of the Musselshell River to pre-mining conditions. The project will be limited to a single construction season which will minimize the impacts described above. Any other potential negative impacts will be mitigated through the implementation of BMPs (sediment and dust) and therefore, will be local, short-term and minor. The outcome of the project is expected to have a positive, long-term, regional impact by improving water quality in the Musselshell River and reducing flood impacts to the surrounding area.

Alternative 2, No Action, will result in no disturbance to wildlife or the public. No Action will result in continued impacts to water quality and exacerbated flooding. Alternative 2 represents potential long-term, regional negative impacts.

In preparing this assessment the Montana Department of Environmental Quality Remediation Division consulted with the following agencies:

Musselshell County Commissioners

City of Roundup

Musselshell Watershed Coalition

Property Owners

Montana National Heritage Program, Montana Sage Grouse Conservation Program, and USFWS on issues related to federally listed threatened and endangered species (Appendix B).

Montana State Historic Preservation Office on issues related to cultural resources and the eligibility of properties for listing on the National Register of Historic Places (Appendix C).

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DRAFT

Attachment A
Fish and Wildlife

DRAFT

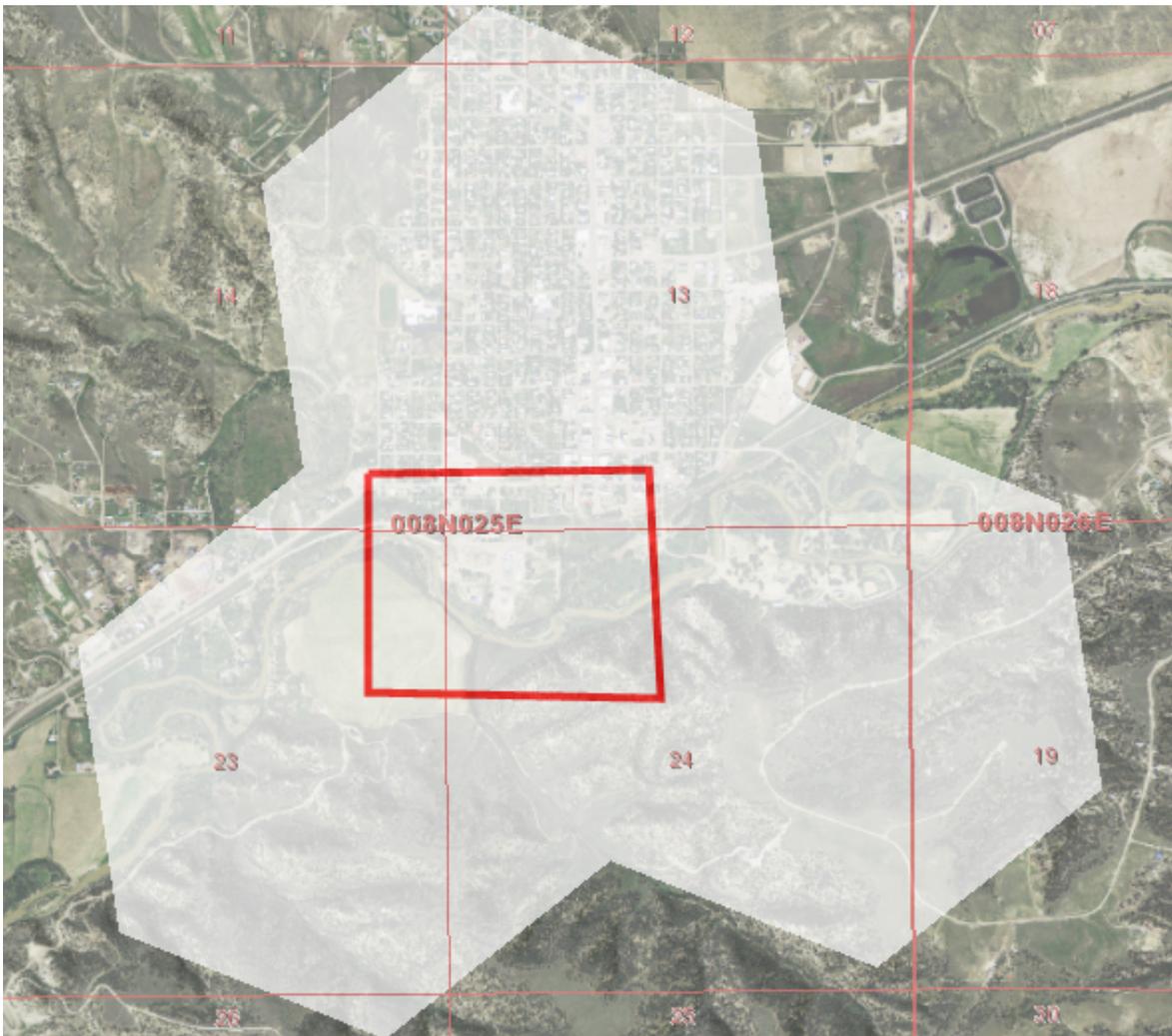


MONTANA Natural Heritage Program

1515 East 6th Avenue
Helena, MT 59620
(406) 444-0241
mtnhp.org



Latitude	Longitude
46.42459	-108.51880
46.45652	-108.56565



Suggested Citation

Montana Natural Heritage Program. Environmental Summary Report.
for Latitude 46.42459 to 46.45652 and Longitude -108.51880 to -108.56565. Retrieved on 12/8/2017.

The Montana Natural Heritage Program is a program of the Montana State Library's Natural Resource Information System. It is operated as a special program under the Office of the Vice President for Research and Creative Scholarship at the University of Montana, Missoula.

The Montana Natural Heritage Program is part of NatureServe – a network of over 80 similar programs in states, provinces and nations throughout the Western Hemisphere, working to provide comprehensive status and distribution information for species and ecosystems.



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Introduction to Environmental Summary Report

The Environmental Summary report for your area of interest consists of introductory and related materials in this PDF and an Excel workbook with worksheets summarizing information managed in the Montana Natural Heritage Program's (MTNHP) databases for: (1) species occurrences; (2) other observed species without Species Occurrences; (3) other species potentially present based on their range, presence of associated habitats, or predictive distribution model output if available; (4) structured surveys (organized efforts following a protocol capable of detecting one or more species); (5) land cover mapped as ecological systems; (6) wetland and riparian mapping; (7) land management categories; and (8) biological reports associated with plant and animal observations. In order to do this in a consistent manner across Montana and allow for rapid delivery of summaries, we have intersected this information with a uniform grid of hexagons that have been used for planning efforts across the western United States (e.g. Western Association of Fish and Wildlife Agencies - [Crucial Habitat Assessment Tool](#)). Each hexagon is one square mile in area and approximately one kilometer in length on each side. Summary information for each data layer is then stored with each hexagon and those summaries are added up to an overall summary for the report area you have requested. Users should be aware that summaries do not correspond to the exact boundaries of the polygon they have specified, but instead are a summary across all hexagons intersected by the polygon they specified.

In presenting this information, MTNHP is working towards assisting the user with rapidly assessing the known or potential species and biological communities, land management categories, and biological reports associated with the report area. We remind users that this information is likely incomplete and may be inaccurate as surveys to document species are lacking in many areas of the state, species' range polygons often include regions of unsuitable habitat, methods of predicting the presence of species or communities are constantly improving, and information is constantly being added and updated in our databases. **Field verification by professional biologists of the absence or presence of species and biological communities in a report area will always be an important obligation of users of our data. Users are encouraged to only use this environmental summary report as a starting point for more in depth analyses and are encouraged to contact state, federal, and tribal resource management agencies for additional data or management guidelines relevant to your efforts. Please see the Appendix for introductory materials to each section of the report, additional information resources, and a list of relevant agency contacts.**



MONTANA
Natural Heritage
Program

A program of the Montana State Library's
Natural Resource Information System
operated by the University of Montana.

Legend

Model Icons

- Suitable (native range)
- Optimal Suitability
- Moderate Suitability
- Low Suitability
- Suitable (introduced range)

Habitat Icons

- Common
- Occasional

Range Icons

- Introduced Range
- Year-round Range
- Summer Range
- Winter Range
- Migratory Range
- Historic Range

Num Obs

Count of obs with
'good precision'
(<=1000m)
+ indicates
additional 'poor
precision' obs
(1001m-10,000m)

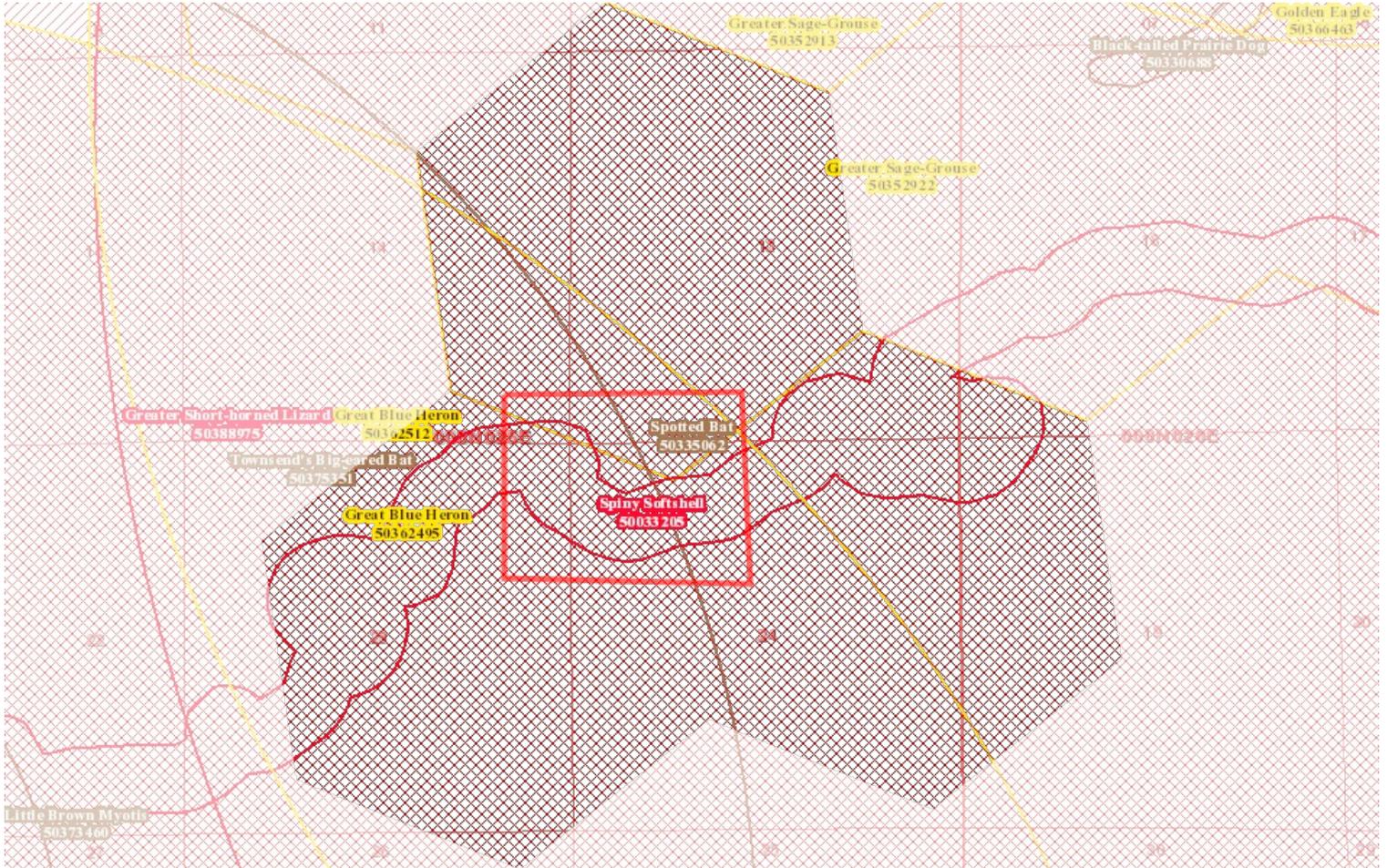


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Species Summary

Filtered by:

MT_Status='Species of Concern','Special Status','Important Animal Habitat','Potential SOC'



Species Occurrences

Species	# SO	# Obs	Predictive Model	Associated Habitat	Range
<input checked="" type="checkbox"/> R - Spiny Softshell (<i>Apalone spinifer</i>) SOC	1		■	■ ■	■ ■ ■
View in Field Guide View Predicted Models View Associated Habitat View Range Maps Species of Concern Global: G5 State: S3 BLM: SENSITIVE FWP SWAP: SGCN3 Delineation Criteria Stream reaches where the species presence has been confirmed through direct capture or where they are believed to be present based on the professional judgement of a biologist due to confirmed presence in adjacent areas. In order to reflect the importance of adjacent terrestrial habitats to survival, stream reaches are buffered 100 meters into the terrestrial habitat based on PACFISH/INFISH Riparian Conservation Area standards. (Last Updated: Oct 11, 2017) Predictive Models: ■ 100% Suitable (native range) (deductive) Associated Habitats: ■ 7% Common, ■ 6% Occasional					
<input checked="" type="checkbox"/> M - Spotted Bat (<i>Euderma maculatum</i>) SOC	1		■ ■	■ ■ ■	■ ■
View in Field Guide View Predicted Models View Associated Habitat View Range Maps Species of Concern Global: G4 State: S3 USFS: Sensitive - Known on Forests (BD, CG) BLM: SENSITIVE FWP SWAP: SGCN3, SGIN Delineation Criteria Confirmed area of occupancy based on the documented presence (mistnet captures, definitively identified acoustic recordings, and definitively identified roosting individuals) of adults or juveniles. Point observation location is buffered by a distance of 10,000 meters in order to encompass the reported maximum foraging distance for the species in British Columbia. If the locational uncertainty associated with the observation is greater than 10,000 meters, the observation is not valid for creation of a species occurrence. (Last Updated: Jun 20, 2017) Predictive Models: ■ 33% Optimal (inductive), ■ 67% Moderate (inductive) Associated Habitats: ■ 51% Common, ■ 22% Occasional					
<input checked="" type="checkbox"/> M - Townsend's Big-eared Bat (<i>Corynorhinus townsendii</i>) SOC	1		■	■ ■ ■	■ ■ ■ ■

[View in Field Guide](#) [View Predicted Models](#) [View Associated Habitat](#) [View Range Maps](#)

Species of Concern Global: **G4** State: **S3** USFS: **Sensitive - Known on Forests (BD, BRT, CG, FLAT, HLC, KOOT, LOLO)** BLM: **SENSITIVE**
FWP SWAP: **SGCN3**

Delineation Criteria Confirmed area of occupancy based on the documented presence (mistnet captures, definitively identified acoustic recordings, and definitively identified roosting individuals) of adults or juveniles. Point observation location is buffered by a distance of 4,500 meters in order to encompass the 95% confidence interval for nightly foraging distance reported for the species in California and otherwise by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. When cave locations are involved, point observations are mapped in the center of a one-square mile hexagon to protect the exact location of the cave entrance as per the Federal Cave Resource Protection Act and associated regulations (U.S. Code Title 16 Chapter 63, Code of Federal Regulations Title 43 Subtitle A Part 37). The outer edges of the hexagon are then buffered by a distance of 4,500 meters and otherwise by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. All of the one-square mile hexagons intersecting this buffered area are presented as the Species Occurrence record. (Last Updated: Oct 06, 2017)

Predictive Models:  100% Moderate (inductive) **Associated Habitats:**  48% Common,  22% Occasional

R - Greater Short-horned Lizard (*Phrynosoma hernandesi*) **SOC** 1 +   

[View in Field Guide](#) [View Predicted Models](#) [View Associated Habitat](#) [View Range Maps](#)

USFS: **Sensitive - Known on Forests (CG)**

Species of Concern Global: **G5** State: **S3** **Sensitive - Suspected on Forests (HLC)** BLM: **SENSITIVE** FWP SWAP: **SGCN3, SGIN**

Delineation Criteria Confirmed breeding area based on the presence of a resident animal of any age. Point observation location is buffered by a minimum distance of 300 meters in order to encompass habitats supporting other individuals and documented distances moved between summer and winter habitats. Otherwise the point observation is buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. (Last Updated: Oct 11, 2017)

Predictive Models:  100% Moderate (inductive) **Associated Habitats:**  45% Common

B - Great Blue Heron (*Ardea herodias*) **SOC** 2 4   

[View in Field Guide](#) [View Predicted Models](#) [View Associated Habitat](#) [View Range Maps](#)

Species of Concern Global: **G5** State: **S3** USFWS: **MBTA** FWP SWAP: **SGCN3**

Delineation Criteria Confirmed nesting area buffered by a minimum distance of 6,500 meters in order to be conservative about encompassing the areas commonly used for foraging near the breeding colony and otherwise buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. (Last Updated: Sep 25, 2017)

Predictive Models:  100% Moderate (inductive) **Associated Habitats:**  6% Common

B - Greater Sage-Grouse (*Centrocercus urophasianus*) **SOC** 2   

[View in Field Guide](#) [View Predicted Models](#) [View Associated Habitat](#) [View Range Maps](#)

USFS: **Sensitive - Known on Forests (BD)**

Species of Concern Global: **G3G4** State: **S2** **Sensitive - Suspected on Forests (CG, HLC)** BLM: **SENSITIVE** FWP SWAP: **SGCN2** PIF: **1**

Delineation Criteria Confirmed breeding area based on the presence of a nest, chicks, juveniles, or adults on a lek. Point observations are mapped in the center of a one-square mile hexagon to protect the exact locations of leks. The outer edges of this hexagon are then buffered by a distance of 6,400 meters in order to encompass a body of research indicating that females typically nest within this distance of a lek and that lek numbers are negatively impacted by fossil fuel drilling activities within this distance of a lek. If the locational uncertainty associated with the observation is greater than this distance, it is buffered by the locational up to a maximum distance of 10,000 meters. All of the one-square mile hexagons intersecting this buffered area are presented as the Species Occurrence record. (Last Updated: Jul 12, 2017)

Predictive Models:  33% Low (inductive) **Associated Habitats:**  17% Common,  5% Occasional

Other Observed Species

See the related Excel Workbook for the Other Observed Species

Other Potential Species

See the related Excel Workbook for the Other Observed Species



Structured Surveys

The Montana Natural Heritage Program (MTNHP) records information on the locations where more than 80 different types of well-defined repeatable survey protocols capable of detecting an animal species or suite of animal species have been conducted by state, federal, tribal, university, or private consulting biologists. Examples of structured survey protocols tracked by MTNHP include: visual encounter and dip net surveys for pond breeding amphibians, point counts for birds, call playback surveys for selected bird species, visual surveys of migrating raptors, kick net stream reach surveys for macroinvertebrates, visual encounter cover object surveys for terrestrial mollusks, bat acoustic or mist net surveys, pitfall and/or snap trap surveys for small terrestrial mammals, track or camera trap surveys for large mammals, and trap surveys for turtles. Whenever possible, photographs of survey locations are stored in MTNHP databases.

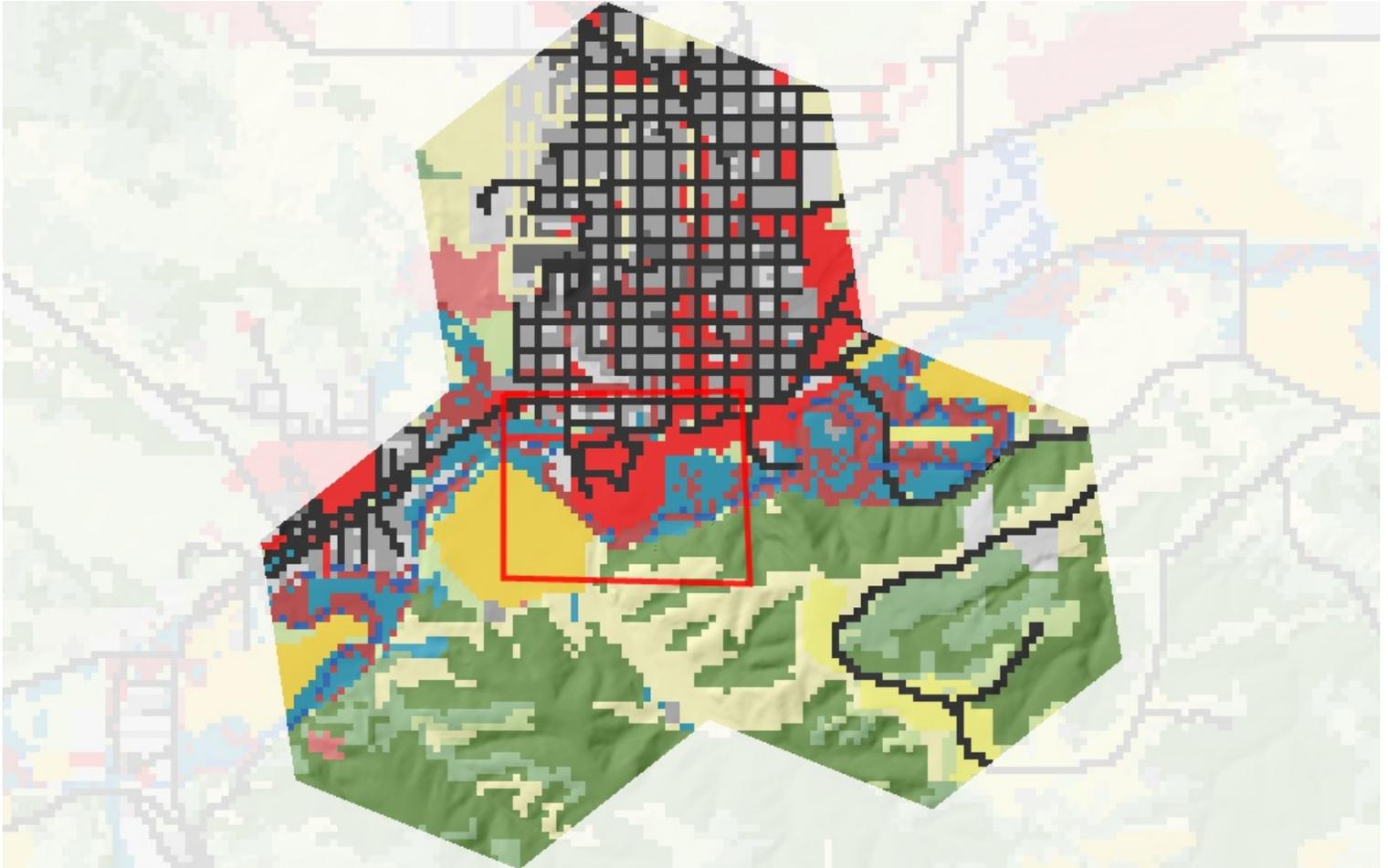
MTNHP does not typically manage information on structured surveys for plants; surveys for invasive species may be a future exception.

Within the report area you have requested, structured surveys are summarized by the number of each type of structured survey protocol that has been conducted, the number of species detections/observations resulting from these surveys, and the most recent year a survey has been conducted.

A-Nocturnal Calling Amphibian (<i>Nocturnal Breeding Amphibian Calling Survey</i>)	Survey Count: 1	Obs Count: 1	Recent Survey: 2005
B-Cuckoo Playback Survey (<i>Riparian Playback Surveys for Cuckoos</i>)	Survey Count: 2	Obs Count:	Recent Survey: 2012



Land Cover Summary



1,917 Acres (0% of Montana)

Notes on and Appropriate Uses of Land Cover

The Land Cover data used in Map Viewer are based on classifications of 30-meter Landsat satellite imagery. The base data were classified as part of the national ReGAP project, using imagery from the late 1990s and early 2000s. Classification accuracy varies from system to system, but statewide and local assessments have not been completed to-date. Generally, systems occurring as small patches (e.g., fens, mountain mahogany shrublands) or those making up smaller percentages of various administrative boundaries (e.g. all of those listed under the Additional Limited Land Cover folder below) will be less accurately classified than systems occurring as matrices or large patches (e.g., mixed grass prairie, lodgepole pine forests). Similarly, areas where land use and land cover has changed significantly over the past decade may not be correctly classified. Users are cautioned that the appropriate scale for use of the data is 1:100,000. Accuracy improvements are ongoing. To submit updated information, please email mtnhp@mt.gov.



23% (437 Acres)

Forest and Woodland Systems

Conifer-dominated forest and woodland (xeric-mesic)

Great Plains Ponderosa Pine Woodland and Savanna

These ponderosa pine (*Pinus ponderosa*) occurrences differ from the Rocky Mountain Ponderosa Pine Woodland and Savanna systems in that they are typically found within the matrix of the Great Plains grassland systems. They are often surrounded by mixed-grass prairie, in places where available soil moisture is higher or soils are more coarse and rocky. Elevation ranges from 1,189 meters (3,900 feet) in southeastern Montana to 1,646 m (5,400 feet) in north-central Montana. Occurrences are usually on east- and north-facing aspects. These woodlands can be physiognomically variable, ranging from very sparse patches of trees on drier sites, to nearly closed-canopy forest stands on north slopes or in draws where available soil moisture is higher.

14% (267 Acres)

Human Land Use

Developed

Other Roads

County, city and or rural roads generally open to motor vehicles.



13% (252 Acres)

Shrubland, Steppe and Savanna Systems Sagebrush Steppe

Big Sagebrush Steppe

This widespread ecological system occurs throughout much of central Montana, and north and east onto the western fringe of the Great Plains. In central Montana, where this system occurs on both glaciated and non-glaciated landscapes, it differs slightly, with more summer rain than winter precipitation and more precipitation annually. Throughout its distribution, soils are typically deep and non-saline, often with a microphytic crust. This shrub-steppe is dominated by perennial grasses and forbs with greater than 25% cover. Overall shrub cover is less than 10 percent. In Montana and Wyoming, stands are more mesic, with more biomass of grass, and have less shrub diversity than stands farther to the west, and 50 to 90% of the occurrences are dominated by Wyoming big sagebrush with western wheatgrass (*Pascopyrum smithii*). Japanese brome (*Bromus japonicus*) and cheatgrass (*Bromus tectorum*) are indicators of disturbance, but cheatgrass is typically not as abundant as in the Intermountain West, possibly due to a colder climate. The natural fire regime of this ecological system maintains a patchy distribution of shrubs, preserving the steppe character. Shrubs may increase following heavy grazing and/or with fire suppression. In central and eastern Montana, complexes of prairie dog towns are common in this ecological system.



8% (162 Acres)

Human Land Use Developed

Low Intensity Residential

Includes areas with a mixture of constructed materials and vegetation. Impervious surfaces account for 20-50% of total cover. These areas most commonly include single-family housing units in rural and suburban areas. Paved roadways may be classified into this category.



6% (111 Acres)

Recently Disturbed or Modified Introduced Vegetation

Introduced Riparian and Wetland Vegetation

Areas where non-native vegetation dominates lands immediately adjacent to rivers and streams (riparian) or occupies 75% or more of a wetland. Typically this class describes Russian Olive along large rivers east of the Rocky Mountains.

6% (106 Acres)

Human Land Use Developed

Commercial / Industrial

Businesses, industrial parks, hospitals, airports; utilities in commercial/industrial areas.



5% (103 Acres)

Wetland and Riparian Systems Floodplain and Riparian

Great Plains Floodplain

This system occurs along the Missouri and Yellowstone Rivers and their larger tributaries, including parts of the Little Missouri, Clark's Fork Yellowstone, Powder, Tongue, Bighorn, Milk, and Musselshell rivers. These are the big perennial rivers of the region, with hydrologic dynamics largely driven by snowmelt and rainfall originating in their headwater watersheds, rather than local precipitation events. In the absence of disturbance, periodic flooding of fluvial and alluvial soils and channel migration will create depressions and backwaters that support a mosaic of wetland and riparian vegetation, whose composition and structure is sustained, altered and redistributed by hydrology. Dominant communities within this system range from floodplain forests to wet meadows to gravel/sand flats, linked by underlying soils and flooding regimes. In the western part of the system's range in Montana, the overstory dominant species is black cottonwood (*Populus balsamifera* ssp. *trichocarpa*) with narrowleaf cottonwood (*Populus angustifolia*) and eastern cottonwood (*Populus deltoides*) occurring as co-dominants in the riparian/floodplain interface near the mountains. Further east, narrowleaf cottonwood and Plains cottonwood become dominant. In relatively undisturbed stands, willow (*Salix* species), redosier dogwood (*Cornus sericea*) and common chokecherry (*Prunus virginiana*) form a thick, multi-layered shrub understory, with a mixture of cool and warm season graminoid species below.

In Montana, many occurrences are now degraded to the point where the cottonwood overstory is the only remaining natural component. The hydrology of these floodplain systems has been affected by dams, highways, railroads and agricultural ditches, and as a result, they have lost their characteristic wetland /riparian mosaic structure. This has resulted in a highly altered community consisting of relict cottonwood stands with little regeneration. The understory vegetation is dominated by non-native pasture grasses, legumes and other introduced forbs, or by the disclimax western snowberry (*Symphoricarpos occidentalis*) and rose (*Rosa* species) shrub community.



5% (101 Acres)

Forest and Woodland Systems Conifer-dominated forest and woodland (xeric-mesic)

Rocky Mountain Foothill Woodland-Steppe Transition

This inland Pacific Northwest ecological system occurs in the foothills of the Montana Rocky Mountains, where it forms a broad ecotone between true forests and true steppe, shrublands, or grasslands, typically on warm, dry, exposed sites too droughty to support a closed tree canopy. This is not a fire-maintained system. The "steppe" character results from a climate-edaphic interaction that results in a graminoid-dominated landscape with widely scattered trees; even in the absence of fire, a "woodland" or "forest" structure will not be obtained. Occurrences are found on all slopes and aspects; however, moderately steep to very steep slopes or ridgetops on southerly or western aspects are most common. They can be found on glacial till, glacio-fluvial sand and gravel, dune, basaltic rubble, colluvium, deep loess or volcanic ash-derived soils, with characteristic features of good aeration and drainage, coarse texture, and an abundance of mineral material. Ponderosa pine (*Pinus ponderosa*) or Douglas-fir (*Pseudotsuga menziesii*) are the predominant conifers. Limber pine (*Pinus flexilis*) may be present in some occurrences. In fire-protected transition areas with big sagebrush steppe systems, antelope bitterbrush (*Purshia tridentata*), Wyoming big sagebrush (*Artemisia tridentata* ssp. *wyomingensis*), big sagebrush (*Artemisia tridentata* ssp. *tridentata*), and three-tip sagebrush (*Artemisia tripartita*) may be common. Deciduous shrubs such as common ninebark (*Physocarpus malvaceus*), common snowberry

(*Symphoricarpos albus*), or birch leaf spirea (*Spiraea betulifolia*) may be abundant in occurrences west of the Continental Divide. Important grass species include bluebunch wheatgrass (*Pseudoroegneria spicata*), Sandberg's bluegrass (*Poa secunda*), needle and thread (*Hesperostipa comata*), needlegrass (*Achnatherum* species), and bottlebrush squirreltail (*Elymus elymoides*). This system is very similar to Northern Rocky Mountain Ponderosa Pine Woodland and Savanna, but with more widely scattered trees.



5% (94 Acres)

Human Land Use

Agriculture



Cultivated Crops

These areas used for the production of crops, such as corn, soybeans, small grains, sunflowers, vegetables, and cotton, typically on an annual cycle. Agricultural plant cover is variable depending on season and type of farming. Other areas include more stable land cover of orchards and vineyards.



4% (79 Acres)

Human Land Use

Developed



Developed, Open Space

Vegetation (primarily grasses) planted in developed settings for recreation, erosion control, or aesthetic purposes. Impervious surfaces account for less than 20% of total cover. This category often includes highway and railway rights of way and graveled rural roads.



3% (61 Acres)

Grassland Systems

Lowland/Prairie Grassland



Great Plains Mixedgrass Prairie

The system covers much of the eastern two-thirds of Montana, occurring continuously for hundreds of square kilometers, interrupted only by wetland/riparian areas or sand prairies. Soils are primarily fine and medium-textured. The growing season averages 115 days, ranging from 100 days on the Canadian border to 130 days on the Wyoming border. Climate is typical of mid-continental regions with long severe winters and hot summers. Grasses typically comprise the greatest canopy cover, and western wheatgrass (*Pascopyrum smithii*) is usually dominant. Other species include thickspike wheatgrass (*Elymus lanceolatus*), green needlegrass (*Nassella viridula*), blue grama (*Bouteloua gracilis*), and needle and thread (*Hesperostipa comata*). Near the Canadian border in north-central Montana, this system grades into rough fescue (*Festuca campestris*) and Idaho fescue (*Festuca idahoensis*) grasslands. Remnants of shortbristle needle and thread (*Hesperostipa curisetata*) dominated vegetation are found in northernmost Montana and North Dakota, and are associated with productive sites, now mostly converted to farmland. Forb diversity is typically high. In areas of southeastern and central Montana where sagebrush steppe borders the mixed grass prairie, common plant associations include Wyoming big sagebrush-western wheatgrass (*Artemisia tridentata* ssp. *wyomingensis*/ *Pascopyrum smithii*). Fire and grazing are the primary drivers of this system. Drought can also impact it, in general favoring the shortgrass component at the expense of the mid-height grasses. With intensive grazing, cool season exotics such as Kentucky bluegrass (*Poa pratensis*), smooth brome (*Bromus inermis*), and Japanese brome (*Bromus japonicus*) increase in dominance; both of these rhizomatous species have been shown to markedly decrease species diversity. Previously cultivated acres that have been re-vegetated with non-native plants have been transformed into associations such as Kentucky bluegrass (*Poa pratensis*)/western wheatgrass (*Pascopyrum smithii*) or into pure crested wheatgrass (*Agropyron cristatum*) stands.



2% (40 Acres)

Human Land Use

Agriculture



Pasture/Hay

These agriculture lands typically have perennial herbaceous cover (e.g. regularly-shaped plantings) used for livestock grazing or the production of hay. There are obvious signs of management such as irrigation and haying that distinguish it from natural grasslands. Identified CRP lands are included in this land cover type.

2% (34 Acres)

Human Land Use

Developed

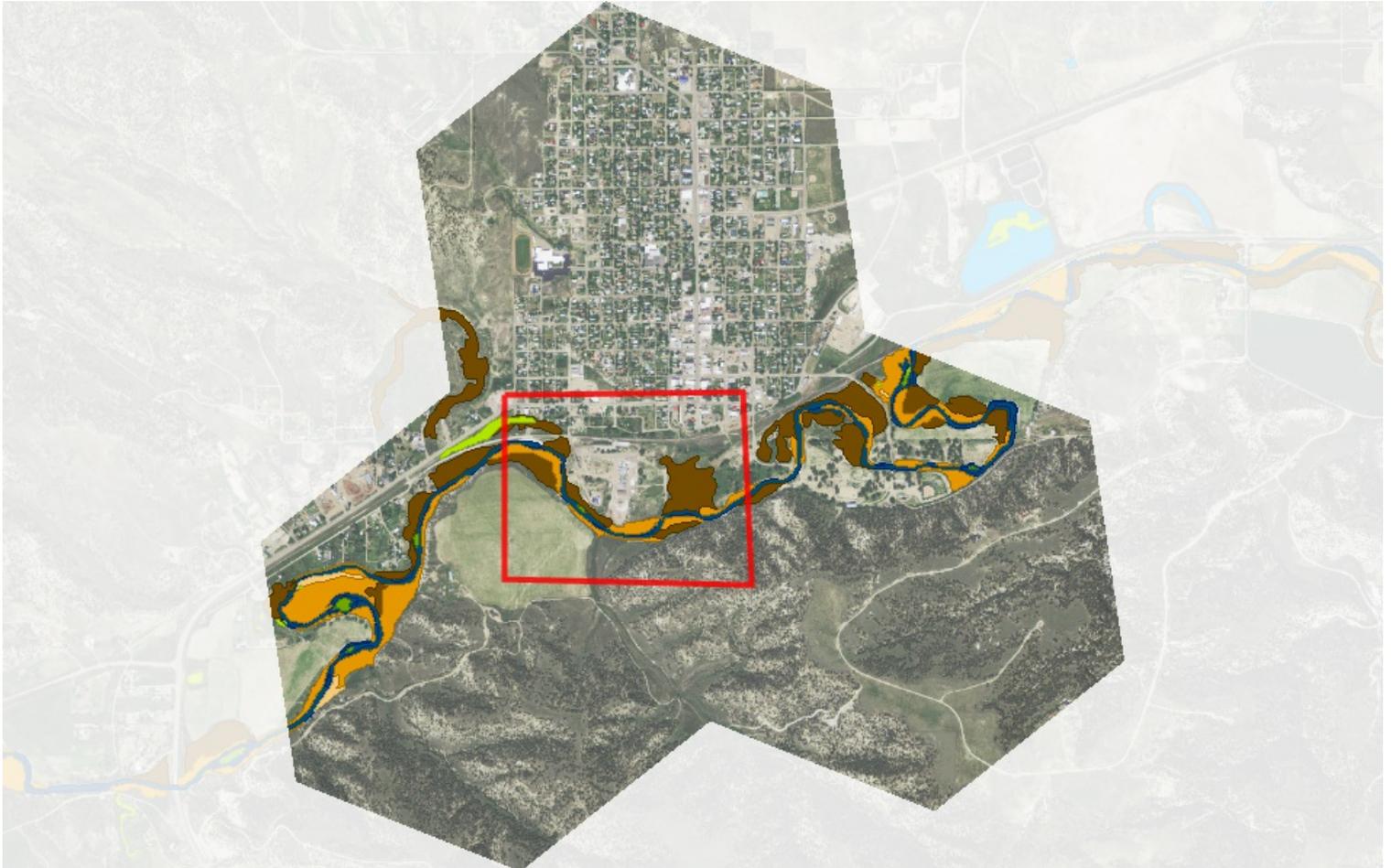


Major Roads

U.S. and State Highways that are not part of the National Highway System (NHS) Interstate network. This category includes entrance and exit ramps to NHS Interstate highways.



Wetland Summary



1,917 Acres (0% of Montana)

Notes on Appropriate Uses of Wetland and Riparian Mapping

Federal, State, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands differently than the NWI. MTNHP Wetland and Riparian Mapping data are intended for use in publications at a scale of 1:12,000 or smaller. Historic wetland mapping is intended for use in publications at a scale of 1:24,000 or smaller. Mapped wetlands do not represent precise wetland boundaries, and digital wetland data cannot substitute for an on-site determination of jurisdictional wetlands.

Wetland and Riparian Mapping

[Explain](#)

Palustrine

- PEM Emergent
- PSS Scrub-Shrub

Acres

- 3 Wetlands with erect, rooted herbaceous vegetation present during most of the growing season.
- 1 Wetlands dominated by woody vegetation less than 6 meters (20 feet) tall. Woody vegetation includes tree saplings and trees that are stunted due to environmental conditions.

Riverine (Rivers)

Lower Perennial

- R2UB Unconsolidated Bottom
- R2US Unconsolidated Shore

- 31 Stream channels where the substrate is at least 25% mud, silt or other fine particles.
- 8 Shorelines with less than 75% areal cover of stones, boulders, or bedrock and less than 30% vegetation cover. The area is also irregularly exposed due to seasonal or irregular flooding and subsequent drying.

Riparian

Lotic

- Rp1SS Scrub-Shrub

- 44 This type of riparian area is dominated by woody vegetation that is less than 6 meters (20 feet) tall. Woody vegetation includes tree saplings and trees that are stunted due to environmental

- Rp1FO Forested
- Rp1EM Emergent

conditions.

65 This riparian class has woody vegetation that is greater than 6 meters (20 feet) tall.

3 Riparian areas that have erect, rooted herbaceous vegetation during most of the growing season.



MONTANA Natural Heritage Program

A program of the Montana State Library's Natural Resource Information System operated by the University of Montana.



Latitude 46.42459 Longitude -108.51880
46.45652 -108.56565

Land Management Summary



1,917 Acres (0% of Montana)

Land Management Summary

[Explain](#)

	Ownership	Tribal	Easements	Other Boundaries (possible overlap)
Public Lands	163 Acres (9%)			
Local	163 Acres (9%)			
Local Government	163 Acres (9%)			
Local Government Owned	163 Acres (9%)			
Private Lands or Unknown Ownership	1,754 Acres (91%)			



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Latitude	Longitude
46.42459	-108.51880
46.45652	-108.56565

Biological Reports

Within the report area you have requested, citations for all reports and publications associated with plant or animal observations in Montana Natural Heritage Program (MTNHP) databases are listed and, where possible, links to the documents are included.

The MTNHP plans to include reports associated with terrestrial and aquatic communities in the future as allowed for by staff resources. If you know of reports or publications associated with species or biological communities within the report area that are not shown in this report, please let us know: mtnhp@mt.gov

- Bramblett, R.G., and A.V. Zale. 2002. Montana Prairie Riparian Native Species Report. Montana Cooperative Fishery Research Unit, Montana State University - Bozeman.
- McCann, S. 1974. **A four-year population study of *Peromyscus maniculatus* in Musselshell County, Montana**. Proceedings Montana Academy of Science 34:37-42.



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Montana Ecological Services Field Office
585 Shepard Way, Suite 1
Helena, MT 59601-6287
Phone: (406) 449-5225 Fax: (406) 449-5339

In Reply Refer To:

October 06, 2017

Consultation Code: 06E11000-2018-SLI-0014

Event Code: 06E11000-2018-E-00018

Project Name: Davis Mine Meathouse Road Reclamation Project

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the

human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Montana Ecological Services Field Office

585 Shepard Way, Suite 1

Helena, MT 59601-6287

(406) 449-5225

Project Summary

Consultation Code: 06E11000-2018-SLI-0014

Event Code: 06E11000-2018-E-00018

Project Name: Davis Mine Meathouse Road Reclamation Project

Project Type: MINING

Project Description: The project will include the salvaging of topsoil and removal of waste coal. The site is located on Meathouse Road in the City of Roundup, MT. 46.43874N, -108.54654W. NW4, NW4, T8N, R25E, S24.

Project Location:

Approximate location of the project can be viewed in Google Maps:

<https://www.google.com/maps/place/46.438684960813376N108.54618603268088W>



Counties: Musselshell, MT

Endangered Species Act Species

There is a total of 0 threatened, endangered, or candidate species on this species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

Critical habitats

There are no critical habitats within your project area under this office's jurisdiction.

Attachment B
Cultural Resources

DRAFT

Big Sky. Big Land. Big History.
Montana
Historical Society

May 9, 2018

Mr. James Strait
Montana Department of Environmental Quality
1520 East 6th Ave
P.O. Box 200901
Helena, MT 59620-0901

RE: Davis Mine Remediation
Musselshell County, Montana

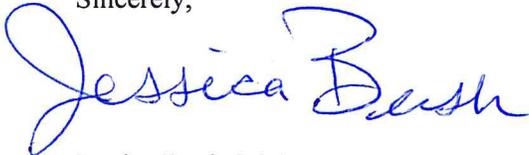
Dear Mr. Strait:

Thank you for the letter and additional information (received April 18, 2018) regarding the Davis Mine Remediation project in Musselshell County, Montana. We concur that cultural resource 24ML1055 is Not Eligible for the National Register of Historic Places.

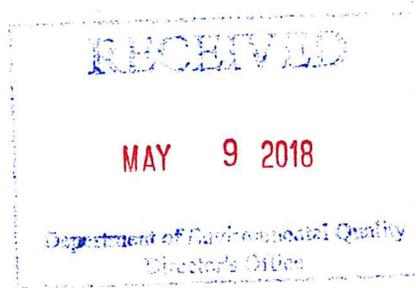
We also concur that the proposed undertaking will have No Adverse Effect on Historic Properties.

If you have any questions or concerns do not hesitate to contact me directly at (406) 444-0388 or JBush2@mt.gov. Thank you for consulting with us.

Sincerely,



Jessica Bush, M.A.
Review and Compliance Officer, Deputy SHPO
Montana State Historic Preservation Office



*Historic Preservation
Museum
Outreach & Interpretation
Publications
Research Center*

Attachment C
Public Comments

DRAFT

Public comments will be provided following the public comment period.

DRAFT