Biological Resources Report

Sun River Bridge Replacement
MT FLAP BOR 2980(1)
Lewis and Clark and Teton Counties, Montana

Prepared for
Federal Highway Administration
Western Federal Lands Highway Division

Prepared by
Herrera Environmental Consultants, Inc.

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Prepared for
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Western Federal Lands Highway Division
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INTRODUCTION

The Federal Highway Administration (FHWA) intends to complete the design and National Environmental Policy Act (NEPA) documentation for the Sun River Bridge Replacement project. The Partner Agencies consist of FHWA, Bureau of Reclamation (BOR), Bureau of Land Management (BLM), Greenfields Irrigation District (GID), and US Forest Service (USFS).

Herrera Environmental Consultants, Inc. (Herrera) prepared this Biological Resources Report to evaluate wildlife, aquatic resources and botanical resources present in the project vicinity and document the project's potential effects on these resources. Herrera biologists performed a background review and visited the site to identify wildlife habitat, noxious weeds, threatened and endangered species, and species of concern that could potentially be affected by the project.

Project Location

The proposed project is located 73 miles west of Great Falls, Montana, 19 miles west of Augusta, Montana, and 0.75 miles downstream from Greenfields Irrigation District Diversion Dam near Gibson Reservoir in Montana. Sun River Bridge crosses the Sun River and spans the county lines of Lewis and Clark County and Teton County, Montana (Figure 1). The approximate latitude and longitude coordinates for the project are N 47°37'06" and W 112°41'32" in Section 36 of Township 22 North and Range 9 West.

Project Description

The proposed project consists of replacing the existing single lane bridge spanning the Sun River (Figure 1). The existing bridge provides access to private and public lands and is used by GID to maintain irrigation facilities. The bridge was constructed in 1916 and is in poor condition, and its outdated design poses safety hazards and limitations to users. The new replacement bridge will meet current design and safety standards and will be constructed following an alignment separate from the existing alignment. The new alignment and approach roads will place the bridge at the top edges of the river canyon about 300 feet downstream of the existing bridge. The new bridge is a proposed single lane three span concrete bridge spanning the canyon with piers above the ordinary high water mark (OHWM). Earthwork will be required to construct approximately 1,300 feet of road needed to tie the new alignment with the existing roads. Following construction, the existing bridge would no longer be needed for vehicular access across the Sun River. The existing bridge may be removed or left in place, contingent upon available funding.

The area encompassing all potential project activities is referred to in this report as the *project area* (see Figure 2). Project details are provided in the sections below.

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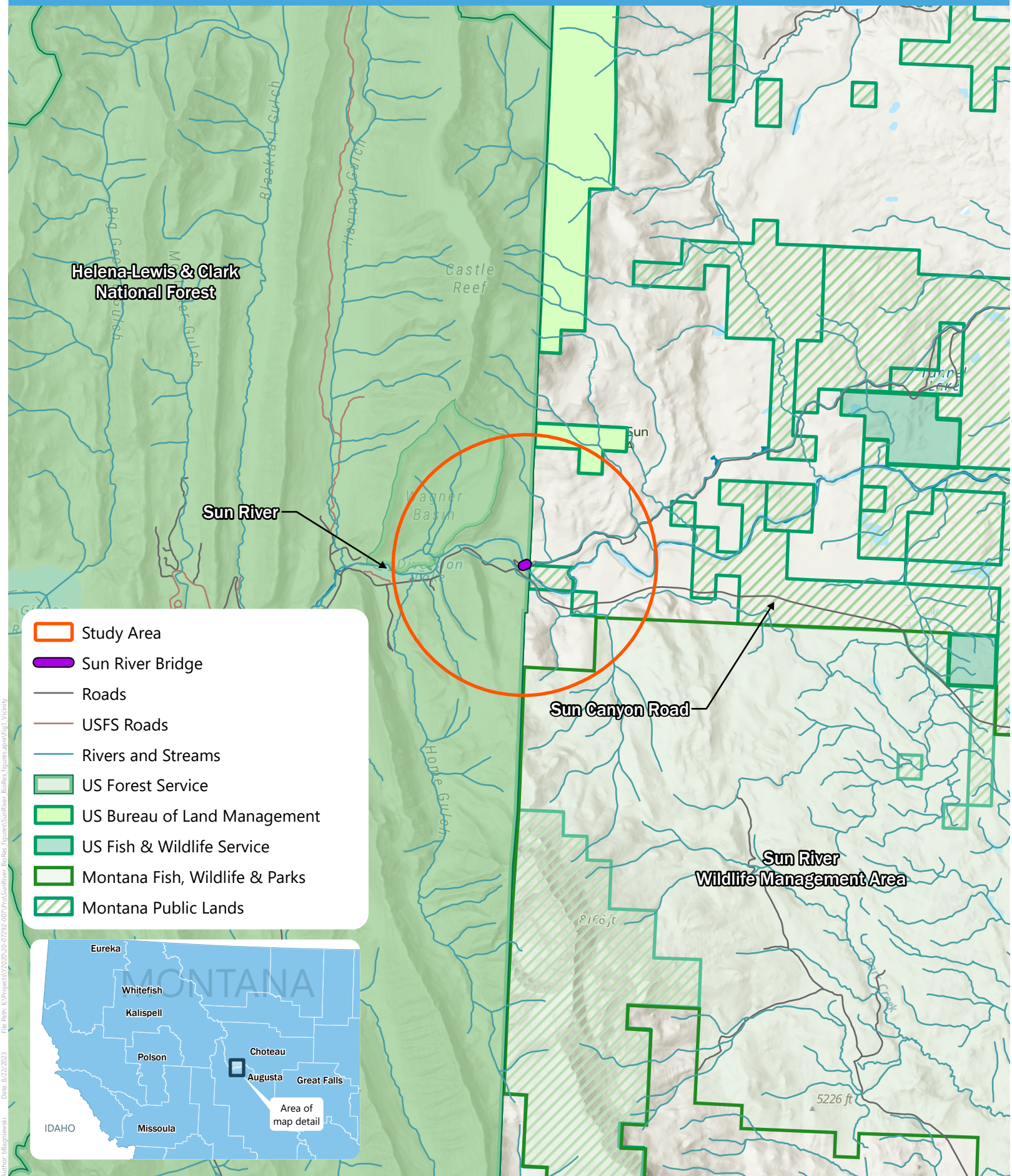
Figure 1.
Vicinity Map for the Sun River Bridge Replacement Project.



Produced by Herrera Environmental Consultants (herrerainc.com) | Sources: USGS, MNHP, MDT, Esri (Basemap)

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Author: bBagniewski

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Figure 2. Proposed Alignment and Construction Limits for the Sun River Bridge Replacement Project.

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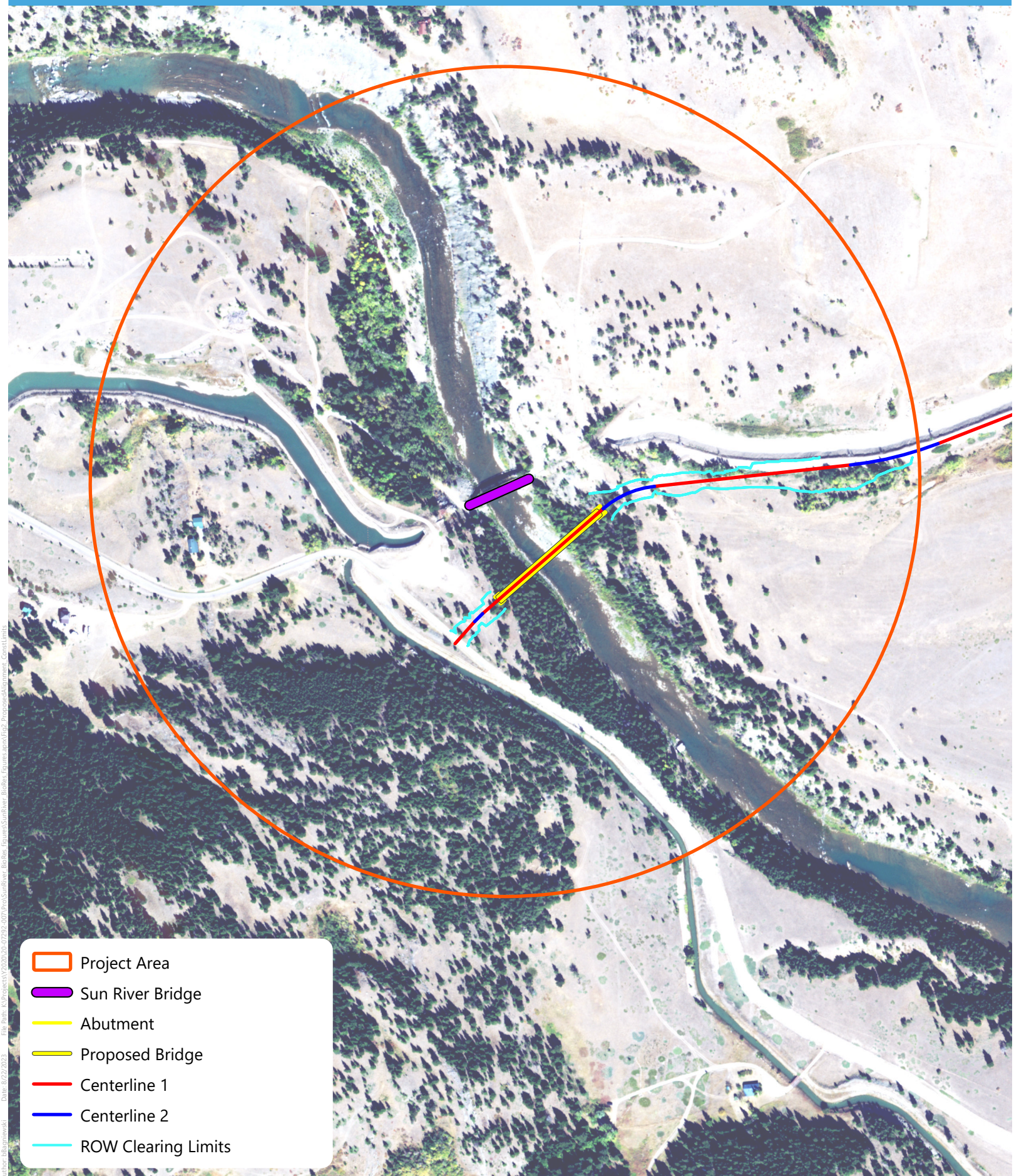

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Date: 8/22/2023
Author: bBagniewski

Produced by Herrera Environmental Consultants (herrerainc.com) | Sources: Montana NAIP (Aerial, 2021)

0 125 250 500 Feet

Bridge Details

The new bridge ends would be placed at the top of the river canyon on the west side and slightly below the top edge of the river canyon on the east side. The bridge length is estimated at approximately 455 feet and would consist of three bridge spans composed of prestressed deck bulb tee girders fitted with guard rails, with the concrete girder serving as the driving surface. The main span crossing the river would be 175 feet long, and the two side spans would each be 140 feet long. The bridge deck would be approximately 85 feet above the water surface, with the bottom chord elevation of the proposed bridge located above the lowest elevation of the existing bridge, resulting in result in a hydraulic opening greater than the existing opening.

Approach Roads

Two new approach roadways totaling approximately 1,300 feet in length with two 12-foot lanes and 2-foot shoulders would connect the new bridge to tie into existing roadways on either side of the Sun River. The grades of the new road would range from 0 percent to approximately 3 percent. The approaches would require approximately 20,000 cubic yards of earthwork along with approximately 4.0 acres of right-of-way acquisition to allow for the new road connection through public and private property. The gravel-surfaced roadway would be located within a variable right-of-way corridor to encompass the proposed side slopes and roadway drainage ditches. Fill material would be imported to create the roadbed.

Construction Access and River Diversion

On the east side of the river, construction access would be provided via an existing access route leading from the upper east side of the canyon down to the existing siphon at the east riverbank. Currently, this existing access route is infrequently used by GID to access a siphon release valve on the east bank and provide siphon maintenance. The route would be improved to facilitate construction access and left in place following completion of the project.

From the existing siphon on the east bank of the river, construction access is anticipated across an existing scour hole and along a gravel bar on the eastern shoreline. Reshaping of these features may be required to create a drivable surface for tracked equipment. Access would then need to be developed from the eastern shoreline up the river embankment to the foundation site approximately 10 feet above the OHWM.

To enable construction of the bridge foundation and pier on the western bank of the river, construction access across the river channel would be required since the steep topography of the western canyon walls prevents access. Coordination with GID would be conducted to determine the duration and amount of flow that can be controlled during construction. The normal operating season of the siphon is May through September. It may be possible to keep the siphon open through October to minimize flow in the Sun River.

The contractor may elect to divert river water to one side or the other using a temporary cofferdam constructed from river gravels or other stream diversion materials such as super sacks, water bladders, or

shoring to control the river. Diversion would enable a temporary work bridge or buried culverts to be placed across a narrowed river channel for access from the east to the west side of the river. Additionally, a diversion may be used to provide a dry work area on the west riverbank. After access across the river is no longer needed, river diversion and temporary crossing materials would be removed and streambed materials would be restored to pre-existing conditions.

Vegetation Clearing

Vegetation, consisting of upland habitat, would be cleared within the footprint of the new roadway alignment. Trees on both slopes of the river canyon would be topped to 10 feet vertical distance below the level of the new bridge and 10 feet horizontal distance on each side of the bridge. Vegetation would be flush cut on the existing GID access road on the east bank. A 15- by 15-foot square of vegetation would be removed for each of the bridge pier foundations.

Bridge Foundations

It is currently anticipated that foundations for the proposed bridge piers would consist of either drilled 10 to 12-foot diameter shafts or driven piles. The two proposed bridge pier foundations would be located approximately 5 to 15 feet outside of the ordinary high water mark (OHWM) of the active channel. The anticipated foundation type and layout would be determined based on the results of subsurface investigations and geotechnical site analysis.

Mechanically stabilized earth (MSE) wall-supported spread footings would be used for the east abutment to reduce the length of the bridge, reduce the earthwork required, and reduce the area of ground disturbance. The MSE wall will be constructed from compacted backfill, soil reinforcements, and facing components (such as wire faced or gabion basket systems) at the top of the slope at the east abutment. Excavation would be required to create a level foundation for the wall, and blasting may be required to construct the bridge abutments due to the presence of shallow bedrock.

Bridge Superstructure

Bridge spans between the abutments and piers would be either a single span or spliced sections. If spliced sections are used, it would be necessary to place temporary shoring towers during construction to support the girders during the splicing operation. Proposed splice locations may be 30 feet towards the river on either side of the intermediate bridge piers. Shoring towers would be created by installing four piles using pile driving or vibratory equipment and placing a cap on top of the piles.

Road Obliteration

The section of road on the west bank between the bridge and the hairpin turn and the section on the east bank between the bridge and the intersection with the private road at the top of the slope would be obliterated. These road sections would be ripped and seeded with a USFS-approved seed mix and blocked to prevent vehicle access.

Existing Bridge

Following construction, the existing bridge would no longer be needed for vehicular access across the Sun River. Two options are under consideration for the existing bridge.

Option 1 – Close the Existing Bridge to Vehicular Access and Maintain in Place

Under this option, the existing bridge and access roadways would remain in place under the ownership of BOR. Concrete barriers and signage would be used to block vehicular access across the bridge due to safety hazards. Routine maintenance would be required to preserve the bridge in place. However, if desired, minor rehabilitation could be conducted including repairs to the deck, abutments, railings, and structural strength to accommodate equestrian and pedestrian loading. Deck repair would include replacing the concrete deck panels with a new wooden deck that would provide a new secure surface for equestrians and pedestrians and reduce the deadload weight on the truss structure, possibly decreasing the extent of truss member strengthening required to support the structure. Additionally, repair or replacement of the abutments would be needed to provide stable bridge support and new railing elements would be needed to provide safe passage for bridge users.

As detailed in the Road Obliteration section above, portions of the existing access roads below the tie-in points with the new access roadways would be abandoned for vehicular use and reclaimed with vegetation. If the existing bridge is allowed to remain in place, the existing roadbeds could be retained for use as a pedestrian trail, with partial obliteration/reclamation to prohibit vehicular use.

Option 2 – Remove the Existing Bridge

A second option would be to remove the existing bridge. To minimize impacts to the river and the existing siphon buried below the streambed directly under the bridge, only the steel superstructure would be removed. The existing concrete piers would be allowed to remain standing in their current locations and would be maintained in place.

Netting would be placed under the bridge for fall protection and to catch large debris (rivet size and larger). A crane would be used to lift bridge sections as they are cut, and sections would be hauled offsite using a dump truck. A crane would access the work area by driving on the existing camp site access road on the west bank, then driving south along the riverbank. It may be necessary to divert the river to the east to create a drivable surface for the crane. Diversion methods would be the same as the options described for the west bank pier construction.

Option 2 is preferred to minimize ongoing maintenance labor and costs. However, bridge removal is contingent upon available funding. The Montana State Historic Preservation Office (SHPO) has concurred that the bridge is not eligible for listing in the National Register of Historic Places (NRHP) under the Section 106 of the National Historic Preservation Act (NHPA), and therefore no historic impacts would occur if the bridge were removed.

Staging

All activities associated with construction, including access and staging, would take place within the project area.

METHODS

Herrera reviewed background information and performed a reconnaissance field survey to document wildlife and botanical resources in the vicinity of the project.

Study Area

The study area was determined based on the existing bridge location and the proposed bridge alignment with the maximum distance of the potential effects of the project, estimated to be a 2-mile radius around the existing Sun River Bridge to encompass noise impacts from potential blasting (see Figure 1).

Background Review

Herrera performed a literature review to gather information on sensitive species and habitats relevant to the potential effects within the study area. The information reviewed specifically for this study includes areas beyond the study area to capture relevant conditions and provide context. Sources of background information included the following:

- USFWS's Information for Planning and Consultation (IPaC) official species list (USFWS 2023)
- Montana Natural Heritage Program (MNHP) Environmental Summary Report for biological resources in the study area (MNHP 2023a) (Appendix A)
- BLM Montana/Dakotas Special Status Species List for the Lewistown District (BLM 2020) (Appendix A)
- Draft Environmental Assessment Report for the Sun River Bridge Replacement Project prepared by TD&H Engineering (TD&H 2019a)
- Preliminary Engineering Report for the Sun River Bridge Replacement Project prepared by TD&H Engineering (TD&H 2019b)
- Site reconnaissance notes from April 24 and 25, 2023 prepared by Robert Peccia and Associates

Coordination

Prior to conducting field work, the following agency representatives were contacted for information on biological resources in the study area and recommended measures to minimize impacts on those resources.

- David Kemp, Wildlife Biologist, Helena-Lewis and Clark National Forest, Rocky Mountain Ranger District, Lincoln Ranger District, Forest Service (Personal communication [Email] on May 18, 2023. Phone: (406) 466-5341. Email: david.kemp@usda.gov)
- Matt Comer, Wildlife Biologist, BLM Lewistown Field Office (Personal communication [Email] May 22, 2023. Phone: 406-538-1925. Email: mcomer@blm.gov)
- Katie Vivian (Personal communication [e-mail] May 23, 2023), Fisheries Biologist with the Montana Fish, Wildlife & Parks, Region 4. Phone 406-466-5621. Email: KVivian@mt.gov
- Mike McGrath (Personal communication [email and telephone] 1/25/2023. Montana Ecological Services Office, U.S. Fish and Wildlife Service. Phone 406.430.9009. Email: mike_mcgrath@fws.gov

Habitat Mapping

Habitats were mapped at an appropriate scale to show their geographic distribution in the project area. Ground-truthing surveys were completed by walking through each habitat type and listing all plant species observed to verify the results of background review and aerial photography interpretation.

RESULTS

Results of the background review and field survey are included below for terrestrial, aquatic and botanical resources in the study area. Potential impacts and general mitigation recommendations are included in each section.

Terrestrial and Aquatic Resources

General terrestrial and aquatic habitats are discussed below. Potential presence of federally listed, state species of concern and BLM sensitive species is provided as well as potential impacts and general mitigation recommendations.

Habitats/Land Cover

The Sun River bridge crossing is located within the Lewis and Clark National Forest and is near the Sun River Wildlife Management Area (WMA) and Bob Marshall Wilderness. The Sun River WMA is an important winter range and migration corridor for the Sun River elk herd.

Ecological systems, as defined by MNHP, are shown in Table 1 based on MNHP-mapping. Percentage of systems in the study area are shown to provide a landscape context.

Table 1. Ecological Systems in the Study Area

Ecological System	Percentage of Land Cover in the Study Area	Description
Rocky Mountain Lower Montane Foothill and Valley Grassland	37%	This ecological system is characterized by cool-season perennial bunch grasses and mixed forbs. This system covers the most significant portions of the study area and are upland of Sun River bridge crossing. Dominant plants are rough fescue (*Festuca campestris*), bluebunch wheatgrass (*Pseudoroegneria spicata*), Kelsey's phlox (*Phlox kelseyii*), waxleaf penstemon (*Penstemon nitid*us), and numerous other forbs.
Rocky Mountain Dry-Mesic Montane Mixed Conifer Forest	13%	This ecological system occurs throughout Montana. Immediately east of the Continental Divide, in north-central Montana, it occurs at montane elevations. This system occurs in the study area immediately adjacent to Sun River. Douglas-fir (*Pseudotsuga menziesii)* and lodgepole pine (*Pinus contorta*) are the dominant conifers in the study area. Shrubs in the understory include common snowberry (*Symphoricarpos albus*), chokecherry (*Prunus virginiana*), red-osier dogwood (*Cornus sericea*), and Rocky Mountain maple (*Acer glabrum*).

Table 1 (continued). Ecological Systems in the Study Area		
Ecological System	**Percentage of Land Cover Within Two Miles of the Study Area**	**Description**
Rocky Mountain Subalpine Deciduous Shrubland	12%	This shrubland ecological system is found in northwestern and west-central Montana and forms within upper montane Douglas-fir and Engelmann spruce-subalpine fir (*Picea engelmanii/ Abies lasiocarpa*) forests. This system occurs adjacent to the Sun River downstream from the Sun River bridge crossing within the study area. Common shrub species include rusty leaf menziesia (*Menziesia ferruginea*), black twinberry (*Lonicera involucrata*), alder buckthorn (*Rhamnus alnifolia*), prickly currant (*Ribes lacustre*), thimbleberry (*Rubus parviflorus*), Sitka alder (*Alnus viridis*), cascade mountain ash (*Sorbus scopulina*), Sitka mountain ash (*Sorbus sitchensis*), and thinleaf huckleberry (*Vaccinium membranaceum*).
Rocky Mountain Subalpine-Upper Montane Grassland	9%	This ecological system is characterized by a diversity of cool season forbs and bunch grass species. In Montana, this system generally occurs as two plant communities: a rough fescue-Idaho fescue *(Festuca campestris-Festuca idahoensis)* association occurring on moister sites, such as the north and east-facing slopes and benches in the mountains; and the Idaho fescue-bluebunch wheatgrass association occurring on drier sites. such as ridges, hilltops, and south and west facing slopes and benches. Noxious species invasion, fire suppression, heavy grazing, and oil and gas development are major threats to this system.
Rocky Mountain Subalpine Dry-Mesic Spruce-Fir Forest and Woodland	5%	Engelmann spruce and subalpine fir make up a substantial part of the montane and lower subalpine forests of the Montana Rocky Mountains and mountain island ranges of north-central and west-central Montana. In northern Montana, Engelmann spruce hybridizes with its boreal counterpart, white spruce (*Picea glauca*). Douglas-fir, lodgepole pine *(Pinus contorta*), and western larch (*Larix occidentalis*) (west of the Continental Divide) are seral but often present in these forests.
Rocky Mountain Cliff, Canyon, and Massive Bedrock	5%	This ecological system of barren and sparsely vegetated landscapes is found from foothill to subalpine elevations throughout the Rocky Mountains and island mountain ranges of Montana. This system is characterized by dry sparsely vegetated plant cover and occurs on steep cliff faces, in narrow canyons, on smaller rock outcrops, and on unstable scree and talus slopes.
Rocky Mountain Montane-Foothill Deciduous Shrubland	4%	This ecological system is found in the lower montane and foothill regions of western Montana, and north and east into the northern Rocky Mountains. These shrublands typically occur below tree line, within surrounding low-elevation grasslands and sagebrush shrublands. This system occurs at the west end of the action area. Dominant shrubs are antelope bitterbrush *(Purshia tridentata*), Wood's rose (*Rosa woodsii*) and silver sage (*Artemisia argentea*).
Rocky Mountain Lodgepole Pine Forest	2%	This forested system is widespread in upper montane to subalpine zones of the Montana Rocky Mountains, and east into island ranges of north-central Montana and the Bighorn and Beartooth ranges of south-central Montana. These are montane to subalpine forests where the dominance of lodgepole pine is related to fire history and topoedaphic conditions. In western Montana, there are a number of commonly occurring tree species in later seral stages, including Douglas-fir, western larch western white pine (*Pinus monticola*), western red cedar (*Thuja plicata*), grand fir (*Abies grandis*) and western hemlock (*Tsuga heterophylla*).

Table 1 (continued). Ecological Systems in the Study Area		
Ecological System	**Percentage of Land Cover Within Two Miles of the Study Area**	**Description**
Aspen Forest and Woodland	1%	This ecological system is more common in the southern and central Rocky Mountains, but occurs in the montane and subalpine zones throughout much of Montana north into Canada. This system describes mesic forests and woodlands dominated by quaking aspen (*Populus tremuloides*) without a significant conifer component (<25% relative tree cover).
Great Plains Floodplain	1%	This system occurs along the Sun River. 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
Alpine Bedrock and Scree	1%	This system occurs on mountain summits and the steep slopes immediately below summits throughout the Rocky Mountains and island mountain ranges of central and southern Montana. Typically, there is sparse (less than 10%) cover of forbs, grasses, and low shrubs, with exposed, unstable scree, talus and bedrock constituting the remainder of cover. Diverse crustose and foliose lichen cover is high (often greater than 50%) on exposed talus and bedrock Soils on these windy, unproductive sites are very poorly developed, often only occurring in fractures of bedrock.
Northern Rocky Mountain Lower Montane Riparian Woodland and Shrubland	1%	This ecological system is found throughout the Rocky Mountain and Colorado Plateau regions. In Montana, this system is found at low to mid elevation throughout the mountains and foothills. Black cottonwood is the key indicator species. Other dominant trees may include boxelder maple (*Acer negundo*), narrowleaf cottonwood, eastern cottonwood (*Populus deltoides*), Douglas-fir, peachleaf willow (*Salix amygdaloides*), or Rocky Mountain juniper (*Juniperus scopulorum*).
Aspen and Mix Conifer Forest	1%	This system occurs in north-central Montana in the Big Snowy Mountain range on gentle to steep mountain slopes. Conifers in this system include Douglas-fir, subalpine fir , Engelmann spruce and lodgepole pine. Common shrubs include serviceberry (*Amelanchier alnifolia*), creeping Oregon grape (*Mahonia repens*), chokecherry, Woods' rose , birch-leaf spiraea (*Spiraea betulifolia*), and snowberry (*Symphoricarpos* species).
Other	<1%	The following systems make up less than 1 percent of the study area: Great Plains Mixedgrass Prairie, Insect-Killed Forest, Rocky Mountain Mesic Montane Mixed Conifer Forest, Rocky Mountain Subalpine-Montane Mesic Meadow, Rocky Mountain Subalpine Mesic Spruce-Fir Forest and Woodland, Rocky Mountain Foothill Limber Pine - Juniper Woodland, Alpine-Montane Wet Meadow, Rocky Mountain Subalpine-Montane Fen, Rocky Mountain Subalpine Woodland and Parkland, Alpine Fell-Field, Emergent Marsh.

General Terrestrial Wildlife

The study area and vicinity encompass a wide range of habitats, which remain highly productive throughout the year. Each of these diverse habitat types provides essential support for numerous wildlife species. Within the Lewis and Clark National Forest and Sun River WMA, adjacent to the study area, a

variety of wildlife species have been observed. Examples include pronghorn (*Antilocapra americana*), elk (*Cervus canadensis*), moose (*Alces alces*), bighorn sheep (*Ovis canadensis*), mule deer (*Odocoileus hemionus*), and whitetail deer (*Odocoileus virginianus*). Additionally, the area is home to various species of bats, water birds, raptors, as well as large carnivores like grizzly bears (*Ursus arctos*) and black bears (*Ursus americanus*).

During the site visit, Herrera biologists documented the following observations:

- Several birds including ruby-crowned kinglet (*Regulus calendula*), yellow warbler (*Setophaga petechia*), belted kingfisher (*Megaceryle alcyon*), warbling vireo (*Vireo gilvus*) vocalizing in the vicinity of the study area
- Carcass of a large ungulate at the bank of Sun River

Aquatic Habitats and Species

The Sun River originates at the confluence of the North and South Forks of the Sun River at Gibson Reservoir. The river flows east out of Gibson Dam, through a mountainous canyon to the Sun River Diversion Dam, then through a steep canyon before flowing onto the high plains characterized by low mounds, ridges, and potholes interspersed with level beds of glacial lakes (BOR 2023). The Sun River flows about 130 miles before its confluence with the Missouri River near Great Falls.

Pishkun Canal originates upstream of the existing bridge at Sun River Diversion Dam (Figure 3). At the existing bridge location, the canal crosses the Sun River via a buried concrete siphon underneath the Sun River. The Pishkun Canal has capacity of 1,400 cfs and is operational from April to September. This canal supplies irrigation water to the Greenfield Irrigation District (BOR 2023. TDH 2019b).

The Willow Creek Feeder Canal is diverted off of the Pishkun Canal just upstream from the siphon. The canal feeds the Willow Creek Reservoir, approximately 11 miles southeast of the diversion point. Water from the reservoir flows back into the Sun River (BOR 2023).

The Sun River drainage contains populations of native and non-native fish. Native species include brook stickleback (*Culaea inconstans*), burbot (*Lota lota*), fathead minnow (*Pimephales promelas*), lake chub (*Couesius plumbeus*), longnose dace (*Rhinichthys cataractae*), mountain sucker (*Catostomus platyrhynchus*), mountain whitefish (*Prosopium williamsoni),* rocky mountain sculpin (*Cottus bondi*), stonecat (*Noturus flavus*), and white sucker (*Catostomus commersonii).* None of these are designated as MNHP species of concern. Non-native species are also present including brown trout (*Salmo trutta*), rainbow trout (*Oncorhynchus mykiss*), common carp (*Cyprinus carpio*), northern pike (*Esox lucius*), and tiger muskellunge (*Esox masquinongy x lucius*) (MFWP 2023; MNHP 2023b).

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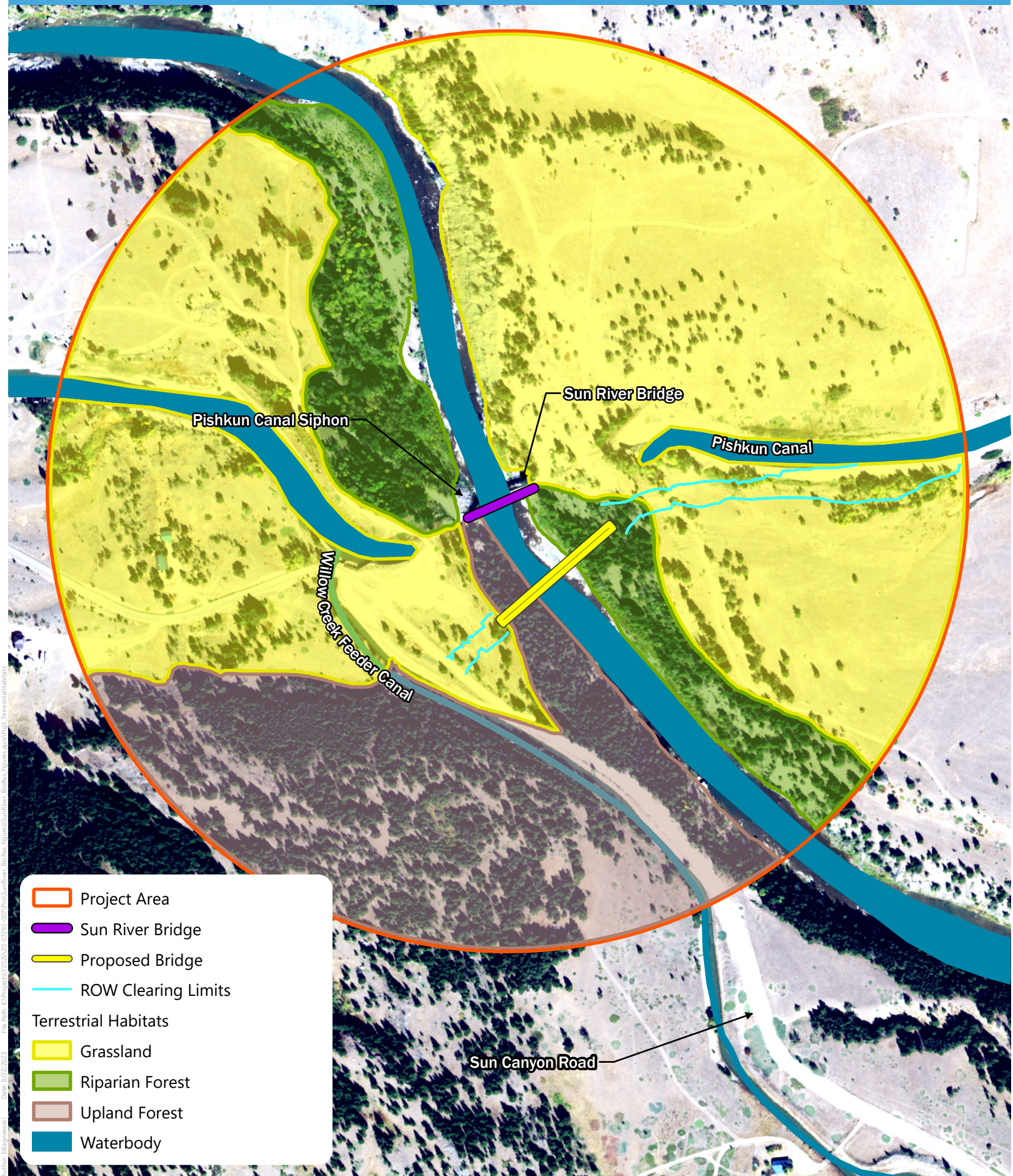
Figure 3.
Aquatic Resources and Terrestrial Habitats in the Project Area.



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Date: 8/22/2023
Author: bBagniewski

U.S. Fish and Wildlife Service Listed Species

According to the USFWS IPaC resource list five federally listed species have been documented or could potentially occur in the study area (USFWS 2023a).

- Grizzly bear (*Ursus arctos horribilis*) – Threatened
- Canada lynx (Lynx canadensis) – Threatened
- Whitebark pine (*Pinus albicaulus*) – Threatened
- North American wolverine (*Gulo gulo luscus*) – Proposed Threatened
- Monarch butterfly (*Danaus plexippus*) - Candidate

These species and potential project impacts and conservation measures are discussed in detail in the Biological Assessment for this project (Herrera 2023) and will not be discussed further in this report. There is no designated or proposed critical habitat in the action area (USFWS 2023b).

Species of Concern, Sensitive Species and Species of Conservation Concern

A BLM biologist conducted a survey of the planned approach roads on August, 1, 2023 and did not observe any raptor nests (personal communication Andrew Oestreich, wildlife biologist, BLM Lewistown Field Office).

Table 2 presents documented occurrences of MNHP species of concern and BLM sensitive species in the study area based on MNHP data. The study area may also include other species of concern and sensitive species that could potentially occur. A full list of species occurrences is included in the MNHP Environmental Summary Report Appendix A. The locations of known bald and golden eagle nests within the study area are also included in Appendix A. The BLM sensitive species list is included in Appendix A.

The Helena-Lewis and Clark National Forest no longer recognizes regional forester sensitive species since signing of the current Forest Plan. Those species were replaced with Species of Conservation Concern (SCC Species). Those species are now only the flammulated owl and Lewis's woodpecker. The MNHP database does not show occurrence of those species and there is no sufficient quality habitat present to support them in the study area (personal communication David Kemp, Wildlife Biologist, Helena-Lewis and Clark National Forest).

Table 2. Wildlife Species of Concern and Sensitive Species Occurrence					
Common Name	**Species**	**State Rank[a]**	**State Species of Concern**	**BLM Sensitive Species Lewistown Field Office**	**Occurrences**
Northern goshawk	*Accipiter gentilis*	S3	SOC	Not listed	Latest observation documented in June 2022 (MNHP 2023b)
Golden eagle	*Aquila chrysaetos*	S3	SOC	SENSITIVE	Several observations documented with the latest in 2018 (MNHP 2023b)
Veery	*Catharus fuscescens*	S3B	SOC	SENSITIVE	Latest occurrence observed in June of 2021 (MNHP 2023b)
Cassin's finch	*Haemorhous cassinii*	S3	SOC	Not listed	One occurrence documented in June 1996 (MNHP 2023b)
Bald Eagle	*Haliaeetus leucocephalus*	S4	SSS	SENSITIVE	Several occurrences documented with the latest in May 2021 (MNHP 2023b)
Gray-crowned rosy-finch	*Leucosticte tephrocotis*	S2	SOC	Not listed	One occurrence documented in November 2007 (MNHP 2023b)
Clark's nutcracker	*Nucifraga columbiana*	S3	SOC	Not listed	Several occurrences documented with the latest in April 2022 (MNHP 2023b)
Eastern red bat	*Lasiurus borealis*	S3B	SOC	SENSITIVE	One occurrence documented in August 2015 (MNHP 2023b)
Hoary bat	*Lasiurus cinereus*	S3B	SOC	SENSITIVE	Several occurrences documented with the most recent in September 2015 (MNHP 2023b)
Long-eared myotis	*Myotis evotis*	S3	SOC	Not listed	Several occurrences documented with the most recent in May 2016 (MNHP 2023b)
Little brown myotis	*Myotis lucifugus*	S3	SOC	Not listed	Several occurrences documented with the most recent in May 2016 (MNHP 2023b)
Fringed myotis	*Myotis thysanodes*	S3	SOC	SENSITIVE	One occurrence documented in June 1999 (MNHP 2023b)

Table 2 (continued). Wildlife Species of Concern and Sensitive Species Occurrence

Common Name	Species	State Rank[a]	State Species of Concern	BLM Sensitive Species Lewistown Field Office	Occurrences
Long-legged myotis	*Myotis volans*	S3	SOC	Not listed	Most recent occurrence documented July 2008 (MNHP 2023b)
Preble's shrew	*Sorex preblei*	S3	SOC	Not listed	Most recent occurrence documented August 1998 (MNHP 2023b)
Grizzly bear	*Ursus arctos*	S2S3	SOC	Not listed	One occurrence documented in 1985 by MNHP (MNHP 2023b). Species occurrence represents areas delineated by USFWS that encompass both home ranges and potential transitory movements based on verified sightings (MNHP 2023a).
Wolverine	*Gulo gulo*	S3	SOC	SENSITIVE	Confirmed area of occupancy supported by recent (post-1980) observations of adults or juveniles within 6 miles (MNHP 2023a).
Fisher	*Pekania pennanti*	S3	SOC	Not listed	Confirmed area of occupancy based on the documented presence of adults or juveniles within tracking regions containing core habitat for the species (MNHP 2023a).

[a] State Status and Rank codes:

S1: At high risk because of extremely limited and/or rapidly declining population numbers, range and/or habitat, making it highly vulnerable to global extinction or extirpation in the state.

S2: At risk because of very limited and/or potentially declining population numbers, range and/or habitat, making it vulnerable to global extinction or extirpation in the state.

S3: Potentially at risk because of limited and/or declining numbers, range and/or habitat, even though it may be abundant in some areas.

S4: Apparently secure, though it may be quite rare in parts of its range, and/or suspected to be declining.

Potential Impacts

Noise and visual disturbance from use of heavy equipment could directly result in mortality or injury of small animal species, such as birds, rodents, and amphibians, especially if nests or young are present. Increased traffic associated with construction activities could heighten the potential for wild-life-vehicle collisions on Sun Canyon Road.

Improperly stored food or petroleum products could attract bears and other wildlife to the construction zone creating a potential human/animal conflict. In addition, bears could be attracted to construction equipment and can damage hoses and seats. Bighorn sheep could be attracted to the construction site due to leaking antifreeze.

It is anticipated that approximately 1.8 acres of habitat will be temporarily cleared during construction. Birds covered under the Migratory Bird Treaty Act (MBTA) could use the habitat for nesting or foraging and could be affected by vegetation removal, which would reduce nesting and foraging opportunities in the immediate vicinity of the project. Vegetation removal may also temporarily affect the availability of suitable habitat for other wildlife species. However, species relying on the habitats within the vicinity of the project for foraging purposes would likely relocate during the construction phase therefore effects will likely be minor and short term until the revegetation following construction reaches maturity.

Permanent impacts on vegetation would occur due to construction of 1,300 feet of road needed to tie in the new bridge. The impact of loss of this habitat is unlikely to be significant, as similar abundant habitat exists in the study area.

As part of the construction process, blasting may be needed to facilitate excavation. The wildlife within the study area would likely avoid the vicinity during this activity but injury or mortality could occur due to falling rock.

Temporary water quality impacts (turbidity) could occur due to sedimentation during installation and removal of culverts for river diversion. Also, installation and removal of temporary fill for work bridges, temporary access roads and shoring towers needed for construction of the new bridge could cause temporary turbidity.

Placement of a temporary road or bridge for access across the river would change the aquatic habitat in the immediate vicinity of the structure, but effects would be minor and localized. Driving across the river could impact water quality if petroleum products come in contact with the river.

Temporary aquatic habitat impacts could occur during construction. Work bridges could change the habitat in a localized area by shading the water surface. The work bridges, temporary access roads and shoring towers will be removed after construction is complete, and the river channel will be regraded to the original contours therefore no permanent changes to aquatic habitat or channel form would occur.

General Mitigation Recommendations

Noise and Visual Disturbance Management:

- Schedule work between 6 am and 9 pm to minimize nighttime disturbance to wildlife.
- Schedule construction activities, including blasting, to minimize disruptions during sensitive periods and breeding seasons.
- All construction equipment will be equipped with adequate mufflers to reduce noise.

Bear Attractant Management:

- Food, fuel, or other attractants will be stored in a manner that does not attract bears. Contractor-supplied garbage bins must be bear proof.
- Gasoline, oil, or other petroleum products should not be left unattended outside of vehicles or on the ground.

Sheep Attractant Management:

- Ensure that all vehicles and equipment are free from leaks, and if any leaks occur, promptly remove them from the project area and/or get them repaired.
- Contain and clean up spills to prevent the spill areas from becoming major attractants.
- Secure clothing, shoes, and tool handles out of the reach of sheep, and other wildlife.
- Ensure portable toilets are strapped down or otherwise secured to the ground to prevent spillage.

Migratory Birds and Eagles

- Any shrub or tree removal must be conducted in compliance with the MBTA and the Bald and Golden Eagle Protection Act. Vegetation clearing should take place outside the nesting season when no active nests are present. For reference, most migratory bird nesting activity along the Missouri River occurs during the period of April 1 to July 15 (USFWS 2011).
- If clearing will occur during nesting season, a nesting survey by qualified biologist should be done before work starts to ensure there are no active nests within clearing limits.

Revegetation and Habitat Restoration:

- Remove only those trees and shrubs in direct conflict with the permanent construction limits; and
- Where possible, do not remove, but trim trees and shrubs as necessary for equipment access and construction activities.
- Ensure prompt reclamation and revegetation of cleared areas with native plant species to restore habitat quality and connectivity.

- If BLM Boundary fence is removed as part of construction, it will need to be reconstructed to the following wildlife friendly standards: top wire 42 inches high, second wire 30 inches high, third wire 22 inches high, and bottom wire 16 inches high. The bottom wire should be smooth. Only the southeast portion of fence should be reconstructed.
- No gates should be constructed other than the existing access gate to the two-track road on BLM managed lands.
- Equipment and materials should not be stored on BLM managed lands except within the designated BLM ROW area.

Aquatic Habitat Protection

- Work during low flow conditions
- Implement erosion control measures to prevent sedimentation and water quality degradation in Sun River.
- Prevent sediment, petroleum products, chemicals, and other liquids or solid materials from entering the Sun River.
- Check equipment daily for leaks, and repair leaks immediately.

Botanical Resources

Habitats and plant species observed in the project area are documented below. Potential impacts and general mitigation recommendations are included for federally listed, state species of concern, USFS species of conservation concern and BLM sensitive species.

Habitats and Plant Species

Three habitats were documented in the project area including Upland Forest, Riparian and Grassland. These plant communities, shown on Figure 3 and in the photos in Appendix B, are generally consistent with the MNHP land cover types described above for the Rocky Mountain Lower Montane Foothill and Valley Grassland and the Northern Rocky Mountain Dry-Mesic Montane Mixed Conifer Forest. The riparian zone is distinguished from the mixed conifer forest by the presence of moisture dependent shrub and tree species.

BLM conducted a site visit on August 1, 2023, within the clearing limits for the planned approach roads. No whitebark pine was observed within the surveyed area (personal communication Andrew Oestreich, wildlife biologist, BLM Lewistown Field Office). No whitebark pine was observed in the study area by Herrera biologists during the site visit in May 2023.

A complete list of plant species observed, and their associated habitats is provided in Table 3.

Table 3. Plant List for the Sun River Bridge Replacement Project				
Common Name	**Scientific Name**	**Grassland**	**Upland Forest**	**Riparian**
Grasses				
Orchardgrass	*Dactylis glomerata*	x		
Rough fescue	*Festuca campestris*	x		
Western wheatgrass	*Pascopyrum smithii*	x		
Kentucky bluegrass	*Poa pratensis*	x		
Bluebunch wheatgrass	*Pseudoroegneria spicata*	x		
Forbs				
Angelica	*Angelica arguta*			x
Common yarrow	*Achillea millefolium*	x		
Rosy pussytoes	*Antenaria rosea*	x		
Fringed sage	*Artemisia frigida*	x		
White sage	*Artemisia ludoviciana*	x		
Arrowleaf balsamroot	*Balsamorhiza saggitata*	x		
Spotted knapweed	*Centaurea stoebe*	x		
Common mouse-ear chickweed	*Cerastium arvense*	x		
Tapertip hawksbeard	*Crepis acuminata*	x		
Buttecandle	*Cryptantha celosioides*	x		
Sulphur-flower buckwheat	*Eriogonum umbellatum*	x		
Old man's whiskers	*Geum triflorum*	x		
Blue flax	*Linum lewisii*	x		
Puccoon	*Lithospermum canescens*	x		
Fernleaf biscuitroot	*Lomatium dissectum*	x		
Bigseed biscuitroot	*Lomatium macrocarpum*	x		
Nineleaf biscuitroot	*Lomatium triternatum*	x		
Silvery lupine	*Lupinus argenteus*	x		
Starry false solomon seal	*Maianthemum stellatum*		x	
Wild bergamot	*Monarda fistulosa*		x	
Field locoweed	*Oxytropis campestris*	x		
Yellow penstemon	*Penstemon confertus*	x		
Fuzzytongue penstemon	*Penstemon eriantherus*	x		
Waxleaf penstemon	*Penstemon nitidus*	x		
Phlox	*Phlox hoodii*	x		
Jacob's ladder	*Polemonium pulcherrimum*	x		
Mountain deathcamas	*Zigadenus elegans*	x		
Larkspur	*Delphinium bicolor*	x		

Table 3 (continued). Plant List for the Sun River Bridge Replacement Project				
Shrubs				
Rocky Mountain maple	*Acer glabrum*			x
Serviceberry	*Amelanchier alnifolia*		x	
Redosier dogwood	*Cornus sericea*			x
Silverberry	*Elaeagnus commutata*			x
Creeping juniper	*Juniperus horizontalis*		x	
Chokecherry	*Prunus virginiana*		x	
Skunkbush sumac	*Rhus trilobata*	x	x	
Wax currant	*Ribes cereum*		x	
Gooseberry	*Ribes sp.*			x
Wood's rose	*Rosa woodsii*	x	x	
Booth's willow	*Salix boothii*			x
Coyote willow	*Salix exigua*			x
Buffaloberry	*Shepherdia canadensis*		x	
Snowberry	*Symphoricarpos albus*		x	x
Trees				
Cottonwood	*Populus balsamifera*			x
Douglas-fir	*Pseutsuga menziessii*		x	x
Lodgepole pine	*Pinus contorta*		x	x
Limber pine	*Pinus flexilis*	x		
Vines				
Western white clematis	*Clematis ligustifolia*		x	

Botanical Species of Concern and Sensitive Species

Herrera biologists conducted a reconnaissance-level survey of the project area for Montana state and Helena-Lewis and Clark National Forest species of conservation concern with documented occurrences within two miles of the bridge (study area). No BLM-listed sensitive species were listed as occurrences in the MNHP data. No species of concern were observed, but the timing of the field survey did not coincide with the window for observing many of the listed plant species. Therefore, it was necessary to rely on MNHP records of past observations, suitable habitat descriptions, and observations of current habitat to determine the likelihood of occurrence in the project area (see Table 4).

Table 4. Botanical Species of Concern and Sensitive Species					
Common Name	**Species**	**State Rank**	**State Species of Concern**	**Helena-Lewis&Clark National Forest Species of Conservation Concern**	**Likelihood of Occurrence in the Project Area**
Round-leaved Orchis	*Amerorchis rotundifolia*	S3	SOC	SCC	Not likely. Occurs in spruce forest around seeps or along streams, often in soil derived from limestone. No spruce forest habitat occurs in the project area.
Small Yellow Lady's-slipper	*Cypripedium parviflorum*	S3S4	PSOC	SCC	Not likely. Occurs in fens, damp mossy woods, seepage areas, and moist forest-meadow ecotones in the valley to lower montane zones. No suitable habitat in the project area.
Giant Helleborine	*Epipactis gigantea*	S2S3	SOC	SCC	Not likely. This species is associated with seeps and springs, fens, and thermal waters. No such habitat occurs in the project area.
Macoun's Gentian	*Gentianopsis macounii*	S2	SOC	SCC	Not likely. This species occurs in wet, organic soil of calcareous fens in the valley and foothill zones. No such habitat occurs in the project area.

Noxious Weeds

Spotted knapweed (*Centaurea stoebe*) was the only noxious weed observed in the project area. Small patches were present along the Pishkun Canal south of the bridge.

Potential Impacts

The project could result in direct and indirect effects on botanical resources. Direct effects could occur due to vegetation clearing. The maximum extent of vegetation clearing activities in the project corridor is anticipated to be approximately 1.8 acres. Affected areas will be reclaimed by seeding native species; therefore, adverse impacts on disturbed sites would be short-term because areas of temporary disturbance will likely recover through revegetation. Possible beneficial effects would occur if disturbed areas were recolonized by native species.

Indirect effects could occur if non-native species or noxious weeds are imported on construction equipment or colonize areas of bare ground. Areas of recent and/or constant disturbance, such as roadsides, are the most susceptible to weed invasion.

General Mitigation Recommendations

The following practices should be used to avoid and minimize project effects on botanical resources:

- Minimize vegetation clearing to the extent possible.
- Mark clearing limits.
- Use already disturbed areas as staging areas rather than disturbing new areas.
- Control exotic and noxious species in the project area prior to earthwork, decontaminate all equipment prior to use on site.
- Materials (soil/gravel) coming from outside sources should be inspected and certified as weed-free before use on the project site.
- Seed exposed soils with suitable native plants as soon as the work is completed to facilitate rapid vegetative recovery of the area and to prevent invasion by noxious weeds.

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APPENDIX A

Montana Natural Heritage Program Environmental Summary Report and Bureau of Land Management Sensitive Species List

HERRERA
Science + Planning + Design

Environmental Summary

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NATURAL HERITAGE PROGRAM mtnhp.org

1201 11th Ave ▫ P.O. Box 201800 ▫ Helena, MT 59620-1800 ▫ fax 406-444-0266 ▫ phone 406-444-3989

Latitude	Longitude
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47.64069	-112.73356

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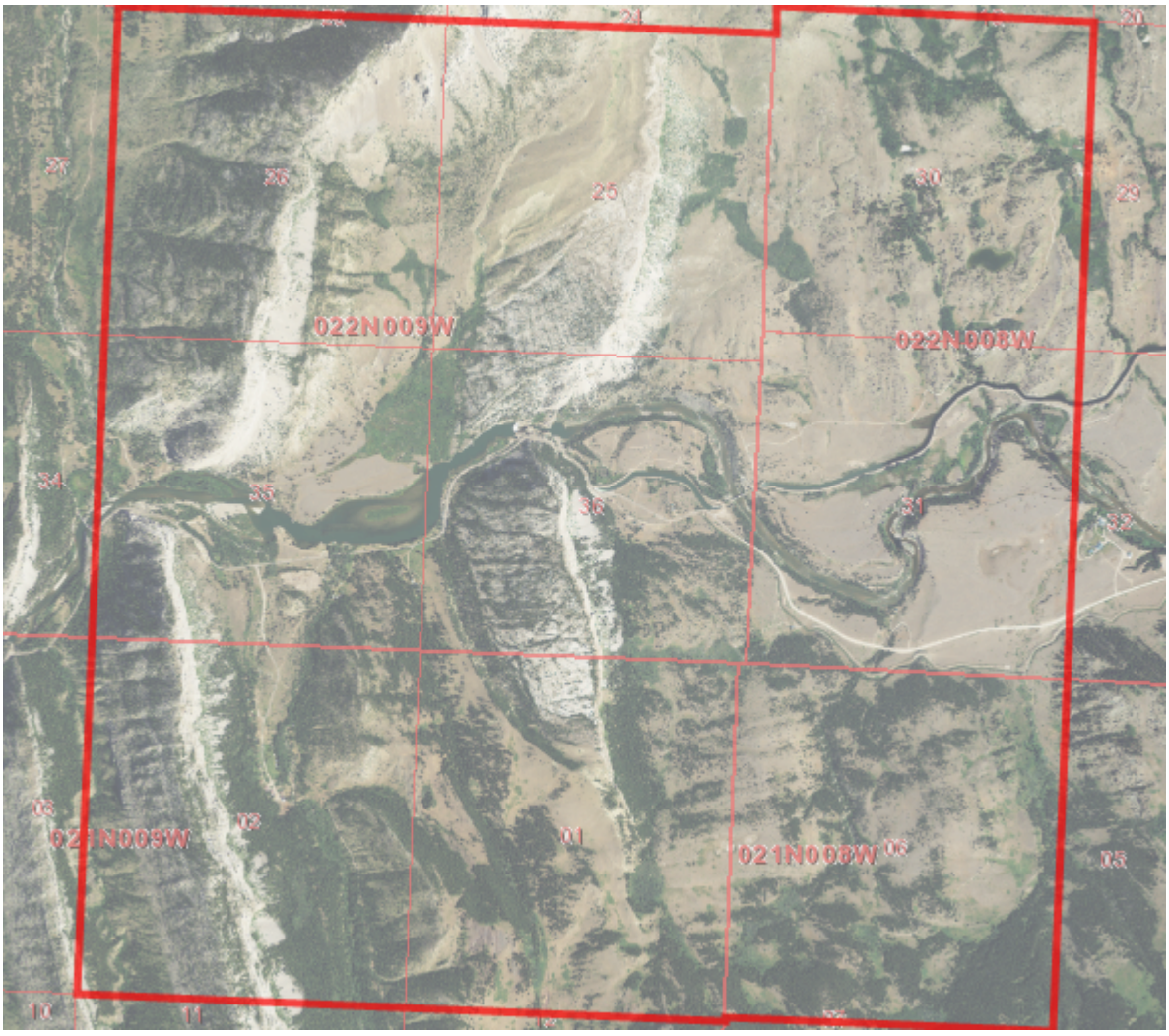
022N009W036
(Buffered PLSS Section)



Suggested Citation
Montana Natural Heritage Program. Environmental Summary Report.
for Latitude 47.59390 to 47.64069 and Longitude -112.67026 to -112.73356. Retrieved on 5/18/2023.

The Montana Natural Heritage Program is part of the Montana State Library's Natural Resource Information System. Since 1985, it has served as a neutral and non-regulatory provider of easily accessible information on Montana's species and biological communities to inform all stakeholders in environmental review, permitting, and planning processes. The program is part of the NatureServe network that is composed of over 60 member programs across North America that work to provide current and comprehensive distribution and status information on species and biological communities.

MONTANA STATE LIBRARY NATURAL HERITAGE PROGRAM

NATURESERVE

Table of Contents

Introduction to Environmental Summary Report

Environmental Summary Reports from the Montana Natural Heritage Program (MTNHP) provide information on species and biological communities to inform all stakeholders in environmental review, permitting, and planning processes. For information on environmental permits in Montana, please see permitting overviews by the Montana Department of Environmental Quality, the Montana Department of Natural Resources and Conservation, the Index of Environmental Permits for Montana and our Suggested Contacts for Natural Resource Management Agencies. The 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 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 that follow 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. If your area of interest corresponds to a statewide polygon layer (e.g., watersheds, counties, or public land survey sections) information summaries in your report will exactly match those boundaries. However, if your report is for a custom area, 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 a layer of hexagons intersected by the polygon they specified as shown on the report cover. Summarizing by these hexagons which are one square mile in area and approximately one kilometer in length on each side allows for consistent and rapid delivery of summaries based on a uniform grid that has been used for planning efforts across North America.

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. Users are reminded 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.**

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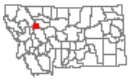
Legend

Model Icons
- N Suitable (native range)
- O Optimal Suitability
- M Moderate Suitability
- L Low Suitability
- I Suitable (introduced range)

Habitat Icons
- C Common
- O Occasional

Range Icons
- Y Native / Year-round
- S Summer
- W Winter
- M Migratory
- N Non-native
- H Historical

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



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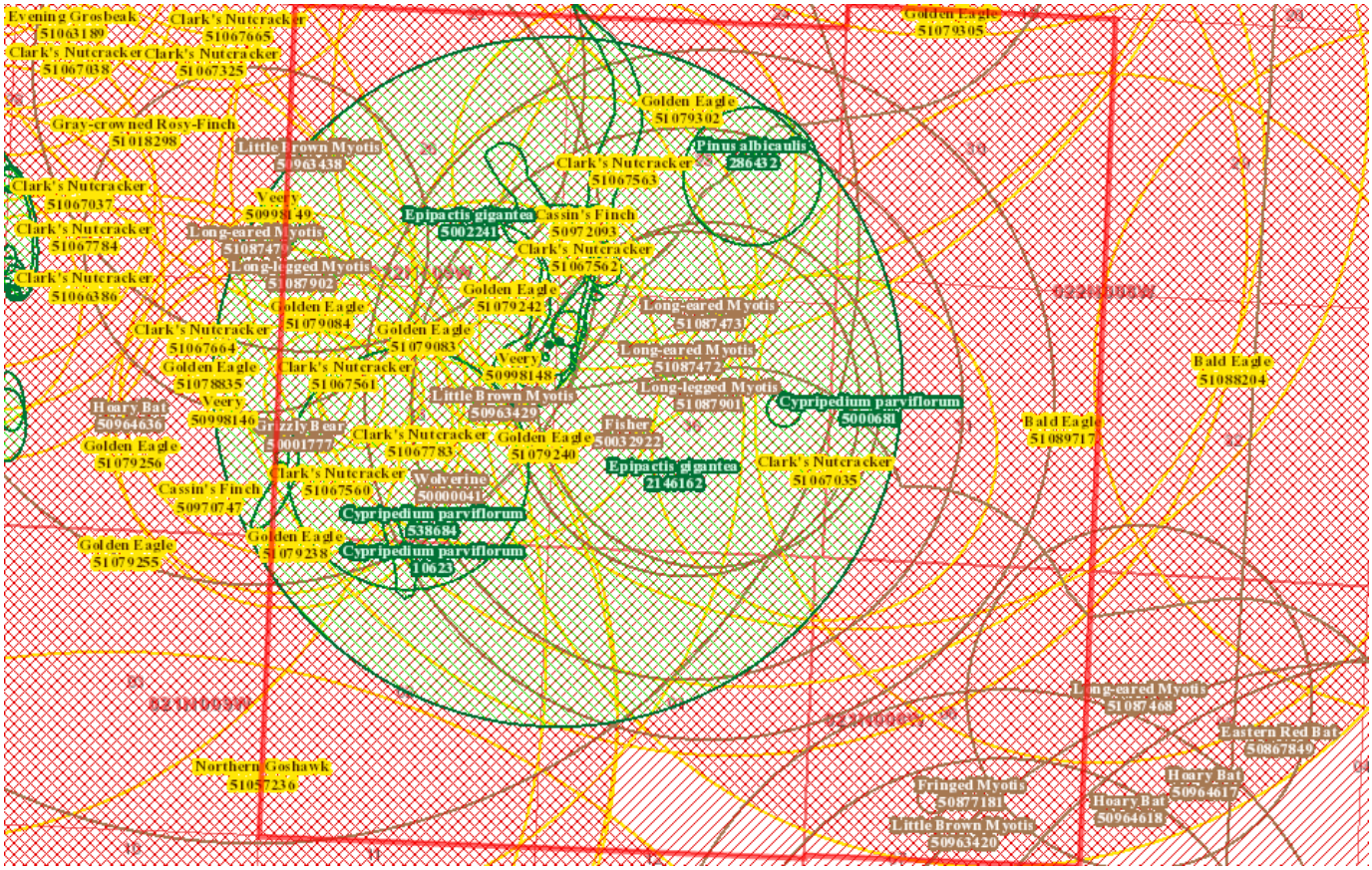
47.64069	-112.73356

Native Species

Summarized by: **022N009W036** *(Buffered PLSS Section)*
Filtered by:
Native Species reports are filtered for Species with MT Status = Species of Concern, Special Status, Important Animal Habitat, Potential SOC



Species Occurrences

	USFWS Sec7	# SO	# Obs	Predicted Model	Range
V - Cypripedium parviflorum *(Small Yellow Lady's-slipper)* PSOC		7	14		Y

View in Field Guide **View Predicted Models** **View Range Maps**

USFS: **Sensitive - Known in Forests (KOOT, LOLO)**
Sensitive - Suspected in Forests (BRT)
Species of Conservation Concern in Forests (CG, HLC)

Potential Species of Concern - Native Species Global: **G5** State: **S3S4**

Predicted Models: O 55% Optimal (inductive), M 44% Moderate (inductive), L 1% Low (inductive)

B - Veery *(Catharus fuscescens)* SOC		7	7		S M

View in Field Guide **View Predicted Models** **View Range Maps**

Species of Concern - Native Species Global: **G5** State: **S3B** USFWS: **MBTA** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **2**

Delineation Criteria Observations with evidence of breeding activity buffered by a minimum distance of 300 meters in order to be conservative about encompassing home ranges and otherwise buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. (Last Updated: Dec 29, 2022)

Predicted Models: O 32% Optimal (inductive), M 37% Moderate (inductive), L 31% Low (inductive)

V - Amerorchis rotundifolia *(Round-leaved Orchis)* SOC		1	1		Y

View in Field Guide **View Predicted Models** **View Range Maps**

USFS: **Sensitive - Known in Forests (KOOT)**
Sensitive - Suspected in Forests (LOLO)

Species of Concern - Native Species Global: **G5** State: **S3** **Species of Conservation Concern in Forests (FLAT, HLC)** Plant Threat Score: **Low**
CCVI: **Moderately Vulnerable**

Delineation Criteria Individual occurrences are generally based upon a discretely mapped area provided by an observer and are not separated by any pre-defined distance. Individual clusters of plants mapped at fine spatial scales (separated by less than approximately 25-50 meters) may be grouped together into one occurrence if they are not separated by distinct areas of habitat or terrain features. Point observations are buffered to encompass any locational uncertainty associated with the observation. (Last Updated: Jan 20, 2023)

Predicted Models: O 12% Optimal (inductive), M 35% Moderate (inductive), L 26% Low (inductive)

M - Preble's Shrew *(Sorex preblei)* SOC		1	1		Y

View in Field Guide **View Predicted Models** **View Range Maps**

Species of Concern - Native Species Global: **G4** State: **S3** FWP SWAP: **SGCN3**

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 100 meters in order to encompass the maximum home range size for small shrews and otherwise is buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. (Last Updated: Oct 19, 2018)

Predicted Models: M 100% Moderate (inductive)

B - Clark's Nutcracker *(Nucifraga columbiana)* SOC

View in Field Guide | View Predicted Models | View Range Maps

Species of Concern - Native Species Global: **G5** State: **S3** USFWS: **MBTA** USFS: **Species of Conservation Concern in Forests (FLAT)** FWP SWAP: **SGCN3** PIF: **3**

Delineation Criteria Observations with direct evidence of breeding activity or indirect evidence of breeding activity between early March and mid-July within forested habitats containing Whitebark Pine (Pinus albicaulis), Limber Pine (Pinus flexilis), or Ponderosa Pine (Pinus ponderosa). Observations are buffered by a minimum distance of 1,000 meters in order to encompass the spring/summer breeding territory size reported for the species or the locational uncertainty of the observation to a maximum distance of 10,000 meters. (Last Updated: Jan 12, 2023)

Predicted Models: M 100% Moderate (inductive)

B - Cassin's Finch *(Haemorhous cassinii)* SOC

View in Field Guide | View Predicted Models | View Range Maps

Species of Concern - Native Species Global: **G5** State: **S3** USFWS: **MBTA; BCC10** FWP SWAP: **SGCN3** PIF: **3**

Delineation Criteria Observations with evidence of breeding activity buffered by a minimum distance of 300 meters in order to be conservative about encompassing the courtship and foraging distance from nesting areas and otherwise buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. (Last Updated: Dec 28, 2022)

Predicted Models: M 73% Moderate (inductive), L 27% Low (inductive)

M - Long-legged Myotis *(Myotis volans)* SOC

View in Field Guide | View Predicted Models | View Range Maps

Species of Concern - Native Species Global: **G4G5** State: **S3**

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 minimum distance of 2,000 meters in order to encompass the average distances traveled from capture locations to roosts in Washington, Oregon, and in the Black Hills of South Dakota and otherwise buffered 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 2,000 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: Mar 22, 2023)

Predicted Models: M 72% Moderate (inductive), L 28% Low (inductive)

M - Fringed Myotis *(Myotis thysanodes)* SOC

View in Field Guide | View Predicted Models | View Range Maps

Species of Concern - Native Species Global: **G4** State: **S3** 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 minimum distance of 2,000 meters in order to encompass the range of distances traveled from capture locations to roosts in the Black Hills of South Dakota and otherwise buffered 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 2,000 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: Jul 21, 2022)

Predicted Models: M 64% Moderate (inductive), L 36% Low (inductive)

B - Golden Eagle *(Aquila chrysaetos)* SOC

View in Field Guide | View Predicted Models | View Range Maps

Species of Concern - Native Species Global: **G5** State: **S3** USFWS: **BGEPA; MBTA** BLM: **SENSITIVE** FWP SWAP: **SGCN3**

Delineation Criteria Confirmed nesting area buffered by a minimum distance of 3,000 meters in order to be conservative about encompassing the entire breeding territory and area commonly used for renesting and otherwise buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. (Last Updated: Jan 17, 2023)

Predicted Models: M 49% Moderate (inductive), L 47% Low (inductive)

M - Grizzly Bear *(Ursus arctos)* SOC

View in Field Guide | View Predicted Models | View Range Maps

Species of Concern - Native Species Global: **G4** State: **S2S3** USFWS: **LT** BLM: **THREATENED** FWP SWAP: **SGCN2-3**

Delineation Criteria Species Occurrence polygons represent areas delineated by the U.S. Fish and Wildlife Service (USFWS) that encompass both home ranges and potential transitory movements based on verified sightings. Within these areas, the USFWS wants project proponents to consider whether the species â€œmay be presentâ€ when evaluating the potential impacts of a project and to work with the USFWS to develop and implement best management practices to minimize or eliminate project effects on the species. (Last Updated: Mar 22, 2023)

Predicted Models: M 39% Moderate (inductive), L 61% Low (inductive)

B - Bald Eagle *(Haliaeetus leucocephalus)* SSS

View in Field Guide | View Predicted Models | View Range Maps

Special Status Species - Native Species Global: **G5** State: **S4** USFWS: **BGEPA; MBTA** USFS: **Sensitive - Known in Forests (BD, BRT, KOOT, LOLO)** BLM: **SENSITIVE** PIF: **2**

Delineation Criteria Confirmed nesting area buffered by a minimum distance of 2,000 meters in order to be conservative about encompassing the breeding territory and area commonly used for renesting. Only nesting observations with a locational uncertainty of 1,000 meters or less will be used to delineate a nesting area. (Last Updated: Mar 23, 2023)

Predicted Models: M 35% Moderate (inductive), L 33% Low (inductive)

M - Little Brown Myotis *(Myotis lucifugus)* SOC

View in Field Guide | View Predicted Models | View Range Maps

Species of Concern - Native Species Global: **G3G4** State: **S3** FWP SWAP: **SGCN3**

Delineation Criteria Confirmed area of occupancy based on the documented presence (mistnet captures, definitively identified acoustic recordings, or definitively identified roosting individuals) of adults or juveniles. Point observation location is buffered by a distance of 1,600 meters in order to encompass the greater than 1,500 meters foraging distance reported for the species in New Brunswick, Canada and otherwise buffered 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 1,600 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: Dec 22, 2022)

Predicted Models: M 32% Moderate (inductive), L 68% Low (inductive)

M - Eastern Red Bat *(Lasiurus borealis)* SOC

View in Field Guide | View Predicted Models | View Range Maps

Species of Concern - Native Species Global: **G3G4** State: **S3B** BLM: **SENSITIVE**

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 during the active season. Point observation location is buffered by a minimum distance of 3,500 meters in order to be conservative about encompassing the maximum reported foraging distance for the congeneric Lasiurus borealis and otherwise buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. (Last Updated: Jul 20, 2022)

Predicted Models: M 32% Moderate (inductive), L 52% Low (inductive)

V - Epipactis gigantea *(Giant Helleborine)* SOC 8 11 Y

View in Field Guide | View Predicted Models | View Range Maps

USFS: **Sensitive - Known in Forests (BD, LOLO)**
Sensitive - Suspected in Forests (BRT, KOOT)

Species of Concern - Native Species Global: **G4** State: **S2S3** **Species of Conservation Concern in Forests (FLAT, HLC)** Plant Threat Score: **Low**
CCVI: **Moderately Vulnerable**

Delineation Criteria Individual occurrences are generally based upon a discretely mapped area provided by an observer and are not separated by any pre-defined distance. Individual clusters of plants mapped at fine spatial scales (separated by less than approximately 25-50 meters) may be grouped together into one occurrence if they are not separated by distinct areas of habitat or terrain features. Point observations are buffered to encompass any locational uncertainty associated with the observation. (Last Updated: Jan 20, 2023)

Predicted Models: M 22% Moderate (inductive), L 41% Low (inductive)

M - Long-eared Myotis *(Myotis evotis)* SOC 4 3 Y

View in Field Guide | View Predicted Models | View Range Maps

Species of Concern - Native Species Global: **G5** State: **S3**

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 minimum distance of 1,000 meters in order to encompass the average distances traveled from capture locations to roosts and between roosts in western Montana, Alberta, and Oregon and otherwise buffered 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 1,000 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: Mar 22, 2023)

Predicted Models: M 21% Moderate (inductive), L 79% Low (inductive)

M - Hoary Bat *(Lasiurus cinereus)* SOC 3 S M

View in Field Guide | View Predicted Models | View Range Maps

Species of Concern - Native Species Global: **G3G4** State: **S3B** 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 during the active season. Point observation location is buffered by a minimum distance of 3,500 meters in order to be conservative about encompassing the maximum reported foraging distance for the congeneric Lasiurus borealis and otherwise buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. (Last Updated: Dec 23, 2022)

Predicted Models: M 21% Moderate (inductive), L 79% Low (inductive)

B - Northern Goshawk *(Accipiter gentilis)* SOC 1 Y WM

View in Field Guide | View Predicted Models | View Range Maps

Species of Concern - Native Species Global: **G5** State: **S3** USFWS: **MBTA** FWP SWAP: **SGCN3** PIF: **2**

Delineation Criteria Confirmed nesting area buffered by a minimum distance of 750 meters in order to encompass the area around the nest known to be defended by adults and otherwise buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. (Last Updated: Jan 10, 2023)

Predicted Models: M 9% Moderate (inductive), L 32% Low (inductive)

M - Wolverine *(Gulo gulo)* SOC 7 1 Y

View in Field Guide | View Predicted Models | View Range Maps

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

Delineation Criteria Confirmed area of occupancy supported by recent (post-1980), nearby (within 10 kilometers) observations of adults or juveniles. Tracking regions were defined by areas of primary habitat and adjacent female dispersal habitat as modeled by Inman et al. (2013). These regions were buffered by 1 kilometer in order to link smaller areas and account for potential inaccuracies in independent variables used in the model. (Last Updated: Mar 22, 2023)

Predicted Models: M 1% Moderate (inductive), L 72% Low (inductive)

B - Gray-crowned Rosy-Finch *(Leucosticte tephrocotis)* SOC 1 Y WM

View in Field Guide | View Predicted Models | View Range Maps

Species of Concern - Native Species Global: **G5** State: **S2** USFWS: **MBTA** FWP SWAP: **SGCN2, SGIN**

Delineation Criteria Confirmed breeding area based on the presence of a nest, chicks, or territorial adults during the breeding season. Point observation location is buffered by a minimum distance of 4,000 meters in order to encompass the known foraging distance from nests of the congeneric Black Rosy-Finch and otherwise is buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. (Last Updated: Jan 03, 2023)

Predicted Models: L 58% Low (inductive)

V - Gentianopsis macounii *(Macoun's Gentian)* SOC 5 5 Y

View in Field Guide | View Predicted Models | View Range Maps

Species of Concern - Native Species Global: **G5** State: **S2** USFS: **Species of Conservation Concern in Forests (HLC)** Plant Threat Score: **No Known Threats**
CCVI: **Highly Vulnerable**

Delineation Criteria Individual occurrences are generally based upon a discretely mapped area provided by an observer and are not separated by any pre-defined distance. Individual clusters of plants mapped at fine spatial scales (separated by less than approximately 25-50 meters) may be grouped together into one occurrence if they are not separated by distinct areas of habitat or terrain features. Point observations are buffered to encompass any locational uncertainty associated with the observation. (Last Updated: Jan 20, 2023)

Predicted Models: L 50% Low (inductive)

M - Fisher *(Pekania pennanti)* SOC 1 Y

View in Field Guide | View Predicted Models | View Range Maps

Species of Concern - Native Species Global: **G5** State: **S3** USFS: **Sensitive - Known in Forests (BD, BRT, KOOT, LOLO)** BLM: **SENSITIVE** FWP SWAP: **SGCN3**

Delineation Criteria Confirmed area of occupancy based on the documented presence of adults or juveniles within tracking regions containing core habitat for the species. Outer boundaries of tracking regions are defined by areas of forest cover on individual mountain ranges or clusters of adjacent mountain ranges with continuous forest cover. (Last Updated: Dec 21, 2022)

Predicted Models: L 28% Low (inductive)

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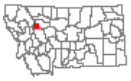
Legend

Model Icons	Habitat Icons	Range Icons	Num Obs
N Suitable (native range)	C Common	Y Native / Year-round	Count of obs with 'good precision' (<=1000m)
O Optimal Suitability	O Occasional	S Summer	+ indicates additional 'poor precision' obs (1001m-10,000m)
M Moderate Suitability		W Winter	
L Low Suitability		M Migratory	
I Suitable (introduced range)		N Non-native	
		H Historical	



Latitude	Longitude
47.59390	-112.67026
47.64069	-112.73356

Native Species

Summarized by: **022N009W036** *(Buffered PLSS Section)*
Filtered by:
Native Species reports are filtered for Species with MT Status = Species of Concern, Special Status, Important Animal Habitat, Potential SOC

Other Observed Species

	USFWS Sec7	# Obs	Predicted Model	Range
B - Ovenbird *(Seiurus aurocapilla)* PSOC		2		S M
View in Field Guide **View Predicted Models** **View Range Maps**				
Potential Species of Concern - Native Species Global: **G5** State: **S4B** USFWS: **MBTA** PIF: **3**				
Predicted Models: M 42% Moderate (inductive), L 58% Low (inductive)				
B - Trumpeter Swan *(Cygnus buccinator)* SOC		1		Y M
View in Field Guide **View Predicted Models** **View Range Maps**				
Species of Concern - Native Species Global: **G4** State: **S3** USFWS: **MBTA** USFS: **Sensitive - Known in Forests (BD)** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **1**				
Predicted Models: M 32% Moderate (inductive), L 66% Low (inductive)				
B - American White Pelican *(Pelecanus erythrorhynchos)* SOC		2		S M
View in Field Guide **View Predicted Models** **View Range Maps**				
Species of Concern - Native Species Global: **G4** State: **S3B** USFWS: **MBTA** FWP SWAP: **SGCN3** PIF: **3**				
Predicted Models: M 32% Moderate (inductive), L 54% Low (inductive)				
M - Silver-haired Bat *(Lasionycteris noctivagans)* PSOC		1		Y
View in Field Guide **View Predicted Models** **View Range Maps**				
Potential Species of Concern - Native Species Global: **G3G4** State: **S4**				
Predicted Models: M 21% Moderate (inductive), L 79% Low (inductive)				
B - Barrow's Goldeneye *(Bucephala islandica)* PSOC		2		Y W M
View in Field Guide **View Predicted Models** **View Range Maps**				
Potential Species of Concern - Native Species Global: **G5** State: **S4** USFWS: **MBTA** FWP SWAP: **SGIN** PIF: **2**				
Predicted Models: M 10% Moderate (inductive), L 57% Low (inductive)				
B - Alder Flycatcher *(Empidonax alnorum)* SOC		1		M
View in Field Guide **View Predicted Models** **View Range Maps**				
Species of Concern - Native Species Global: **G5** State: **S3B** USFWS: **MBTA** FWP SWAP: **SGCN3**				
Predicted Models: M 3% Moderate (inductive)				
B - Long-billed Curlew *(Numenius americanus)* SOC		1		S M
View in Field Guide **View Predicted Models** **View Range Maps**				
Species of Concern - Native Species Global: **G5** State: **S3B** USFWS: **MBTA; BCC11** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **2**				
Predicted Models: M 1% Moderate (inductive), L 51% Low (inductive)				
B - Harlequin Duck *(Histrionicus histrionicus)* SOC		2		S M
View in Field Guide **View Predicted Models** **View Range Maps**				
Species of Concern - Native Species Global: **G4** State: **S2B** USFWS: **MBTA** USFS: **Sensitive - Known in Forests (BD, KOOT, LOLO)** FWP SWAP: **SGCN2** PIF: **1**				
Predicted Models: L 80% Low (inductive)				
B - Caspian Tern *(Hydroprogne caspia)* SOC		1		S M
View in Field Guide **View Predicted Models** **View Range Maps**				
Species of Concern - Native Species Global: **G5** State: **S2B** USFWS: **MBTA** BLM: **SENSITIVE** FWP SWAP: **SGCN2** PIF: **2**				
Predicted Models: L 32% Low (inductive)				
F - Arctic Grayling *(Thymallus arcticus)* SOC		1		N H
View in Field Guide **View Predicted Models** **View Range Maps**				
Species of Concern - Native/Non-native Species - (depends on location or taxa) Global: **G5** State: **S1** USFS: **Sensitive - Known in Forests (BD)** BLM: **SENSITIVE** FWP SWAP: **SGCN1**				
Predicted Models: I 33% Suitable (introduced range) (deductive)				
B - Common Loon *(Gavia immer)* SOC		3	Not Assessed	M
View in Field Guide **View Range Maps**				
Species of Concern - Native Species Global: **G5** State: **S3B** USFWS: **MBTA** USFS: **Sensitive - Known in Forests (KOOT, LOLO)** FWP SWAP: **SGCN3** PIF: **1**				

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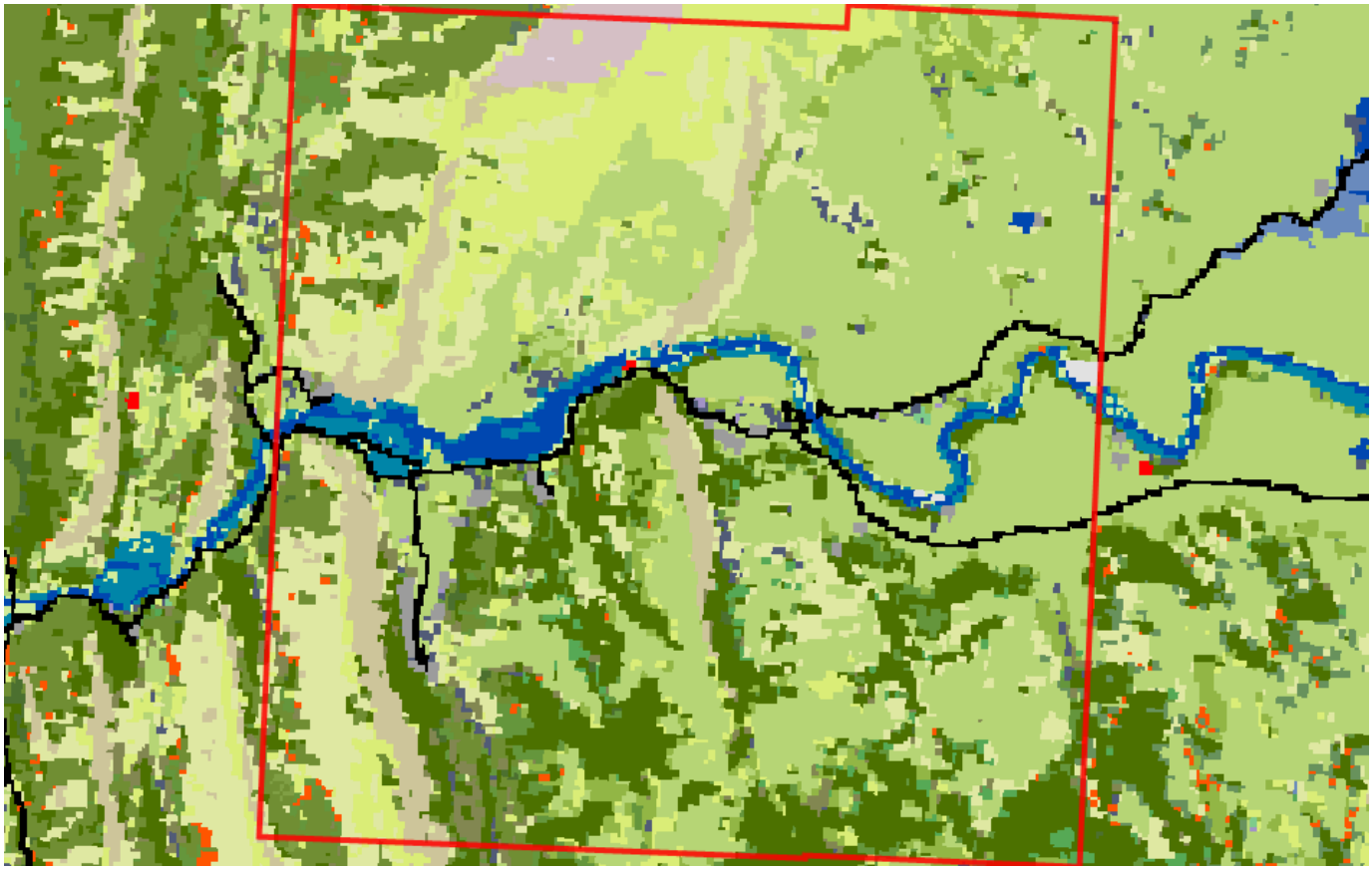
Latitude	Longitude
47.59390	-112.67026
47.64069	-112.73356

Land Cover

Summarized by: **022N009W036** *(Buffered PLSS Section)*



37% (*2,123 Acres*)

Grassland Systems
Montane Grassland

Rocky Mountain Lower Montane, Foothill, and Valley Grassland

This grassland system of the northern Rocky Mountains is found at lower montane to foothill elevations in mountains and valleys throughout Montana. These grasslands are floristically similar to Big Sagebrush Steppe but are defined by shorter summers, colder winters, and young soils derived from recent glacial and alluvial material. They are found at elevations from 548 - 1,650 meters (1,800-5,413 feet). In the lower montane zone, they range from small meadows to large open parks surrounded by conifers; below the lower treeline, they occur as extensive foothill and valley grasslands. Soils are relatively deep, fine-textured, often with coarse fragments, and non-saline. Microphytic crust may be present in high-quality occurrences. This system is typified by cool-season perennial bunch grasses and forbs (>25%) cover, with a sparse shrub cover (<10%). Rough fescue (*Festuca campestris*) is dominant in the northwestern portion of the state and Idaho fescue (*Festuca idahoensis*) is dominant or co-dominant throughout the range of the system. Bluebunch wheatgrass (*Pseudoroegneria spicata*) occurs as a co-dominant throughout the range as well, especially on xeric sites. Western wheatgrass (*Pascopyrum smithii*) is consistently present, often with appreciable coverage (>10%) in lower elevation occurrences in western Montana and virtually always present, with relatively high coverages (>25%), on the edge of the Northwestern Great Plains region. Species diversity ranges from a high of more than 50 per 400 square meter plot on mesic sites to 15 (or fewer) on xeric and disturbed sites. Most occurrences have at least 25 vascular species present. Farmland conversion, noxious species invasion, fire suppression, heavy grazing and oil and gas development are major threats to this system.

13% (*745 Acres*)

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

Rocky Mountain Dry-Mesic Montane Mixed Conifer Forest

This ecological system, composed of highly variable montane conifer forests, is found throughout Montana. It is associated with a submesic climate regime with annual precipitation ranging from 250 to 1,000 millimeters (10-39 inches), with most precipitation occurring during winter, and April through June. Winter snowpacks typically melt off in early spring at lower elevations. Elevations range from valley bottoms to 1,676 meters (5,500 feet) in northwestern Montana and up to 2,286 meters (7,500 feet) on warm aspects in southern Montana. In northwestern and west-central Montana, this ecosystem forms a forest belt on warm, dry to slightly moist sites. It generally occurs on gravelly soils with good aeration and drainage and a neutral to slightly acidic pH. In the western part of the state, it is seen mostly on well drained mountain slopes and valleys from lower treeline to up to 1,676 meters (5,500 feet). Immediately east of the Continental Divide, in north-central Montana, it occurs at montane elevations. Douglas-fir (*Pseudotsuga menziesii*) is the dominant conifer both as a seral and climax species. West of the Continental Divide, occurrences can be dominated by any combination of Douglas-fir and long-lived, seral western larch (*Larix occidentalis*), grand fir (*Abies grandis*), ponderosa pine (*Pinus ponderosa*) and lodgepole pine (*Pinus contorta*). Aspen (*Populus tremuloides*) and western white pine (*Pinus monticola*) have a minor status, with western white pine only in extreme western Montana. East of the Continental Divide, larch is absent and lodgepole pine is the co-dominant. Engelmann spruce (*Picea engelmannii*), white spruce, (*Picea glauca*)or their hybrid, become increasingly common towards the eastern edge of the Douglas-fir forest belt.

12% (*713 Acres*)

Shrubland, Steppe and Savanna Systems
Deciduous Shrubland
Rocky Mountain Subalpine Deciduous Shrubland

This shrubland ecological system is found within the zone of continuous forest in the upper montane and lower subalpine zones along both sides of the Continental Divide from southwestern to northwestern Montana, and in the island mountain ranges. Soils tend to be moist to wet. It is found on steep mountain slopes, usually on north and east facing aspects. In northwestern and west-central Montana, it forms within upper montane Douglas-fir (*Pseudotsuga menziesii*) and Engelmann spruce-subalpine fir (*Picea engelmanii/ Abies lasiocarpa*) forests on steep slopes and ravines. Soils are usually shallow, rocky or gravelly with good aeration and drainage. Occurrences are typically found in locations with cold-air drainage or ponding, or where snowpacks linger late into the summer, such as north-facing slopes and high-elevation ravines. They can extend down in elevation to the montane zone in places where cold-air ponding occurs, especially on north and east aspects. In northwestern Montana, elevation ranges from 1,525 to 1,950 meters (5,000 to 6,400 feet) west and immediately east of the Continental Divide and up to 2,682 meters (8,800 feet) in southwestern Montana. Common shrub species include rusty leaf menziesia (*Menziesia ferruginea*), black twinberry (*Lonicera involucrata*), alder buckthorn (*Rhamnus alnifolia*), prickly currant (*Ribes lacustre*), thimbleberry (*Rubus parviflorus*), sitka alder (*Alnus viridis*), cascade mountain ash (*Sorbus scopulina*), Sitka mountain ash (*Sorbus sitchensis*), and thinleaf huckleberry (*Vaccinium membranaceum*).

9% (*510 Acres*)

Grassland Systems
Montane Grassland
Rocky Mountain Subalpine-Upper Montane Grassland

These lush grassland systems are found in upper montane to subalpine, high-elevation,zones, and are shaped by short summers, cold winters, and young soils derived from recent glacial and alluvial material. In subalpine settings, dry grasslands may occur as small meadows or large open parks surrounded by higher elevational forests, but typicall will have no tree cover within them. In general, soil textures are much finer, and soils are often deeper than in the neighboring forests. Most precipitation occurs as heavy snowpack in the mountains with spring and early summer rains. This system is composed of bunch grass species, with a diversity of cool season forbs. It is similar to the Rocky Mountain Lower Montane, Foothill and Valley Grassland ecological system, but is found at higher elevations and has additional floristic components with more subalpine taxa. In Montana, this system generally occurs as two plant communities: a rough fescue-Idaho fescue (*Festuca campestris-Festuca idahoensis*) association occurring on moister sites, such as the north and east-facing slopes and benches in the mountains; and the Idaho Fescue-bluebunch wheatgrass (*Festuca idahoensis-Pseudoroegneria spicata*) association occurring on drier sites, such as ridges, hilltops, and south and west facing slopes and benches. At elevations greater than 2286 meters (7,500 feet), Idaho fescue becomes dominant, sometimes associated with slender wheatgrass (*Elymus trachycaulus*), or in certain areas, tufted hairgrass (*Deschampsia cespitosa*). Noxious species invasion, fire suppression, heavy grazing, and oil and gas development are major threats to this system.

5% (*312 Acres*)

Forest and Woodland Systems
Conifer-dominated forest and woodland (xeric-mesic)
Rocky Mountain Subalpine Dry-Mesic Spruce-Fir Forest and Woodland

Engelmann spruce (*Picea engelmannii*) and subalpine fir (*Abies lasiocarpa*) make up a substantial part of the montane and lower subalpine forests of the Montana Rocky Mountains and mountain island ranges of north-central and west-central Montana. Spruceis usually associated with fir and occurs as either a climax co-dominant or as a persistent, long-lived seral species in most upper elevation firhabitat types. Dry to mesic spruce-dominated forests range from 884-1,585 meters (2,900-5,200 feet) west of the Continental Divide, and 1585-2,073 meters (5,200-6,800 feet) east of the Continental Divide in the northern and central portions of the state. This system can be found at elevations up to 2,896 meters (9,500 feet) in southwestern Montana. Forests are found on gentle to very steep mountain slopes, high-elevation ridge tops and upper slopes, plateau-like surfaces, basins, alluvial terraces, well-drained benches, and inactive stream terraces. Tree canopy characteristics are relatively uniform. In northern Montana, Engelmann spruce hybridizes with its boreal counterpart, white spruce (*Picea glauca*). Douglas-fir (*Pseudotsuga menziesii*), lodgepole pine (*Pinus contorta*), and western larch (*Larix occidentalis*) (west of the Continental Divide) are seral but often present in these forests. The understory is comprised of a mixture of shrubs, forbs and graminoids tolerant of warmer and drier soil conditions than those found on the more mesic to wet spruce-fir system. The drier occurrences of this system are especially common on steep slopes at upper elevations throughout the easten Rocky Mountains, whereas the more mesic occurrences form substantial cover west of the Continental Divide in the Flathead, Lolo, Bitteroot and Kootenai river drainages.

5% (*263 Acres*)

Sparse and Barren Systems
Cliff, Canyon and Talus
Rocky Mountain Cliff, Canyon and Massive Bedrock

This ecological system of barren and sparsely vegetated landscapes is found from foothill to subalpine elevations throughout the Rocky Mountains and island mountain ranges of Montana. Its range overlaps with the Western Great Plains Cliff and Outcrop, which differs in having more developed soils and more vegetated cover. It occurs on steep cliff faces, in narrow canyons, and on smaller rock outcrops of various igneous, sedimentary, and metamorphic bedrock types, and includes the unstable scree and talus slopes that typically occur below cliff faces. It is characteristically dry and sparsely vegetated, typically having less than 10% plant cover. Species composition includes individuals present in adjacent systems (unless exposed parent material is radically different) and herbaceous species specifically adapted to cliff faces and unstable talus slides. Although there may be small patches of dense vegetation, the system usually consists of scattered trees and/or shrubs such as Douglas-fir (*Pseudotsuga menziesii*), Ponderosa pine (*Pinus ponderosa*), limber pine (*Pinus flexilis*), aspen (*Populus tremuloides*), or subalpine fir (*Abies lasiocarpa*). Juniper (*Juniperus* spp.) is common at lower elevations. Shrubs adapted to xeric growing conditions and rocky soils are typically present, e.g. oceanspray (*Holodiscus discolor*), currant (*Ribes species*), common ninebark (*Physocarpus malvaceus*), wild rose *(Rosa species*), common juniper *(Juniperus communis*), Lewis mock orange (*Philadelphus lewisii*), creeping Oregon grape (*Mahonia repens*), three leaf sumac (*Rhus trilobata*), American wild raspberry (*Rubus idaeus*) or serviceberry (*Amelanchier alnifolia)*. Soil development is limited, as is herbaceous cover. Forbs may include penstemon (*Penstemon* species), buckwheat (*Eriogonum* species), western sagewort (*Artemisia ludovicana*), Michauxâ€™s sagewort (*Artemisia michauxiana*), and spotted saxifrage (*Saxifraga bronchialis*). Because the elevation range is so broad, species composition may vary widely from occurrence to occurrence.

No Image

4% (*251 Acres*)

Shrubland, Steppe and Savanna Systems
Deciduous Shrubland
Rocky Mountain Montane-Foothill Deciduous Shrubland

This system is found in the lower montane and foothill regions of western Montana, and north and east into the northern Rocky Mountains. These shrublands typically occur below treeline, within the matrix of surrounding low-elevation grasslands and sagebrush shrublands. They are usually found on steep slopes of canyons, on toeslopes and occasionally on valley bottom lands. These communities can occur on all aspects. In northwestern and west-central Montana, this system forms within Douglas-fir (*Pseudotsuga menziesii*) and ponderosa pine (*Pinus ponderosa)* forests and adjacent to fescue grasslands and big sagebrush (*Artemisia tridentata*) shrublands. In northwestern Montana, these shrublands commonly occur within the upper montane grasslands and forests along the Rocky Mountain Front. Immediately east of the Continental Divide, this system is found within montane grasslands and steep canyon slopes. Most sites have shallow soils that are either loess deposits or volcanic clays. Common ninebark (*Physocarpus malvaceus*), bittercherry (*Prunus emarginata*), common chokecherry (*Prunus virginiana*), rose (*Rosa* spp.), smooth sumac (*Rhus glabra*), Rocky Mountain maple (*Acer glabrum*), serviceberry (*Amelanchier alnifolia*), and oceanspray (*Holodiscus discolor*) are the most common dominant shrubs.

3% (*145 Acres*)

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

Rocky Mountain Lodgepole Pine Forest

This forested system is widespread in upper montane to subalpine zones of the Montana Rocky Mountains, and east into island ranges of north-central Montana and the Bighorn and Beartooth ranges of south-central Montana. These are montane to subalpine forests where the dominance of lodgepole pine (*Pinus contorta*) is related to fire history and topoedaphic conditions. In Montana, elevation ranges from 975 to 2,743 meters (3,200-9000 feet). These forests occur on flats to slopes of all degrees and aspect, as well as valley bottoms. Fire is frequent, and stand-replacing fires are common. Following stand-replacing fires, lodgepole pinewill rapidly colonize and develop into dense, even-aged stands. Most forests in this ecological system occur as early- to mid-successional forests persisting for 50-200 years on warmer, lower elevation forests, and 150-400 years in subalpine forests. They generally occur on dry to intermediate sites with a wide seasonal range of temperatures and long precipitation-free periods in summer. Snowfall is heavy and supplies the major source of soil water used for growth in early summer. Vigorous stands occur where the precipitation exceeds 533 millimeters (21 inches). These lodgepole forests are typically associated with rock types weathering to acidic substrates, such as granite and rhyolite. In west-central Montana ranges such the Big Belts and the Rocky Mountain Front, these forests are found on limestone substrates. These systems are especially well developed on the broad ridges and high valleys near and east of the Continental Divide. Succession proceeds at different rates, moving relatively quickly on low-elevation, mesic sites and particularly slowly in high-elevation forests such as those along the Continental Divide in Montana.

2% (*104 Acres*)

Wetland and Riparian Systems
Open Water

Open Water

All areas of open water, generally with less than 25% cover of vegetation or soil

No Image

2% (*98 Acres*)

Human Land Use
Developed

Other Roads

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

Additional Limited Land Cover

1% (*86 Acres*) Aspen Forest and Woodland
1% (*80 Acres*) Great Plains Floodplain
1% (*64 Acres*) Alpine Bedrock and Scree
1% (*55 Acres*) Northern Rocky Mountain Lower Montane Riparian Woodland and Shrubland
1% (*42 Acres*) Aspen and Mixed Conifer Forest
1% (*38 Acres*) Low Intensity Residential
<1% (*25 Acres*) Great Plains Mixedgrass Prairie
<1% (*17 Acres*) Insect-Killed Forest
<1% (*10 Acres*) Rocky Mountain Mesic Montane Mixed Conifer Forest
<1% (*9 Acres*) Rocky Mountain Subalpine-Montane Mesic Meadow
<1% (*6 Acres*) Developed, Open Space
<1% (*5 Acres*) Rocky Mountain Subalpine Mesic Spruce-Fir Forest and Woodland
<1% (*3 Acres*) Rocky Mountain Foothill Limber Pine - Juniper Woodland
<1% (*3 Acres*) Alpine-Montane Wet Meadow
<1% (*3 Acres*) Rocky Mountain Subalpine-Montane Fen
<1% (*2 Acres*) Rocky Mountain Subalpine Woodland and Parkland
<1% (*1 Acres*) Commercial / Industrial
<1% (*0 Acres*) Alpine Fell-Field
<1% (*0 Acres*) Emergent Marsh

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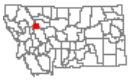
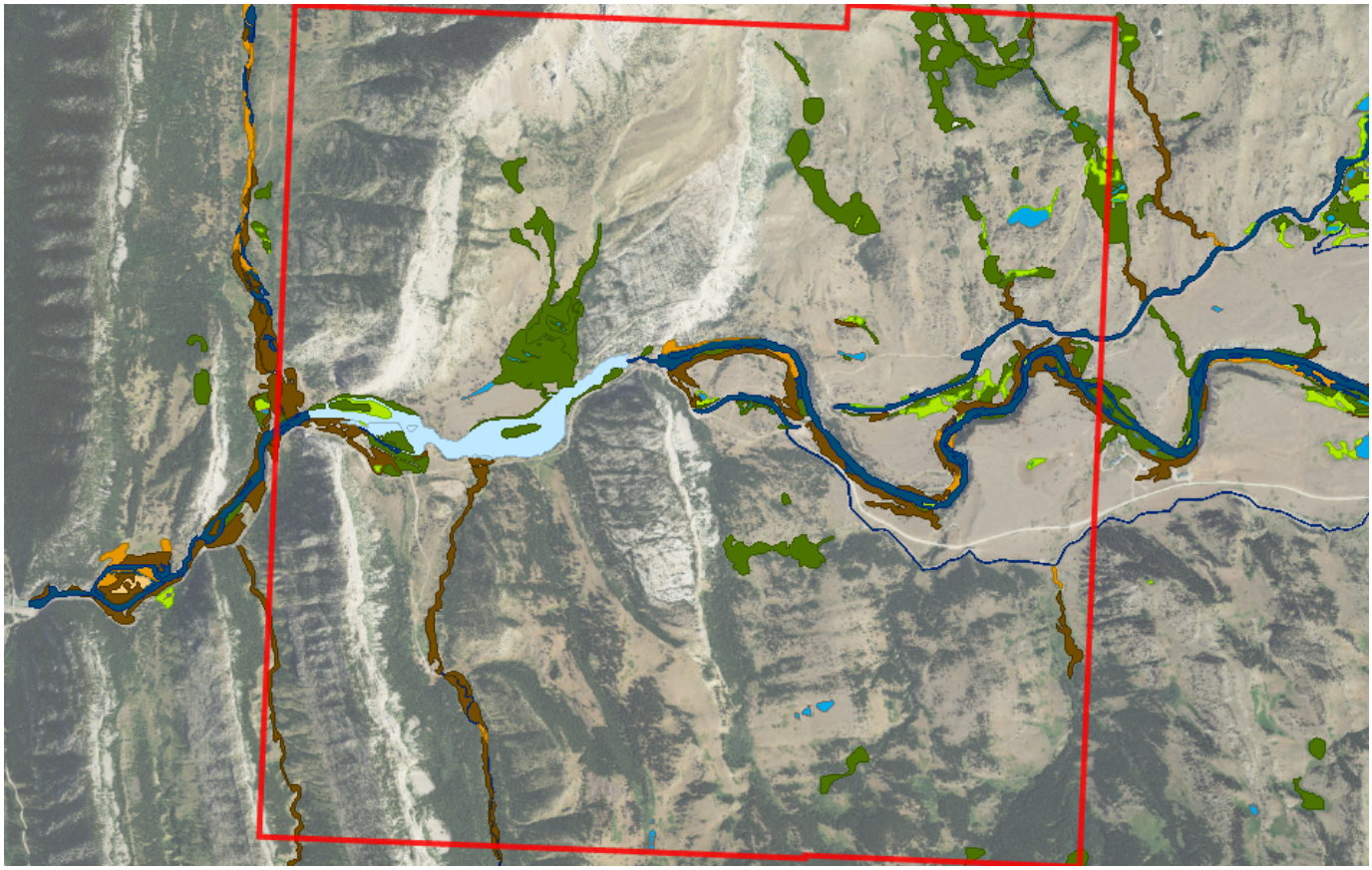


Latitude	Longitude
47.59390	-112.67026
47.64069	-112.73356

Wetland and Riparian

Summarized by: **022N009W036** *(Buffered PLSS Section)*



Wetland and Riparian Mapping

Explain

P - Palustrine

AB - Aquatic Bed

P - Palustrine, AB - Aquatic Bed
Wetlands with vegetation growing on or below the water surface for most of the growing season.

F - Semipermanently Flooded	9 Acres	
(no modifier)	**7 Acres**	**PABF**
b - Beaver	**2 Acres**	**PABFb**
h - Diked/Impounded	**<1 Acres**	**PABFh**

US - Unconsolidated Shore

P - Palustrine, US - Unconsolidated Shore
Wetlands with less than 75% areal cover of stones, boulders, or bedrock. AND with less than 30% vegetative cover AND the wetland is irregularly exposed due to seasonal or irregular flooding and subsequent drying.

A - Temporarily Flooded	4 Acres	
(no modifier)	**4 Acres**	**PUSA**
C - Seasonally Flooded	<1 Acres	
(no modifier)	**<1 Acres**	**PUSC**

EM - Emergent

P - Palustrine, EM - Emergent
Wetlands with erect, rooted herbaceous vegetation present during most of the growing season.

A - Temporarily Flooded	10 Acres	
(no modifier)	**10 Acres**	**PEMA**
h - Diked/Impounded	**<1 Acres**	**PEMAh**
C - Seasonally Flooded	9 Acres	
(no modifier)	**6 Acres**	**PEMC**
h - Diked/Impounded	**3 Acres**	**PEMCh**
F - Semipermanently Flooded	1 Acres	
(no modifier)	**1 Acres**	**PEMF**

SS - Scrub-Shrub

P - Palustrine, SS - Scrub-Shrub
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.

A - Temporarily Flooded	141 Acres	
(no modifier)	**130 Acres**	**PSSA**
h - Diked/Impounded	**11 Acres**	**PSSAh**
C - Seasonally Flooded	50 Acres	
(no modifier)	**15 Acres**	**PSSC**
b - Beaver	**32 Acres**	**PSSCb**
h - Diked/Impounded	**3 Acres**	**PSSCh**

FO - Forested

P - Palustrine, FO - Forested
Wetlands dominated by woody vegetation greater than 6

A - Temporarily Flooded 21 Acres
(no modifier) **21 Acres** PFOA

meters (20 feet) tall.

L - Lacustrine (Lakes)

1 - Limnetic

UB - Unconsolidated Bottom

H - Permanently Flooded 59 Acres
h - Diked/Impounded **59 Acres** L1UBHh

L - Lacustrine (Lakes), 1 - Limnetic, UB - Unconsolidated Bottom
Deep waterbodies with mud or silt covering at least 25% of the bottom.

2 - Littoral

US - Unconsolidated Shore

A - Temporarily Flooded 5 Acres
h - Diked/Impounded **5 Acres** L2USAh

L - Lacustrine (Lakes), 2 - Littoral, US - Unconsolidated Shore
Shorelines where there is 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.

R - Riverine (Rivers)

3 - Upper Perennial

UB - Unconsolidated Bottom

F - Semipermanently Flooded 3 Acres
(no modifier) **3 Acres** R3UBF

G - Intermittently Exposed 40 Acres
(no modifier) **40 Acres** R3UBG

H - Permanently Flooded 21 Acres
(no modifier) **3 Acres** R3UBH
x - Excavated **18 Acres** R3UBHx

R - Riverine (Rivers), 3 - Upper Perennial, UB - Unconsolidated Bottom
Stream channels where the substrate is at least 25% mud, silt or other fine particles.

US - Unconsolidated Shore

A - Temporarily Flooded 7 Acres
(no modifier) **6 Acres** R3USA
h - Diked/Impounded **1 Acres** R3USAh

C - Seasonally Flooded 1 Acres
(no modifier) **1 Acres** R3USC

R - Riverine (Rivers), 3 - Upper Perennial, US - Unconsolidated Shore
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.

4 - Intermittent

SB - Stream Bed

C - Seasonally Flooded 4 Acres
x - Excavated **4 Acres** R4SBCx

R - Riverine (Rivers), 4 - Intermittent, SB - Stream Bed
Active channel that contains periodic water flow.

Rp - Riparian

1 - Lotic

SS - Scrub-Shrub
(no modifier) **8 Acres** Rp1SS

Rp - Riparian, 1 - Lotic, SS - Scrub-Shrub
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 conditions.

FO - Forested
(no modifier) **100 Acres** Rp1FO

Rp - Riparian, 1 - Lotic, FO - Forested
This riparian class has woody vegetation that is greater than 6 meters (20 feet) tall.

2 - Lentic

FO - Forested
(no modifier) **2 Acres** Rp2FO

Rp - Riparian, 2 - Lentic, FO - Forested
This riparian class has woody vegetation that is greater than 6 meters (20 feet) tall.

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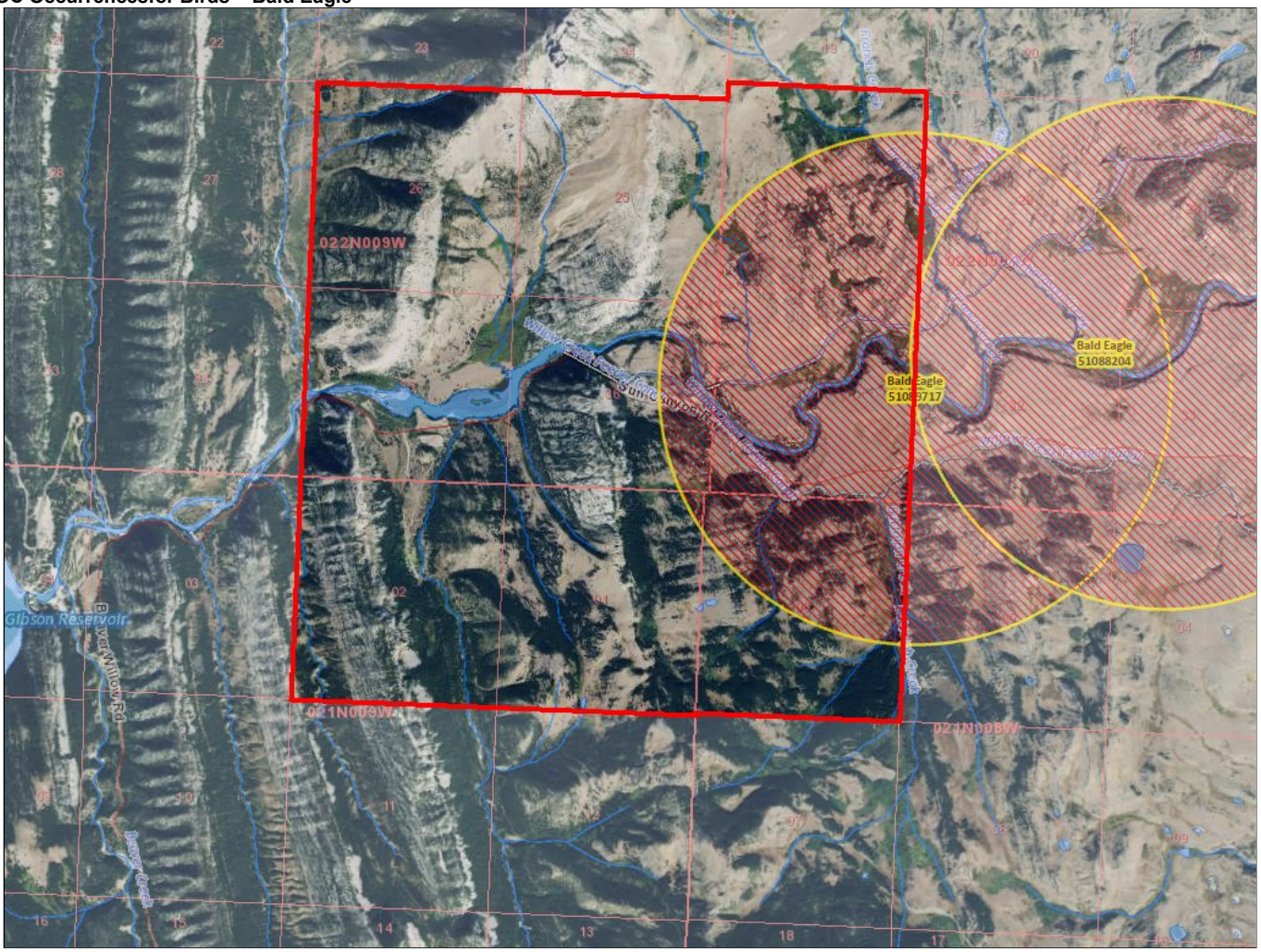
Latitude	Longitude
47.58520	-112.62275
47.63874	-112.77579

Montana SOC Occurrences Report

SOC Occurrencesfor Birds = Bald Eagle

Report generated 5/18/2023 10:26:27 AM



Birds - Bald Eagle *(Haliaeetus leucocephalus)*

SO Count: 2 **Obs Count**: 2 **Earliest Obs**: 2013 **Recent Obs**: 2021

Special Status Species
Native Species
Global Rank: G5
State Rank: S4

Agency Status
USFWS: BGEPA; MBTA
USFS: Sensitive - Known in Forests (BD, BRT, KOOT, LOLO)
BLM: SENSITIVE
FWP SWAP:
PIF: 2

Delineation Criteria
Confirmed nesting area buffered by a minimum distance of 2,000 meters in order to be conservative about encompassing the breeding territory and area commonly used for renesting. Only nesting observations with a locational uncertainty of 1,000 meters or less will be used to delineate a nesting area.

Last Updated
Mar 23, 2023

SO ID: 51088204	**Acres**: 3,105	**Obs Count**: 1	**Earliest Obs**: 2021	**Recent Obs**: 2021
SO ID: 51089717	**Acres**: 3,105	**Obs Count**: 1	**Earliest Obs**: 2013	**Recent Obs**: 2013

Citation for this report:
Montana SOC Occurrences Report
SOC Occurrencesfor Birds = Bald Eagle
Within Lat/Long: (47.58520,-112.62275) to (47.63874,-112.77579)
Natural Heritage Map Viewer. Montana Natural Heritage Program.
Retrieved on May 18, 2023, from https://mtnhp.org/MapViewer/SOReport.aspx

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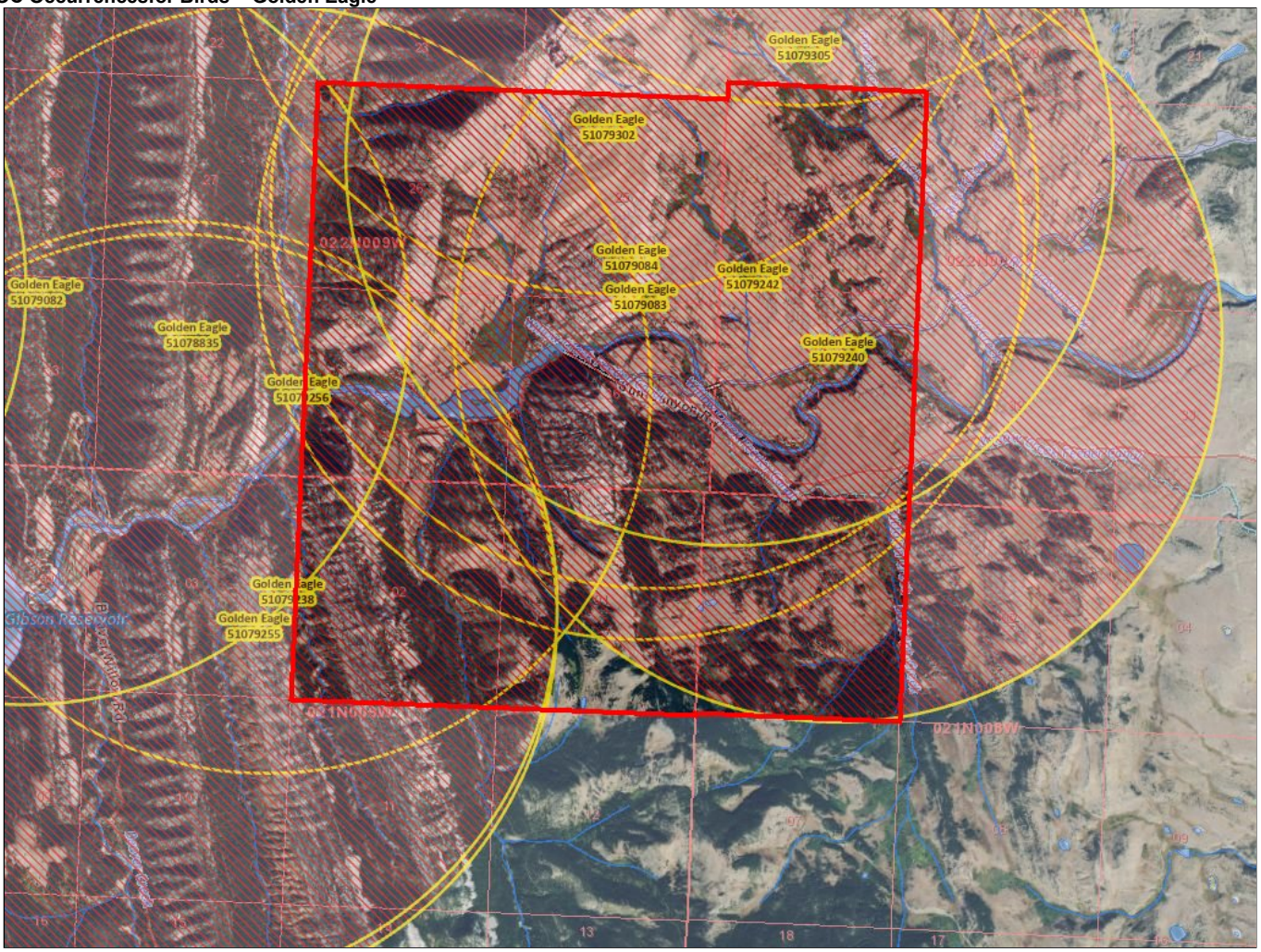
Latitude	Longitude
47.58520	-112.62275
47.63874	-112.77579

Montana SOC Occurrences Report

SOC Occurrencesfor Birds = Golden Eagle

Report generated 5/18/2023 10:27:21 AM



Birds - Golden Eagle *(Aquila chrysaetos)*

SO Count: 10 Obs Count: 14 Earliest Obs: 1982 Recent Obs: 2011

Species of Concern
Native Species
Global Rank: G5
State Rank: S3

Agency Status
USFWS: BGEPA; MBTA
USFS:
BLM: SENSITIVE
FWP SWAP: SGCN3
PIF:

Delineation Criteria
Confirmed nesting area buffered by a minimum distance of 3,000 meters in order to be conservative about encompassing the entire breeding territory and area commonly used for renesting and otherwise buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters.

Last Updated
Jan 17, 2023

SO ID: 51078835	**Acres**: 6,987	**Obs Count**: 1	**Earliest Obs**: 1982	**Recent Obs**: 1982
SO ID: 51079082	**Acres**: 6,987	**Obs Count**: 2	**Earliest Obs**: 1982	**Recent Obs**: 1983
SO ID: 51079083	**Acres**: 6,987	**Obs Count**: 1	**Earliest Obs**: 1983	**Recent Obs**: 1983
SO ID: 51079084	**Acres**: 6,972	**Obs Count**: 3	**Earliest Obs**: 1982	**Recent Obs**: 2001
SO ID: 51079238	**Acres**: 6,987	**Obs Count**: 1	**Earliest Obs**: 1984	**Recent Obs**: 1984
SO ID: 51079240	**Acres**: 6,987	**Obs Count**: 1	**Earliest Obs**: 2011	**Recent Obs**: 2011
SO ID: 51079242	**Acres**: 6,987	**Obs Count**: 1	**Earliest Obs**: 2004	**Recent Obs**: 2004
SO ID: 51079255	**Acres**: 6,987	**Obs Count**: 1	**Earliest Obs**: 1984	**Recent Obs**: 1984
SO ID: 51079256	**Acres**: 6,987	**Obs Count**: 2	**Earliest Obs**: 1982	**Recent Obs**: 1983
SO ID: 51079302	**Acres**: 6,987	**Obs Count**: 1	**Earliest Obs**: 1982	**Recent Obs**: 1982

Citation for this report:
Montana SOC Occurrences Report
SOC Occurrencesfor Birds = Golden Eagle
Within Lat/Long: (47.58520,-112.62275) to (47.63874,-112.77579)
Natural Heritage Map Viewer. Montana Natural Heritage Program.
Retrieved on May 18, 2023, from https://mtnhp.org/MapViewer/SOReport.aspx

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Montana/Dakotas State Office
5001 Southgate Drive
Billings, Montana 59101
http://www.blm.gov/montana-dakotas

March 16, 2020

In Reply Refer To: 6840 (930) I

EMAIL TRANSMISSION – 03/16/2020
Instruction Memorandum No. MT-2020-012
Expires: 9/30/2023

To: Montana Dakotas Leadership

From: State Director

Subject: 2020 Montana/Dakotas Special Status Species List

Program Area: Fish, Wildlife, Botany, and Threatened and Endangered Species Programs

Purpose: In accordance with the Bureau of Land Management (BLM) Special Status Species Policy (Manual-6840), the Special Status Species List, has been updated to assist in addressing conservation management needs and to help establish priorities. The 6840 manual gives the State Director the responsibilities to designate Bureau sensitive species within their respective jurisdictions and, at least once every 5 years, reviewing and updating the Bureau sensitive species list in coordination with State agencies responsible for fisheries, wildlife, and botanical resources and Natural Heritage Programs. The State Director also has the responsibility to implement procedures for the conservation of all special status species on BLM-administered lands within Montana/Dakotas.

Administrative or Mission Related: Mission Related

Policy/Action: The BLM Montana/Dakotas offices will use the Special Status Species list (Attachment 1) in budget planning, project planning, National Environmental Policy Act (NEPA) analysis, and land use planning. District managers and Field managers are responsible for implementing the BLM special status species policies and program within their area of jurisdiction. The field office matrix for sensitive species (Attachment 2) indicates where those species are considered sensitive for that field office.
Budget planning: Develop projects to gather new baseline information, improve or restore habitat, or monitor the condition of habitats and populations after treatments. Incorporate baseline information, habitat restoration, or species monitoring into project proposal for other resources (e.g., habitat improvement for sensitive plants from fuels treatments). Linking project feasibility and benefits to Special Status Species can improve the chance for funding.

NEPA analysis and compliance: When a project is proposed, the interdisciplinary team shall look at the special status species list and field office matrix, Montana Natural Heritage Program database

information, and other information, as appropriate, to determine if sites or habitats of special status species are known to occur or could occur in the project area. If a proposed alternative or project has the potential to positively or negatively affect special status species or their habitat, the impacts should be described and addressed in the NEPA analysis. If the proposed project has the possibility of creating or expanding the habitat for special status species, then the NEPA analysis shall address the development of new habitat and how the project can be designed to further benefit habitat. Consequences to federally listed and proposed as federally listed species or their habitat must be administered and analyzed as outlined in the 6840 Manual and the Endangered Species Act.

Sensitive Plants
If sensitive plant sites or habitats may be present in the project area, a field inventory should be conducted, prior to the project implementation, at the optimum time of year to determine presence or absence of sensitive species. Mitigation measures should be developed to prevent excessive loss of known plant sites.

Timeframe: This policy is effective immediately

Budget Impact: Minimal

Background: Revision of the 2014 Special Status Species list initiated in 2017. In October of 2019, a draft list was developed and provided to the BLM Montana/Dakotas organization, for review and comment (Instruction Memorandum No. MT-2020-001). In addition, the list was provided to the BLM National Operations Center. To date all comments have been appropriately addressed and the 2020 list is complete.

Manual/Handbook Sections Affected: None

Contact and Coordination: Informal discussions and species review were held with several field offices throughout the MT/DKs, the Montana Natural Heritage Program, adjacent BLM States and Federal and State partners during the revision process. Questions about animal species can be directed to Chris Boone, State Wildlife Lead, at 406-896-5034. Questions about aquatic species can be directed to Alden Shallcross, Aquatic Program Lead, at 406-896-5044. Questions about plant species can be directed to Wendy Velman, Botany Program Lead, at 406-896-5032.

Signed By:	Authenticated By:
John Mehlhoff	Mona Tanner
State Director	Staff Assistant

3 Attachments
1 - Bureau of Land Management MT/DKs Special Status Species List 2020 (7pp)
2 – 2020 Species Occurrence by Field Office (10pp)
3 - List of References and Information Sources (2pp)

Bureau of Land Management
Montana/Dakotas
Special Status Species List
2020

Endangered Species Act Federally Listed Species and Designated Critical Habitat			
Common	**Scientific Name**	**Listing Status**	**Critical Habitat Designation** Yes/No
BIRDS			
Least Tern	*Sternula antillarum*	Endangered	No
Piping Plover	*Charadrius melodus*	Threatened	Yes
Red Knot	*Calidris canutus*	Threatened	No
Whooping Crane	*Grus americana*	Endangered	No
Yellow-Billed Cuckoo	*Coccyzus americanus*	Threatened	No
FISH			
Bull Trout	*Salvelinus confluentus*	Threatened	Yes
Pallid Sturgeon	*Scaphirhynchus albus*	Endangered	No
INVERTEBRATES			
Dakota Skipper	*Hesperia dacotae*	Threatened	Yes
MAMMALS			
Black Footed Ferret	*Mustela nigripes*	Endangered	No
Canada Lynx	*Lynx canadensis*	Threatened	Yes
Grizzly Bear	*Ursus arctos*	Threatened (GYE & NCDE)	No
Northern Long-Eared Bat (Northern Myotis)	*Myotis septentrionalis*	Threatened	No

Special Notes:

Additional Information: Provided through hyperlinks of scientific names and Attachment 3, List of References and Sources of Information for Wildlife and Fisheries Management.

1) (GYE) = Greater Yellowstone Ecosystem and (NCDE) = Northern Continental Divide Ecosystem.

2) (MBTA) = Denotes species protected under the Migratory Bird Treaty Act

3) (BGEPA) = Denotes species protected under the Bald and Golden Eagle Protection Act

4) (BCC) = Birds of Conservation Concern. Identifies species of migratory nongame birds that, without additional conservation actions, are likely to become candidates for listing under the Endangered Species Act (ESA) of 1973.

5) BCRs = Bird Conservation Regions are ecologically distinct regions in North America with similar bird communities, habitats, and resource management issues.

Bureau of Land Management Sensitive Species				
Common	**Scientific**	**Federal Candidate**	**Federally Delisted**	**Federally Proposed**
AMPHIBIANS				
Great Plains Toad	*Anaxyrus cognatus*			
Northern Leopard frog	*Lithobates pipiens*			
Western Toad	*Anaxyrus boreas*			
BIRDS				
American Bittern (MBTA) (BCC) BCR Regions 11 & 17	*Botaurus lentiginosus*			
Bairds Sparrow (MBTA) (BCC) BCR Regions 11 & 17	*Centronyx bairdii*			
Bald Eagle (BGEPA) (BCC) BCR Regions 10, 11 & 17	*Haliaeetus leucocephalus*			
Black Tern (MBTA) (BCC) BCR Region 11	*Chilodonias niger*			
Black-backed Woodpecker (MBTA)	*Picoides arcticus*			
Black-billed Cuckoo (MBTA) (BCC) BCR Regions 11 & 17	*Coccyzus erythropthalmus*			
Blue-Gray Gnatcatcher (MBTA)	*Polioptila caerulea*			
Brewer's Sparrow (MBTA) (BCC) BCR Regions 10 & 17	*Spizella breweri*			
Burrowing Owl (MBTA) (BCC) BCR Region 17	*Athene cunicularia*			
Caspian Tern (MBTA)	*Hydroprogne caspia*			

Chestnut –collared Longspur (MBTA) (BCC) BCR Regions 11 & 17	*Calcarius ornatus*			
Common Tern (MBTA)	*Sterna hirundo*			
Ferruginous Hawk (MBTA) (BCC) BCR Regions 10 & 17	*Buteo regalis*			
Flammulated Owl (MBTA) (BCC) BCR Region 10	*Psioscops flammeolus*			
Forster's Tern (MBTA)	*Sterna forsteri*			
Franklin's Gull (MBTA)	*Leucophocus pipixcan*			
Golden Eagle (BGEPA) (BCC) BCR Region 17	*Aquila chrysaetos*			
Grasshopper sparrow (MBTA) BCC, Regions 11 and 17	*Ammodramus savannarum*			
Great Gray Owl	*Strix nebulosa*			
Greater Sage-Grouse	*Centrocercus urophasianus*			
Horned Grebe (MBTA) (BCC) BCR Regions 11 & 17	*Podiceps auritus*			
Lewis's Woodpecker (MBTA) (BCC) BCR Region 10	*Melanerpes lewis*			
Loggerhead Shrike (MBTA) (BCC) BCR Regions 10 & 17	*Lanius ludovicianus*			
Long-billed Curlew (MBTA) (BCC) BCR Regions 10, 11 & 17	*Numenius americanus*			
Marbled Godwit (MBTA) (BCC) BCR Regions 11 & 17	*Limosa fedoa*			
McCown's Longspur (MBTA) (BCC) BCR Regions 10, 11 & 17	*Rhychophanes mccownii*			
Mountain Plover (MBTA) (BCC) BCR Regions 11 & 17	*Charadrius montanus*			
Peregrine Falcon (MBTA) (BCC) BCR Regions 10, 11 & 17	*Falco peregrinus*			

Red-headed Woodpecker (MBTA) (BCC) BCR Regions 11 & 17	*Melanerpes erythrocephalus*			
Sagebrush Sparrow (MBTA) (BCC) BCR Regions 10 & 17	*Artemisiospiza nevadensis*			
Sage Thrasher (MBTA) (BCC) BCR Regions 10 & 17	*Oreoscoptes montanus*			
Sprague's Pipit (MBTA) (BCC) BCR Regions 11 & 17	*Anthus spraugueii*			
Trumpeter Swan (MBTA)	*Cygus buccinator*			
Veery (MBTA)	*Catharus fuscescens*			
White-faced Ibis (MBTA)	*Plegadis chihi*			
Yellow Rail (MBTA) (BCC) BCR Regions 11 & 17	*Coturnicops noveboracensis*			
FISH				
Arctic Grayling	*Thymallus arcticus montanus*			
Iowa Darter	*Etheostoma exile*			
Northern Redbelly X Finescale Dace	*Chrosomus eos x chrosomus neogaeus*			
Paddlefish	*Polyodon spathula*			
Northern Pearl Dace	*Margariscus nachtriebi*			
Sauger	*Sander canadensis*			
Sturgeon Chub	*Macrhybopsis gelida*			
Westslope Cutthroat Trout	*Oncorhynchus clarkii lewisi*			
Yellowstone Cutthroat Trout	*Oncorhynchus clarkii bouvieri*			
INVERTEBRATES				
A Mayfly	*Raptoheptagenia cruentata*			
Western Bumble Bee	*Bombus occidentalis*			
Western Pearlshell	*Margaritifera falcata*			
Regal Fritillary	*Speyeria idalia*			
MAMMALS				
Black-tailed Prairie Dog	*Cynomys ludovicianus*			
Eastern Red Bat	*Lasiurus borealis*			
Fisher	*Pekania pennanti*			

Fringed Myotis	*Myotis thysanodes*			
Gray Wolf	*Canis lupus*			
Hoary Bat	*Lasiurus cinereus*			
Pallid Bat	*Antrozous pallidus*			
Pygmy Rabbit	*Brachylagus idahoensis*			
Spotted Bat	*Euderma maculatum*			
Swift Fox	*Vulpes velox*			
Townsend's Big-eared Bat	*Corynorhinus townsendii*			
White-tailed Prairie Dog	*Cynomys leucurus*			
Wolverine	*Gulo gulo*			X
REPTILES				
Greater Short-horned Lizard	*Phrynosoma hernandesi*			
Western Milk Snake	*Lampropeltis gentilis*			
Snapping Turtle	*Chelydra serpentina*			
Spiny Softshell	*Apalone spinifera*			
Plains Hog-nosed Snake	*Heterodon nasicus*			
Smooth Green Snake	*Opheodrys vernalis*			
PLANTS				
MONTANA				
Cusick's Horse-mint	*Agastache cusickii*			
Sapphire Rockcress	*Boechera fecunda* = *Arabis fecunda*			
Bitterroot Milkvetch	*Astragalus scaphoides*			
Railhead Milkvetch	*Astragalus terminalis*			
Peculiar Moonwort	*Botrychium paradoxum*			
Idaho Sedge	*Carex idahoa*			
Big Horn Fleabane	*Erigeron allocotus*			
Parry's Fleabane	*Erigeron parryi*			
Railroad Canyon Wild Buckwheat	*Eriogonum soliceps*			
Visher's Buckwheat	*Eriogonum visheri*			
Howell's Gumweed	*Grindelia howellii*			
Taper-tip Desert-parsley	*Lomatium attenuatum*			
Nuttall Desert-parsley	*Lomatium nuttallii*			
Thinsepal monkeyflower	*Mimulus hymenophyllus*			
Meadow Lousewort	*Pedicularis crenulata*			
Cary Penstemon	*Penstemon caryi*			
Lemhi Beardtongue	*Penstemon lemhiensis*			

Payson's Bladderpod	*Physaria carinata* =*Lesquerella carinata*			
Pryor Mt. Bladderpod	Physaria lesicii =Lesquerella lesicii			
Thick-leaf Bladderpod	Physaria pachyphylla			
Beautiful Bladderpod	*Physaria pulchella* =*Lesquerella pulchella*			
White-bark Pine	*Pinus albicaulis*	X		
Spiny Skeletonweed	*Pleiacanthus spinosus* =*Stephanomeria spinosa* = *Lygodesmia spinosa*			
Alkali Primrose	*Primula alcalina*			
Beartooth Large-flowered Goldenweed	*Pyrrocoma carthamoides var. subsquarrosa*			
Shoshonea	*Shoshonea pulvinata*			
Chicken Sage	*Sphaeromeria argentea*			
NORTH DAKOTA				
Sidecluster Milkweed	*Asclepias lanuginosa*			
Slender-lobed Clematis	*Clematis columbiana var. tenuiloba*			
Torrey's Cryptantha	*Cryptantha torreyana*			
Lesser Yellow Lady's Slipper	*Cypripedium parviflorum*			
Taproot Fleabane	*Erigeron radicatus*			
Visher's Buckwheat	*Eriogonum visheri*			
Great Plains Stickseed	*Lappula cenchrusoides*			
Prairie Pinweed	*Lechea stricta*			
Common Starlily	*Leucocrinum montanum*			
Sunbright	*Phemeranthus parviflorus (Talinum parviflorum)*			
Narrowpoint Knotweed	*Polygonum leptocarpum*			
Heartleaf Buttercup	*Ranunculus cardiophyllus*			
SOUTH DAKOTA				
Rattlepod	*Astragalus americanus*			
Visher's Buckwheat	*Eriogonum visheri*			
Fendler's Spurge	*Euphorbia fendleri*			
Tulip Gentain	*Eustoma exaltatum*			
Broad-lipped Twayblade	*Listera convallarioides*			
Hairy Woodrush	*Luzula acuminata*			
Small-flowered Woodrush	*Luzula parviflora*			
Bristly Clubmoss	*Lycopodium annotinum*			

Ground Cedar	*Lycopodium complanatum*			
Oniongrass	*Melica bulbosa*			
Streamside Bluebells	*Mertensia ciliata*			
Nodding Silver-puffs	*Microseris nutans*			
Yellow Evening Primrose	*Oenothera flava*			
One-flowered Broomrape	*Orobanche uniflora*			
Northern White Orchid	*Platanthera dilatata*			
Round-leaved Orchid	*Platanthera orbiculata*			
One-flower Wintergreen	*Moneses uniflora* *(Pyrola uniflora)*			
Shining Willow	*Salix lucida*			
Western Saxifrage	*Micranthes occidentalis* *(Saxifraga occidentalis)*			
Hooker's Townsend-daisy	*Townsendia hookeri*			
Sand Puffs	*Tripterocalyx micranthus*			
Mountain Huckleberry	*Vaccinium membranaceum*			

1) Plant names in ( ) are the State of Montana recognized name for the species. All other names are the federally excepted names from USDA Plants.
2) See Attachment 3 and the hyperlinks above for individual species information.

Species Occurrence by Field Office

X= Species is considered a BLM Sensitive Species for that field office.
A species may occur in additional field offices but are not considered Sensitive for that Field Office unless they are marked with an X.

Sensitive Species Count	
Amphibians	3
Birds	36
Fish	9
Invertebrates	4
Mammals	13
Reptiles	6
Plants	58
Total	129

		Billings	Butte	Dillon	Glasgow	Havre	Lewistown	Malta	Miles City	Missoula	North Dakota	South Dakota	Upper Missouri River Breaks
AMPHIBIANS													
Great Plains Toad	Anaxyrus cognatus	X			X	X	X	X	X			X	X
Northern Leopard Frog	Lithobates pipiens		X	X						X			
Western Toad	Anaxyrus boreas		X	X			X			X			
BIRDS													
American Bittern	Botaurus lentiginosus	X	X	X	X	X	X	X	X	X	X	X	X
Baird's Sparrow	Centronyx bairdii	X	X		X	X	X	X	X		X	X	X
Bald Eagle	Haliaeetus leucocephalus	X	X	X	X	X	X	X	X	X	X	X	X
Black Tern	Chilodonias niger	X	X	X	X	X	X	X	X	X	X	X	X
Black-backed Woodpecker	Picoides arcticus	X	X		X	X	X		X	X	X	X	
Black-Billed Cuckoo	Coccyzus erythropthalmus	X			X	X	X	X	X		X		X
Blue-Gray Gnatcatcher	Polioptila caerulea	X										X	
Brewer's Sparrow	Spizella breweri	X	X	X	X	X	X	X	X	X		X	X
Burrowing Owl	Athene cunicularia	X	X	X	X	X	X	X	X		X	X	X
Caspian Tern	Hydroprogne caspia		X	X	X	X	X	X	X			X	X
Chestnut-collared Longspur	Calcarius ornatus	X	X	X	X	X	X	X	X		X	X	X
Common Tern	Sterna hirundo	X	X	X	X	X	X	X	X			X	X
Ferruginous Hawk	Buteo regallis	X	X	X	X	X	X	X	X		X	X	X
Flammulated Owl	Psioscops flammeolus		X	X		X	X			X			
Forster's Tern	Sterna forsteri	X	X	X	X	X	X	X				X	X

		Billings	Butte	Dillon	Glasgow	Havre	Lewistown	Malta	Miles City	Missoula	North Dakota	South Dakota	Upper Missouri River Breaks
BIRDS continued													
Franklin's Gull	Leucophocus pipixcan	X	X	X	X	X	X	X	X		X	X	
Golden Eagle	Aquila chrysaetos	X	X	X	X	X	X	X	X	X	X	X	X
Grasshopper Sparrow	Ammodramus savannarum										X		
Great Gray Owl	Strix nebulosa	X	X	X		X				X			
Greater Sage-grouse	Centrocercus urophasianus	X		X	X	X	X	X	X		X	X	X
Horned Grebe	Podiceps auritus				X	X		X		X	X		X
Lewis's Woodpecker	Melanerpes lewis	X	X	X						X			
Loggerhead Shrike	Lanius ludovicianus	X	X	X	X	X	X	X	X	X	X	X	X
Long-billed Curlew	Numenius americanus	X	X	X	X	X	X	X	X	X	X	X	X
Marbled Godwit	Limosa fedoa										X		
McCown's Longspur	Rhychophanes mccownii	X	X	X	X	X	X	X	X			X	X
Mountain Plover	Charadrius montanus	X	X	X	X	X	X	X	X			X	X
Peregrine Falcon	Falco peregrinus	X	X	X	X	X	X	X	X	X	X	X	X
Red-headed Woodpecker	Melanerpes erythrocephalus	X			X	X	X	X	X		X	X	X
Sagebrush Sparrow	Artemisiospiza nevadensis	X	X	X			X					X	
Sage Thrasher	Oreoscoptes montanus	X	X	X	X	X	X	X	X			X	X
Sprague's Pipit	Anthus spragueii	X	X	X	X	X	X	X	X		X	X	X
Trumpeter Swan	Cygus buccinator		X	X						X		X	

		Billings	Butte	Dillon	Glasgow	Havre	Lewistown	Malta	Miles City	Missoula	North Dakota	South Dakota	Upper Missouri River Breaks
BIRDS continued													
Veery	Catharus fuscescens	X	X	X	X	X	X	X	X			X	X
White-faced Ibis	Plegadis chihi	X	X	X	X	X	X	X	X			X	X
Yellow Rail	Coturnicops noveboracensis				X						X		
FISH													
Arctic Grayling (native fluvial population)	Thymallus arcticus montanus		X	X									
Iowa Darter	Etheostoma exile				X	X		X	X		X	X	
Northern Redbelly X Finescale dace	Chrosomus eos x Chrosomus neogaeus				X	X	X	X					X
Paddlefish	Polyodon spathula				X	X	X	X	X		X		X
Northern Pearl dace	Margariscus nachtriebi				X	X		X					
Sauger	Sander canadensis	X			X	X	X	X	X		X	X	X
Sturgeon chub	Macrhybopsis gelida				X	X	X	X	X		X	X	X
Westslope cutthroat trout	Oncorhynchus clarkii lewisi		X	X	X		X			X			
Yellowstone cutthroat trout	Oncorhynchus clarkii bouvieri	X	X										
INVERTEBRATES													
A Mayfly	Raptoheptagenia cruentata								X				
Regal Fritillary	Speyeria idalia											X	

		Billings	Butte	Dillon	Glasgow	Havre	Lewistown	Malta	Miles City	Missoula	North Dakota	South Dakota	Upper Missouri River Breaks
INVERTEBRATES continued													
Western Bumble Bee	Bombus occidentalis	X	X	X	X	X	X	X	X	X	X	X	X
Western Pearlshell	Margaritifera falcata		X	X						X			
MAMMALS													
Black-tailed Prairie Dog	Cynomys ludovicianus	X	X		X	X	X	X	X		X	X	X
Eastern Red Bat	Lasiurus borealis	X			X	X	X	X	X				X
Fisher	Pekania pennanti		X							X			
Fringed Myotis	Myotis thysanodes	X	X	X	X	X	X	X	X	X		X	X
Gray Wolf	Canis lupus	X	X	X	X	X	X	X		X		X	
Hoary Bat	Lasiurus cinereus	X	X	X	X	X	X	X	X	X			X
Pallid Bat	Antrozous pallidus	X				X	X	X					
Pygmy Rabbit	Brachylagus idahoensis		X	X									
Spotted Bat	Euderma maculatum	X	X	X		X	X	X	X				X
Swift Fox	Vulpes velox	X			X	X	X	X	X		X	X	X
Townsend's Big-eared Bat	Corynorhinus townsendii	X	X	X	X	X	X	X	X	X	X	X	X
White-tailed Prairie Dog	Cynomys leucurus	X											
Wolverine	Gulo gulo		X	X			X			X			
REPTILES													
Greater Short-horned Lizard	Phrynosoma hernandesi	X			X	X	X	X	X		X	X	X
Western Milk Snake	Lampropeltis gentilis	X			X		X	X	X			X	X

		Billings	Butte	Dillon	Glasgow	Havre	Lewistown	Malta	Miles City	Missoula	North Dakota	South Dakota	Upper Missouri River Breaks
REPTILES continued													
Snapping Turtle	Chelydra serpentina	X							X		X		
Spiny Softshell	Apalone spinifera	X				X	X	X	X			X	X
Plains Hog-nosed Snake	Heterodon nasicus	X			X	X	X	X	X		X		X
Smooth Green Snake	Opheodrys vernalis								X		X		
PLANTS													
Cusick's Horse-mint	Agastache cusickii			X									
Sidecluster Milkweed	Asclepias lanuginosa										X		
Rattlepod	Astragalus americanus											X	
Painted Milkvetch	Astragalus ceramicus var. apus			X									
Bitterroot Milkvetch	Astragalus scaphoides			X									
Railhead Milkvetch	Astragalus terminalis			X									
Sapphire Rockcress	Boechera fecunda (Arabis fecunda)		X										
Peculiar Moonwort	Botrychium paradoxum		X							X			
American Thorowax	Bupleurum americanum											X	
Idaho Sedge	Carex idahoa		X	X									

		Billings	Butte	Dillon	Glasgow	Havre	Lewistown	Malta	Miles City	Missoula	North Dakota	South Dakota	Upper Missouri River Breaks
PLANTS continued													
Slender-lobed Clematis	Clematis columbiana var. tenuiloba										X		
Fendler Cat's-eye	Cryptantha fendleri			X									
Torrey's Cryptantha	Cryptantha torreyana										X		
Lesser Yellow Lady's Slipper	Cypripedium parviflorum										X		
Taproot Fleabane	Erigeron radicatus										X		
Railroad Canyon Wild Buckwheat	Eriogonum soliceps		X	X									
Visher's Buckwheat	Eriogonum visheri								X		X	X	
Fendler's Spurge	Euphorbia fendleri											X	
Tulip Gentain	Eustoma exaltatum											X	
Great Plains Stickseed	Lappula cenchrusoides										X		
Prairie Pinweed	Lechea stricta										X		
Common Starlily	Leucocrinum montanum										X		
Broad-lipped Twayblade	Listera convallarioides											X	
Taper-tip Desert-parsley	Lomatium attenuatum			X						X			
Nuttall Desert-parsley	Lomatium nuttallii								X			X	

		Billings	Butte	Dillon	Glasgow	Havre	Lewistown	Malta	Miles City	Missoula	North Dakota	South Dakota	Upper Missouri River Breaks
PLANTS continued													
Hairy Woodrush	Luzula acuminata											X	
Small-flowered Woodrush	Luzula parviflora											X	
Bristly Clubmoss	Lycopodium annotinum											X	
Ground Cedar	Lycopodium complanatum											X	
Oniongrass	Melica bulbosa											X	
Streamside Bluebells	Mertensia ciliata											X	
Western Saxifrage	Micranthes occidentalis (Saxifraga occidentalis)											X	
Nodding Silver-puffs	Microseris nutans											X	
One-flower Wintergreen	Moneses uniflora (Pyrola uniflora)											X	
Yellow Evening Primrose	Oenothera flava											X	
One-flowered Broomrape	Orobanche uniflora											X	
Meadow Lousewort	Pedicularis crenulata			X									
Cary Penstemon	Penstemon caryi	X											
Lemhi Beardtongue	Penstemon lemhiensis		X	X									
Shining Penstemon	Penstemon nitidus											X	

		Billings	Butte	Dillon	Glasgow	Havre	Lewistown	Malta	Miles City	Missoula	North Dakota	South Dakota	Upper Missouri River Breaks
PLANTS continued													
Sunbright	Phemeranthus parviflorus (Talinum parviflorum)										X		
Payson's Bladderpod	Physaria carinata	X		X						X			
Pryor Mt. Bladderpod	Physaria lesicii	X											
Thick-leaf Bladderpod	Physaria pachyphylla	X											
Beautiful Bladderpod	Physaria pulchella			X						X			
White-bark Pine	Pinus albicaulis	X	X	X		X	X			X			
Northern White Orchid	Platanthera dilatata											X	
Round-leaved Orchid	Platanthera orbiculata											X	
Spiny Skeletonweed	Pleiacanthus spinosus =Stephanomeria spinosa = Lygodesmia spinosa	X	X	X									
Narrowpoint Knotweed	Polygonum leptocarpum										X		
Alkali Primrose	Primula alcalina			X									
Beartooth Large-flowered Goldenweed	Pyrrocoma carthamoides var. subsquarrosa	X											
Heartleaf Buttercup	Ranunculus cardiophyllus										X		

		Billings	Butte	Dillon	Glasgow	Havre	Lewistown	Malta	Miles City	Missoula	North Dakota	South Dakota	Upper Missouri River Breaks
Shining Willow	Salix lucida											X	
PLANTS continued													
Shoshonea	Shoshonea pulvinata	X											
Hooker's Townsend-daisy	Townsendia hookeri											X	
Sand Puffs	Tripterocalyx micranthus											X	
Mountain Huckleberry	Vaccinium membranaceum											X	

Attachment 3. List of References and Sources of Information

BLM National Policy Place – BLM Manual Sections: BLM Policy

- MS 6500 – Wildlife and Fisheries Management
- MS 6520 - Cooperative Relations
- MS 6521 - State Agencies
- MS 6522 - Federal Agencies
- MS 6523 - NGOs
- MS 6525 - Sikes Act Wildlife Program
- MS 6600 - Fish, Wildlife, & Special Status Plant Resources Inventory & Monitoring
- MS 6674 - Water Analysis for Fisheries
- MS 6720 - Aquatic Resource Management
- MS 6780 - Habitat Management Plans
- MS 6830 - Animal Damage Control
- MS 6840 - Special Status Species Management
- MS 1745 - Introduction, Transplant, Augmentation, & Reestablishment of Fish, Wildlife, and Plants

Wildlife and Fisheries Resources

1) Migratory Bird Treaty Act
https://www.fws.gov/birds/policies-and-regulations/laws-legislations/migratory-bird-treaty-act.php

2) Bald and Golden Eagle Protection Act
https://www.fws.gov/birds/policies-and-regulations/laws-legislations/bald-and-golden-eagle-protection-act.php

3) Birds of Conservation Concern
https://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php

4) North Dakota Species of Conservation Priority: https://gf.nd.gov./wildlife

5) Montana Conservation and Management: http://fwp.mt.gov

6) Montana Natural Heritage Program: http://mtnhp.org

7) South Dakota Natural Heritage Program: https://gfp.sd.gov/natural-heritage-program

8) Nature Serve: http://www.natureserve.org

9) Information for Planning and Consultation (IPaC): https://ecos.fws.gov/ipac/

10) Greater Yellowstone Ecosystem (GYE) and Northern Continental Divide Ecosystem (NCDE) are recovery ecosystems for grizzly bear. http://igbconline.org/

Pollinator Resources

1) Managing Public Lands for Pollinators https://www.pollinator.org/pollinator.org/assets/generalFiles/Managing_Public_Lands_brochure.pdf
2) North Dakota Pollinators info https://gf.nd.gov/wildlife/pollinators
3) USFWS Pollinators page https://www.fws.gov/pollinators/
4) Xerces Society https://xerces.org/
5) WO IM 2016-013 Managing for Pollinators on Public Lands https://www.blm.gov/policy/im-2016-013
6) Public Lands and Pollinators https://www.pollinator.org/pollinator.org/assets/generalFiles/NAPPCPublicLandsbroch.pdf
7) Bumblebees of MT http://www.mtent.org/projects/Bumble_Bees/bumble_bees.html
8) USGS Pollinator Species Biology https://www.usgs.gov/Centers/NPWRC/Science/Species-Biology
9) Bug Guide website https://bugguide.net/node/view/15740
10) BMPs for Pollinators on Western Rangelands https://xerces.org/wp-content/uploads/2019/09/18-015_BMPs-for-Polls-on-Western-Rangelands_sml_9-12-2019-1.pdf

Plant Resources

1) ND Proposed Plant Species of Conservation Priority https://gf.nd.gov./gnf/conservation/docs/proposed-plant-scp-summary-2013.pdf
2) ND Proposed Plant Species of Concern Accounts https://gf.nd.gov./gnf/conservation/docs/proposed-plant-scp-species-accounts.pdf
3) Flora of North Dakota http://ashipunov.info/shipunov/fnddb/index.htm
4) Rare Plants of South Dakota https://gfp.sd.gov/rare-plants/
5) SEINet – Herbarium resources http://swbiodiversity.org/seinet/
6) Montana Natural Heritage Program(Vascular & Non-Vascular plants) http://mtnhp.org
7) Wisconsin's rare plants https://dnr.wi.gov/topic/endangeredresources/Plants.asp
8) Minnesota's Rare Species Guide https://www.dnr.state.mn.us/rsg/filter_search.html?action=doFilterSearch&lichen=Y&moss=Y&vascular_plant=Y&allstatus=Y
9) Flora of Wisconsin http://wisflora.herbarium.wisc.edu/index.php
10) Northern Prairie Wildlife Research Center Herbarium https://www.npwrc.usgs.gov/herbarium/
11) Discover Life https://www.discoverlife.org/

APPENDIX B

Photographs

HERRERA
Science + Planning + Design

Biological Resources Report
Sun River Bridge Replacement
Photographic Log

Photo Number	Photo Description
1	Sun River Bridge facing downstream from the left bank
2	Grassland habitat on slope above the left bank
3	Grass and scattered trees along the left bank upstream of the bridge
4	Mixed conifer forest on steep slope along right bank downstream of the bridge
5	Riparian zone along the right bank upstream of the bridge
6	Riparian zone along the left bank downstream of the bridge
7	Pishkun Canal at siphon outlet, facing upstream
8	Willow Creek Feeder Canal, facing downstream (east)


1


2


3


4


5


6


7


8