BIOLOGICAL RESOURCES REPORT/PRELIMINARY BIOLOGICAL ASSESSMENT

GORE HILL INTERCHANGE
STPX 15 5(141)278
GREAT FALLS, MONTANA

Prepared for
Montana Department of Transportation

Prepared by
Herrera Environmental Consultants, Inc.

HERRERA

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Prepared for
Montana Department of Transportation
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Helena, Montana 59601

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December 27, 2019

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INTRODUCTION

Herrera prepared this Biological Resources Report and Preliminary Biological Assessment (BRR/PBA) for the Gore Hill Interchange project in Great Falls, Montana (Figure 1) to evaluate the project's potential effects on biological resources. Herrera visited the site and performed a literature review to identify all general habitat/vegetation communities, noxious weeds/regulated plants, general wildlife species (mammals, birds, reptiles and amphibians), and species of concern/special status species that could be affected by the project. Herrera documented wildlife use patterns and assessed wildlife accommodation needs and opportunities for further feasibility analysis.

PROJECT LOCATION

The project is located in Cascade County within the urban boundary of Great Falls on Interstate 15 (I-15). The study area for this project includes the south end of the Gore Hill Interchange on/off ramps and extends north to the 10th Avenue South Interchange. The study area includes the Gore Hill Interchange (Exit 278) and southbound I-15 between the 10th Ave Interchange (Exit 279) and Gore Hill. The study area also includes the intersections of 31st Street SW and the Tri Hill Frontage Road, and the I-15 ramp terminals at the Gore Hill Interchange (Figure 1).

PROJECT SCOPE

The Montana Department of Transportation (MDT) proposes to reconstruct and reconfigure the Gore Hill Interchange and provide a southbound auxiliary lane between 10th Avenue South and Gore Hill. The I-15 Gore Hill to Emerson Junction Corridor Planning Study (I-15 Corridor Study) was conducted in July of 2015 for the Interstate system in Great Falls. The study identified the Gore Hill Interchange as needing modifications to improve traffic operations and reduce congestion. The I-15 Corridor Study evaluated multiple improvement options and recommended that the preferred alternative be identified during the project development process. Also included in the I-15 Corridor Study was a recommendation to construct a southbound auxiliary lane between 10th Avenue South and Gore Hill to better accommodate traffic operations and improve safety.

The Preliminary Traffic Engineering Report for this project completed in 2019 examined existing conditions and evaluated a wide range of potential alternative designs for the interchange reconfiguration. Ultimately, a design consisting of a single-lane roundabout configuration at each ramp terminal of the interchange was selected. The Preliminary Traffic Engineering Report also recommended that an auxiliary lane be constructed between the 10th Avenue South and Gore Hill Interchanges and that a new structure across I-15 be built to accommodate widened

shoulders and pedestrian movements. The preferred design also includes rerouting the Tri Hill Frontage Road south of the Town Pump and providing a new intersection on 31st Street SW.

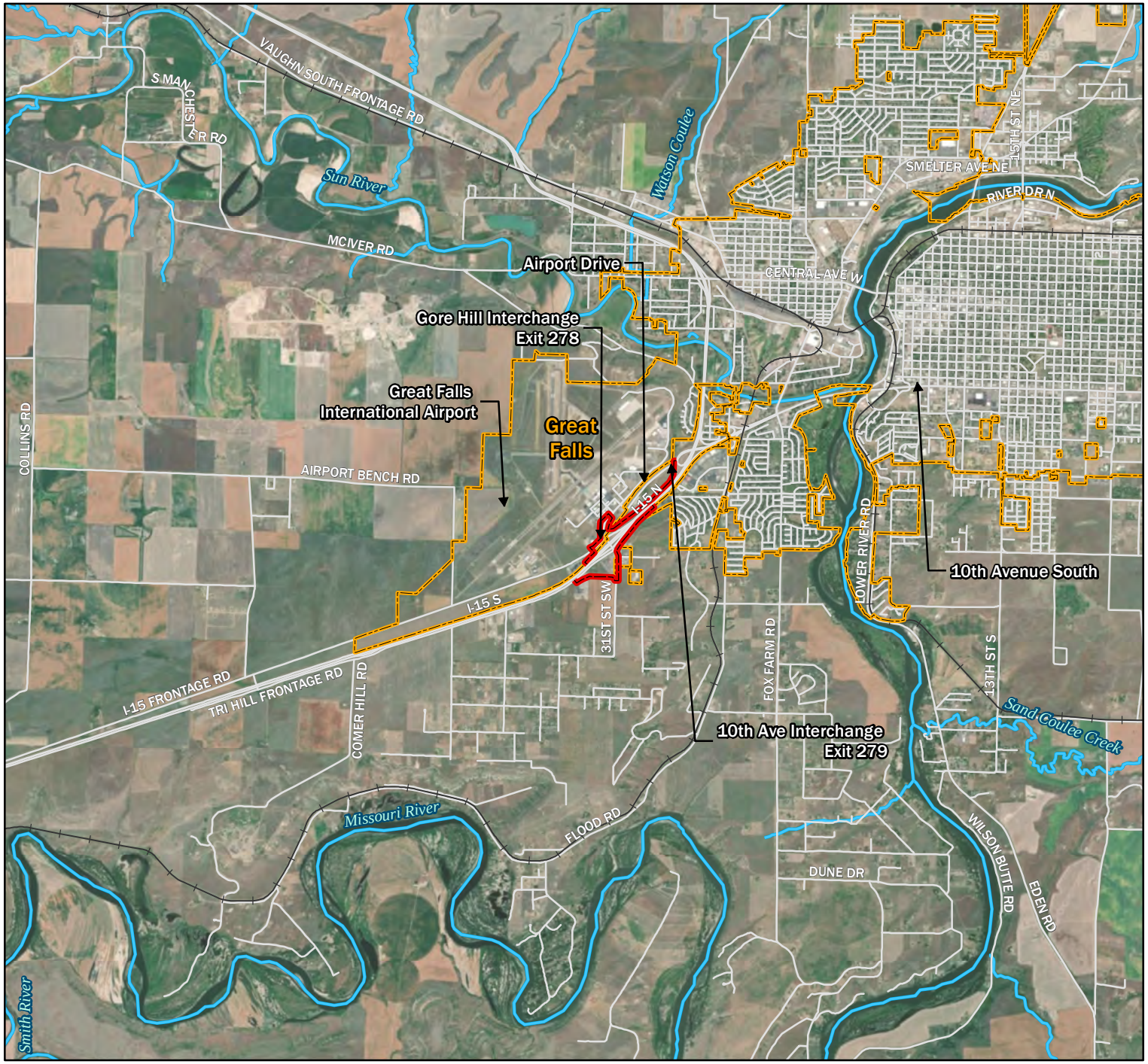

Figure 1.
Vicinity Map for the Gore Hill Interchange Project.

Legend

- Study area
- Stream
- Railroad
- Roads
- City boundaries

N

0 3,500 7,000 Feet

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Ecological Setting and General Area Description

The study area is in the Northwestern Glaciated Plains ecoregion of Montana (Woods et al. 2002). This ecoregion is transitional between the generally more level, wetter, more agricultural Northern Glaciated Plains to the east and the more irregular, dryer, Northwestern Great Plains to the west and southwest. The western and southwestern boundary of this region roughly coincides with the limits of continental glaciation (EPA 2019).

The study area and vicinity are highly developed. Existing development north of the Gore Hill Interchange includes the Great Falls International Airport, the U.S. Army Reserve Center, FedEx Shipping Center, and other commercial properties within the airport complex. Southeast of the interchange are the Pilot Travel Center, the Flying J Travel Plaza, Gardner's RV Center, Jackrabbit Red's Casino and Crystal Inn Hotel and Suites. The Cascade County Sheriff's office is southwest of the interchange and there is some residential property along the south side of I-15 which connects to 31st Street SW.

TERRESTRIAL RESOURCES

GENERAL HABITAT/VEGETATION COMMUNITIES

Herrera used the following resources for general information about habitat and vegetation communities in the study area:

- Montana Natural Heritage Program data (MNHP 2019a)
- Aerial photographs (ESRI 2019)
- Topographic maps (Montana State Library 2019)

Herrera biologist Susan Wall visited the site on November 1, 2019 to observe vegetation and habitat conditions in the study area. Data were collected by driving and walking through the study area and recording vegetation and noxious weeds. Photos were taken from within the study area and at vantage points outside the study area, and are provided in Appendix A.

Land Use/Land Ownership

According to the Montana National Heritage Program landcover data (MNHP 2019a), the dominant land use near the study area is developed land consisting of major roads, including the interstate, and residential and commercial land. Outside the developed land in the city of Great Falls are some cultivated crops, including hay land south of the Gore Hill Interchange. All land types in the project area are disturbed to some extent. Most of the study area is within MDT right-of-way and Great Falls International Airport Authority ownership. There are several private parcels that are partially within the study area.

Habitats

Within the study area, Herrera identified the following habitat types, shown on Figure 2:

- Mixed grasses including smooth brome (*Bromus inermis*), crested wheatgrass (*Agropyron cristatum*), slender wheatgrass (*Elymus trachycaulus*), and fescue (*Festuca* spp.). Scattered forbs are present including tumblemustard (*Sisymbrium altissimum*), curly dock (*Rumex crispus*), showy milkweed (*Asclepias speciosa*), and pepperweed (*Lepidium* spp.). This habitat type also contains scattered individual plains cottonwood (*Populus deltoides*) and Russian olive (*Eleagnus angustifolia*).

- Hillside seep (potential wetland area) on the slope north of I-5, further described in the Aquatic Resources section below.
- Ditch wetland at the base of the I-5 fill slope, further described in the Aquatic Resources section below.
- Cropland south of the airport interchange.

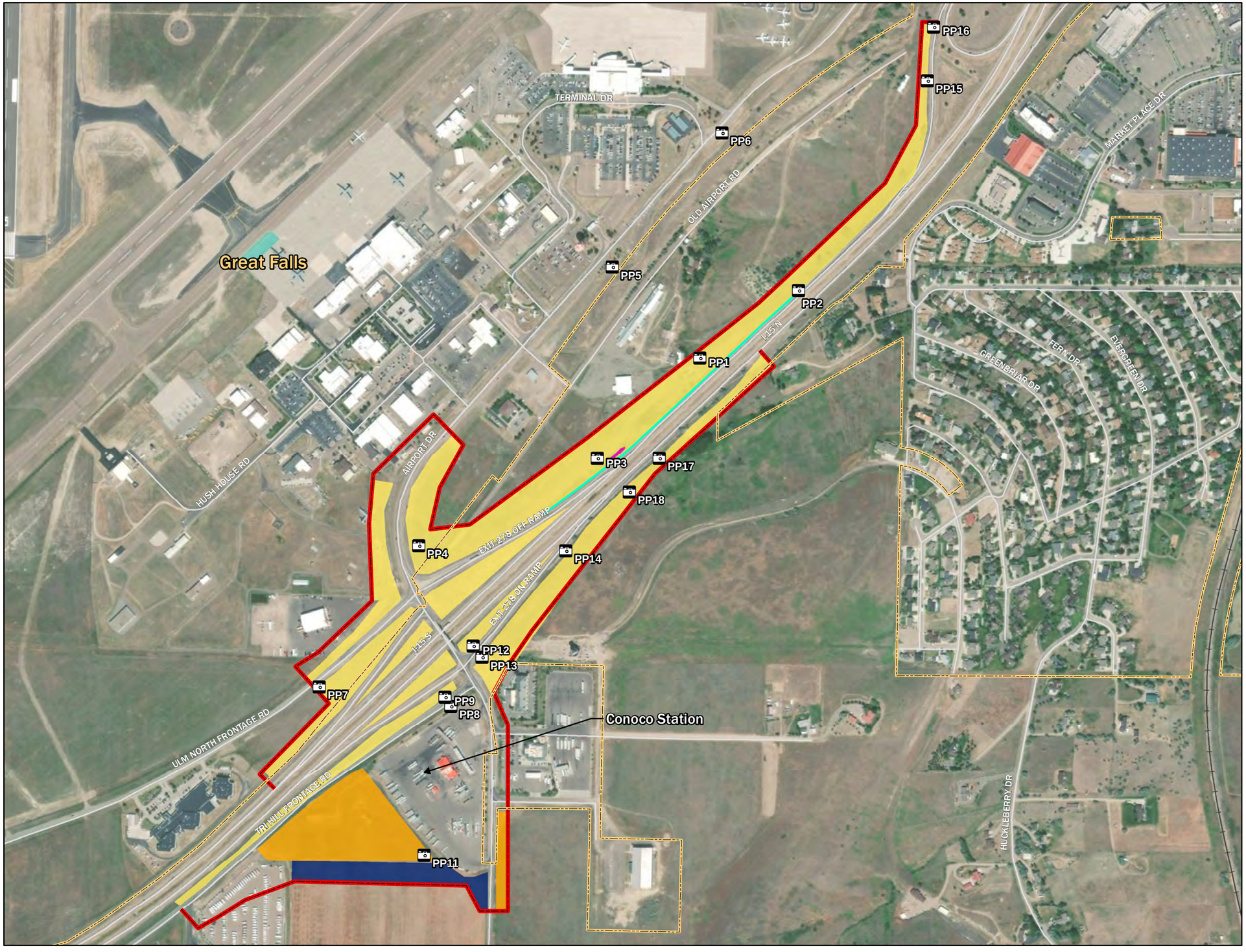

Figure 2.
Habitats, and Photo Points for the Gore Hill Interchange Project.

Legend

- Photo points
- Study area
- Roads
- Railroad
- City boundaries

Noxious Weeds

- Spotted knapweed

Habitat Type

- Seep wetland (potential wetland area)
- Cropland
- Mixed grasses
- Ditch Wetland (potential wetland area)

N

0 320 640 1,280 Feet

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Potential Impacts

Proposed roadway improvements, including providing single-lane roundabouts at the ramp terminals, widening to add a southbound auxiliary lane between the 10th Avenue South and Gore Hill Interchanges, building a new structure for the road crossing over I-15, and rerouting Tri-Hill Frontage Road, would clear roadside vegetation and potentially introduce noxious weeds.

Avoidance and Minimization Recommendations

Follow the MDT Standard Specifications.

- Any disturbed areas shall be seeded with desirable plant species as soon as practicable after construction to reduce the spread and establishment of noxious weeds and to re-establish permanent vegetation. Clear and grub only within the staked construction limits.

Noxious Weeds/Regulated Plants

The Montana Noxious Weed Information website (MSU 2019) was used for general information about noxious weeds and regulated plants in the study area. During the site visit Ms. Wall walked through the study area and recorded the presence and degree of infestation of noxious weeds and regulated plants.

Species Present and Degree of Infestation

The following noxious weeds and invasive species were observed during the site visit:

- Russian olive (*Eleagnus angustifolia*) - scattered individuals adjacent to I-15 on both sides
- Spotted knapweed (*Centaurea stoebe*) – dense patch in the field west of the Town Pump gas station in the southern portion of the study area (see Figure 2) and scattered patches on the slopes on both sides of I-15.
- Canada thistle (*Cirsium arvense*) – scattered patches on the slope north of I-15
- Houndstongue (*Cynoglossum officinale*) – scattered individuals south of I-15
- Cheatgrass (*Bromus tectorum*) – interspersed with other grasses on the hillslope north of the 10th Avenue South Interchange

Spotted knapweed and houndstongue are State of Montana Priority 2B weeds and Cascade County Category 3 weeds. These weeds are abundant in Montana and distributed in large areas in Cascade County. The County recommends aggressively managing these species when they are found along transportation rights of-way or other areas that could facilitate rapid dispersion (MSU 2019; Cascade County 2019).

Canada thistle is a State of Montana Priority 2B weed and a Cascade County Category 4 weed commonly found in many areas in the county, but not as widespread as Category 3 weeds. The County recommends employing herbicide and other management methods to reduce the impact of these species to lands under direct Weed District responsibility, and to reduce their spread from these areas (MSU 2019; Cascade County 2019).

Russian olive and cheatgrass are State of Montana regulated plants and Cascade County Category 6 weeds, but not state or county listed noxious weeds. Recommended practices are research, education and prevention to minimize the spread of these plants (MSU 2019; Cascade County 2019).

Avoidance and Minimization Recommendations

In addition to Cascade County recommendations, seeding disturbed areas with desirable plant species would reduce the spread and establishment of noxious weeds and allow permanent desirable vegetation to establish.

General Wildlife Species

The following resources provided general information about wildlife in the study area:

- Montana Natural Heritage Program data (MNHP 2019a)
- Correspondence with MDT district biologist Paul Sturm

During the site visit Ms. Wall made visual observations for wildlife; observations included visual sightings, scat, and tracks.

Mammals

Wildlife species inhabiting or traversing the study area are typical of those that occur in developed and disturbed areas of central Montana. Most species habituate to disturbed areas and, as a result, are predominately generalist species.

Species Observed/Documented

Common mammals occupying habitats in, traversing, or having a distribution range that overlaps the study area are white-tailed deer (*Odocoileus virginianus*), mule deer (*Odocoileus hemionus*), and coyote (*Canis latrans*). Other common mammals potentially occurring in the project area include, but are not limited to, North American porcupine (*Erethizon dorsatum*), raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), American badger (*Taxidea taxus*), bobcat (*Lynx rufus*), red fox (*Vulpes vulpes*), muskrat (*Ondatra zibethicus*), Richardson's ground squirrel (*Urocitellus richardsonii*), deer mouse (*Peromyscus maniculatus*), and meadow vole (*Microtus pennsylvanicus*) (RPA 2015).

Wildlife observations during the site visit included tracks, scat and direct observation as shown in Table 1. Tracks in the snow were not fresh, and snow was melting, so positive identification was not possible.

Table 1. Wildlife and Wildlife Sign Observed Within the Study Area

Species	Location	Observation Type
Whitetail/Mule Deer	Both sides of I-15	Scat and tracks
Rabbit	North of I-15 between 10th Ave. interchange and Gore Hill interchange	Tracks
Squirrel	North of I-15 between 10th Ave. interchange and Gore Hill interchange	Tracks
Canine (unidentified)	North of I-15 between 10th Ave. interchange and Gore Hill interchange	Tracks
Domestic cat	North of I-15 between 10th Ave. interchange and Gore Hill interchange	Tracks
Domestic dog	South of Conoco Station	Tracks and scat

The most abundant signs of wildlife were deer tracks running parallel to I-15. Tracks north of I-15 appeared to originate from the slope near the 10th Avenue South Interchange, follow the toe of the roadway embankment, then head up the slope toward the airport interchange. Tracks south of I-15 appeared to come from the open area southwest of the study area, then paralleled I-15 and led down the slope toward a residential and commercial area near the 10th Avenue South Interchange. There were no obvious signs (tracks) of deer crossing the highway, but it is likely that deer occasionally travel across the highway between the open fields north and south of the highway corridor.

Potential Impacts

Roads can impact wildlife by removing habitat, reducing connectivity and causing mortality due to vehicle collisions. Wildlife mortality associated with roads is primarily due to vehicle speed

and volume, and species behavior and ecology (Forman 2003). The proposed project would not change vehicle speeds or volume and would only remove minor amounts of low-quality habitat. The main impact of the proposed project on wildlife would be the effect of adding an additional lane, which would widen the distance that wildlife must cross when moving north or south across I-15.

Avoidance and Minimization Recommendations

Potential accommodations to avoid and minimize project impacts on wildlife are discussed in the Wildlife Accommodations Needs and Opportunities section below.

Birds

Species Observed

During the site visit Ms. Wall saw a small unidentified bird in shrubs adjacent to I-15, and tracks of American crow (*Corvus brachyrhynchos*) north of I-15 between 10th Avenue South Interchange and Gore Hill Interchange. Ms. Wall did not observe any bird nests in the study area.

Potential Impacts

Birds covered under the Migratory Bird Treaty Act 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.

Avoidance and Minimization Recommendations

Review of the study area for bird nests should occur before construction to verify that no nests are present. Any tree removal should take place outside the nesting season (April 15 – Aug. 15) or when no active nests are present, according to MDT Special Provision 107-25c, to avoid potential impacts to migratory birds.

WILDLIFE ACCOMMODATION NEEDS AND OPPORTUNITIES

Wildlife accommodations are defined by MDT as features or strategies "designed and implemented into a transportation facility to moderate the effects of the infrastructure on wildlife and their habitat".

Ms. Wall used the following resources for information about wildlife movement patterns and potential to reduce wildlife-vehicle conflicts in the study area:

- Topographic maps (Montana State Library 2019)

- Correspondence with MDT district biologist Paul Sturm

Needs Analysis

Whitetail and mule deer are the primary wildlife that could benefit from wildlife accommodations for this project. Deer movements are influenced by seasonal weather variations, population pressures, hunting, agricultural activities, food availability, and proximity of protective cover. Deer often exhibit increased movement across the landscape during fall as males search for females during the breeding season.

Carcass data collected by MDT can be used as an indicator of the relative risk of wildlife-vehicle collisions, although there are limitations to the dataset. Carcass data from 2017 and 2018 shows three animal mortalities in the vicinity of the study area, including one male whitetail deer, one female whitetail deer, and one female mule deer. The events occurred in fall and winter of 2017. No carcasses were removed from this area in 2018 (MDT 2019). Based on this data and general site observations, it does not appear that the study area is a well-used crossing location.

General Recommendations

MDT's Wildlife Accommodation Process (MDT 2018) was consulted for developing guidance on general wildlife accommodations. Possible accommodations include incorporating areas of wildlife-friendly fencing and trimming of roadside vegetation where feasible to discourage wildlife use.

AQUATIC RESOURCES

Prior to conducting field investigations, Herrera reviewed existing data sources for information related to wetlands and streams in the study area and vicinity. Data reviewed included:

- National Wetland Inventory (NWI) mapping (USFWS 2019a)
- Soil survey data (NRCS 2019)
- Aerial photographs (NAIP 2019)
- Topographic maps (Montana State Library 2019)

During the site visit on November 1, 2019, Ms. Wall conducted a reconnaissance level survey for aquatic resources and sketched their general location on an aerial photograph.

WETLANDS

The available data sources do not indicate any wetlands or hydric soils in the study area (Figure 3); however, Ms. Wall observed a potential wetland area north of I-15 containing a seep on the hillslope that drains to a ditch along the highway (see Figure 2). The hillslope shows visible signs of instability (slumping) and Ms. Wall observed a network of pipes and drains on the slope.

The areas shown on Figure 2 are approximate boundaries based on the presence of vegetation dominated by common cattails (*Typha latifolia*) and sandbar willow (*Salix exigua*), standing water in the ditch, and aerial photo interpretation. Due to project timing outside of the growing season and frozen soil, it was not possible to conduct a wetland delineation according to the U.S. Army Corps of Engineers Wetland Delineation Manual. Wetlands will be delineated in the spring of 2020 and included in this report by addendum.

South of I-15 there are several concrete lined ditches that convey highway runoff and water that drains from the hillslopes north of I-15 through culverts under the highway. These ditches are not vegetated and do not provide habitat for aquatic species. There are no streams or water bodies in the study area that could support fish or aquatic wildlife species.

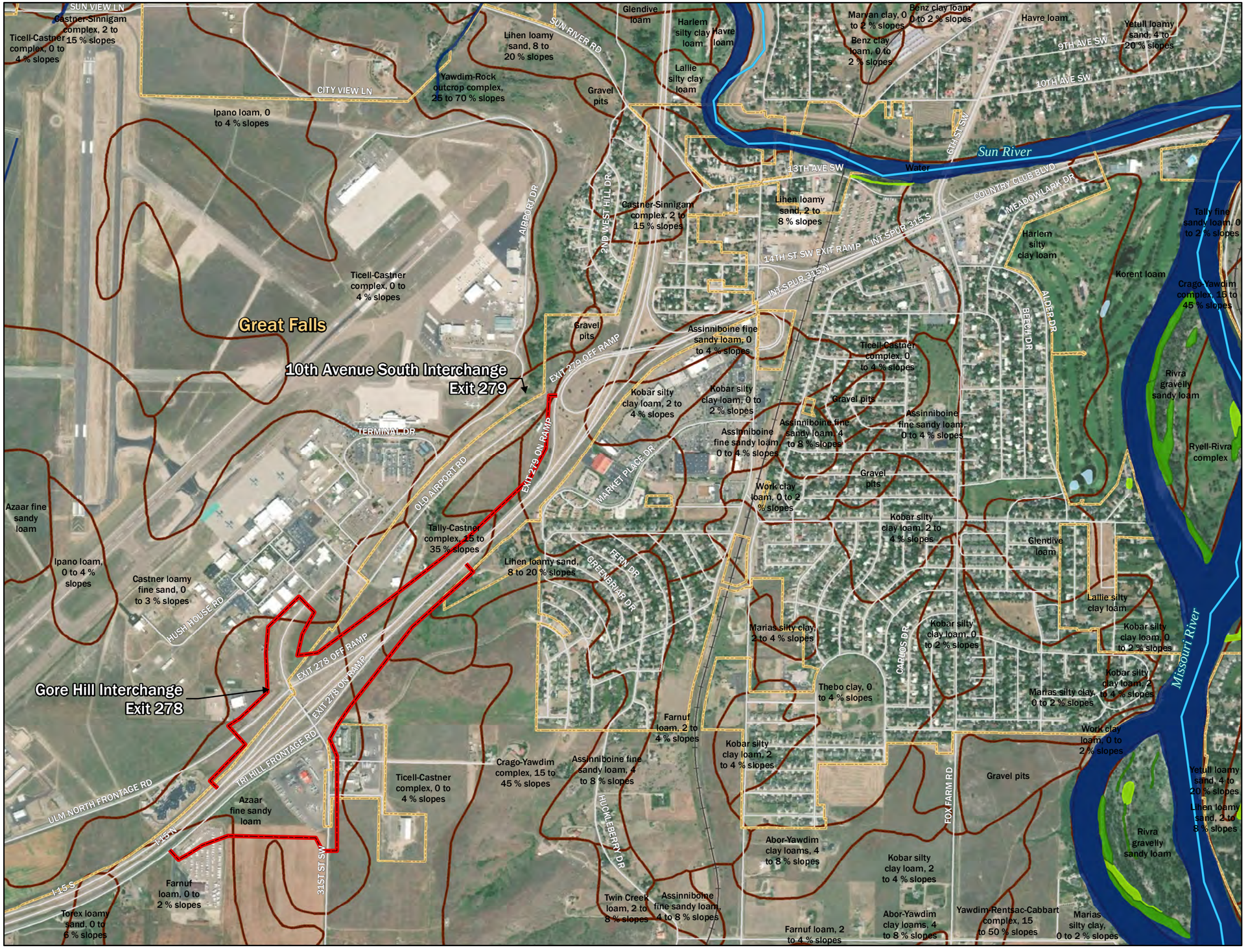

Figure 3.
NWI Wetlands and NRCS Soils for the Gore Hill Interchange Project.

Legend

- Study area
- Stream
- Roads
- Railroad
- City boundaries
- NRCS soils

NWI Wetlands

- Freshwater Emergent Wetland
- Freshwater Forested /Shrub Wetland
- Freshwater Pond
- Riverine

N

0 625 1,250 2,500 Feet

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SPECIES OF CONCERN AND SPECIAL STATUS SPECIES

This section describes species identified by the Montana Natural Heritage Program (MNHP) as species of concern (SOCs) or potential SOCs that could occur within one mile of the study area. The MNHP report of Species of Concern Occurrences is included in Appendix B. Data from the MNHP (MNHP 2019b) were the primary sources used to provide baseline species information that was used to guide field investigations. During the site visit Ms. Wall made general observations regarding suitability of habitat for SOCs.

PLANTS

Four plant SOCs are documented within one mile of the study area. Their description and habitat are provided below.

Species Description and Habitat

Little Indian breadroot (*Pediomelum hypogaeum*) – potential species of concern

Little Indian Breadroot is a perennial herb with a deep, club-shaped root. Above ground, the plant consists of a rosette of leaves that are divided into 3 to 7 leaflets. Blue, pea-like flowers are borne in spikes arising from the bases of the leaves. Habitat is loose, sandy soil of grasslands and open pine woodlands on the plains, below sandstone outcrops and in blowouts (MNHP 2019c).

Chaffweed (*Centunculus minimus*) – species of concern

Chaffweed is a low, annual herb with prostrate or erect stems, 2 to 10 centimeters (cm) long, that root at the nodes. The alternate leaves, 5-10 mm long, are egg to spoon-shaped with entire margins. Foliage is glabrous. Solitary, inconspicuous flowers on short stalks occur in the leaf axils. Habitat is vernally wet, sparsely vegetated soil around ponds and along rivers and streams in the valleys and on the plains (MNHP 2019c).

Pale-yellow jewel-weed (*Impatiens aurella*) – species of concern

Pale-yellow jewel-weed has erect branching stems, 20–70 cm long and leaf blades 3–12 cm long; Flowers are yellow, often with orange spots. Habitat is wet, usually organic soil in marshes and ditches (MNHP 2019c).

Manyhead sedge (*Carex sychnocephala*) - species of concern

The inflorescence of manyhead sedge consists of 4 to 12 spikes in a dense head, with female flowers above few male flowers. Habitat is moist soil in meadows along streams and ponds in the valleys and on the plains (MNHP 2019c).

Potential Impacts

It is unlikely that any of these species occur in the study area. The upland grasslands in the study area are disturbed and primarily vegetated with non-native species. The ditch north of I-15 and the hillside seep are dominated by common cattail and sandbar willow and are highly disturbed. There is no habitat for the plant SOCs in the study area; therefore, the project would have no impact on sensitive plant species.

MAMMALS

The MNHP database (MNHP 2019b) lists one sensitive wildlife species occurrence, hoary bat, within 2 miles of the study area, along the Missouri River.

Species Description and Habitat

Hoary Bat (*Lasiurus cinereus*) – species of concern

Hoary bat is the largest bat species found in Montana. During the summer, hoary bats occupy forested areas and are probably most common throughout summer in Montana at lower elevations Only one roost has been reported in Montana, over 150 miles from the study area. Hoary bats often forage over water sources within conifer and hardwood forests and along riparian corridors (MNHP 2019c).

Hoary bats could use habitat in the study area for foraging, although their preferred habitat is over one half mile away along the Missouri River. There is no suitable roosting habitat for hoary bat in the study area.

Potential Impacts

This project will not remove any roosting habitat for hoary bat and any impacts on foraging habitat will be negligible; therefore, the project will have no impact on this species.

BIRDS

The MNHP database lists confirmed nesting areas for bald eagle (*Haliaeetus leucocephalus*) and great blue heron (*Ardea herodias*) along the Missouri River, over one half mile from the study area (MNHP 2019b).

Bald Eagle

The bald eagle is a resident species in the forested mountainous areas of Montana. Other individuals from more northerly latitudes either winter in Montana or migrate through the state to more southerly locations. Residents generally remain in the vicinity of their breeding areas throughout the year, while some may move to lower elevations or to other areas with higher concentrations of food (MBEWG 1994 as cited in MNHP 2019c). In Montana, as elsewhere, the bald eagle is primarily a species of forested areas along rivers and lakes, especially during the breeding season. Important year-round habitat includes wetlands, major water bodies, spring spawning streams, ungulate winter ranges and open water areas (Bureau of Land Management 1986). Nesting sites are generally located within larger forested areas near large lakes and rivers where nests are usually built in the tallest, oldest, large diameter trees (MBEWG 1994 as cited in MNHP 2019c).

Great Blue Heron

Great blue herons breed from southern Alaska southeast across central Canada to Nova Scotia and south to Guatemala, Belize, and the Galapagos Islands. They winter in most of the breeding range and throughout Central America to Venezuela and Colombia. Most Montana nesting colonies are in cottonwoods along major rivers and lakes; with a smaller number occurring in riparian ponderosa pines (Pinus ponderosa) and on islands in prairie wetlands. Great blue herons use the largest available trees for nesting (MNHP 2019c).

Potential Impacts

Habitat in the study area does not contain suitable nest trees or foraging habitat for bald eagle or great blue heron, and project construction would not affect these species.

THREATENED AND ENDANGERED SPECIES PRELIMINARY BIOLOGICAL ASSESSMENT

The U.S. Fish and Wildlife Service (USFWS) maintains the federal list of threatened and endangered species. Species on this list receive protection under the Endangered Species Act. An endangered species is one that is in danger of extinction throughout all or a significant portion of its range. A threatened species is one that is likely to become endangered in the foreseeable future. USFWS also maintains a list of species that are candidates or are proposed for possible addition to the federal list.

USFWS's Information for Planning and Consultation (IPaC) official species list, provided in Appendix C, and data from the Montana Natural Heritage Program were the primary sources used to provide baseline species information that was used to guide field investigations.

According to the USFWS IPaC official species list (USFWS 2019b), two federally listed species are could potentially occur in this location:

- Grizzly Bear (*Ursus arctos horribilis*) – threatened
- North American Wolverine (*Gulo gulo luscus*) – proposed threatened

There is no designated or proposed critical habitat at this location.

GRIZZLY BEAR

A search of the Montana Natural Heritage Program's Natural Heritage Tracker database (report generated October 31, 2019) revealed that there are no occurrences of grizzly bear within one mile of the study area. In Montana, grizzly bears primarily use meadows, seeps, riparian zones, mixed shrub fields, closed timber, open timber, sidehill parks, snow chutes, and alpine slabrock habitats (MNHP 2019c).

The study area is within the year-round range of the grizzly (MNHP 2019c) and is east of the Northern Continental Divide Ecosystem recovery zone (USFWS 2019c). Grizzlies are becoming increasingly common between the recovery zone boundary and I-15 to the east (USFWS 2011). A grizzly was recently spotted near Benton Lake National Wildlife Refuge, about 10 miles north of Great Falls (Great Falls Tribune 2018). However, the study area is a highly developed transportation corridor, not considered high quality grizzly bear habitat. Grizzlies are known to avoid areas with high road density (Lamb et al. 2018).

Because there have been no documented occurrences of grizzly bear within one mile of the study area and the project would have no impacts on grizzly habitat, the project will have **no effect** on grizzly bears.

North American Wolverine

A search of the Montana Natural Heritage Program's Natural Heritage Tracker database (report generated October 31, 2019) revealed that there are no occurrences of North American wolverine within one mile of the study area. Wolverines occur within a wide variety of habitats, primarily boreal forests, tundra, and western mountains (USFWS 2019d). In Montana, wolverines occupy alpine tundra, and coniferous mountain forests, especially large wilderness areas (MNHP 2019c) . There is no habitat for wolverines in the study area and no documented occurrences of wolverines in the study area. Therefore, the project **is not likely to jeopardize the continued existence of** wolverine. This project will not impact wolverine, and if wolverine become listed as threatened or endangered prior to project construction, the project would have no effect to wolverine.

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APPENDIX A

Photographs

1. Photo Point 1 facing northeast showing deer tracks both sides of fence

2. Photo Point 2 facing southwest.

3. Photo Point 3 facing southwest

4. Photo Point 4 facing northeast.

5. Photo Point 5 from cell phone lot, facing east.

6. Photo Point 6 facing south.

7. Photo Point 7 facing northeast.

8. Photo Point 8 facing east.

9. Photo Point 9 facing southwest

10. Photo Point 11 facing north showing heavy knapweed infestation

11. Photo Point 12 facing northeast.

12. Photo Point 13 facing northeast.

13. Photo Point 14 facing northeast showing Russian olive and concrete lined ditch

14. Photo Point 15 facing south.

15. Photo Point 16 facing south

16. Photo Point 17 facing northeast showing deer tracks parallel with I-15

17. Photo Point 18 facing southwest showing concrete-lined ditch.

18. Seep (potential wetland area) on hillslope north of I-15.

APPENDIX B

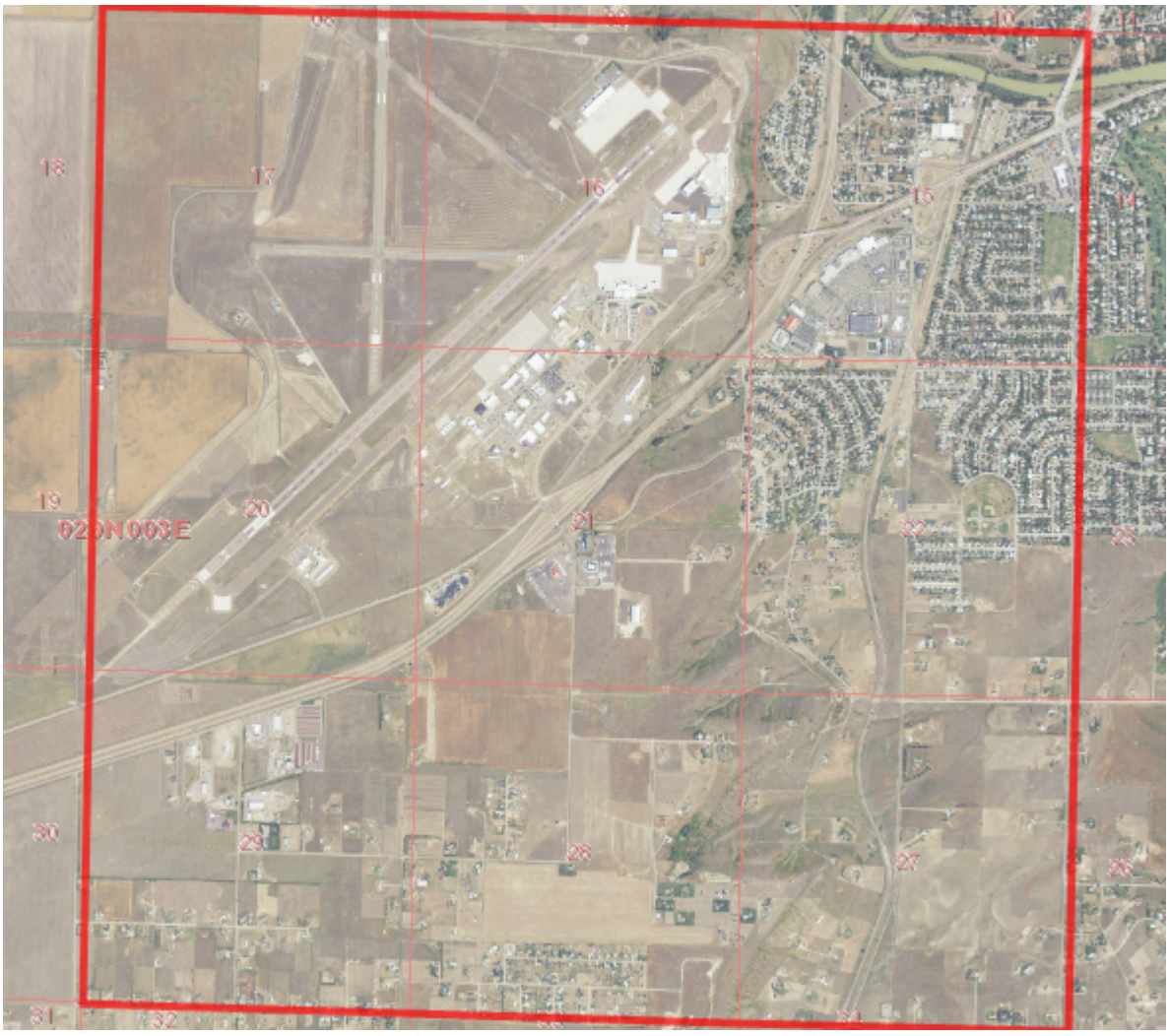
Montana Natural Heritage Program Element Occurrence Report

Environmental Summary

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

Latitude	Longitude
47.44943	-111.32728
47.49542	-111.39073

Summarized by:
020N003E021
(Buffered PLSS Section)



Suggested Citation
Montana Natural Heritage Program. Environmental Summary Report.
for Latitude 47.44943 to 47.49542 and Longitude -111.32728 to -111.39073. Retrieved on 10/31/2019.

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

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

Montana Natural Heritage Program · Montana State Library · University of Montana · NatureServe

Table of Contents

Introduction to Environmental Summary Report

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

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

MONTANA Natural Heritage Program

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

Legend

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

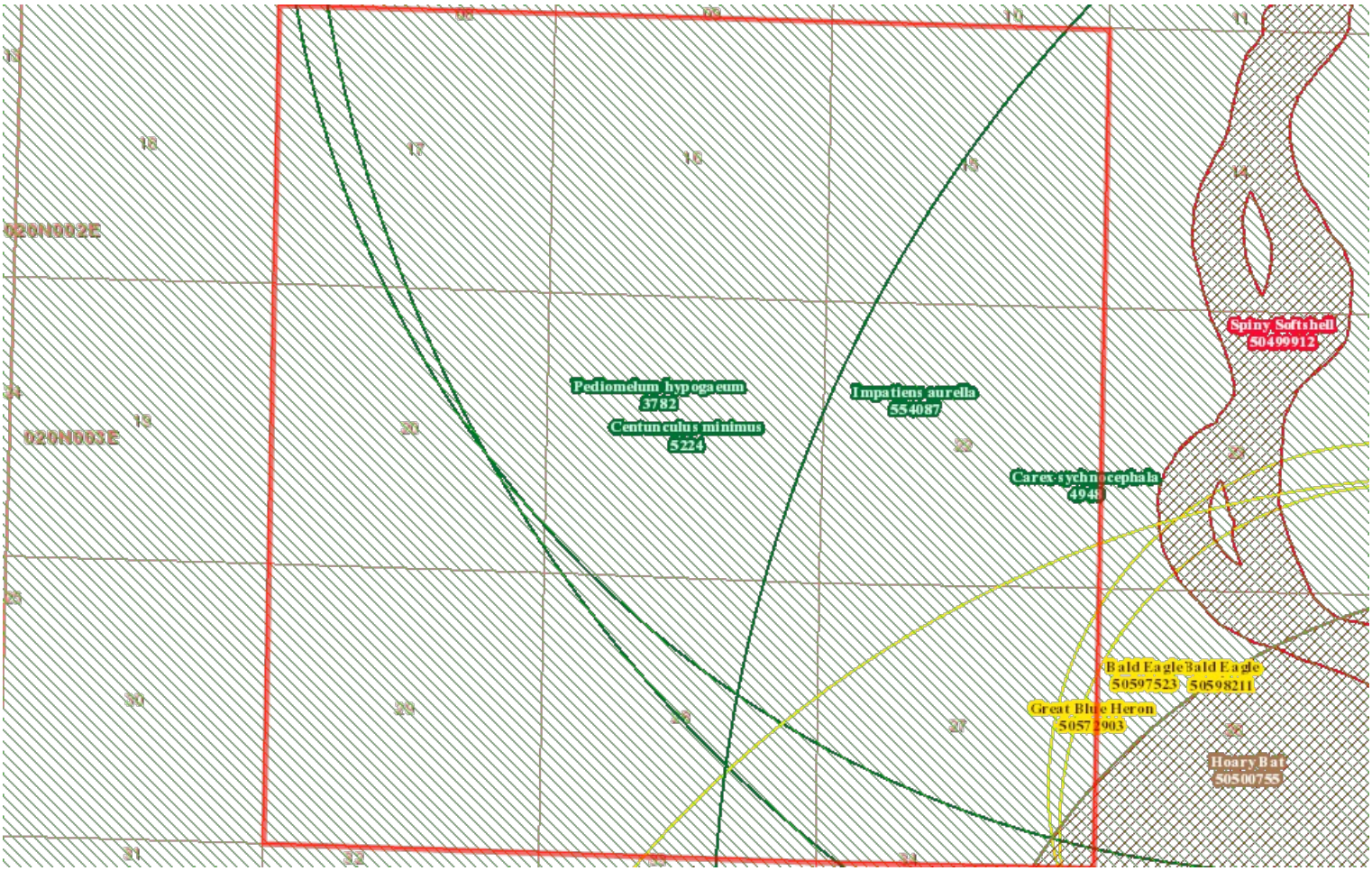
Latitude	Longitude
47.44943	-111.32728
47.49542	-111.39073

Native Species

Summarized by: **020N003E021** *(Buffered PLSS Section)*

Filtered by:

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



Species Occurrences

	USFWS Sec7	# SO	# Obs	Predictive Model	Associated Habitat	Range
M - Hoary Bat *(Lasiurus cinereus)* SOC		1				S M

View in Field Guide | View Predicted Models | View Associated Habitat | 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, 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: May 14, 2019)

Predictive Models: M 65% Moderate (inductive), L 35% Low (inductive) **Associated Habitats:** C 17% Common, O 46% Occasional

B - Great Blue Heron *(Ardea herodias)* SOC		1	1			Y S M

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

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

Delineation Criteria Confirmed nesting area buffered by a minimum distance of 6,500 meters in order to be conservative about encompassing the areas commonly used for foraging near the breeding colony and otherwise buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. (Last Updated: Sep 17, 2019)

Predictive Models: M 15% Moderate (inductive), L 70% Low (inductive) **Associated Habitats:** C 1% Common

B - Bald Eagle *(Haliaeetus leucocephalus)* SSS		2				Y

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

Special Status Species - Native Species Global: **G5** State: **S4** USFWS: **DM; BGEPA; MBTA; BCC10; BCC11; BCC17**
USFS: **Sensitive - Known on Forests (BD, BRT, CG, HLC, 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 and otherwise buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. (Last Updated: Sep 27, 2019)

Predictive Models: M 15% Moderate (inductive), L 40% Low (inductive) **Associated Habitats:** C 1% Common, O 19% Occasional

V - Centunculus minimus *(Chaffweed)* **SOC** | 1 | Not Available

View in Field Guide **View Associated Habitat**

Species of Concern - Native Species Global: **G5** State: **S2**

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: Sep 06, 2017)

Associated Habitats: C 1% Common

V - Impatiens aurella *(Pale-yellow Jewel-weed)* **SOC** | 1 | Not Available | Not Assigned | Y

View in Field Guide **View Range Maps**

Species of Concern - Native Species Global: **G4** State: **S3**

V - Carex sychnocephala *(Many-headed Sedge)* **SOC** | 1 | Not Available | Not Assigned

View in Field Guide

Species of Concern - Native Species Global: **G5** State: **S1S2** MNPS: **1**

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: Apr 26, 2018)

V - Pediomelum hypogaeum *(Little Indian Breadroot)* **PSOC** | 1 | Not Available | Not Assigned

View in Field Guide

Potential Species of Concern - Native Species Global: **G5** State: **S3S4** MNPS: **3**

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: Sep 06, 2017)

MONTANA Natural Heritage Program

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

Legend

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

Latitude	Longitude
47.44943	-111.32728
47.49542	-111.39073

Native Species

Summarized by: **020N003E021** *(Buffered PLSS Section)*

Filtered by:

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

Other Observed Species

No Species were found for the filters selected

Legend

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

Latitude	Longitude
47.44943	-111.32728
47.49542	-111.39073

Native Species

Summarized by: **020N003E021** *(Buffered PLSS Section)*
Filtered by:
MT_Status='Species of Concern', 'Special Status', 'Important Animal Habitat', 'Potential SOC'

Other Potential Species

	USFWS Sec7	Predictive Model	Associated Habitat	Range
F - Burbot *(Lota lota)* PSOC			Not Assigned	Y
R - Spiny Softshell *(Apalone spinifera)* SOC				Y
M - Spotted Bat *(Euderma maculatum)* SOC				S M
M - Merriam's Shrew *(Sorex merriami)* SOC				Y
M - Porcupine *(Erethizon dorsatum)* PSOC				Y
M - Little Brown Myotis *(Myotis lucifugus)* SOC				Y
B - Pinyon Jay *(Gymnorhinus cyanocephalus)* SOC				Y
B - Long-billed Curlew *(Numenius americanus)* SOC				S M
R - Greater Short-horned Lizard *(Phrynosoma hernandesi)* SOC				Y
M - Hayden's Shrew *(Sorex haydeni)* PSOC				Y
M - Silver-haired Bat *(Lasionycteris noctivagans)* PSOC				Y

F - Burbot *(Lota lota)* PSOC

View in Field Guide | View Predicted Models | View Range Maps
Potential Species of Concern - Native Species Global: **G5** State: **S4**
Predictive Models: N 17% Suitable (native range) (deductive)

R - Spiny Softshell *(Apalone spinifera)* SOC

View in Field Guide | View Predicted Models | View Associated Habitat | View Range Maps
Species of Concern - Native Species Global: **G5** State: **S3** BLM: **SENSITIVE** FWP SWAP: **SGCN3**
Predictive Models: N 6% Suitable (native range) (deductive) **Associated Habitats:** C 1% Common

M - Spotted Bat *(Euderma maculatum)* SOC

View in Field Guide | View Predicted Models | View Associated Habitat | View Range Maps
Species of Concern - Native Species Global: **G4** State: **S3** USFS: **Sensitive - Known on Forests (BD, CG)** BLM: **SENSITIVE**
FWP SWAP: **SGCN3, SGIN**
Predictive Models: O 15% Optimal (inductive), M 48% Moderate (inductive), L 37% Low (inductive)
Associated Habitats: C 17% Common, O 24% Occasional

M - Merriam's Shrew *(Sorex merriami)* SOC

View in Field Guide | View Predicted Models | View Associated Habitat | View Range Maps
Species of Concern - Native Species Global: **G4** State: **S3** FWP SWAP: **SGCN3**
Predictive Models: M 100% Moderate (inductive) **Associated Habitats:** C 29% Common

M - Porcupine *(Erethizon dorsatum)* PSOC

View in Field Guide | View Predicted Models | View Associated Habitat | View Range Maps
Potential Species of Concern - Native Species Global: **G5** State: **S4** FWP SWAP: **SGIN**
Predictive Models: M 96% Moderate (inductive), L 4% Low (inductive) **Associated Habitats:** C 37% Common, O 1% Occasional

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

View in Field Guide | View Predicted Models | View Associated Habitat | View Range Maps
Species of Concern - Native Species Global: **G3** State: **S3** FWP SWAP: **SGCN3**
Predictive Models: M 76% Moderate (inductive), L 24% Low (inductive) **Associated Habitats:** C 37% Common, O 63% Occasional

B - Pinyon Jay *(Gymnorhinus cyanocephalus)* SOC

View in Field Guide | View Predicted Models | View Associated Habitat | View Range Maps
Species of Concern - Native Species Global: **G3** State: **S3** USFWS: **MBTA; BCC17** FWP SWAP: **SGCN3**
Predictive Models: M 74% Moderate (inductive), L 26% Low (inductive) **Associated Habitats:** O 20% Occasional

B - Long-billed Curlew *(Numenius americanus)* SOC

View in Field Guide | View Predicted Models | View Associated Habitat | View Range Maps
Species of Concern - Native Species Global: **G5** State: **S3B** USFWS: **MBTA; BCC10; BCC11; BCC17** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **2**
Predictive Models: M 55% Moderate (inductive), L 45% Low (inductive) **Associated Habitats:** C 16% Common, O 4% Occasional

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

View in Field Guide | View Predicted Models | View Associated Habitat | View Range Maps
USFS: **Sensitive - Known on Forests (CG)**
Species of Concern - Native Species Global: **G5** State: **S3** **Sensitive - Suspected on Forests (HLC)** BLM: **SENSITIVE**
FWP SWAP: **SGCN3, SGIN**
Predictive Models: M 47% Moderate (inductive), L 53% Low (inductive) **Associated Habitats:** C 16% Common, O 1% Occasional

M - Hayden's Shrew *(Sorex haydeni)* PSOC

View in Field Guide | View Predicted Models | View Associated Habitat | View Range Maps
Potential Species of Concern - Native Species Global: **G5** State: **S3S4**
Predictive Models: M 40% Moderate (inductive), L 60% Low (inductive) **Associated Habitats:** C 48% Common

M - Silver-haired Bat *(Lasionycteris noctivagans)* PSOC

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Potential Species of Concern - Native Species Global: **G3G4** State: **S4**
Predictive Models: M 38% Moderate (inductive), L 62% Low (inductive) **Associated Habitats:** C 17% Common, O 67% Occasional

R - Western Milksnake *(Lampropeltis gentilis)* **SOC** Y

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Species of Concern - Native Species Global: **G5** State: **S2** USFS: **Sensitive - Known on Forests (CG)** BLM: **SENSITIVE** FWP SWAP: **SGCN2**
Predictive Models: M 26% Moderate (inductive), L 70% Low (inductive) **Associated Habitats:** C 17% Common, O 21% Occasional

B - Short-eared Owl *(Asio flammeus)* **PSOC** Y

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Potential Species of Concern - Native Species Global: **G5** State: **S4** USFWS: **MBTA; BCC11; BCC17** PIF: **3**
Predictive Models: M 24% Moderate (inductive), L 75% Low (inductive) **Associated Habitats:** C 31% Common, O 12% Occasional

V - Carex scoparia *(Pointed Broom Sedge)* **SOC** Not Assigned Y

View in Field Guide View Predicted Models View Range Maps
Species of Concern - Native Species Global: **G5** State: **S1S2**
Predictive Models: M 16% Moderate (inductive), L 15% Low (inductive)

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

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Species of Concern - Native Species Global: **G3G4** State: **S3**
Predictive Models: M 15% Moderate (inductive), L 85% Low (inductive) **Associated Habitats:** C 16% Common, O 21% Occasional

B - Black-billed Cuckoo *(Coccyzus erythropthalmus)* **SOC** S M

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Species of Concern - Native Species Global: **G5** State: **S3B** USFWS: **MBTA; BCC11; BCC17** FWP SWAP: **SGCN3, SGIN** PIF: **2**
Predictive Models: M 15% Moderate (inductive), L 81% Low (inductive) **Associated Habitats:** C 1% Common

B - Golden Eagle *(Aquila chrysaetos)* **SOC** Y

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Species of Concern - Native Species Global: **G5** State: **S3** USFWS: **BGEPA; MBTA; BCC17** BLM: **SENSITIVE** FWP SWAP: **SGCN3**
Predictive Models: M 12% Moderate (inductive), L 88% Low (inductive) **Associated Habitats:** C 17% Common, O 15% Occasional

M - Black-tailed Prairie Dog *(Cynomys ludovicianus)* **SOC** Y

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Species of Concern - Native Species Global: **G4** State: **S3** USFS: **Sensitive - Known on Forests (CG)** BLM: **SENSITIVE** FWP SWAP: **SGCN3**
Predictive Models: M 9% Moderate (inductive), L 91% Low (inductive) **Associated Habitats:** C 16% Common, O 36% Occasional

M - Townsend's Big-eared Bat *(Corynorhinus townsendii)* **SOC** Y

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Species of Concern - Native Species Global: **G4** State: **S3** USFS: **Sensitive - Known on Forests (BD, BRT, CG, HLC, KOOT, LOLO)**
BLM: **SENSITIVE** FWP SWAP: **SGCN3**
Predictive Models: M 7% Moderate (inductive), L 93% Low (inductive) **Associated Habitats:** C 1% Common, O 36% Occasional

V - Lilium philadelphicum *(Wood Lily)* **SOC** Not Assigned Y

View in Field Guide View Predicted Models View Range Maps
Species of Concern - Native Species Global: **G5** State: **S3**
Predictive Models: M 6% Moderate (inductive), L 25% Low (inductive)

A - Northern Leopard Frog *(Lithobates pipiens)* **SOC** Y

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
USFS: **Sensitive - Known on Forests (CG, HLC, KOOT)**
Species of Concern - Native Species Global: **G5** State: **S1,S4** **Sensitive - Suspected on Forests (BRT, LOLO)** BLM: **SENSITIVE**
FWP SWAP: **SGCN1**
Predictive Models: M 5% Moderate (inductive), L 95% Low (inductive) **Associated Habitats:** C 1% Common, O 3% Occasional

B - Rufous Hummingbird *(Selasphorus rufus)* **PSOC** S M

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Potential Species of Concern - Native Species Global: **G5** State: **S4B** USFWS: **MBTA** PIF: **3**
Predictive Models: M 5% Moderate (inductive), L 60% Low (inductive) **Associated Habitats:** C 21% Common, O 3% Occasional

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

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Species of Concern - Native Species Global: **G5** State: **S3B** USFWS: **MBTA** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **2**
Predictive Models: M 5% Moderate (inductive), L 38% Low (inductive) **Associated Habitats:** C 1% Common

V - Chenopodium subglabrum *(Smooth Goosefoot)* **SOC** Y

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Species of Concern - Native Species Global: **G3G4** State: **S2** MNPS: **4**
Predictive Models: M 5% Moderate (inductive), L 25% Low (inductive) **Associated Habitats:** C 1% Common, O 1% Occasional

M - White-footed Mouse *(Peromyscus leucopus)* **PSOC** Y

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Potential Species of Concern - Native Species Global: **G5** State: **S4**
Predictive Models: M 5% Moderate (inductive), L 15% Low (inductive) **Associated Habitats:** C 52% Common

M - Dwarf Shrew *(Sorex nanus)* **SOC** Y

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Species of Concern - Native Species Global: **G4** State: **S2S3** FWP SWAP: **SGCN2-3**
Predictive Models: M 1% Moderate (inductive), L 99% Low (inductive) **Associated Habitats:** C 16% Common, O 12% Occasional

B - Burrowing Owl *(Athene cunicularia)* **SOC** S M

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
USFS: **Sensitive - Known on Forests (CG)**
Species of Concern - Native Species Global: **G4** State: **S3B** USFWS: **MBTA; BCC17** **Sensitive - Suspected on Forests (HLC)** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **1**
Predictive Models: M 1% Moderate (inductive), L 99% Low (inductive) **Associated Habitats:** C 16% Common, O 12% Occasional

V - Carex crawei *(Crawe's Sedge)* **SOC** Not Assigned Y

View in Field Guide View Predicted Models View Range Maps
Species of Concern - Native Species Global: **G5** State: **S2S3** MNPS: **2**
Predictive Models: M 1% Moderate (inductive), L 99% Low (inductive)

M - Fringed Myotis *(Myotis thysanodes)* **SOC** Y

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Species of Concern - Native Species Global: **G4** State: **S3** BLM: **SENSITIVE** FWP SWAP: **SGCN3**
Predictive Models: M 1% Moderate (inductive), L 65% Low (inductive) **Associated Habitats:** C 1% Common, O 49% Occasional

B - Barrow's Goldeneye *(Bucephala islandica)* **PSOC** Y WM

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Potential Species of Concern - Native Species Global: **G5** State: **S4** USFWS: **MBTA** FWP SWAP: **SGIN** PIF: **2**
Predictive Models: M 1% Moderate (inductive), L 17% Low (inductive) **Associated Habitats:** C 1% Common

B - Black-crowned Night-Heron *(Nycticorax nycticorax)* **SOC** S M

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Species of Concern - Native Species Global: **G5** State: **S3B** USFWS: **MBTA** FWP SWAP: **SGCN3** PIF: **3**
Predictive Models: M 1% Moderate (inductive), L 16% Low (inductive) **Associated Habitats:** C 1% Common

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

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Species of Concern - Native Species Global: **G4** State: **S3** FWP SWAP: **SGCN3**
Predictive Models: L 100% Low (inductive) **Associated Habitats:** C 37% Common

A - Great Plains Toad *(Anaxyrus cognatus)* **SOC** Y

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Species of Concern - Native Species Global: **G5** State: **S2** USFS: **Sensitive - Known on Forests (CG)** BLM: **SENSITIVE** FWP SWAP: **SGCN2**
Predictive Models: L 100% Low (inductive) **Associated Habitats:** C 17% Common, O 3% Occasional

M - Swift Fox *(Vulpes velox)* **SOC** Y

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Species of Concern - Native Species Global: **G3** State: **S3** BLM: **SENSITIVE** FWP SWAP: **SGCN3**
Predictive Models: L 100% Low (inductive) **Associated Habitats:** C 16% Common, O 1% Occasional

V - Elodea bifoliata *(Long-sheath Waterweed)* **SOC** Y

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Species of Concern - Native Species Global: **G4G5** State: **S2?** MNPS: **3**
Predictive Models: L 100% Low (inductive) **Associated Habitats:** C 1% Common

B - Brewer's Sparrow *(Spizella breweri)* **SOC** Not Assigned S M

View in Field Guide View Predicted Models View Range Maps
Species of Concern - Native Species Global: **G5** State: **S3B** USFWS: **MBTA; BCC10; BCC17** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **2**
Predictive Models: L 100% Low (inductive)

B - Loggerhead Shrike *(Lanius ludovicianus)* **SOC** S M

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Species of Concern - Native Species Global: **G4** State: **S3B** USFWS: **MBTA; BCC10; BCC17** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **2**
Predictive Models: L 95% Low (inductive) **Associated Habitats:** C 37% Common, O 16% Occasional

B - Eastern Bluebird *(Sialia sialis)* **PSOC** S M

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Potential Species of Concern - Native Species Global: **G5** State: **S4B** USFWS: **MBTA**
Predictive Models: L 91% Low (inductive) **Associated Habitats:** C 17% Common, O 21% Occasional

B - Bobolink *(Dolichonyx oryzivorus)* **SOC** S M

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Species of Concern - Native Species Global: **G5** State: **S3B** USFWS: **MBTA** FWP SWAP: **SGCN3** PIF: **3**
Predictive Models: L 89% Low (inductive) **Associated Habitats:** C 50% Common, O 1% Occasional

B - Baird's Sparrow *(Centronyx bairdii)* SOC

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Species of Concern - Native Species Global: **G4** State: **S3B** USFWS: **MBTA; BCC11; BCC17** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **1**
Predictive Models: L 85% Low (inductive) **Associated Habitats:** C 17% Common, O 1% Occasional

B - Ferruginous Hawk *(Buteo regalis)* SOC

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Species of Concern - Native Species Global: **G4** State: **S3B** USFWS: **MBTA; BCC10; BCC17** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **2**
Predictive Models: L 85% Low (inductive) **Associated Habitats:** C 17% Common, O 1% Occasional

B - Sprague's Pipit *(Anthus spragueii)* SOC

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Species of Concern - Native Species Global: **G3G4** State: **S3B** USFWS: **MBTA; BCC11; BCC17** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **1**
Predictive Models: L 85% Low (inductive) **Associated Habitats:** C 16% Common, O 1% Occasional

M - Grizzly Bear *(Ursus arctos)* SOC

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Species of Concern - Native Species Global: **G4** State: **S2S3** USFWS: **PS: LT; XN** USFS: **Threatened on Forests (BD, CG, HLC, KOOT, LOLO)** BLM: **THREATENED** FWP SWAP: **SGCN2-3**
Predictive Models: L 76% Low (inductive) **Associated Habitats:** C 1% Common, O 16% Occasional

R - Plains Hog-nosed Snake *(Heterodon nasicus)* SOC

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Species of Concern - Native Species Global: **G5** State: **S2** USFS: **Sensitive - Known on Forests (CG)** BLM: **SENSITIVE** FWP SWAP: **SGCN2, SGIN**
Predictive Models: L 74% Low (inductive) **Associated Habitats:** C 17% Common, O 1% Occasional

B - Black Tern *(Chlidonias niger)* SOC

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Species of Concern - Native Species Global: **G4G5** State: **S3B** USFWS: **MBTA; BCC11** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **2**
Predictive Models: L 61% Low (inductive) **Associated Habitats:** C 1% Common

B - Black-necked Stilt *(Himantopus mexicanus)* SOC

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Species of Concern - Native Species Global: **G5** State: **S3B** USFWS: **MBTA** FWP SWAP: **SGCN3** PIF: **3**
Predictive Models: L 59% Low (inductive) **Associated Habitats:** C 1% Common

B - McCown's Longspur *(Rhynchophanes mccownii)* SOC

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Species of Concern - Native Species Global: **G4** State: **S3B** USFWS: **MBTA; BCC10; BCC11; BCC17** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **2**
Predictive Models: L 57% Low (inductive) **Associated Habitats:** C 16% Common, O 36% Occasional

B - Green-tailed Towhee *(Pipilo chlorurus)* SOC

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Species of Concern - Native Species Global: **G5** State: **S3B** USFWS: **MBTA** FWP SWAP: **SGCN3** PIF: **3**
Predictive Models: L 42% Low (inductive) **Associated Habitats:** C 2% Common, O 19% Occasional

B - Lewis's Woodpecker *(Melanerpes lewis)* SOC

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Species of Concern - Native Species Global: **G4** State: **S2B** USFWS: **MBTA; BCC10; BCC17** BLM: **SENSITIVE** FWP SWAP: **SGCN2** PIF: **2**
Predictive Models: L 42% Low (inductive) **Associated Habitats:** O 1% Occasional

V - Cyperus schweinitzii *(Schweinitz's Flatsedge)* SOC

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Species of Concern - Native Species Global: **G5** State: **S2** MNPS: **4**
Predictive Models: L 30% Low (inductive) **Associated Habitats:** C 1% Common

B - Common Tern *(Sterna hirundo)* SOC

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Species of Concern - Native Species Global: **G5** State: **S3B** USFWS: **MBTA** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **2**
Predictive Models: L 15% Low (inductive) **Associated Habitats:** C 1% Common

B - Chestnut-collared Longspur *(Calcarius ornatus)* SOC

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Species of Concern - Native Species Global: **G5** State: **S2B** USFWS: **MBTA; BCC11; BCC17** BLM: **SENSITIVE** FWP SWAP: **SGCN2** PIF: **2**
Predictive Models: L 11% Low (inductive) **Associated Habitats:** C 16% Common, O 15% Occasional

B - American Bittern *(Botaurus lentiginosus)* SOC

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Species of Concern - Native Species Global: **G5** State: **S3B** USFWS: **MBTA; BCC11; BCC17** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **3**
Predictive Models: L 9% Low (inductive) **Associated Habitats:** C 1% Common

B - Common Poorwill *(Phalaenoptilus nuttallii)* **PSOC** S M

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Potential Species of Concern - Native Species Global: **G5** State: **S4B** USFWS: **MBTA** FWP SWAP: **SGIN** PIF: **3**
Predictive Models: L 7% Low (inductive) **Associated Habitats:** C 17% Common, O 35% Occasional

B - Peregrine Falcon *(Falco peregrinus)* **SOC** Y

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Species of Concern - Native Species Global: **G4** State: **S3** USFWS: **DM; MBTA; BCC10; BCC11; BCC17**
USFS: **Sensitive - Known on Forests (BD, BRT, CG, HLC, KOOT, LOLO)** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **2**
Predictive Models: L 5% Low (inductive) **Associated Habitats:** C 1% Common, O 16% Occasional

B - Ovenbird *(Seiurus aurocapilla)* **PSOC** S M

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Potential Species of Concern - Native Species Global: **G5** State: **S4B** USFWS: **MBTA** PIF: **3**
Predictive Models: L 5% Low (inductive) **Associated Habitats:** C 1% Common, O 1% Occasional

B - Cassin's Finch *(Haemorhous cassinii)* **SOC** Not Assigned Y

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**
Predictive Models: L 5% Low (inductive)

B - Great Gray Owl *(Strix nebulosa)* **SOC** Not Assigned Y

View in Field Guide View Predicted Models View Range Maps
Species of Concern - Native Species Global: **G5** State: **S3** USFWS: **MBTA** BLM: **SENSITIVE** FWP SWAP: **SGCN3, SGIN** PIF: **3**
Predictive Models: L 5% Low (inductive)

B - Mountain Plover *(Charadrius montanus)* **SOC** S M

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Species of Concern - Native Species Global: **G3** State: **S2B** USFWS: **MBTA; BCC11; BCC17** BLM: **SENSITIVE** FWP SWAP: **SGCN2** PIF: **1**
Predictive Models: L 1% Low (inductive) **Associated Habitats:** C 16% Common

B - Evening Grosbeak *(Coccothraustes vespertinus)* **SOC** Not Available W M

View in Field Guide View Associated Habitat View Range Maps
Species of Concern - Native Species Global: **G5** State: **S3** USFWS: **MBTA** FWP SWAP: **SGCN3**
Associated Habitats: C 21% Common

B - Sharp-tailed Grouse *(Tympanuchus phasianellus)* **SOC** Not Available Y

View in Field Guide View Associated Habitat View Range Maps
Species of Concern - Native Species Global: **G5** State: **SX,S4** FWP SWAP: **SGCN1** PIF: **2**
Associated Habitats: C 17% Common, O 15% Occasional

V - Senecio integerrimus var. scribneri *(Scribner's Ragwort)* **SOC** Not Available Y

View in Field Guide View Associated Habitat View Range Maps
Species of Concern - Native Species Global: **G5T2T3** State: **S2S3**
Associated Habitats: C 16% Common

M - Black-footed Ferret *(Mustela nigripes)* **SOC** Not Available H

View in Field Guide View Associated Habitat View Range Maps
Species of Concern - Native Species Global: **G1** State: **S1** USFWS: **LE; XN** USFS: **Endangered, Experimental Nonessential on Forests (CG)**
BLM: **ENDANGERED** FWP SWAP: **SGCN1**
Associated Habitats: C 16% Common

M - Bison *(Bos bison)* **SOC** Not Available H

View in Field Guide View Associated Habitat View Range Maps
Species of Concern - Native Species Global: **G4** State: **S2** FWP SWAP: **SGCN2**
Associated Habitats: C 3% Common, O 1% Occasional

B - Franklin's Gull *(Leucophaeus pipixcan)* **SOC** Not Available S M

View in Field Guide View Associated Habitat View Range Maps
Species of Concern - Native Species Global: **G5** State: **S3B** USFWS: **MBTA** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **2**
Associated Habitats: C 1% Common, O 30% Occasional

I - Rhionaeschna multicolor *(Blue-eyed Darner)* **PSOC** Not Available Y

View in Field Guide View Associated Habitat View Range Maps
Potential Species of Concern - Native Species Global: **G5** State: **S2S4**
Associated Habitats: C 1% Common, O 1% Occasional

I - Sympetrum madidum *(Red-veined Meadowhawk)* **PSOC** Not Available Y

View in Field Guide View Associated Habitat View Range Maps
Potential Species of Concern - Native Species Global: **G5** State: **S2S3**
Associated Habitats: C 1% Common, O 1% Occasional

B - Forster's Tern *(Sterna forsteri)* **SOC** Not Available S M
View in Field Guide View Associated Habitat View Range Maps
Species of Concern - Native Species Global: **G5** State: **S3B** USFWS: **MBTA** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **2**
Associated Habitats: C 1% Common, O 1% Occasional

B - Caspian Tern *(Hydroprogne caspia)* **SOC** Not Available M
View in Field Guide View Associated Habitat View Range Maps
Species of Concern - Native Species Global: **G5** State: **S2B** USFWS: **MBTA** BLM: **SENSITIVE** FWP SWAP: **SGCN2** PIF: **2**
Associated Habitats: C 1% Common, O 1% Occasional

B - Hooded Merganser *(Lophodytes cucullatus)* **PSOC** Not Available M
View in Field Guide View Associated Habitat View Range Maps
Potential Species of Concern - Native Species Global: **G5** State: **S4** USFWS: **MBTA** FWP SWAP: **SGIN** PIF: **2**
Associated Habitats: C 1% Common, O 1% Occasional

I - Aeshna constricta *(Lance-tipped Darner)* **PSOC** Not Available Y
View in Field Guide View Associated Habitat View Range Maps
Potential Species of Concern - Native Species Global: **G5** State: **S1S3**
Associated Habitats: C 1% Common

I - Argia emma *(Emma's Dancer)* **PSOC** Not Available Y
View in Field Guide View Associated Habitat View Range Maps
Potential Species of Concern - Native Species Global: **G5** State: **S3S5**
Associated Habitats: C 1% Common

I - Argia vivida *(Vivid Dancer)* **PSOC** Not Available Y
View in Field Guide View Associated Habitat View Range Maps
Potential Species of Concern - Native Species Global: **G5** State: **S3S5**
Associated Habitats: O 1% Occasional

I - Enallagma clausum *(Alkali Bluet)* **PSOC** Not Available Y
View in Field Guide View Associated Habitat View Range Maps
Potential Species of Concern - Native Species Global: **G5** State: **S2S4**
Associated Habitats: O 1% Occasional

I - Polygonia progne *(Gray Comma)* **SOC** Not Available Y
View in Field Guide View Associated Habitat View Range Maps
Species of Concern - Native Species Global: **G5** State: **S2**
Associated Habitats: C 1% Common

I - Rhionaeschna californica *(California Darner)* **PSOC** Not Available Y
View in Field Guide View Associated Habitat View Range Maps
Potential Species of Concern - Native Species Global: **G5** State: **S3S5**
Associated Habitats: O 1% Occasional

V - Cryptantha fendleri *(Fendler Cat's-eye)* **SOC** Not Available Y
View in Field Guide View Associated Habitat View Range Maps
Species of Concern - Native Species Global: **G5** State: **S2** BLM: **SENSITIVE** MNPS: **2**
Associated Habitats: C 1% Common

V - Physaria ludoviciana *(Silver Bladderpod)* **SOC** Not Available Y
View in Field Guide View Associated Habitat View Range Maps
Species of Concern - Native Species Global: **G5** State: **S2S3**
Associated Habitats: C 1% Common

B - Horned Grebe *(Podiceps auritus)* **SOC** Not Available S M
View in Field Guide View Associated Habitat View Range Maps
Species of Concern - Native Species Global: **G5** State: **S3B** USFWS: **MBTA; BCC11; BCC17** FWP SWAP: **SGCN3** PIF: **2**
Associated Habitats: C 1% Common

B - White-faced Ibis *(Plegadis chihi)* **SOC** Not Available S M
View in Field Guide View Associated Habitat View Range Maps
Species of Concern - Native Species Global: **G5** State: **S3B** USFWS: **MBTA** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **2**
Associated Habitats: C 1% Common

B - Alder Flycatcher *(Empidonax alnorum)* **SOC** Not Available M
View in Field Guide View Associated Habitat View Range Maps
Species of Concern - Native Species Global: **G5** State: **S3B** USFWS: **MBTA** FWP SWAP: **SGCN3**
Associated Habitats: C 1% Common

B - American White Pelican *(Pelecanus erythrorhynchos)* **SOC** Not Available

View in Field Guide **View Associated Habitat** **View Range Maps**

Species of Concern - Native Species Global: **G4** State: **S3B** USFWS: **MBTA** FWP SWAP: **SGCN3** PIF: **3**

Associated Habitats: C 1% Common

B - Clark's Grebe *(Aechmophorus clarkii)* **SOC** Not Available

View in Field Guide **View Associated Habitat** **View Range Maps**

Species of Concern - Native Species Global: **G5** State: **S3B** USFWS: **MBTA** FWP SWAP: **SGCN3** PIF: **3**

Associated Habitats: C 1% Common

B - Common Loon *(Gavia immer)* **SOC** Not Available

View in Field Guide **View Associated Habitat** **View Range Maps**

Species of Concern - Native Species Global: **G5** State: **S3B** USFWS: **MBTA** USFS: **Sensitive - Known on Forests (KOOT, LOLO)** FWP SWAP: **SGCN3** PIF: **1**

Associated Habitats: C 1% Common

B - Piping Plover *(Charadrius melodus)* **SOC** Not Available

View in Field Guide **View Associated Habitat** **View Range Maps**

Species of Concern - Native Species Global: **G3** State: **S2B** USFWS: **LT; CH; MBTA** BLM: **THREATENED** FWP SWAP: **SGCN2** PIF: **1**

Associated Habitats: C 1% Common

B - Trumpeter Swan *(Cygnus buccinator)* **SOC** Not Available

View in Field Guide **View Associated Habitat** **View Range Maps**

Species of Concern - Native Species Global: **G4** State: **S3** USFWS: **MBTA** USFS: **Sensitive - Known on Forests (BD, CG)** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **1**

Associated Habitats: C 1% Common

Latitude	Longitude
47.44943	-111.32728
47.49542	-111.39073

Structured Surveys

Summarized by: **020N003E021** *(Buffered PLSS Section)*

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

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

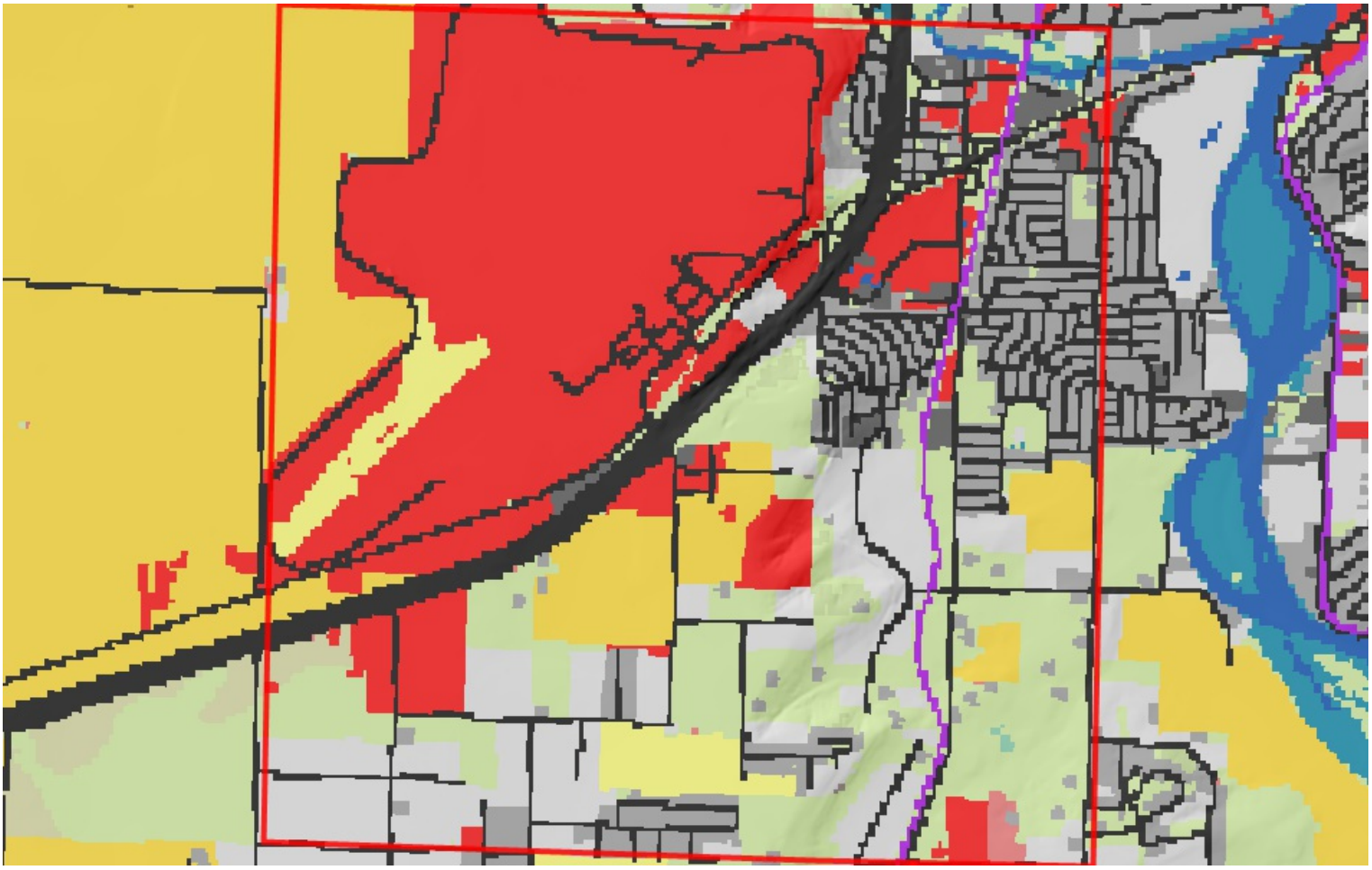
Within the report area you have requested, structured surveys are summarized by the number of each type of structured survey protocol that has been conducted, the number of species detections/observations resulting from these surveys, and the most recent year a survey has been conducted.

E-Eastern Heath Snail *(Eastern Heath Snail Survey)*	**Survey Count**: 6	**Obs Count**:	**Recent Survey**: 2012
E-Noxious Weed, Road-based *(Noxious Weed Road-based Visual Surveys)*	**Survey Count**: 27	**Obs Count**: 73	**Recent Survey**: 2004

Latitude	Longitude
47.44943	-111.32728
47.49542	-111.39073

Land Cover

Summarized by: **020N003E021** *(Buffered PLSS Section)*



No Image

Human Land Use

Developed

Commercial / Industrial

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

31% (*1,815 Acres*)

16% (*919 Acres*)

Grassland Systems
Lowland/Prairie Grassland
Great Plains Mixedgrass Prairie

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

12% (*678 Acres*)

Human Land Use
Developed
Developed, Open Space

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

11% (*652 Acres*)

Human Land Use
Agriculture
Cultivated Crops

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

No Image

11% (*627 Acres*)

Human Land Use
Developed
Other Roads

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

8% (*481 Acres*)

Human Land Use
Developed
Low Intensity Residential

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

No Image

3% (*194 Acres*)

Human Land Use
Developed
Interstate

National Highway System (NHS) limited access highways and their shoulders and rights of way.

3% (*173 Acres*)

Human Land Use
Agriculture
Pasture/Hay

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

Additional Limited Land Cover

1% (*66 Acres*) High Intensity Residential

1% (*45 Acres*) Railroad

1% (*29 Acres*) Major Roads

<1% (*25 Acres*) Great Plains Sand Prairie

<1% (*24 Acres*) Great Plains Shrubland

<1% (*18 Acres*) Introduced Upland Vegetation - Annual and Biennial Forbland

<1% (*15 Acres*) Open Water

<1% (*11 Acres*) Great Plains Floodplain

<1% (*3 Acres*) Great Plains Closed Depressional Wetland

<1% (*1 Acres*) Great Plains Cliff and Outcrop

Latitude	Longitude
47.44943	-111.32728
47.49542	-111.39073

Wetland and Riparian

Summarized by: **020N003E021** *(Buffered PLSS Section)*

No Wetland records were found in the selected area

Latitude	Longitude
47.44943	-111.32728
47.49542	-111.39073

Land Management

Summarized by: **020N003E021** *(Buffered PLSS Section)*

Land Management Summary

Explain

	Ownership	Tribal	Easements	Other Boundaries (possible overlap)
Public Lands	86 Acres (1%)			
Federal	4 Acres (<1%)			
US Government	4 Acres (<1%)			
US Government Owned	4 Acres (<1%)			
State	14 Acres (<1%)			
Montana State Trust Lands	4 Acres (<1%)			
MT State Trust Owned	4 Acres (<1%)			
Montana Department of Transportation	10 Acres (<1%)			
MTDOT Owned	10 Acres (<1%)			
Local	68 Acres (1%)			
Local Government	68 Acres (1%)			
Local Government Owned	68 Acres (1%)			
Private Lands or Unknown Ownership	5,691 Acres (99%)			

Latitude	Longitude
47.44943	-111.32728
47.49542	-111.39073

Biological Reports

Summarized by: **020N003E021** *(Buffered PLSS Section)*

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

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

No Biological Reports were found in the selected area

MONTANA Natural Heritage Program

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

Legend

Model Icons
- 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
- T Suspect (invasive / pest)
- D Documented (invasive / pest)
- R Released (biocontrol)
- E Established (biocontrol)

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

Latitude	Longitude
47.44943	-111.32728
47.49542	-111.39073

Invasive and Pest Species

Summarized by: **020N003E021** *(Buffered PLSS Section)*

	# Obs	Predictive Model	Associated Habitat	Range
Aquatic Invasive Species				
F - Common Carp *(Cyprinus carpio)* AIS			Not Assigned	D
View in Field Guide · View Predicted Models · View Range Maps				
Aquatic Invasive Species - Non-native Species Global: **G5** State: **SNA**				
Predictive Models: I 17% Suitable (introduced range) (deductive)				
Noxious Weeds: Priority 1A				
V - Isatis tinctoria *(Dyer's Woad)* N1A			Not Assigned	D
View in Field Guide · View Predicted Models · View Range Maps				
Noxious Weed: Priority 1A - Non-native Species Global: **GNR** State: **SNA**				
Predictive Models: M 27% Moderate (inductive), L 73% Low (inductive)				
Noxious Weeds: Priority 2A				
V - Lepidium latifolium *(Perennial Pepperweed)* N2A			Not Assigned	D
View in Field Guide · View Predicted Models · View Range Maps				
Noxious Weed: Priority 2A - Non-native Species Global: **GNR** State: **SNA**				
Predictive Models: M 6% Moderate (inductive), L 90% Low (inductive)				
V - Hieracium praealtum *(Kingdevil Hawkweed)* N2A			Not Assigned	D
View in Field Guide · View Predicted Models · View Range Maps				
Noxious Weed: Priority 2A - Non-native Species Global: **GNR** State: **SNA**				
Predictive Models: M 5% Moderate (inductive), L 20% Low (inductive)				
V - Hieracium caespitosum *(Meadow Hawkweed)* N2A			Not Assigned	D
View in Field Guide · View Predicted Models · View Range Maps				
Noxious Weed: Priority 2A - Non-native Species Global: **GNR** State: **SNA**				
Predictive Models: L 1% Low (inductive)				
Noxious Weeds: Priority 2B				
V - Centaurea diffusa *(Diffuse Knapweed)* N2B			Not Assigned	D
View in Field Guide · View Predicted Models · View Range Maps				
Noxious Weed: Priority 2B - Non-native Species Global: **GNR** State: **SNA**				
Predictive Models: O 26% Optimal (inductive), M 70% Moderate (inductive), L 4% Low (inductive)				
V - Lepidium draba *(Whitetop)* N2B			Not Assigned	D
View in Field Guide · View Predicted Models · View Range Maps				
Noxious Weed: Priority 2B - Non-native Species Global: **GNR** State: **SNA**				
Predictive Models: O 16% Optimal (inductive), M 84% Moderate (inductive)				
V - Acroptilon repens *(Russian Knapweed)* N2B			Not Assigned	D
View in Field Guide · View Predicted Models · View Range Maps				
Noxious Weed: Priority 2B - Non-native Species Global: **GNR** State: **SNA**				
Predictive Models: O 1% Optimal (inductive), M 41% Moderate (inductive), L 58% Low (inductive)				
V - Convolvulus arvensis *(Field Bindweed)* N2B	1		Not Assigned	D
View in Field Guide · View Predicted Models · View Range Maps				
Noxious Weed: Priority 2B - Non-native Species Global: **GNR** State: **SNA**				
Predictive Models: M 100% Moderate (inductive), L 0% Low (inductive)				
V - Cirsium arvense *(Canada Thistle)* N2B	19		Not Assigned	D
View in Field Guide · View Predicted Models · View Range Maps				
Noxious Weed: Priority 2B - Non-native Species Global: **G5** State: **SNA**				
Predictive Models: M 96% Moderate (inductive), L 4% Low (inductive)				
V - Euphorbia virgata *(Leafy Spurge)* N2B	23		Not Assigned	D
View in Field Guide · View Predicted Models · View Range Maps				
Noxious Weed: Priority 2B - Non-native Species Global: **GNRTNR** State: **SNA**				
Predictive Models: M 87% Moderate (inductive), L 13% Low (inductive)				
V - Centaurea stoebe *(Spotted Knapweed)* N2B	27		Not Assigned	D

View in Field Guide View Predicted Models View Range Maps
Noxious Weed: Priority 2B - Non-native Species Global: **GNR** State: **SNA**
Predictive Models: M 85% Moderate (inductive), L 15% Low (inductive)

V - Linaria dalmatica *(Dalmatian Toadflax)* N2B — 1 — Not Assigned — D

View in Field Guide View Predicted Models View Range Maps
Noxious Weed: Priority 2B - Non-native Species Global: **G5** State: **SNA**
Predictive Models: M 65% Moderate (inductive), L 35% Low (inductive)

V - Cynoglossum officinale *(Common Hound's-tongue)* N2B — 2 — Not Assigned — D

View in Field Guide View Predicted Models View Range Maps
Noxious Weed: Priority 2B - Non-native Species Global: **GNR** State: **SNA**
Predictive Models: M 15% Moderate (inductive), L 85% Low (inductive)

V - Linaria vulgaris *(Yellow Toadflax)* N2B — Not Assigned — D

View in Field Guide View Predicted Models View Range Maps
Noxious Weed: Priority 2B - Non-native Species Global: **GNR** State: **SNA**
Predictive Models: L 15% Low (inductive)

Regulated Weeds: Priority 3

V - Elaeagnus angustifolia *(Russian Olive)* R3 — Not Assigned — D

View in Field Guide View Predicted Models View Range Maps
Regulated Weed: Priority 3 - Non-native Species Global: **GNR** State: **SNA**
Predictive Models: M 85% Moderate (inductive), L 15% Low (inductive)

V - Bromus tectorum *(Cheatgrass)* R3 — Not Assigned — D

View in Field Guide View Predicted Models View Range Maps
Regulated Weed: Priority 3 - Non-native Species Global: **GNR** State: **SNA**
Predictive Models: L 100% Low (inductive)

Biocontrol Species

I - Oberea erythrocephala *(Red-headed Leafy Spurge Stem Borer)* BIOCNTRL — Not Assigned — R

View in Field Guide View Predicted Models View Range Maps
Biocontrol Species - Non-native Species Global: **GNR** State: **SNA**
Predictive Models: O 5% Optimal (inductive), M 65% Moderate (inductive), L 29% Low (inductive)

I - Aphthona lacertosa *(Brown-legged Leafy Spurge Flea Beetle)* BIOCNTRL — Not Assigned — R

View in Field Guide View Predicted Models View Range Maps
Biocontrol Species - Non-native Species Global: **GNR** State: **SNA**
Predictive Models: M 65% Moderate (inductive), L 31% Low (inductive)

I - Cyphocleonus achates *(Knapweed Root Weevil)* BIOCNTRL — Not Assigned — R

View in Field Guide View Predicted Models View Range Maps
Biocontrol Species - Non-native Species Global: **GNR** State: **SNA**
Predictive Models: M 6% Moderate (inductive), L 90% Low (inductive)

I - Mecinus janthiniformis *(Dalmatian Toadflax Stem-boring Weevil)* BIOCNTRL — Not Assigned — R

View in Field Guide View Predicted Models View Range Maps
Biocontrol Species - Non-native Species Global: **GNR** State: **SNA**
Predictive Models: M 5% Moderate (inductive), L 95% Low (inductive)

I - Aphthona nigriscutis *(Black Dot Leafy Spurge Flea Beetle)* BIOCNTRL — Not Assigned — R

View in Field Guide View Predicted Models View Range Maps
Biocontrol Species - Non-native Species Global: **GNR** State: **SNA**
Predictive Models: M 5% Moderate (inductive), L 36% Low (inductive)

I - Mecinus janthinus *(Yellow Toadflax Stem-boring Weevil)* BIOCNTRL — Not Assigned — R

View in Field Guide View Predicted Models View Range Maps
Biocontrol Species - Non-native Species Global: **GNR** State: **SNA**
Predictive Models: M 1% Moderate (inductive), L 14% Low (inductive)

I - Hyles euphorbiae *(Spurge Hawkmoth)* BIOCNTRL — 1 — Not Available — Not Assigned

View in Field Guide
Biocontrol Species - Non-native Species Global: **G5** State: **SNA**

Introduction to Montana Natural Heritage Program

P.O. Box 201800 • 1515 East Sixth Avenue • Helena, MT 59620-1800 • fax 406.444.0266 • tel 406.444.0241 • mtnhp.org

Introduction

The Montana Natural Heritage Program (MTNHP) is Montana's source for reliable and objective information on Montana's native species and habitats, emphasizing those of conservation concern. MTNHP was created by the Montana legislature in 1983 as part of the Natural Resource Information System (NRIS) at the Montana State Library (MSL). MTNHP is "a program of information acquisition, storage, and retrieval for data relating to the flora, fauna, and biological community types of Montana" (MCA 90-15-102). MTNHP's activities are guided by statute (MCA 90-15) as well as through ongoing interaction with, and feedback from, principal data source agencies such as Montana Fish, Wildlife, and Parks, the Montana Department of Environmental Quality, the Montana Department of Natural Resources and Conservation, the Montana University System, the US Forest Service, and the US Bureau of Land Management. The enabling legislation for MTNHP provides the State Library with the option to contract the operation of the Program. Since 2006, MTNHP has been operated as a program under the Office of the Vice President for Research and Creative Scholarship at the University of Montana (UM) through a renewable 2-year contract with the MSL. Since the first staff was hired in 1985, the Program has logged a long record of success, and developed into a highly respected, service-oriented program. MTNHP is widely recognized as one of the most advanced and effective of over 80 natural heritage programs throughout the Western Hemisphere.

Vision

Our vision is that public agencies, the private sector, the education sector, and the general public will trust and rely upon MTNHP as the source for information and expertise on Montana's species and habitats, especially those of conservation concern. We strive to provide easy access to our information in order for users to save time and money, speed environmental reviews, and inform decision making.

Core Values

- We endeavor to be a single statewide source of accurate and up-to-date information on Montana's plants, animals, and aquatic and terrestrial biological communities.
- We actively listen to our data users and work responsively to meet their information and training needs.
- We strive to provide neutral, trusted, timely, and equitable service to all of our information users.
- We make every effort to be transparent to our data users in setting work priorities and providing data products.

Confidentiality

All information requests made to the Montana Natural Heritage Program are considered library records and are protected from disclosure by the Montana Library Records Confidentiality Act (MCA 22-1-11).

Information Managed

Information managed at the Montana Natural Heritage Program includes: (1) lists of, and basic information on, plant and animal species and biological communities; (2) plant and animal surveys, observations, species occurrences, predictive distribution models, range polygons, and conservation status ranks; and (3) land cover and wetland and riparian mapping and the conservation status of these and other biological communities.

Data Use Terms and Conditions

- Montana Natural Heritage Program (MTNHP) products and services are based on biological data and the objective interpretation of those data by professional scientists. MTNHP does not advocate any particular philosophy of natural resource protection, management, development, or public policy.
- MTNHP has no natural resource management or regulatory authority. Products, statements, and services from MTNHP are intended to inform parties as to the state of scientific knowledge about certain natural resources, and to further develop that knowledge. The information is not intended as natural resource management guidelines or prescriptions or a determination of environmental impacts. MTNHP recommends consultation with appropriate state, federal, and tribal resource management agencies and authorities in the area where your project is located.
- Information on the status and spatial distribution of biological resources produced by MTNHP are intended to inform parties of the state-wide status, known occurrence, or the likelihood of the presence of those resources. **These products are not intended to substitute for field-collected data, nor are they intended to be the sole basis for natural resource management decisions.**
- MTNHP does not portray its data as exhaustive or comprehensive inventories of rare species or biological communities. **Field verification of the absence or presence of sensitive species and biological communities will always be an important obligation of users of our data.**
- MTNHP responds equally to all requests for products and services, regardless of the purpose or identity of the requester.
- Because MTNHP constantly updates and revises its databases with new data and information, products will become outdated over time. Interested parties are encouraged to obtain the most current information possible from MTNHP, rather than using older products. We add, review, update, and delete records on a daily basis. Consequently, we strongly advise that you update your MTNHP data sets at a minimum of every three months for most applications of our information.
- MTNHP data require a certain degree of biological expertise for proper analysis, interpretation, and application. Our staff is available to advise you on questions regarding the interpretation or appropriate use of the data that we provide. Contact information for MTNHP staff is posted at: http://mtnhp.org/contact.asp
- The information provided to you by MTNHP may include sensitive data that if publicly released might jeopardize the welfare of threatened, endangered, or sensitive species or biological communities. This information is intended for distribution or use only within your department, agency, or business. Subcontractors may have access to the data during the course of any given project, but should not be given a copy for their use on subsequent, unrelated work.
- MTNHP data are made freely available. Duplication of hard-copy or digital MTNHP products with the intent to sell is prohibited without written consent by MTNHP. Should you be asked by individuals outside your organization for the type of data that we provide, please refer them to MTNHP.
- MTNHP and appropriate staff members should be appropriately acknowledged as an information source in any third-party product involving MTNHP data, reports, papers, publications, or in maps that incorporate MTNHP graphic elements.
- Sources of our data include museum specimens, published and unpublished scientific literature, field surveys by state and federal agencies and private contractors, and reports from knowledgeable individuals. MTNHP actively solicits and encourages additions, corrections and updates, new observations or collections, and comments on any of the data we provide.
- MTNHP staff and contractors do not cross or survey privately-owned lands without express permission from the landowner. However, the program cannot guarantee that information provided to us by others was obtained under adherence to this policy.

Suggested Contacts for Natural Resource Agencies

As required by Montana statute (MCA 90-15), the Montana Natural Heritage Program works with state, federal, tribal, nongovernmental organizations, and private partners to ensure that the latest animal and plant distribution and status information is incorporated into our databases so that it can be used to inform a variety of planning processes and management decisions. In addition to the information you receive from us, we encourage you to contact state, federal, and tribal resource management agencies in the area where your project is located. They may have additional data or management guidelines relevant to your efforts. In particular, we encourage you to contact the Montana Department of Fish, Wildlife, and Parks for the latest data and management information regarding hunted and high-profile management species and to use the U.S. Fish and Wildlife Service's Information Planning and Conservation (IPAC) website http://ecos.fws.gov/ipac/ regarding U.S. Endangered Species Act listed Threatened, Endangered, or Candidate species.

For your convenience, we have compiled a list of relevant agency contacts and links below:

Montana Fish, Wildlife, and Parks

Fish Species	Zachary Shattuck zshattuck@mt.gov (406) 444-1231 or Eric Roberts eroberts@mt.gov (406) 444-5334
American Bison Black-footed Ferret Black-tailed Prairie Dog Bald Eagle Golden Eagle Common Loon Least Tern Piping Plover Whooping Crane	Lauri Hanauska-Brown LHanauska-Brown@mt.gov (406) 444-5209
Grizzly Bear Greater Sage Grouse Trumpeter Swan Big Game Upland Game Birds Furbearers	John Vore jvore@mt.gov (406) 444-3940
Managed Terrestrial Game and Nongame Animal Data	Smith Wells – MFWP Data Analyst smith.wells@mt.gov (406) 444-3759
Fisheries Data	Ryan Alger – MFWP Data Analyst ryan.alger@mt.gov (406) 444-5365
Wildlife and Fisheries Scientific Collector's Permits	http://fwp.mt.gov/doingBusiness/licenses/scientificWildlife/ Kammi McClain for Wildlife Kammi.McClain@mt.gov (406) 444-2612 Kim Wedde for Fisheries kim.wedde@mt.gov (406) 444-5594
Fish and Wildlife Recommendations for Subdivision Development	Renee Lemon RLemon@mt.gov (406) 444-3738 and see http://fwp.mt.gov/fishAndWildlife/livingWithWildlife/buildingWithWildlife/subdivisionRecommendations/
Regional Contacts  	Region 1 (Kalispell) (406) 752-5501 Region 2 (Missoula) (406) 542-5500 Region 3 (Bozeman) (406) 994-4042 Region 4 (Great Falls) (406) 454-5840 Region 5 (Billings) (406) 247-2940 Region 6 (Glasgow) (406) 228-3700 Region 7 (Miles City) (406) 234-0900

United States Fish and Wildlife Service:
Information Planning and Conservation (IPAC) website: http://ecos.fws.gov/ipac/
Montana Ecological Services Field Office: http://www.fws.gov/montanafieldoffice/ (406) 449-5225

Bureau of Land Management

Montana Field Office Contacts:

Billings	(406) 896-5013
Butte	(406) 533-7600
Dillon	(406) 683-8000
Glasgow	(406) 228-3750
Havre	(406) 262-2820
Lewistown	(406) 538-1900
Malta	(406) 654-5100
Miles City	(406) 233-2800
Missoula	(406) 329-3914

United States Forest Service

Regional Office – Missoula, Montana Contacts

Wildlife Program Leader	Tammy Fletcher	tammyfletcher@fs.fed.us	(406) 329-3588
Wildlife Ecologist	Cara Staab	cstaab@fs.fed.us	(406) 329-3677
Fish Program Leader	Scott Spaulding	scottspaulding@fs.fed.us	(406) 329-3287
Fish Ecologist	Cameron Thomas	cathomas@fs.fed.us	(406) 329-3087
TES Program	Lydia Allen	lrallen@fs.fed.us	(406) 329-3558
Interagency Grizzly Bear Coordinator	Scott Jackson	sjackson03@fs.fed.us	(406) 329-3664
Regional Botanist	Steve Shelly	sshelly@fs.fed.us	(406) 329-3041
Invasive Species Program Manager	Michelle Cox	michelle.cox2@usda.gov	(406) 329-3669

Tribal Nations

Assiniboine & Gros Ventre Tribes – Fort Belknap Reservation
Assiniboine & Sioux Tribes – Fort Peck Reservation
Blackfeet Tribe - Blackfeet Reservation
Chippewa Creek Tribe - Rocky Boy's Reservation
Crow Tribe – Crow Reservation
Little Shell Chippewa Tribe
Northern Cheyenne Tribe – Northern Cheyenne Reservation
Salish & Kootenai Tribes - Flathead Reservation

Natural Heritage Programs and Conservation Data Centers in Surrounding States and Provinces
Alberta Conservation Information Management System
British Columbia Conservation Data Centre
Idaho Natural Heritage Program
North Dakota Natural Heritage Program
Saskatchewan Conservation Data Centre
South Dakota Natural Heritage Program
Wyoming Natural Diversity Database

Invasive Species Management Contacts and Information

Aquatic Invasive Species

Montana Fish, Wildlife, and Parks Aquatic Invasive Species staff
Montana Department of Natural Resources and Conservation's Aquatic Invasive Species Grant Program
Montana Invasive Species Council (MISC)
Upper Columbia Conservation Commission (UC3)

Noxious Weeds

Montana Weed Control Association Contacts Webpage
Montana Biological Weed Control Coordination Project
Montana Department of Agriculture - Noxious Weeds
Montana Weed Control Association
Montana Fish, Wildlife, and Parks - Noxious Weeds
Montana State University Integrated Pest Management Extension
Integrated Noxious Weed Management after Wildfires

Introduction to Native Species

Within the report area you have requested, separate summaries are provided for: (1) Species Occurrences (SO) for plant and animal Species of Concern, Special Status Species (SSS), Important Animal Habitat (IAH) and some Potential Plant Species of Concern; (2) other observed non Species of Concern or Species of Concern without suitable documentation to create Species Occurrence polygons; and (3) other non-documented species that are potentially present based on their range, predicted suitable habitat model output, or presence of associated habitats. Each of these summaries provides the following information when present for a species: (1) the number of Species Occurrences and associated delineation criteria for construction of these polygons that have long been used for considerations of documented Species of Concern in environmental reviews; (2) the number of observations of each species; (3) the geographic range polygons for each species that the report area overlaps; (4) predicted relative habitat suitability classes that are present if a predicted suitable habitat model has been created; (5) the percent of the report area that is mapped as commonly associated or occasionally associated habitat as listed for each species in the Montana Field Guide; and (6) a variety of conservation status ranks and links to species accounts in the Montana Field Guide. Details on each of these information categories are included under relevant section headers below or are defined on our Species Status Codes page. In presenting this information, the Montana Natural Heritage Program (MTNHP) is working towards assisting the user with rapidly determining what species have been documented and what species are potentially present in the report area. We remind users that this information is likely incomplete as surveys to document native and introduced species are lacking in many areas of the state, information on introduced species has only been tracked relatively recently, the MTNHP's staff and resources are restricted by declining budgets, and information is constantly being added and updated in our databases. **Thus, field verification by professional biologists of the absence or presence of species and biological communities will always be an important obligation of users of our data.**

If you are aware of observation datasets that the MTNHP is missing, please report them to the Program Botanist apipp@mt.gov or Senior Zoologist dbachen@mt.gov. If you have observations that you would like to contribute, you can submit animal observations using our online data entry system at http://mtnhp.org/AddObs/, plant and animal observations via Excel spreadsheets posted at http://mtnhp.org/observations.asp , or to the Program Botanist or Senior Zoologist.

Observations

The MTNHP manages information on more than 1.8 million animal and plant observations that have been reported by professional biologists and private citizens from across Montana. The majority of these observations are submitted in digital format from standardized databases associated with research or monitoring efforts and spreadsheets of incidental observations submitted by professional biologists and amateur naturalists. At a minimum, accepted observation records must contain a credible species identification (i.e. appropriate geographic range, date, and habitat and, if species are difficult to identify, a photograph and notes on key identifying features), a date or date range, observer name, locational information (ideally with latitude and longitude in decimal degrees), notes on numbers observed, and species behavior or habitat use (e.g., is the observation likely associated with reproduction). Bird records are also required to have information associated with date-appropriate breeding or overwintering status of the species observed. MTNHP reviews observation records to ensure that they are mapped correctly, occur within date ranges when the species is known to be present or detectable, occur within the known seasonal geographic range of the species, and occur in appropriate habitats. MTNHP also assigns each record a locational uncertainty value in meters to indicate the spatial precision associated with the record's mapped coordinates. Only records with locational uncertainty values of 10,000 meters or less are included in environmental summary reports and number summaries are only provided for records with locational uncertainty values of 1,000 meters or less.

Species Occurrences

The MTNHP evaluates plant and animal observation records for species of higher conservation concern to determine whether they are worthy of inclusion in the Species Occurrence (SO) layer for use in environmental reviews; observations not worthy of inclusion in this layer include long distance dispersal events, migrants observed away from key migratory stopover habitats, and winter observations. An SO is a polygon depicting what is known about a species occupancy from direct observation with a defined level of locational uncertainty and any inference that can be made about adjacent habitat use from the latest peer-reviewed science. If an observation can be associated with a map feature that can be tracked (e.g., a wetland boundary for a wetland associated plant) then this polygon feature is used to represent the SO. Areas that can be inferred as probable occupied habitat based on direct observation of a species location and what is known about the foraging area or home range size of the species may be incorporated into the SO. Species Occurrences generally belong to one of the following categories:

Plant Species Occurrences

A documented location of a specimen collection or observed plant population. In some instances, adjacent, spatially separated clusters are considered subpopulations and are grouped as one occurrence (e.g., the subpopulations occur in ecologically similar habitats, and their spatial proximity likely allows them to interbreed). Tabular information for multiple observations at the same SO location is generally linked to a single polygon. Plant SO's are only created for Species of Concern and Potential Species of Concern.

Animal Species Occurrences

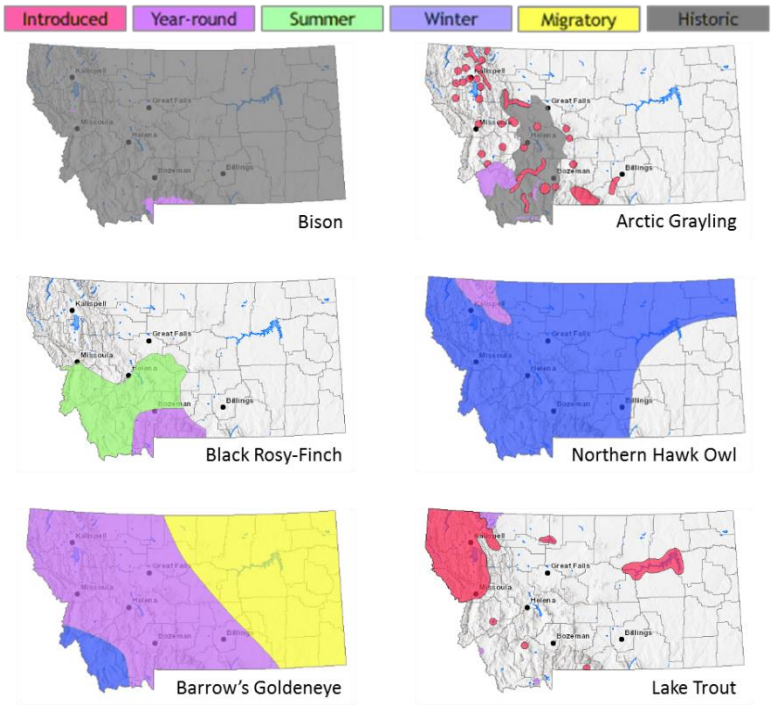
The location of a verified observation or specimen record typically known or assumed to represent a breeding population or a portion of a breeding population. Animal SO's are generally: (1) buffers of terrestrial point observations based on documented species' home range sizes; (2) buffers of stream segments to encompass occupied streams and immediate adjacent riparian habitats; (3) polygonal features encompassing known or likely breeding populations (e.g., a wetland for some amphibians or a forested portion of a mountain range for some wide ranging carnivores); or (4) combinations of the above. Tabular information for multiple observations at the same SO location is generally linked to a single polygon. Species Occurrence polygons may encompass some unsuitable habitat in some instances in order to avoid heavy data processing associated with clipping out habitats that are readily assessed as unsuitable by the data user (e.g., a point buffer of a terrestrial species may overlap into a portion of a lake that is obviously inappropriate habitat for the species). Animal SO's are only created for Species of Concern and Special Status Species (e.g., Bald Eagle).

Other Occurrence Polygons

These include significant biological features not included in the above categories, such as Important Animal Habitats like bird rookeries and bat roosts, and peatlands or other wetland and riparian communities that support diverse plant and animal communities.

Geographic Range Polygons

Geographic range polygons have not yet been defined for most plant species. Native year-round, summer, winter, migratory and historic geographic range polygons as well as polygons for introduced populations have been defined for most animal species for which there are enough observations, surveys, and knowledge of appropriate seasonal habitat use to define them (see examples to left). These native or introduced range polygons bound the extent of known or likely occupied habitats for non-migratory and relative sedentary species and the regular extent of known or likely occupied habitats for migratory and long-distance dispersing species; polygons may include unsuitable intervening habitats. For most species, a single polygon can represent the year-round or seasonal range, but breeding ranges of some colonial nesting water birds and some introduced species are represented more patchily when supported by data. Some ranges are mapped more broadly than actual distributions in order to be visible on statewide maps (e.g., fish).



Predicted Suitable Habitat Models

Recent predicted suitable habitat suitability models have not yet been created for most plant species. For animal species for which models have been completed, the environmental summary report includes simple, rule-based, associations with streams for fish and other aquatic species and mathematically complex Maximum Entropy models (Phillips et al. 2006, Ecological Modeling 190:231-259) constructed from a variety of statewide biotic and abiotic layers and presence only data for individual species contributed to Montana Natural Heritage Program databases for most terrestrial species. For the Maximum Entropy models, we reclassified 90 x 90-meter continuous model output into suitability classes (unsuitable, low, moderate, and optimal) then aggregated that into the one square mile hexagons used in the environmental summary report; this is the finest spatial scale we suggest using this information in management decisions and survey planning. Full model write ups for individual species that discuss model goals, inputs, outputs, and evaluation in much greater detail are posted on the MTNHP's Predicted Suitable Habitat Models page. Evaluations of predictive accuracy and specific limitations are included with the metadata for models of individual species. **Model outputs should not be used in place of on-the-ground surveys for species. Instead model outputs should be used in conjunction with habitat evaluations to determine the need for on-the-ground surveys for species.** We suggest that the percentage of predicted optimal and moderate suitable habitat within the report area be used in conjunction with geographic range polygons and the percentage of commonly associated habitats to generate lists of potential species that may occupy broader landscapes for the purposes of landscape-level planning.

Associated Habitats

Within the boundary of the intersected hexagons, we provide the approximate percentage of commonly or occasionally associated habitat for vertebrate animal species that regularly breed, overwinter, or migrate through the state; a detailed list of commonly and occasionally associated habitats is provided in individual species accounts in the Montana Field Guide. We assigned common or occasional use of each of the 82 ecological systems mapped in Montana by: (1) using personal knowledge and reviewing literature that

summarizes the breeding, overwintering, or migratory habitat requirements of each species; (2) evaluating structural characteristics and distribution of each ecological system relative to the species' range and habitat requirements; (3) examining the observation records for each species in the state-wide point observation database associated with each ecological system; and (4) calculating the percentage of observations associated with each ecological system relative to the percent of Montana covered by each ecological system to get a measure of numbers of observations versus availability of habitat. Species that breed in Montana were only evaluated for breeding habitat use, species that only overwinter in Montana were only evaluated for overwintering habitat use, and species that only migrate through Montana were only evaluated for migratory habitat use. In general, species were listed as associated with an ecological system if structural characteristics of used habitat documented in the literature were present in the ecological system or large numbers of point observations were associated with the ecological system. However, species were not listed as associated with an ecological system if there was no support in the literature for use of structural characteristics in an ecological system, even if point observations were associated with that system. Common versus occasional association with an ecological system was assigned based on the degree to which the structural characteristics of an ecological system matched the preferred structural habitat characteristics for each species as represented in the scientific literature. The percentage of observations associated with each ecological system relative to the percent of Montana covered by each ecological system was also used to guide assignment of common versus occasional association.

We suggest that the percentage of commonly associated habitat within the report area be used in conjunction with geographic range polygons and the percentage of predicted optimal and moderate suitable habitat from predictive models to generate lists of potential species that may occupy broader landscapes for the purposes of landscape-level planning. Users of this information should be aware that land cover mapping accuracy is particularly problematic when the systems occur as small patches or where the land cover types have been altered over the past decade. Thus, particular caution should be used when using the associations in assessments of smaller areas (e.g., evaluations of public land survey sections).

Introduction to Land Cover

Land Use/Land Cover is one of 15 Montana Spatial Data Infrastructure framework layers considered vital for making statewide maps of Montana and understanding its geography. The layer records all Montana natural vegetation, land cover and land use, classified from satellite and aerial imagery, mapped at a scale of 1:100000, and interpreted with supporting ground-level data. The baseline map is adapted from the Northwest ReGAP (NWGAP) project land cover classification, which used 30m resolution multi-spectral Landsat imagery acquired between 1999 and 2001. Vegetation classes were drawn from the Ecological System Classification developed by NatureServe (Comer et al. 2003). The land cover classes were developed by Anderson et al. (1976). The NWGAP effort encompasses 12 map zones. Montana overlaps seven of these zones. The two NWGAP teams responsible for the initial land cover mapping effort in Montana were Sanborn and NWGAP at the University of Idaho. Both Sanborn and NWGAP employed a similar modeling approach in which Classification and Regression Tree (CART) models were applied to Landsat ETM+ scenes. The Spatial Analysis Lab within the Montana Natural Heritage Program was responsible for developing a seamless Montana land cover map with a consistent statewide legend from these two separate products. Additionally, the Montana land cover layer incorporates several other land cover and land use products (e.g., MSDI Structures and Transportation themes and the Montana Department of Revenue Final Land Unit classification) and reclassifications based on plot-level data and the latest NAIP imagery to improve accuracy and enhance the usability of the theme. Updates are done as partner support and funding allow, or when other MSDI datasets can be incorporated. Recent updates include fire perimeters and agricultural land use (annually), energy developments such as wind, oil and gas installations (2014), roads, structures and other impervious surfaces (various years): and local updates/improvements to specific ecological systems (e.g., central Montana grassland and sagebrush ecosystems). Current and previous versions of the Land Use/Land Cover layer with full metadata are available for download at the Montana State Library's Geographic Information Clearinghouse.

Within the report area you have requested, land cover is summarized by acres of Level 1, Level 2, and Level 3 Ecological Systems.

Literature Cited

Anderson, J.R. E.E. Hardy, J.T. Roach, and R.E. Witmer. 1976. A land use and land cover classification system for use with remote sensor data. U.S. Geological Survey Professional Paper 964.

Comer, P., D. Faber-Langendoen, R. Evans, S. Gawler, C. Josse, G. Kittel, S. Menard, M. Pyne, M. Reid, K. Schulz, K. Snow, and J. Teague. 2003. Ecological systems of the United States: A working classification of U.S. terrestrial systems. NatureServe, Arlington, VA.

Introduction to Wetland and Riparian

Within the report area you have requested, wetland and riparian mapping is summarized by acres of each classification present. Summaries are only provided for modern MTNHP wetland and riparian mapping and not for outdated (NWI Legacy) or incomplete (NWI Scalable) mapping efforts; described here. MTNHP has made all three of these datasets and associated metadata available for separate download on the Montana Wetland and Riparian Framework MSDI download page.

Wetland and Riparian mapping is one of 15 Montana Spatial Data Infrastructure framework layers considered vital for making statewide maps of Montana and understanding its geography. The wetland and riparian framework layer consists of spatial data representing the extent, type, and approximate location of wetlands, riparian areas, and deepwater habitats in Montana.

Wetland and riparian mapping is completed through photointerpretation of 1-m resolution color infrared aerial imagery acquired from 2005 or later. A coding convention using letters and numbers is assigned to each mapped wetland. These letters and numbers describe the broad landscape context of the wetland, its vegetation type, its water regime, and the kind of alterations that may have occurred. Ancillary data layers such as topographic maps, digital elevation models, soils data, and other aerial imagery sources are also used to improve mapping accuracy. Wetland mapping follows the federal Wetland Mapping Standard and classifies wetlands according to the Cowardin classification system of the National Wetlands Inventory (NWI) (Cowardin et al. 1979, FGDC Wetlands Subcommittee 2013). Federal, State, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands differently than the NWI. Similar coding, based on U.S. Fish and Wildlife Service conventions, is applied to riparian areas (U.S. Fish and Wildlife Service 2009). These are mapped areas where vegetation composition and growth is influenced by nearby water bodies, but where soils, plant communities, and hydrology do not display true wetland characteristics. **These data are intended for use in publications at a scale of 1:12,000 or smaller. Mapped wetland and riparian areas do not represent precise boundaries and digital wetland data cannot substitute for an on-site determination of jurisdictional wetlands.**

A detailed overview, with examples, of both wetland and riparian classification systems and associated codes can be found at: http://mtnhp.org/help/MapViewer/WetRip_Classification.asp

Literature Cited

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deepwater habitats of the United States. U.S. Fish and Wildlife Service, FWS/OBS-79/31. Washington, D.C. 103pp.

Federal Geographic Data Committee. 2013. Classification of wetlands and deepwater habitats of the United States. FGDC-STD-004-2013. Second Edition. Wetlands Subcommittee, Federal Geographic Data Committee and U.S. Fish and Wildlife Service, Washington, D.C.

U.S. Fish and Wildlife Services. 2009. A system for mapping riparian areas in the western United States. Division of Habitat and Resource Conservation, Branch of Resource and Mapping Support, Arlington, Virginia.

Introduction to Land Management

Within the report area you have requested, land management information is summarized by acres of federal, state, and local government lands, tribal reservation boundaries, private conservation lands, and federal, state, local, and private conservation easements. Acreage for "Owned", "Tribal", or "Easement" categories represents non-overlapping areas that may be totaled. However, "Other Boundaries" represents managed areas such as National Forest boundaries containing private inholdings and other mixed ownership which may cause boundaries to overlap (e.g. a wilderness area within a forest). Therefore, acreages may not total in a straight-forward manner.

Because information on land stewardship is critical to effective land management, the Montana Natural Heritage Program (MTNHP) began compiling ownership and management data in 1997. The goal of the Montana Land Management Database is to manage a single, statewide digital data set that incorporates information from both public and private entities. The database assembles information on public lands, private conservation lands, and conservation easements held by state and federal agencies and land trusts and is updated on a regular basis. Since 2011, the Information Management group in the Montana State Library's Digital Library Division has taken an increasingly active role in managing layers of the Montana Land Management Database in partnership with the MTNHP.

Public and private conservation land polygons are attributed with the name of the entity that owns it. The data are derived from the statewide Montana Cadastral Parcel layer. Conservation easement data shows land parcels on which a public agency or qualified land trust has placed a conservation easement in cooperation with the land owner. The dataset contains no information about ownership or status of the mineral estate. For questions about the dataset or to report errors, please contact the Montana Natural Heritage Program at (406) 444-5354 or mtnhp@mt.gov. You can download various components of the Land Management Database and view associated metadata at the Montana State Library's GIS Data List at the following links:

Public Lands
Conservation Easements
Private Conservation Lands
Managed Areas

Map features in the Montana Land Management Database or summaries provided in this report are not intended as a legal depiction of public or private surface land ownership boundaries and should not be used in place of a survey conducted by a licensed land surveyor. Similarly, map features do not imply public access to any lands. The Montana Natural Heritage Program makes no representations or warranties whatsoever with respect to the accuracy or completeness of this data and assumes no responsibility for the suitability of the data for a particular purpose. The Montana Natural Heritage Program will not be liable for any damages incurred as a result of errors displayed here. Consumers of this information should review or consult the primary data and information sources to ascertain the viability of the information for their purposes.

Introduction to Invasive and Pest Species

Within the report area you have requested, separate summaries are provided for: Aquatic Invasive Species, Noxious Weeds, Agricultural Pests, and Forest Pests that have been documented or potentially occur there based on their known distribution in the state. Definitions for each of these invasive and pest species categories can be found on our Species Status Codes page.

Each of these summaries provides the following information when present for a species: (1) the number of observations of each species; (2) the geographic range polygons for each species, if developed, that the report area overlaps; (3) predicted relative habitat suitability classes that are present if a predicted suitable habitat model has been created; (4) the percent of the report area that is mapped as commonly associated or occasionally associated habitat as listed for each species in the Montana Field Guide; and (5) and links to species accounts in the Montana Field Guide. Details on each of these information categories are included under relevant section headers under the Introduction to Native Species above or are defined on our Species Status Codes page. In presenting this information, the Montana Natural Heritage Program (MTNHP) is working towards assisting the user with rapidly determining what invasive and pest species have been documented and what species are potentially present in the report area. We remind users that this information is likely incomplete as surveys to document introduced species are lacking in many areas of the state, information on introduced species has only been tracked relatively recently, the MTNHP's staff and resources are restricted by declining budgets, and information is constantly being added and updated in our databases. **Thus, field verification by professional biologists of the absence or presence of species will always be an important obligation of users of our data.**

If you are aware of observation or survey datasets for invasive or pest species that the MTNHP is missing, please report them to the Program Coordinator bmaxell@mt.gov Program Botanist apipp@mt.gov or Senior Zoologist dbachen@mt.gov. If you have observations that you would like to contribute, you can submit animal observations using our online data entry system at http://mtnhp.org/AddObs/, plant and animal observations via Excel spreadsheets posted at http://mtnhp.org/observations.asp , or to the Program Botanist or Senior Zoologist.

Additional Information Resources

Home Page for Montana Natural Heritage Program (MTNHP)

MTNHP Staff Contact Information

Montana Field Guide

MTNHP Species of Concern Report - Animals and Plants

MTNHP Species Status Codes - Explanation

MTNHP Predicted Suitable Habitat Models (for select Animals and Plants)

MTNHP Request Information page

Montana Cadastral

Montana Code Annotated

Montana Department of Environmental Quality

Montana Fisheries Information System

Montana Fish, Wildlife, and Parks Subdivision Recommendations

Montana GIS Data Layers

Montana GIS Data Bundler

Montana Greater Sage-Grouse Project Submittal Site

Montana Ground Water Information Center

Montana Legislative Environmental Policy Office Publications
(Including Index of Environmental Permits required in Montana and Guide to the Montana Environmental Policy Act)

Montana Environmental Policy Act (MEPA)

MEPA Analysis Resource List

Laws, Treaties, Regulations, and Permits on Animals and Plants

Montana Spatial Data Infrastructure Layers

Montana State Historic Preservation Office Review and Compliance

Montana Water Information System

Montana Web Map Services

National Environmental Policy Act

U.S. Fish and Wildlife Service Information for Planning and Conservation (Section 7 Consultation)

Web Soil Survey Tool

APPENDIX C

USFWS Official Species List

United States Department of the Interior

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

In Reply Refer To:
Consultation Code: 06E11000-2020-SLI-0105
Event Code: 06E11000-2020-E-00196
Project Name: Gore Hill Interchange

December 09, 2019

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

To Whom It May Concern:

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

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

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

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

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

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

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

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

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

Attachment(s):

- Official Species List

Official Species List

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

This species list is provided by:

Montana Ecological Services Field Office
585 Shephard Way, Suite 1
Helena, MT 59601-6287
(406) 449-5225

Project Summary

Consultation Code: 06E11000-2020-SLI-0105

Event Code: 06E11000-2020-E-00196

Project Name: Gore Hill Interchange

Project Type: TRANSPORTATION

Project Description: reconstruction

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/47.47637621930481N111.35535969657624W

Counties: Cascade, MT

Endangered Species Act Species

There is a total of 2 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Grizzly Bear *Ursus arctos horribilis* Population: U.S.A., conterminous (lower 48) States, except where listed as an experimental population There is **proposed** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/7642	Threatened
North American Wolverine *Gulo gulo luscus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5123	Proposed Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.