



Appendix 3:

NRCS Soil Survey Mapping

SILOS
Recreation Area
— Master Plan —

Soil Map—Broadwater County Area, Montana




**Natural Resources
Conservation Service**

Web Soil Survey
National Cooperative Soil Survey

3/17/2020
Page 1 of 3


MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

Water Features



Streams and Canals

Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

Background



Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Broadwater County Area, Montana

Survey Area Data: Version 18, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Sep 10, 2012—Feb 15, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
MvB	Musselshell gravelly loam, 2 to 5 percent slopes	16.3	1.5%
MwE	Musselshell-Crago channery loams, 15 to 35 percent slopes	36.7	3.4%
MxE	Musselshell-Crago cobbly loams, 8 to 20 percent slopes	14.4	1.3%
Ra	Radersburg very cobbly loam	650.6	60.1%
W	Water	365.4	33.7%
Totals for Area of Interest		1,083.3	100.0%



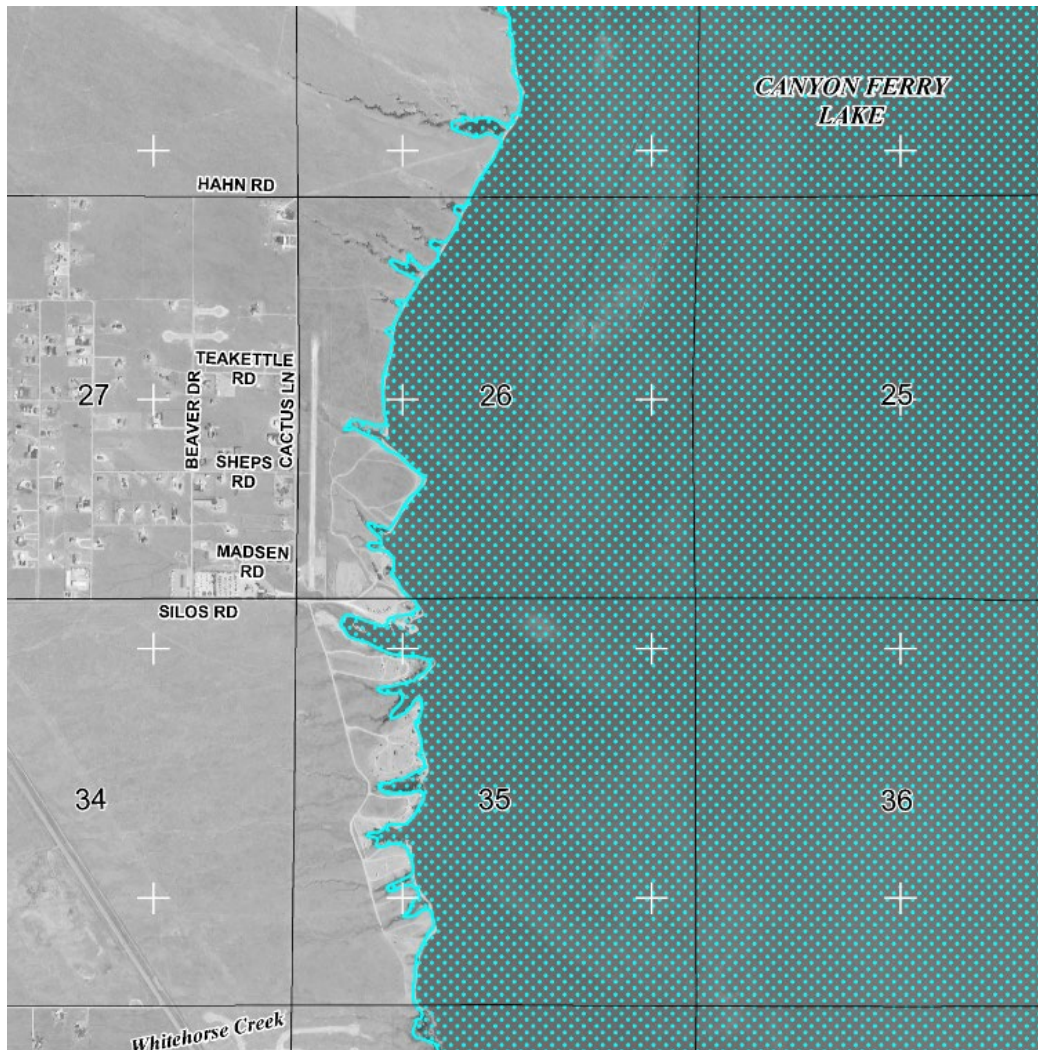
Appendix 4:

FEMA Floodplain Map

SILOS
Recreation Area
— Master Plan —

Silos Recreation Area – Floodplain Map

FIRM Panel 30007C0350C (Effective Date August 18, 2014)



SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

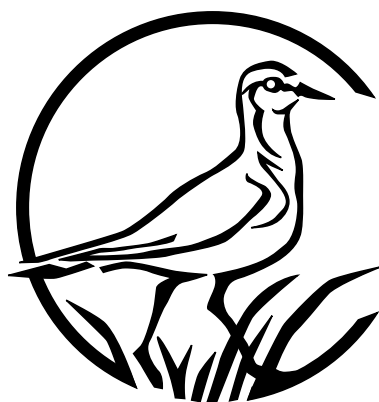
ZONE A No Base Flood Elevations determined.

Source: FEMA Flood Map Service Center available at:
<https://msc.fema.gov/portal/home>; Accessed March 2020.

Appendix 5:

MTNHP Environmental Summary Report

SILOS
Recreation Area
—— Master Plan ——



MONTANA Natural Heritage Program

1515 East 6th Avenue
Helena, MT 59620
(406) 444-5363
mtnhp.org



Latitude	Longitude
46.37045	-111.52685
46.45796	-111.61733

Summarized by:
20MTCO0004
(Custom Area of Interest)



Suggested Citation

Montana Natural Heritage Program. Environmental Summary Report.
for Latitude 46.37045 to 46.45796 and Longitude -111.52685 to -111.61733. Retrieved on 3/16/2020.

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.



Table of Contents

- [Species Report](#)
- [- Other Observed](#)
- [- Other Potential Species](#)
- [Structured Surveys](#)
- [Land Cover](#)
- [Wetland and Riparian](#)
- [Land Management](#)
- [Biological Reports](#)
- [Invasive and Pest Species](#)
- [Introduction to Montana Natural Heritage Program](#)
- [Data Use Terms and Conditions](#)
- [Suggested Contacts for Natural Resource Agencies](#)
- [Introduction to Native Species](#)
- [Introduction to Land Cover](#)
- [Introduction to Wetland and Riparian](#)
- [Introduction to Land Management](#)
- [Introduction to Invasive and Pest Species](#)
- [Additional Information Resources](#)

Introduction to Environmental Summary Report

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

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



MONTANA Natural Heritage Program

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

Legend

Model Icons

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

Habitat Icons

- Common
- Occasional

Range Icons

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

Num Obs

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



Latitude
46.37045
46.45796

Longitude
-111.52685
-111.61733

Native Species

Summarized by: **20MTCO0004** (*Custom Area of Interest*)

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
<input checked="" type="checkbox"/> M - Hoary Bat (<i>Lasiurus cinereus</i>) SOC		3	2			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 <i>Lasiurus borealis</i> 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: ■ 89% Moderate (inductive), ■ 11% Low (inductive) Associated Habitats: ■ 89% Common, ■ 10% Occasional						
<input checked="" type="checkbox"/> M - Little Brown Myotis (<i>Myotis lucifugus</i>) SOC		2	2			Y
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						
Delineation Criteria Confirmed area of occupancy based on the documented presence (mistnet captures, definitively identified acoustic recordings, or definitively identified roosting individuals) of adults or juveniles. Point observation location is buffered by a distance of 1,600 meters in order to encompass the greater than 1,500 meters foraging distance reported for the species in New Brunswick, Canada and otherwise buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. When cave locations are involved, point observations are mapped in the center of a one-square mile hexagon to protect the exact location of the cave entrance as per the Federal Cave Resource Protection Act and associated regulations (U.S. Code Title 16 Chapter 63, Code of Federal Regulations Title 43 Subtitle A Part 37). The outer edges of the hexagon are then buffered by a distance of 1,600 meters and otherwise by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. All of the one-square mile hexagons intersecting this buffered area are presented as the Species Occurrence record. (Last Updated: Jan 03, 2020)						
Predictive Models: ■ 78% Moderate (inductive), ■ 22% Low (inductive) Associated Habitats: ■ 95% Common, ■ 5% Occasional						

	B - Long-billed Curlew (<i>Numenius americanus</i>) SOC	4	6 +		
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 Delineation Criteria Confirmed breeding area based on the presence of a nest, chicks, or territorial adults during the breeding season. Point observation location is buffered by a minimum distance of 200 meters in order to approximate the breeding territory size reported for the species in Idaho and otherwise is buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. (Last Updated: Sep 24, 2019) Predictive Models: 56% Moderate (inductive), 44% Low (inductive) Associated Habitats: 40% Common, 6% Occasional					
	M - Townsend's Big-eared Bat (<i>Corynorhinus townsendii</i>) SOC	1			
View in Field Guide View Predicted Models View Associated Habitat View Range Maps Species of Concern - Native Species Global: G4 State: S3 USFS: Sensitive - Known on Forests (BD, BRT, CG, HLC, KOOT, LOLO) BLM: SENSITIVE FWP SWAP: SGCN3 Delineation Criteria Confirmed area of occupancy based on the documented presence (mistnet captures, definitively identified acoustic recordings, and definitively identified roosting individuals) of adults or juveniles. Point observation location is buffered by a distance of 4,500 meters in order to encompass the 95% confidence interval for nightly foraging distance reported for the species in California and otherwise by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. When cave locations are involved, point observations are mapped in the center of a one-square mile hexagon to protect the exact location of the cave entrance as per the Federal Cave Resource Protection Act and associated regulations (U.S. Code Title 16 Chapter 63, Code of Federal Regulations Title 43 Subtitle A Part 37). The outer edges of the hexagon are then buffered by a distance of 4,500 meters and otherwise by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. All of the one-square mile hexagons intersecting this buffered area are presented as the Species Occurrence record. (Last Updated: Sep 26, 2019) Predictive Models: 44% Moderate (inductive), 56% Low (inductive) Associated Habitats: 88% Common, 6% Occasional					
	B - Great Blue Heron (<i>Ardea herodias</i>) SOC	6	2 +		
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: Jan 29, 2020) Predictive Models: 39% Moderate (inductive), 56% Low (inductive) Associated Habitats: 1% Common					
	B - McCown's Longspur (<i>Rhynchophanes mccownii</i>) SOC	1	+		
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 Delineation Criteria Confirmed breeding area based on the presence of a nest, chicks, or territorial adults during the breeding season. Point observation location is buffered by a minimum distance of 100 meters in order to encompass the maximum breeding territory size reported for the species and otherwise is buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. (Last Updated: Aug 07, 2019) Predictive Models: 22% Moderate (inductive), 78% Low (inductive) Associated Habitats: 47% Occasional					
	B - Evening Grosbeak (<i>Coccothraustes vespertinus</i>) SOC	1	+	Not Available	
View in Field Guide View Associated Habitat View Range Maps Species of Concern - Native Species Global: G5 State: S3 USFWS: MBTA FWP SWAP: SGCN3 Delineation Criteria Confirmed breeding area based on the presence of a nest, chicks, or territorial adults during the breeding season. Point observation location is buffered by a minimum distance of 1,000 meters in order to encompass the maximum foraging distance from nests reported for the species and otherwise is buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. (Last Updated: Jan 03, 2020) Associated Habitats: 7% Common, 1% Occasional					
	B - Clark's Nutcracker (<i>Nucifraga columbiana</i>) SOC	1	+	Not Available	
View in Field Guide View Associated Habitat View Range Maps Species of Concern - Native Species Global: G5 State: S3 USFWS: MBTA USFS: Species of Conservation Concern on Forests (FLAT) FWP SWAP: SGCN3 PIF: 3 Delineation Criteria Observations with direct evidence of breeding activity or indirect evidence of breeding activity between early March and mid-July within forested habitats containing Whitebark Pine (<i>Pinus albicaulis</i>), Limber Pine (<i>Pinus flexilis</i>), or Ponderosa Pine (<i>Pinus ponderosa</i>). Observations are buffered by a minimum distance of 1,000 meters in order to encompass the spring/summer breeding territory size reported for the species or the locational uncertainty of the observation to a maximum distance of 10,000 meters. (Last Updated: Sep 25, 2019) Associated Habitats: 1% Common					
	O - Bat Roost (Non-Cave) (<i>Bat Roost (Non-Cave)</i>) IAH	1		Not Available Not Assigned	
View in Field Guide Important Animal Habitat - Native Species Global: GNR State: SNR Delineation Criteria Confirmed area of occupancy based on the documented presence of adults or juveniles of any bat species at non-cave natural roost sites (e.g. rock outcrops, trees), below ground human created roost sites (e.g. mines), and above ground human created roost sites (e.g., bridges, buildings). Point observation locations are buffered by a distance of 4,500 meters in order to encompass the 95% confidence interval for nightly foraging distance reported for Townsend's Big-eared Bat (a resident Montana bat Species of Concern) and otherwise by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. (Last Updated: Oct 22, 2019)					



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Legend

Model Icons

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

Habitat Icons

- Common
- Occasional

Range Icons

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

Num Obs

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



Latitude 46.37045
Longitude -111.52685
46.45796 -111.61733

Native Species

Summarized by: **20MTCO0004** (*Custom Area of Interest*)

Filtered by:

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

Other Observed Species

	USFWS Sec7	# Obs	Predictive Model	Associated Habitat	Range
<input type="checkbox"/> F - Burbot (<i>Lota lota</i>) PSOC		+		Not Assigned	
View in Field Guide View Predicted Models View Range Maps Potential Species of Concern - Native Species Global: G5 State: S4 Predictive Models: 61% Suitable (native range) (deductive)					
<input type="checkbox"/> B - Common Tern (<i>Sterna hirundo</i>) 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: 44% Optimal (inductive), 6% Moderate (inductive), 17% Low (inductive) Associated Habitats: 44% Common					
<input type="checkbox"/> B - Golden Eagle (<i>Aquila chrysaetos</i>) SOC		+			
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: 100% Moderate (inductive) Associated Habitats: 46% Common, 2% Occasional					
<input type="checkbox"/> B - Mountain Plover (<i>Charadrius montanus</i>) SOC		1			
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: 67% Moderate (inductive), 33% Low (inductive) Associated Habitats: 5% Common, 40% Occasional					
<input type="checkbox"/> B - Brewer's Sparrow (<i>Spizella breweri</i>) 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; BCC17 BLM: SENSITIVE FWP SWAP: SGCN3 PIF: 2 Predictive Models: 56% Moderate (inductive), 44% Low (inductive) Associated Habitats: 5% Common					
<input type="checkbox"/> M - Silver-haired Bat (<i>Lasionycteris noctivagans</i>) PSOC		2			
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: 39% Moderate (inductive), 61% Low (inductive) Associated Habitats: 89% Common, 8% Occasional					
<input type="checkbox"/> A - Northern Leopard Frog (<i>Lithobates pipiens</i>) SOC		1 +			
View in Field Guide View Predicted Models View Associated Habitat View Range Maps Species of Concern - Native Species Global: G5 State: S1,S4 USFS: Sensitive - Known on Forests (CG, HLC, KOOT) Sensitive - Suspected on Forests (BRT, LOLO) BLM: SENSITIVE FWP SWAP: SGCN1 Predictive Models: 39% Moderate (inductive), 61% Low (inductive) Associated Habitats: 43% Common, 1% Occasional					
<input type="checkbox"/> B - Bald Eagle (<i>Haliaeetus leucocephalus</i>) SSS		+			
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 Predictive Models: 39% Moderate (inductive), 44% Low (inductive) Associated Habitats: 44% Common, 40% Occasional					
<input type="checkbox"/> B - Black Tern (<i>Chlidonias niger</i>) 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: 28% Moderate (inductive), 33% Low (inductive) Associated Habitats: 43% Common, 1% Occasional					
<input type="checkbox"/> B - Ferruginous Hawk (<i>Buteo regalis</i>) 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: 22% Moderate (inductive), 78% Low (inductive) Associated Habitats: 44% Common, 1% Occasional					
<input type="checkbox"/> B - Barrow's Goldeneye (<i>Bucephala islandica</i>) PSOC		+			

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: 11% Moderate (inductive), 44% Low (inductive) Associated Habitats: 44% Common									
	B - Greater Sage-Grouse (<i>Centrocercus urophasianus</i>) SOC					+			
View in Field Guide View Predicted Models View Associated Habitat View Range Maps USFS: Sensitive - Known on Forests (BD) Species of Concern - Native Species Global: G3G4 State: S2 Sensitive - Suspected on Forests (CG, HLC) BLM: SENSITIVE FWP SWAP: SGCN2 PIF: 1 Predictive Models: 100% Low (inductive) Associated Habitats: 5% Common									
	B - Sprague's Pipit (<i>Anthus spragueii</i>) 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: 67% Low (inductive) Associated Habitats: 40% Occasional									
	B - Green-tailed Towhee (<i>Pipilo chlorurus</i>) 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: 28% Low (inductive) Associated Habitats: 46% Common, 1% Occasional									
	B - Veery (<i>Catharus fuscescens</i>) 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: 22% Low (inductive) Associated Habitats: 1% Common									
	B - Hooded Merganser (<i>Lophodytes cucullatus</i>) PSOC					+			
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: 11% Low (inductive) Associated Habitats: 44% Common									
	F - Yellowstone Cutthroat Trout (<i>Oncorhynchus clarkii bouvieri</i>) SOC					+		Not Assigned	
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G5T4 State: S2 USFS: Sensitive - Known on Forests (CG) BLM: SENSITIVE FWP SWAP: SGCN2 Predictive Models: 61% Suitable (introduced range) (deductive)									
	B - Peregrine Falcon (<i>Falco peregrinus</i>) SOC					+	Not Available		
View in Field Guide 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 Associated Habitats: 83% Common, 1% Occasional									
	B - Rufous Hummingbird (<i>Selasphorus rufus</i>) PSOC					+	Not Available		
View in Field Guide View Associated Habitat View Range Maps Potential Species of Concern - Native Species Global: G5 State: S4B USFWS: MBTA PIF: 3 Associated Habitats: 47% Common, 1% Occasional									
	B - White-faced Ibis (<i>Plegadis chihi</i>) SOC					+	Not Available		
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: 44% Common									
	B - Trumpeter Swan (<i>Cygnus buccinator</i>) 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: 44% Common									
	B - Chestnut-collared Longspur (<i>Calcarius ornatus</i>) SOC					+	Not Available		
View in Field Guide 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 Associated Habitats: 44% Occasional									
	B - Franklin's Gull (<i>Leucophaeus pipixcan</i>) SOC					+	Not Available		
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: 43% Common, 2% Occasional									
	I - Libellula saturata (<i>Flame Skimmer</i>) PSOC					1	Not Available		
View in Field Guide View Associated Habitat View Range Maps Potential Species of Concern - Native Species Global: G5 State: S2S4 Associated Habitats: 43% Common, 1% Occasional									
	B - Caspian Tern (<i>Hydroprogne caspia</i>) SOC					1 +	Not Available		

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: 43% Common, 1% Occasional					
	B - Forster's Tern (<i>Sterna forsteri</i>)	SOC		+	Not Available
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: 43% Common, 1% Occasional					
	B - Black-necked Stilt (<i>Himantopus mexicanus</i>)	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: 43% Common, 1% Occasional					
	B - American White Pelican (<i>Pelecanus erythrorhynchos</i>)	SOC		7 +	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: 43% Common					
	B - Clark's Grebe (<i>Aechmophorus clarkii</i>)	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: 43% Common					
	B - Common Loon (<i>Gavia immer</i>)	SOC		1 +	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: 43% Common					
	B - Horned Grebe (<i>Podiceps auritus</i>)	SOC		+	Not Available
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: 43% Common					
	B - Harlequin Duck (<i>Histrionicus histrionicus</i>)	SOC		+	Not Available
View in Field Guide		View Associated Habitat	View Range Maps		
Species of Concern - Native Species		Global: G4	State: S2B	USFWS: MBTA	USFS: Sensitive - Known on Forests (BD, CG, HLC, KOOT, LOLO)
FWP SWAP: SGCN2 PIF: 1					
Associated Habitats: 1% Common, 43% Occasional					
	B - Northern Goshawk (<i>Accipiter gentilis</i>)	SOC		+	Not Available
View in Field Guide		View Associated Habitat	View Range Maps		
Species of Concern - Native Species		Global: G5	State: S3	USFWS: MBTA	FWP SWAP: SGCN3 PIF: 2
Associated Habitats: 1% Common, 1% Occasional					
	F - Westslope Cutthroat Trout (<i>Oncorhynchus clarkii lewisi</i>)	SOC		+	Not Available Not Assigned
View in Field Guide		View Range Maps			
Species of Concern - Native Species		Global: G5T4	State: S2	USFS: Sensitive - Known on Forests (BD, BRT, CG, HLC, KOOT, LOLO)	
BLM: SENSITIVE FWP SWAP: SGCN2					



MONTANA Natural Heritage Program

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

Legend

Model Icons

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

Habitat Icons

- Common
- Occasional

Range Icons

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

Num Obs

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



Latitude 46.37045 Longitude -111.52685
46.45796 -111.61733

Native Species

Summarized by: **20MTCO0004** (*Custom Area of Interest*)

Filtered by:

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

Other Potential Species

	USFWS Sec7	Predictive Model	Associated Habitat	Range
<input checked="" type="checkbox"/> V - Elodea bifoliata (<i>Long-sheath Waterweed</i>) SOC				
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: 44% Optimal (inductive), 6% Moderate (inductive), 50% Low (inductive) Associated Habitats: 43% Common				
<input checked="" type="checkbox"/> M - Spotted Bat (<i>Euderma maculatum</i>) 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: 6% Optimal (inductive), 67% Moderate (inductive), 27% Low (inductive) Associated Habitats: 88% Common, 7% Occasional				
<input checked="" type="checkbox"/> B - Sage Thrasher (<i>Oreoscoptes montanus</i>) 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: 3 Predictive Models: 100% Moderate (inductive) Associated Habitats: 5% Common				
<input checked="" type="checkbox"/> V - Physaria ludoviciana (<i>Silver Bladderpod</i>) SOC			Not Assigned	
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G5 State: S2S3 Predictive Models: 94% Moderate (inductive), 6% Low (inductive)				
<input checked="" type="checkbox"/> B - Pinyon Jay (<i>Gymnorhinus cyanocephalus</i>) 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: 89% Moderate (inductive), 11% Low (inductive) Associated Habitats: 1% Common, 6% Occasional				
<input checked="" type="checkbox"/> M - Preble's Shrew (<i>Sorex preblei</i>) 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: 83% Moderate (inductive), 17% Low (inductive) Associated Habitats: 51% Common				
<input checked="" type="checkbox"/> V - Eleocharis rostellata (<i>Beaked Spikerush</i>) SOC			Not Assigned	
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G5 State: S3 USFS: Sensitive - Known on Forests (BD, CG, HLC) Species of Conservation Concern on Forests (FLAT) MNPS: 3 Predictive Models: 72% Moderate (inductive), 28% Low (inductive)				
<input checked="" type="checkbox"/> R - Greater Short-horned Lizard (<i>Phrynosoma hernandesi</i>) SOC				
View in Field Guide View Predicted Models View Associated Habitat View Range Maps Species of Concern - Native Species Global: G5 State: S3 USFS: Sensitive - Known on Forests (CG) Sensitive - Suspected on Forests (HLC) BLM: SENSITIVE FWP SWAP: SGCN3, SGIN Predictive Models: 61% Moderate (inductive), 39% Low (inductive) Associated Habitats: 44% Common, 1% Occasional				
<input checked="" type="checkbox"/> M - Porcupine (<i>Erethizon dorsatum</i>) 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: 56% Moderate (inductive), 44% Low (inductive) Associated Habitats: 52% Common				
<input checked="" type="checkbox"/> M - Dwarf Shrew (<i>Sorex nanus</i>) SOC				
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: 50% Moderate (inductive), 28% Low (inductive) Associated Habitats: 5% Common, 44% Occasional				
<input checked="" type="checkbox"/> B - Short-eared Owl (<i>Asio flammeus</i>) PSOC				

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:  33% Moderate (inductive),  67% Low (inductive)		Associated Habitats:  47% Common,  4% Occasional				
<input checked="" type="checkbox"/>	V - <i>Spiranthes diluvialis</i> (<i>Ute ladies'-tresses</i>)	SOC		 7	Not Assigned	
View in Field Guide		View Predicted Models	View Range Maps			
Species of Concern - Native Species		Global: G2G3 State: S1S2 USFWS: LT MNPS: 2				
Predictive Models:  33% Moderate (inductive)						
<input checked="" type="checkbox"/>	V - <i>Carex crawei</i> (<i>Crawe's Sedge</i>)	SOC			Not Assigned	
View in Field Guide		View Predicted Models	View Range Maps			
Species of Concern - Native Species		Global: G5 State: S2S3 MNPS: 2				
Predictive Models:  28% Moderate (inductive),  67% Low (inductive)						
<input checked="" type="checkbox"/>	M - Western Spotted Skunk (<i>Spilogale gracilis</i>)	PSOC				
View in Field Guide		View Predicted Models	View Associated Habitat	View Range Maps		
Potential Species of Concern - Native Species		Global: G5 State: SNR FWP SWAP: SGIN				
Predictive Models:  28% Moderate (inductive),  22% Low (inductive)		Associated Habitats:  45% Common,  6% Occasional				
<input checked="" type="checkbox"/>	V - <i>Carex scoparia</i> (<i>Pointed Broom Sedge</i>)	SOC			Not Assigned	
View in Field Guide		View Predicted Models	View Range Maps			
Species of Concern - Native Species		Global: G5 State: S1S2				
Predictive Models:  28% Moderate (inductive),  17% Low (inductive)						
<input checked="" type="checkbox"/>	B - Burrowing Owl (<i>Athene cunicularia</i>)	SOC				 
View in Field Guide		View Predicted Models	View Associated Habitat	View Range Maps		
Species of Concern - Native Species		USFS: Sensitive - Known on Forests (CG) Global: G4 State: S3B USFWS: MBTA; BCC17 Sensitive - Suspected on Forests (HLC) BLM: SENSITIVE FWP SWAP: SGCN3 PIF: 1				
Predictive Models:  11% Moderate (inductive),  67% Low (inductive)		Associated Habitats:  5% Common,  44% Occasional				
<input checked="" type="checkbox"/>	M - Fringed Myotis (<i>Myotis thysanodes</i>)	SOC				
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:  11% Moderate (inductive),  28% Low (inductive)		Associated Habitats:  88% Common,  9% Occasional				
<input checked="" type="checkbox"/>	B - Western Screech-Owl (<i>Megascops kennicottii</i>)	PSOC				
View in Field Guide		View Predicted Models	View Associated Habitat	View Range Maps		
Potential Species of Concern - Native Species		Global: G4G5 State: S3S4 USFWS: MBTA FWP SWAP: SGIN PIF: 3				
Predictive Models:  11% Moderate (inductive),  28% Low (inductive)		Associated Habitats:  41% Common				
<input checked="" type="checkbox"/>	B - Sagebrush Sparrow (<i>Artemisiospiza nevadensis</i>)	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; BCC17 BLM: SENSITIVE FWP SWAP: SGCN3				
Predictive Models:  11% Moderate (inductive),  22% Low (inductive)		Associated Habitats:  5% Common				
<input checked="" type="checkbox"/>	B - Yellow-billed Cuckoo (<i>Coccyzus americanus</i>)	SOC				 
View in Field Guide		View Predicted Models	View Associated Habitat	View Range Maps		
Species of Concern - Native Species		Global: G5 State: S3B USFWS: PS: LT; MBTA; BCC10 USFS: Threatened on Forests (BRT, LOLO) BLM: SENSITIVE FWP SWAP: SGCN3, SGIN PIF: 2				
Predictive Models:  11% Moderate (inductive),  17% Low (inductive)		Associated Habitats:  1% Common				
<input checked="" type="checkbox"/>	B - Lewis's Woodpecker (<i>Melanerpes lewis</i>)	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:  6% Moderate (inductive),  44% Low (inductive)		Associated Habitats:  1% Common				
<input checked="" type="checkbox"/>	M - Black-tailed Prairie Dog (<i>Cynomys ludovicianus</i>)	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 (CG) BLM: SENSITIVE FWP SWAP: SGCN3				
Predictive Models:  83% Low (inductive)		Associated Habitats:  5% Common,  48% Occasional				
<input checked="" type="checkbox"/>	B - Loggerhead Shrike (<i>Lanius ludovicianus</i>)	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:  78% Low (inductive)		Associated Habitats:  51% Common,  2% Occasional				
<input checked="" type="checkbox"/>	R - Western Milksnake (<i>Lampropeltis gentilis</i>)	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				
Predictive Models:  78% Low (inductive)		Associated Habitats:  44% Common,  7% Occasional				
<input checked="" type="checkbox"/>	M - Swift Fox (<i>Vulpes velox</i>)	SOC				

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: 72% Low (inductive)		Associated Habitats: 44% Occasional				
B - Bobolink (<i>Dolichonyx oryzivorus</i>) 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: 39% Low (inductive)		Associated Habitats: 47% Common, 1% Occasional				
M - Grizzly Bear (<i>Ursus arctos</i>) 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: 28% Low (inductive)		Associated Habitats: 41% Common, 5% Occasional				
V - Utricularia intermedia (<i>Flatleaf Bladderwort</i>) SOC					Not Assigned	
View in Field Guide		View Predicted Models	View Range Maps			
Species of Concern - Native Species		Global: G5	State: S2	USFS: Sensitive - Known on Forests (KOOT) MNPS: 3		
Predictive Models: 17% Low (inductive)						
B - Meesia triquetra (<i>Meesia Moss</i>) SOC					Not Assigned	
View in Field Guide		View Predicted Models	View Range Maps			
Species of Concern - Native Species		Global: G5	State: S2	USFS: Sensitive - Known on Forests (BRT, CG, KOOT) Sensitive - Suspected on Forests (LOLO) Species of Conservation Concern on Forests (FLAT)		
Predictive Models: 17% Low (inductive)						
A - Western Toad (<i>Anaxyrus boreas</i>) SOC						
View in Field Guide		View Predicted Models	View Associated Habitat	View Range Maps		
Species of Concern - Native Species		Global: G4	State: S2	USFS: Sensitive - Known on Forests (BD, BRT, CG, HLC, KOOT, LOLO)		
BLM: SENSITIVE		FWP SWAP: SGCN2				
Predictive Models: 11% Low (inductive)		Associated Habitats: 44% Common, 46% Occasional				
B - Great Gray Owl (<i>Strix nebulosa</i>) SOC						
View in Field Guide		View Predicted Models	View Associated Habitat	View Range Maps		
Species of Concern - Native Species		Global: G5	State: S3	USFWS: MBTA	BLM: SENSITIVE FWP SWAP: SGCN3, SGIN PIF: 3	
Predictive Models: 11% Low (inductive)		Associated Habitats: 1% Common, 1% Occasional				
V - Castilleja gracillima (<i>Slender Indian Paintbrush</i>) SOC						
View in Field Guide		View Predicted Models	View Associated Habitat	View Range Maps		
Species of Concern - Native Species		Global: G3G4	State: S2			
Predictive Models: 11% Low (inductive)		Associated Habitats: 1% Occasional				
B - Common Poorwill (<i>Phalaenoptilus nuttallii</i>) PSOC						
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: 6% Low (inductive)		Associated Habitats: 44% Common, 8% Occasional				
M - Water Vole (<i>Microtus richardsoni</i>) PSOC						
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: 6% Low (inductive)		Associated Habitats: 43% Common				
M - Bison (<i>Bos bison</i>) SOC				Not Available		
View in Field Guide		View Associated Habitat	View Range Maps			
Species of Concern - Native Species		Global: G4	State: S2	FWP SWAP: SGCN2		
Associated Habitats: 45% Common, 1% Occasional						
B - Sharp-tailed Grouse (<i>Tympanuchus phasianellus</i>) SOC				Not Available		
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: 44% Common, 3% Occasional						
I - Argia alberta (<i>Paiute Dancer</i>) PSOC				Not Available		
View in Field Guide		View Associated Habitat	View Range Maps			
Potential Species of Concern - Native Species		Global: G4	State: S2S3			
Associated Habitats: 44% Occasional						
B - Black-crowned Night-Heron (<i>Nycticorax nycticorax</i>) 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: 44% Common						
I - Somatochlora minor (<i>Ocellated Emerald</i>) PSOC				Not Available		

View in Field Guide View Associated Habitat View Range Maps Potential Species of Concern - Native Species Global: G5 State: S2S4 Associated Habitats: 43% Common, 1% Occasional			
<input type="checkbox"/> I - <i>Aeshna constricta</i> (<i>Lance-tipped Darner</i>) 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: 43% Common			
<input type="checkbox"/> I - <i>Aeshna eremita</i> (<i>Lake Darner</i>) PSOC		Not Available	Y S W
View in Field Guide View Associated Habitat View Range Maps Potential Species of Concern - Native Species Global: G5 State: S3S4 Associated Habitats: 43% Common			
<input type="checkbox"/> I - <i>Argia emma</i> (<i>Emma's Dancer</i>) 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: 43% Common			
<input type="checkbox"/> I - <i>Rhionaeschna multicolor</i> (<i>Blue-eyed Darner</i>) 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: 43% Common			
<input type="checkbox"/> B - <i>Piping Plover</i> (<i>Charadrius melodus</i>) SOC		Not Available	M
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: 43% Common			
<input type="checkbox"/> V - <i>Astragalus convallarius</i> (<i>Lesser Rushy Milkvetch</i>) SOC		Not Available	Y
View in Field Guide View Associated Habitat View Range Maps Species of Concern - Native Species Global: G5 State: S3 MNPS: 2 Associated Habitats: 40% Common, 5% Occasional			
<input type="checkbox"/> V - <i>Erigeron linearis</i> (<i>Linear-leaf Fleabane</i>) SOC		Not Available	Y
View in Field Guide View Associated Habitat View Range Maps Species of Concern - Native Species Global: G5 State: S2 MNPS: 2 Associated Habitats: 40% Common			
<input type="checkbox"/> V - <i>Eriogonum caespitosum</i> (<i>Mat Buckwheat</i>) SOC		Not Available	Y
View in Field Guide View Associated Habitat View Range Maps Species of Concern - Native Species Global: G5 State: S2S3 MNPS: 3 Associated Habitats: 40% Common			
<input type="checkbox"/> V - <i>Phlox kelseyi</i> var. <i>missoulensis</i> (<i>Missoula Phlox</i>) SOC		Not Available	Y
View in Field Guide View Associated Habitat View Range Maps Species of Concern - Native Species Global: G3 State: S3 USFS: Sensitive - Known on Forests (BD, HLC) Associated Habitats: 40% Common USFS: Sensitive - Suspected on Forests (LOLO) MNPS: 2			
<input type="checkbox"/> M - <i>Black-footed Ferret</i> (<i>Mustela nigripes</i>) 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: 5% Common			
<input type="checkbox"/> I - <i>Argia vivida</i> (<i>Vivid Dancer</i>) 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: 1% Common, 44% Occasional			
<input type="checkbox"/> I - <i>Aeshna juncea</i> (<i>Sedge Darner</i>) 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: 1% Common, 43% Occasional			
<input type="checkbox"/> I - <i>Enallagma clausum</i> (<i>Alkali Bluet</i>) 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: 1% Common, 43% Occasional			
<input type="checkbox"/> I - <i>Leucorrhinia borealis</i> (<i>Boreal Whiteface</i>) SOC		Not Available	Y

View in Field Guide View Associated Habitat View Range Maps		Species of Concern - Native Species Global: G5 State: S1		Associated Habitats: 1% Common, 43% Occasional	
I - Rhionaeschna californica (California Darner) PSOC		Not Available			
View in Field Guide View Associated Habitat View Range Maps		Potential Species of Concern - Native Species Global: G5 State: S3S5		Associated Habitats: 1% Common, 43% Occasional	
I - Somatochlora hudsonica (Hudsonian Emerald) PSOC		Not Available			
View in Field Guide View Associated Habitat View Range Maps		Potential Species of Concern - Native Species Global: G5 State: S2S4		Associated Habitats: 1% Common, 43% Occasional	
I - Sympetrum madidum (Red-veined Meadowhawk) PSOC		Not Available			
View in Field Guide View Associated Habitat View Range Maps		Potential Species of Concern - Native Species Global: G5 State: S2S3		Associated Habitats: 1% Common, 40% Occasional	
I - Euphydryas gillettii (Gillette's Checkerspot) SOC		Not Available			
View in Field Guide View Associated Habitat View Range Maps		Species of Concern - Native Species Global: G3 State: S2		Associated Habitats: 1% Common, 40% Occasional	
M - Canada Lynx (Lynx canadensis) SOC		7		Not Available	
View in Field Guide View Associated Habitat View Range Maps		USFS: Threatened on Forests (BD, BRT)		BLM: THREATENED FWP SWAP: SGCN3	
Associated Habitats: 1% Common, 1% Occasional		Global: G5 State: S3 USFS: LT; CH		Threatened, Critical Habitat on Forests (CG, HLC, KOOT, LOLO)	
M - Wolverine (Gulo gulo) SOC		7		Not Available	
View in Field Guide View Associated Habitat View Range Maps		Species of Concern - Native Species Global: G4 State: S3 USFS: P		USFS: Proposed on Forests (BD, BRT, CG, HLC, KOOT, LOLO)	
Associated Habitats: 1% Common, 1% Occasional		BLM: SENSITIVE FWP SWAP: SGCN3			
B - Boreal Owl (Aegolius funereus) PSOC		Not Available			
View in Field Guide View Associated Habitat View Range Maps		Potential Species of Concern - Native Species Global: G5 State: S3S4 USFS: MBTA FWP SWAP: SGIN PIF: 3		Associated Habitats: 1% Common, 1% Occasional	
I - Aeshna sitchensis (Zigzag Darner) PSOC		Not Available			
View in Field Guide View Associated Habitat View Range Maps		Potential Species of Concern - Native Species Global: G5 State: S2S3		Associated Habitats: 1% Common, 1% Occasional	
I - Colias gigantea (Giant Sulphur) PSOC		Not Available			
View in Field Guide View Associated Habitat View Range Maps		Potential Species of Concern - Native Species Global: G5 State: S3		Associated Habitats: 1% Common, 1% Occasional	
B - Flamulated Owl (Psiloscops flammeolus) SOC		Not Available			
View in Field Guide View Associated Habitat View Range Maps		Species of Concern - Native Species Global: G4 State: S3B USFS: MBTA; BCC10		USFS: Sensitive - Known on Forests (BD, BRT, HLC, KOOT, LOLO)	
Sensitive - Suspected on Forests (CG)		BLM: SENSITIVE FWP SWAP: SGCN3 PIF: 1		Species of Conservation Concern on Forests (FLAT)	
Associated Habitats: 1% Common, 1% Occasional					
B - Black-backed Woodpecker (Picoides arcticus) SOC		Not Available			
View in Field Guide View Associated Habitat View Range Maps		Species of Concern - Native Species Global: G5 State: S3 USFS: MBTA		USFS: Sensitive - Known on Forests (BD, BRT, CG, HLC, KOOT, LOLO) BLM: SENSITIVE FWP SWAP: SGCN3 PIF: 1	
Associated Habitats: 1% Common					
B - Brown Creeper (Certhia americana) SOC		Not Available			
View in Field Guide View Associated Habitat View Range Maps		Species of Concern - Native Species Global: G5 State: S3 USFS: MBTA FWP SWAP: SGCN3 PIF: 1		Associated Habitats: 1% Common	
B - Cassin's Finch (Haemorhous cassinii) SOC		Not Available			
View in Field Guide View Associated Habitat View Range Maps		Species of Concern - Native Species Global: G5 State: S3 USFS: MBTA; BCC10 FWP SWAP: SGCN3 PIF: 3		Associated Habitats: 1% Common	

<input type="checkbox"/> B - Gray-crowned Rosy-Finch (<i>Leucosticte tephrocotis</i>) SOC	Not Available <input type="text"/>	<input type="checkbox"/> Y <input type="checkbox"/> W <input type="checkbox"/> M
View in Field Guide View Associated Habitat View Range Maps Species of Concern - Native Species Global: G5 State: S2B,S5N USFWS: MBTA FWP SWAP: SGCN2, SGIN Associated Habitats: <input checked="" type="checkbox"/> 1% Common		
<input type="checkbox"/> B - Pacific Wren (<i>Troglodytes pacificus</i>) SOC	Not Available <input type="text"/>	<input type="checkbox"/> Y
View in Field Guide View Associated Habitat View Range Maps Species of Concern - Native Species Global: G5 State: S3 USFWS: MBTA FWP SWAP: SGCN3 PIF: 2 Associated Habitats: <input checked="" type="checkbox"/> 1% Common		
<input type="checkbox"/> B - Pileated Woodpecker (<i>Dryocopus pileatus</i>) SOC	Not Available <input type="text"/>	<input type="checkbox"/> Y
View in Field Guide View Associated Habitat View Range Maps Species of Concern - Native Species Global: G5 State: S3 USFWS: MBTA FWP SWAP: SGCN3 PIF: 2 Associated Habitats: <input checked="" type="checkbox"/> 1% Common		
<input type="checkbox"/> I - Polygonia progne (<i>Gray Comma</i>) SOC	Not Available <input type="text"/>	<input type="checkbox"/> Y
View in Field Guide View Associated Habitat View Range Maps Species of Concern - Native Species Global: G5 State: S2 Associated Habitats: <input checked="" type="checkbox"/> 1% Common		
<input type="checkbox"/> I - Somatochlora semicircularis (<i>Mountain Emerald</i>) PSOC	Not Available <input type="text"/>	<input type="checkbox"/> Y
View in Field Guide View Associated Habitat View Range Maps Potential Species of Concern - Native Species Global: G5 State: S3S5 Associated Habitats: <input checked="" type="checkbox"/> 1% Common		
<input type="checkbox"/> V - Castilleja exilis (<i>Annual Indian Paintbrush</i>) SOC	Not Available <input type="text"/>	<input type="checkbox"/> Y
View in Field Guide View Associated Habitat View Range Maps Species of Concern - Native Species Global: G5T5 State: S2 MNPS: 2 Associated Habitats: <input checked="" type="checkbox"/> 1% Common		
<input type="checkbox"/> V - Primula incana (<i>Mealy Primrose</i>) SOC	Not Available <input type="text"/>	<input type="checkbox"/> Y
View in Field Guide View Associated Habitat View Range Maps USFS: Sensitive - Known on Forests (BD) Species of Concern - Native Species Global: G5 State: S3 Sensitive - Historically known, not recently documented on Forests (CG) MNPS: 2 Associated Habitats: <input checked="" type="checkbox"/> 1% Common		
<input type="checkbox"/> V - Trichophorum cespitosum (<i>Tufted Club-rush</i>) SOC	Not Available <input type="text"/>	<input type="checkbox"/> Y
View in Field Guide View Associated Habitat View Range Maps USFS: Sensitive - Known on Forests (BD, HLC, KOOT) Species of Concern - Native Species Global: G5 State: S2 Species of Conservation Concern on Forests (FLAT) MNPS: 3 Associated Habitats: <input checked="" type="checkbox"/> 1% Common		
<input type="checkbox"/> V - Veratrum californicum (<i>California False-hellebore</i>) SOC	Not Available <input type="text"/>	<input type="checkbox"/> Y
View in Field Guide View Associated Habitat View Range Maps USFS: Sensitive - Known on Forests (BD, BRT) Species of Concern - Native Species Global: G5 State: S2 Sensitive - Suspected on Forests (CG, HLC) Associated Habitats: <input checked="" type="checkbox"/> 1% Common		
<input type="checkbox"/> B - American Bittern (<i>Botaurus lentiginosus</i>) SOC	Not Available <input type="text"/>	<input type="checkbox"/> S <input type="checkbox"/> M
View in Field Guide 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 Associated Habitats: <input checked="" type="checkbox"/> 1% Common		
<input type="checkbox"/> B - Black Rosy-Finch (<i>Leucosticte atrata</i>) SOC	Not Available <input type="text"/>	<input type="checkbox"/> S <input type="checkbox"/> M
View in Field Guide View Associated Habitat View Range Maps Species of Concern - Native Species Global: G4 State: S2 USFWS: MBTA; BCC10 FWP SWAP: SGCN2, SGIN PIF: 2 Associated Habitats: <input checked="" type="checkbox"/> 1% Common		
<input type="checkbox"/> B - Black-billed Cuckoo (<i>Coccyzus erythrophthalmus</i>) SOC	Not Available <input type="text"/>	<input type="checkbox"/> S <input type="checkbox"/> 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, SGIN PIF: 2 Associated Habitats: <input checked="" type="checkbox"/> 1% Common		
<input type="checkbox"/> B - Ovenbird (<i>Seiurus aurocapilla</i>) PSOC	Not Available <input type="text"/>	<input type="checkbox"/> S <input type="checkbox"/> M
View in Field Guide View Associated Habitat View Range Maps Potential Species of Concern - Native Species Global: G5 State: S4B USFWS: MBTA PIF: 3 Associated Habitats: <input checked="" type="checkbox"/> 1% Common		
<input type="checkbox"/> B - Varied Thrush (<i>Ixoreus naevius</i>) SOC	Not Available <input type="text"/>	<input type="checkbox"/> S <input type="checkbox"/> 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 PIF: 3 Associated Habitats: <input checked="" type="checkbox"/> 1% Common		
<input type="checkbox"/> B - Northern Hawk Owl (<i>Surnia ulula</i>) SOC	Not Available <input type="text"/>	<input type="checkbox"/> W <input type="checkbox"/> 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, SGIN**

Associated Habitats:  1% Common



B - Tennessee Warbler (*Oreothlypis peregrina*) **PSOC**

Not Available



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

[Potential Species of Concern - Native Species](#) Global: **G5** State: **S3S4B** USFWS: **MBTA**

Associated Habitats:  1% Common



Structured Surveys

Summarized by: **20MTCO0004** (*Custom Area of Interest*)

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.

B-Long-billed Curlew (<i>Long-billed Curlew, Road-based, Point Count</i>)	Survey Count: 16	Obs Count: 4	Recent Survey: 2017
E-Eurasian Water-milfoil Rake (<i>Rake tows/pulls for Eurasian Water-milfoil</i>)	Survey Count: 85	Obs Count: 3	Recent Survey: 2019
E-Invasive Mussel Plankton Tow (<i>Plankton tows for veligers of Invasive Mussels</i>)	Survey Count: 33	Obs Count:	Recent Survey: 2019
E-Invasive Mussel Substrate (<i>Artificial Substrate for Invasive Mussels</i>)	Survey Count: 16	Obs Count:	Recent Survey: 2019
E-Kicknet (<i>Kicknet Collection Survey for Invasive Mussels and Snails</i>)	Survey Count: 11	Obs Count: 2	Recent Survey: 2019
E-Noxious Weed, Road-based (<i>Noxious Weed Road-based Visual Surveys</i>)	Survey Count: 6	Obs Count: 3	Recent Survey: 2004
E-Sniffer Dog Aquatic Invasive (<i>Aquatic Sniffer Dog Surveys for Invasives</i>)	Survey Count: 2	Obs Count:	Recent Survey: 2019
E-Visual Aquatic Invasives (<i>Visual Encounter Surveys for Aquatic Invasives on Shorelines or Underwater</i>)	Survey Count: 103	Obs Count: 19	Recent Survey: 2019
M-Bat Acoustic (<i>Bat Acoustic Survey</i>)	Survey Count: 2	Obs Count: 10	Recent Survey: 2010



MONTANA Natural Heritage Program

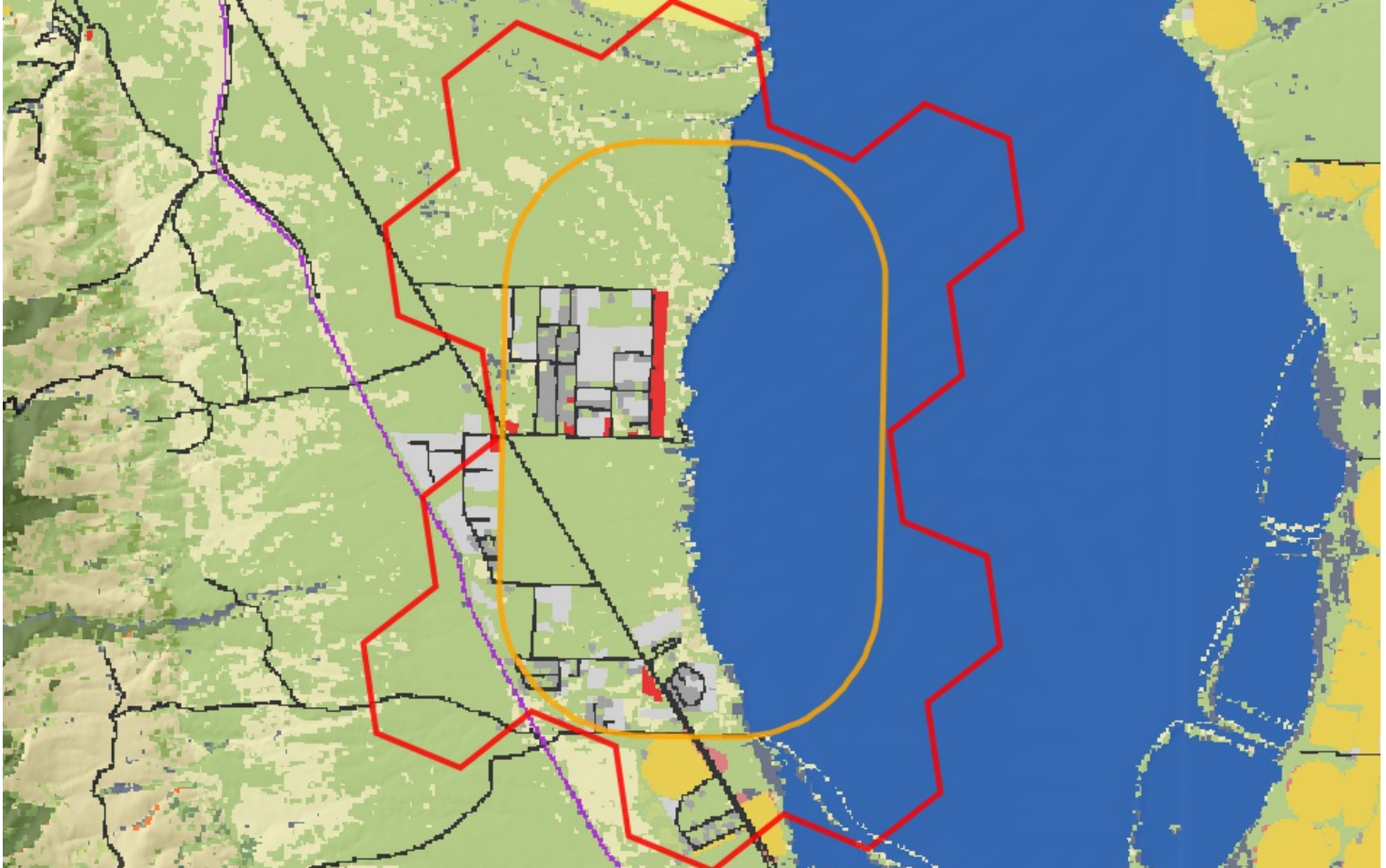
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Latitude	Longitude
46.37045	-111.52685
46.45796	-111.61733

Land Cover

Summarized by: **20MTCO0004** (*Custom Area of Interest*)



Wetland and Riparian Systems Open Water

Open Water

**43% (4,932
Acres)**

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



Grassland Systems Montane Grassland

Rocky Mountain Lower Montane, Foothill, and Valley Grassland

**39% (4,539
Acres)**

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



Shrubland, Steppe and Savanna Systems Sagebrush Steppe

5% (523
Acres)

Big Sagebrush Steppe

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

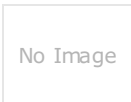


4% (470
Acres)

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.



No Image
2% (274
Acres)

Human Land Use Developed

Other Roads

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














2% (237
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.

Additional Limited Land Cover

- 1% (127 Acres)  Cultivated Crops
- 1% (113 Acres)  Northern Rocky Mountain Lower Montane Riparian Woodland and Shrubland
- 1% (85 Acres)  Commercial / Industrial
- 1% (65 Acres)  Major Roads
- <1% (33 Acres)  Pasture/Hay
- <1% (33 Acres)  Montane Sagebrush Steppe
- <1% (28 Acres)  Rocky Mountain Subalpine-Montane Mesic Meadow
- <1% (26 Acres)  Railroad
- <1% (18 Acres)  Introduced Upland Vegetation - Annual and Biennial Forbland
- <1% (3 Acres)  Alpine-Montane Wet Meadow
- <1% (1 Acres)  Rocky Mountain Ponderosa Pine Woodland and Savanna
- <1% (0 Acres)  Emergent Marsh



Wetland and Riparian

Summarized by: **20MTCO0004** (Custom Area of Interest)



Wetland and Riparian Mapping

[Explain](#)

P - Palustrine

AB - Aquatic Bed

F - Semipermanently Flooded	4 Acres
h - Diked/Impounded	4 Acres PABFh

P - Palustrine, AB - Aquatic Bed

Wetlands with vegetation growing on or below the water surface for most of the growing season.

EM - Emergent

A - Temporarily Flooded	40 Acres
(no modifier)	40 Acres PEMA
h - Diked/Impounded	<1 Acres PEMAh
C - Seasonally Flooded	2 Acres
(no modifier)	1 Acres PEMC
h - Diked/Impounded	<1 Acres PEMCh
x - Excavated	1 Acres PEMCx

P - Palustrine, EM - Emergent

Wetlands with erect, rooted herbaceous vegetation present during most of the growing season.

SS - Scrub-Shrub

A - Temporarily Flooded	15 Acres
h - Diked/Impounded	4 Acres PSSAh
x - Excavated	11 Acres PSSAx
C - Seasonally Flooded	16 Acres
h - Diked/Impounded	3 Acres PSSCh
x - Excavated	13 Acres PSSCx

P - Palustrine, SS - Scrub-Shrub


Wetlands dominated by woody vegetation less than 6 meters (20 feet) tall. Woody vegetation includes tree saplings and trees that are stunted due to environmental conditions.


L - Lacustrine (Lakes)

1 - Limnetic

 UB - Unconsolidated Bottom		L - Lacustrine (Lakes), 1 - Limnetic, UB - Unconsolidated Bottom <i>Deep waterbodies with mud or silt covering at least 25% of the bottom.</i>
H - Permanently Flooded	4,858 Acres	
h - Diked/Impounded	4,858 Acres	L1UBHh


2 - Littoral


 AB - Aquatic Bed		L - Lacustrine (Lakes), 2 - Littoral, AB - Aquatic Bed <i>Shorelines with vegetation growing on or below the water surface for most of the growing season.</i>
H - Permanently Flooded	63 Acres	
x - Excavated	63 Acres	L2ABHx

 US - Unconsolidated Shore		L - Lacustrine (Lakes), 2 - Littoral, US - Unconsolidated Shore <i>Shorelines where there is less than 75% areal cover of stones, boulders, or bedrock, and less than 30% vegetation cover. The area is also irregularly exposed due to seasonal or irregular flooding and subsequent drying.</i>
C - Seasonally Flooded	4 Acres	
h - Diked/Impounded	4 Acres	L2USCh

Rp - Riparian

2 - Lentic

 SS - Scrub-Shrub (no modifier)		Rp - Riparian, 2 - Lentic, SS - Scrub-Shrub <i>This type of riparian area is dominated by woody vegetation that is less than 6 meters (20 feet) tall. Woody vegetation includes tree saplings and trees that are stunted due to environmental conditions.</i>
	<1 Acres	Rp2SS

 FO - Forested (no modifier)		Rp - Riparian, 2 - Lentic, FO - Forested <i>This riparian class has woody vegetation that is greater than 6 meters (20 feet) tall.</i>
	13 Acres	Rp2FO



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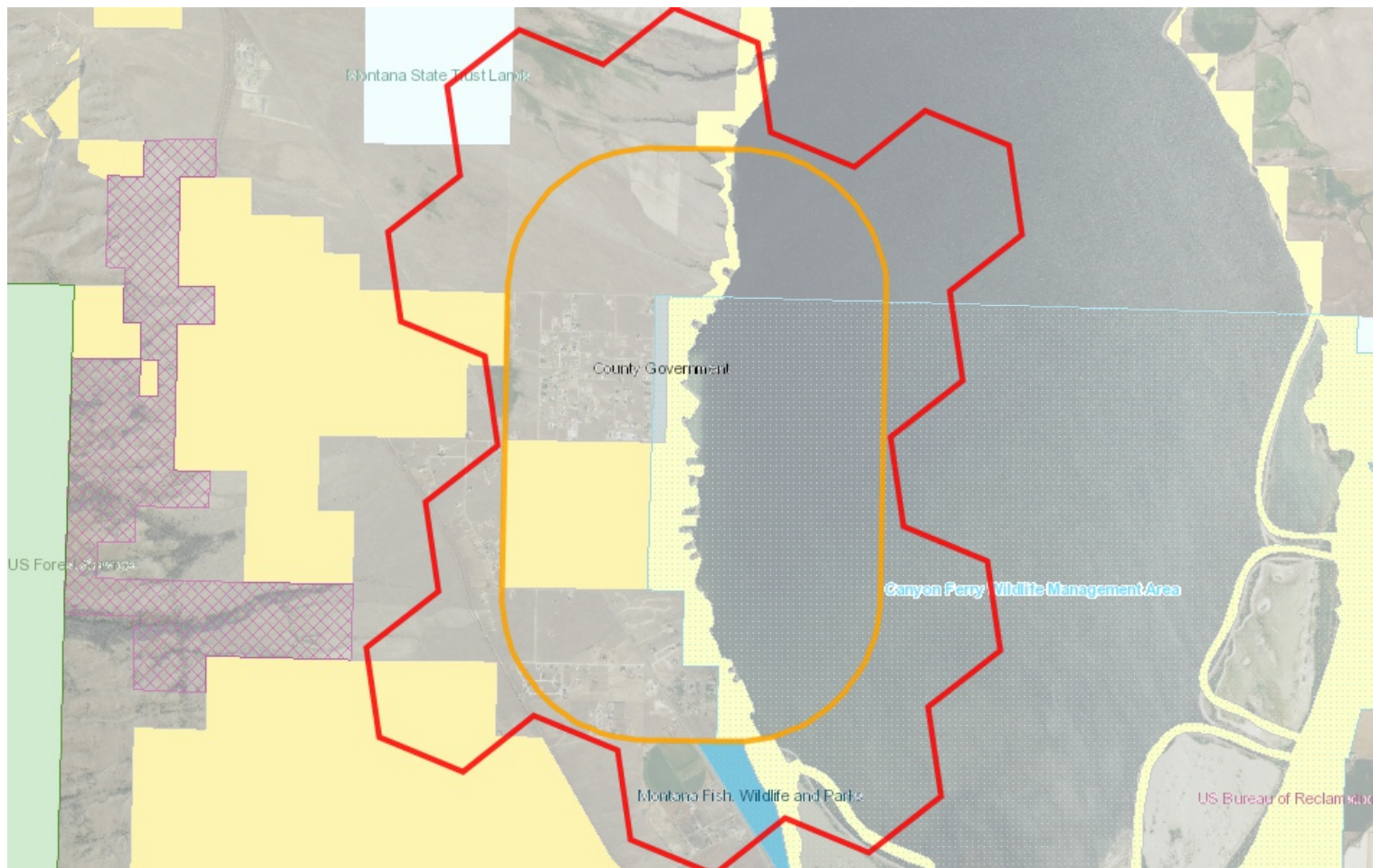
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Latitude Longitude
46.37045 -111.52685
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Land Management

Summarized by: **20MTCO0004** (Custom Area of Interest)



Land Management Summary

[Explain](#)

	Ownership	Tribal	Easements	Other Boundaries (possible overlap)
Public Lands	2,240 Acres (19%)			
Federal	1,914 Acres (17%)			
US Bureau of Land Management	1,172 Acres (10%)			
BLM Owned	1,172 Acres (10%)			
US Bureau of Reclamation	742 Acres (6%)			
USBR Owned	742 Acres (6%)			
USBR Water Projects				5,556 Acres
Canyon Ferry Reservoir				5,556 Acres
State	267 Acres (2%)			
Montana State Trust Lands	161 Acres (1%)			
MT State Trust Owned	161 Acres (1%)			
Montana Fish, Wildlife and Parks	106 Acres (1%)			
MTFWP Owned	106 Acres (1%)			
MTFWP Wildlife Management Areas				4,235 Acres
Canyon Ferry Wildlife Management Area				4,235 Acres
Local	59 Acres (1%)			
Local Government	59 Acres (1%)			
Local Government Owned	59 Acres (1%)			
Private Lands or Unknown Ownership	9,267 Acres (81%)			



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Biological Reports

Summarized by: **20MTCO0004** (*Custom Area of Interest*)

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

- Restani, M. and A.R. Harmata. 1992. Survey of raptors along the upper Missouri River, Montana. Montana State University. Bozeman, MT. 53 pp plus appendix.



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Legend

Model Icons

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

Habitat Icons

- Common
- Occasional

Range Icons

- Suspect (invasive / pest)
- Documented (invasive / pest)
- Released (biocontrol)
- Established (biocontrol)

Num Obs

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



Latitude 46.37045
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46.45796 -111.61733

Invasive and Pest Species

Summarized by: **20MTCO0004** (*Custom Area of Interest*)

	# Obs	Predictive Model	Associated Habitat	Range
Aquatic Invasive Species				
<input checked="" type="checkbox"/> F - Common Carp (<i>Cyprinus carpio</i>) AIS	+		Not Assigned	
View in Field Guide View Predicted Models View Range Maps Aquatic Invasive Species - Non-native Species Global: G5 State: SNA Predictive Models: 61% Suitable (introduced range) (deductive)				
<input checked="" type="checkbox"/> V - Potamogeton crispus (<i>Curly-leaf Pondweed</i>) N2B/AIS	11	Not Available	Not Assigned	
View in Field Guide View Range Maps Noxious Weed: Priority 2B - Aquatic Invasive Species - Non-native Species Global: G5 State: SNA				
<input checked="" type="checkbox"/> I - Orconectes virilis (<i>Virile Crayfish</i>) AIS	2	Not Available	Not Assigned	
View in Field Guide Aquatic Invasive Species - Native Species Global: G5 State: S5				
Noxious Weeds: Priority 1A				
<input checked="" type="checkbox"/> V - Isatis tinctoria (<i>Dyer's Woad</i>) N1A			Not Assigned	
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 1A - Non-native Species Global: GNR State: SNA Predictive Models: 83% Moderate (inductive), 17% Low (inductive)				
<input checked="" type="checkbox"/> V - Centaurea solstitialis (<i>Yellow Starthistle</i>) N1A			Not Assigned	
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 1A - Non-native Species Global: GNR State: SNA Predictive Models: 67% Moderate (inductive), 11% Low (inductive)				
Noxious Weeds: Priority 1B				
<input checked="" type="checkbox"/> V - Echium vulgare (<i>Blueseed</i>) N1B			Not Assigned	
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 1B - Non-native Species Global: GNR State: SNA Predictive Models: 11% Low (inductive)				
Noxious Weeds: Priority 2A				
<input checked="" type="checkbox"/> V - Lepidium latifolium (<i>Perennial Pepperweed</i>) N2A			Not Assigned	
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 2A - Non-native Species Global: GNR State: SNA Predictive Models: 6% Optimal (inductive), 17% Moderate (inductive), 77% Low (inductive)				
<input checked="" type="checkbox"/> V - Hieracium praealtum (<i>Kingdevil Hawkweed</i>) N2A			Not Assigned	
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 2A - Non-native Species Global: GNR State: SNA Predictive Models: 11% Low (inductive)				
Noxious Weeds: Priority 2B				
<input checked="" type="checkbox"/> V - Lepidium draba (<i>Whitetop</i>) N2B			Not Assigned	
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 2B - Non-native Species Global: GNR State: SNA Predictive Models: 6% Optimal (inductive), 56% Moderate (inductive), 28% Low (inductive)				
<input checked="" type="checkbox"/> V - Centaurea diffusa (<i>Diffuse Knapweed</i>) N2B			Not Assigned	
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 2B - Non-native Species Global: GNR State: SNA Predictive Models: 72% Moderate (inductive), 28% Low (inductive)				
<input checked="" type="checkbox"/> V - Euphorbia virgata (<i>Leafy Spurge</i>) N2B			Not Assigned	
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 2B - Non-native Species Global: GNRTNR State: SNA Predictive Models: 50% Moderate (inductive), 50% Low (inductive)				
<input checked="" type="checkbox"/> V - Convolvulus arvensis (<i>Field Bindweed</i>) N2B			Not Assigned	

View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 2B - Non-native Species Global: GNR State: SNA Predictive Models:  22% Moderate (inductive),  56% Low (inductive)			
<input type="checkbox"/> V - Centaurea stoebe (<i>Spotted Knapweed</i>) N2B	2		Not Assigned 
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 2B - Non-native Species Global: GNR State: SNA Predictive Models:  17% Moderate (inductive),  67% Low (inductive)			
<input type="checkbox"/> V - Cirsium arvense (<i>Canada Thistle</i>) N2B	2		Not Assigned 
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 2B - Non-native Species Global: G5 State: SNA Predictive Models:  11% Moderate (inductive),  78% Low (inductive)			
<input type="checkbox"/> V - Linaria dalmatica (<i>Dalmatian Toadflax</i>) N2B	1		Not Assigned 
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 2B - Non-native Species Global: G5 State: SNA Predictive Models:  6% Moderate (inductive),  72% Low (inductive)			
<input type="checkbox"/> V - Acroptilon repens (<i>Russian Knapweed</i>) N2B			Not Assigned 
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 2B - Non-native Species Global: GNR State: SNA Predictive Models:  83% Low (inductive)			
<input type="checkbox"/> V - Cynoglossum officinale (<i>Common Hound's-tongue</i>) N2B			Not Assigned 
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 2B - Non-native Species Global: GNR State: SNA Predictive Models:  78% Low (inductive)			
<input type="checkbox"/> V - Berteroa incana (<i>Hoary False-alyssum</i>) N2B			Not Assigned 
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 2B - Non-native Species Global: GNR State: SNA Predictive Models:  28% Low (inductive)			
<input type="checkbox"/> V - Potamogeton crispus (<i>Curly-leaf Pondweed</i>) N2B/AIS	11	Not Available	Not Assigned 
View in Field Guide View Range Maps Noxious Weed: Priority 2B - Aquatic Invasive Species - Non-native Species Global: G5 State: SNA			
Regulated Weeds: Priority 3			
<input type="checkbox"/> V - Elaeagnus angustifolia (<i>Russian Olive</i>) R3			Not Assigned 
View in Field Guide View Predicted Models View Range Maps Regulated Weed: Priority 3 - Non-native Species Global: GNR State: SNA Predictive Models:  22% Moderate (inductive),  72% Low (inductive)			
<input type="checkbox"/> V - Bromus tectorum (<i>Cheatgrass</i>) R3			Not Assigned 
View in Field Guide View Predicted Models View Range Maps Regulated Weed: Priority 3 - Non-native Species Global: GNR State: SNA Predictive Models:  78% Low (inductive)			
Biocontrol Species			
<input type="checkbox"/> I - Oberea erythrocephala (<i>Red-headed Leafy Spurge Stem Borer</i>) BIOCNTL			Not Assigned 
View in Field Guide View Predicted Models View Range Maps Biocontrol Species - Non-native Species Global: GNR State: SNA Predictive Models:  50% Moderate (inductive),  33% Low (inductive)			
<input type="checkbox"/> I - Aphthona lacertosa (<i>Brown-legged Leafy Spurge Flea Beetle</i>) BIOCNTL			Not Assigned 
View in Field Guide View Predicted Models View Range Maps Biocontrol Species - Non-native Species Global: GNR State: SNA Predictive Models:  44% Moderate (inductive),  28% Low (inductive)			
<input type="checkbox"/> I - Cyphocleonus achates (<i>Knapweed Root Weevil</i>) BIOCNTL			Not Assigned 
View in Field Guide View Predicted Models View Range Maps Biocontrol Species - Non-native Species Global: GNR State: SNA Predictive Models:  28% Moderate (inductive),  39% Low (inductive)			
<input type="checkbox"/> I - Aphthona nigricutis (<i>Black Dot Leafy Spurge Flea Beetle</i>) BIOCNTL			Not Assigned 
View in Field Guide View Predicted Models View Range Maps Biocontrol Species - Non-native Species Global: GNR State: SNA Predictive Models:  11% Moderate (inductive),  33% Low (inductive)			
<input type="checkbox"/> I - Mecinus janthiniformis (<i>Dalmatian Toadflax Stem-boring Weevil</i>) BIOCNTL			Not Assigned 
View in Field Guide View Predicted Models View Range Maps Biocontrol Species - Non-native Species Global: GNR State: SNA Predictive Models:  6% Moderate (inductive),  67% Low (inductive)			

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
	Blackfoot 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

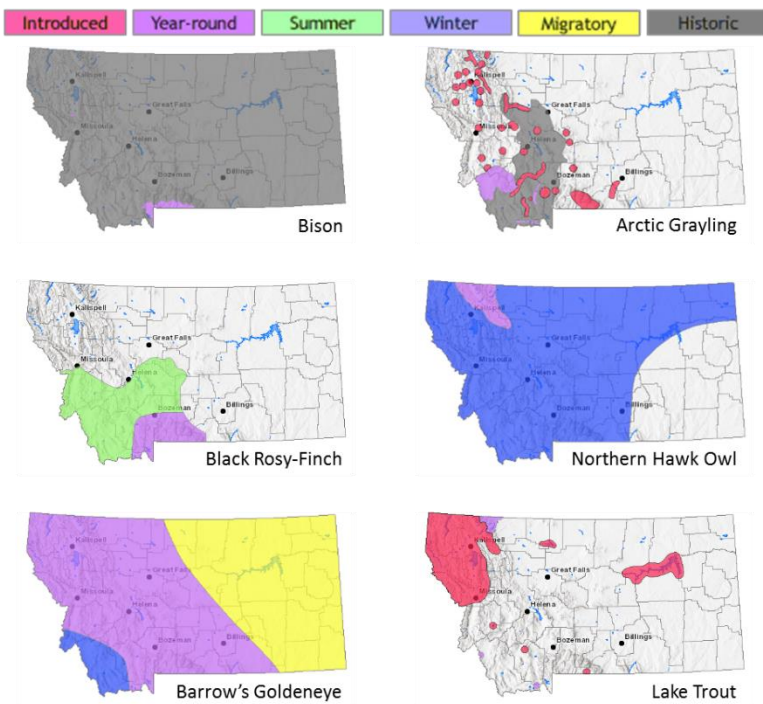
The location of a verified observation or specimen record typically known or assumed to represent a breeding population or a portion of a breeding population. Animal SO's are generally: (1) buffers of terrestrial point observations based on documented species' home range sizes; (2) buffers of stream 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/MapView/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) 444-5363 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](#)

[Penalties for Misuse of Fish and Wildlife Location Data](#) (MCA 87-6-222)

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

[Web Soil Survey Tool](#)

Appendix 6:

Montana SHPO File Search Results

From: [Murdo, Damon](#)
To: [Dan Norderud](#)
Subject: RE: Silos Recreation Area Master Plan - CRIS/CRABS File Search Request
Date: Monday, March 16, 2020 3:18:47 PM
Attachments: [Reports.pdf](#)
[Sites.pdf](#)
[2020031602.pdf](#)



March 16, 2020

Daniel Norderud
RP&A
3147 Saddle Drive
Helena MT 59601

RE: SILOS RECREATION AREA MASTER PLAN SHPO Project #:2020031602

Dear Mr. Norderud:

I have conducted a cultural resource file search for the above-cited project located in Section 26, 35, T8N R1E. According to our records there have been a few previously recorded sites within the designated search locale. In addition to the sites there have been a few previously conducted cultural resource inventories done in the area. I've attached a list of these sites and reports. If you would like any further information regarding these sites or reports, you may contact me at the number listed below.

It is SHPO's position that any structure over fifty years of age is considered historic and is potentially eligible for listing on the National Register of Historic Places. If any structures are to be altered and are over fifty years old, we would recommend that they be recorded, and a determination of their eligibility be made prior to any disturbance taking place.

If this project involves a federal agency, it may constitute a federal undertaking subject to compliance with Section 106 of the National Historic Preservation Act. As such it will be important for you to coordinate efforts in the further consideration of impacts to cultural resources through the federal agency for consultation with our office.

If you have any further questions or comments, you may contact me at (406) 444-7767 or by e-mail at dmurdo@mt.gov. I have attached an invoice for the file search. Thank you for consulting with us.

Sincerely,

Damon Murdo
Cultural Records Manager
State Historic Preservation Office



STATE HISTORIC PRESERVATION OFFICE

Cultural Resource Information Systems

CRIS Township, Range, Section Report

Report Date:3/16/2020

Site #	Twp	Rng	Sec	Qs	Site Type 1	Site Type 2	Time Period	Owner	NR Status
24BW0040	8N	1E	35	NE	Lithic Material Concentration		No Indication of Time	No Data	Undetermined*
24BW0044	8N	1E	26	SE	Lithic Material Concentration		No Indication of Time	No Data	Undetermined*
24BW0045	8N	1E	26	NW	Lithic Material Concentration		No Indication of Time	No Data	Undetermined*
24BW0046	8N	1E	35	SW	Lithic Material Concentration		No Indication of Time	No Data	Undetermined*
24BW0047	8N	1E	26	NW	Tipi Ring		No Indication of Time	No Data	Unresolved
24BW0952	8N	1E	26	Comb	Historic Political/Government		1950-1959	BOR	Undetermined*
24BW0965	8N	1E	35		Historic Homestead/Farmstead	Historic Building Foundation	Historic More Than One Decade	BOR	Ineligible
24BW1163	8N	1E	26	NW	Rock Cairn(s)			BOR	Undetermined*
24BW1164	8N	1E	35	NW	Historic Political/Government		Historic More Than One Decade	BOR	Undetermined*



STATE HISTORIC PRESERVATION OFFICE Montana Cultural Resource Database

CRABS Township,Range,Section Results

Report Date:3/16/2020

Township:8 N Range:1 E Section: 26

GREISER SALLY T., ET AL.

3/1/1983 CLASS III CULTURAL AND PALEONTOLOGICAL RESOURCE INVENTORY AT CANYON FERRY RESERVOIR, NEAR HELENA, MONTANA (INCOMPLETE)

CRABS Document Number: BW 6 1467 Agency Document Number:

Township:8 N Range:1 E Section: 35

GREISER SALLY T., ET AL.

3/1/1983 CLASS III CULTURAL AND PALEONTOLOGICAL RESOURCE INVENTORY AT CANYON FERRY RESERVOIR, NEAR HELENA, MONTANA (INCOMPLETE)

CRABS Document Number: BW 6 1467 Agency Document Number:

Township:8 N Range:1 E Section: 26

MALOUF CARLING I.

1/1/1950 THE ARCHAEOLOGY OF THE CANYON FERRY REGION, MONTANA

CRABS Document Number: BW 6 13739 Agency Document Number: ANTH AND SOC PAPERS #11

Township:8 N Range:1 E Section: 35

MALOUF CARLING I.

1/1/1950 THE ARCHAEOLOGY OF THE CANYON FERRY REGION, MONTANA

CRABS Document Number: BW 6 13739 Agency Document Number: ANTH AND SOC PAPERS #11

Township:8 N Range:1 E Section: 35

VINCENT WILLIAM B.

5/24/2002 NOTIFICATION OF UNDERTAKING- PROPOSED SPECIAL USE PERMIT FOR ERNIE NUNN FOR A COOK SHACK ON THE ICE NEAR THE SILOS CAMPGROUND, CANYON FERRY RESERVOIR, BROADWATER COUNTY, MONTANA

CRABS Document Number: BW 6 24819 Agency Document Number: MTAO CF-02-123

Township:8 N Range:1 E Section: 35

VINCENT WILLIAM B.

5/29/2002 CULTURAL RESOURCES OVERVIEW FOR THE PROPOSED ROAD WORK AT SILOS CAMPGROUND, CANYON FERRY RESERVOIR, BROADWATER COUNTY, MONTANA

CRABS Document Number: BW 6 24826 Agency Document Number: MTAO CF-02-126

Township:8 N Range:1 E Section: 35

VINCENT WILLIAM B.

7/2/2002 PROPOSED SPECIAL USE PERMIT FOR SK CONSTRUCTION COMPANY ACCESS TO CANYON FERRY RESERVOIR AT SILOS CAMPGROUND NEAR HELENA MONTANA

CRABS Document Number: LC 6 25063 Agency Document Number: MTAO CF-02-135

Township:8 N Range:1 E Section: 26

NICKELS ADAM M

5/23/2003 CLASS III CULTURAL RESOURCE INVENTORY OF SILOS AIRPORT, BROADWATER COUNTY, MONTANA

CRABS Document Number: BW 6 26040 Agency Document Number: MTAO CF-03-007

Township:8 N Range:1 E Section: 26

VINCENT WILLIAM B.

1/11/2006 CLASS III CULTURAL RESOURCE INVENTORY OF THE SILOS CAMPGROUND AND RECREATION SITE IN BROADWATER COUNTY, MONTANA

CRABS Document Number: BW 6 28234 Agency Document Number: MTAO#CF-05-014

Township:8 N Range:1 E Section: 35

VINCENT WILLIAM B.

1/11/2006 CLASS III CULTURAL RESOURCE INVENTORY OF THE SILOS CAMPGROUND AND RECREATION SITE IN BROADWATER COUNTY, MONTANA

CRABS Document Number: BW 6 28234 Agency Document Number: MTAO#CF-05-014