MONTANA
Natural Heritage
Program

P.O. Box 201800 • 1515 East Sixth Avenue • Helena, MT 59620-1800 • fax 406.444.0266 • tel 406.444.5363 • http://mtnhp.org

August 9, 2022

Joe Dehnert
IMEG
1817 South Ave West
Suite A
Missoula, MT 59801

Dear Joe Dehnert,

Thank you for your request for Natural Heritage information for Icon Apartment Homes at Dougherty Ranch Major Subdivision, in Section 7, Township 13 North, Range 20 West and Section 7, Township 13 North, Range 19 West, Missoula County, Montana. Included with this letter is an Environmental Summary report PDF and a companion Excel workbook 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. The PDF report contains introductory materials and limitations associated with the use of each of these data types, a list of additional information resources, data use terms and conditions, and suggested contacts. The Excel workbook contains worksheets for each data type that can be easily sorted to summarize particular information needs. In addition to these materials, we have included a compilation of one page snapshots containing general description, habitat, spatial and temporal distribution, and conservation status information for each species listed in the species occurrence, other observed species, and other potential species sections of the Environmental Summary report. These three field guide compilations are excerpted from the full accounts found on the Montana Field Guide http://fieldguide.mt.gov for general reference use and, if desired, as appendices to environmental review documents.

Please keep in mind the following when using and interpreting the enclosed information:

(1) This information is intended for distribution or use only within your department, agency, or business. Please see the Data Use Terms and Conditions in the Environmental Summary report PDF for additional guidelines.

(2) Our minimum search area for standard information requests consists of the requested area buffered by an additional mile in order to capture records that may be immediately adjacent to

the requested area. Please let us know if a buffer greater than 1 mile would be of use to your efforts.

(3) Additional information on animal, plant, and lichen species and ecological systems in Montana is available on the Montana Field Guide at http://fieldguide.mt.gov/

(4) 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 (see Environmental Summary report PDF).

I hope the enclosed information is helpful to you. Please feel free to contact me at the phone or email address below if you have any questions, require additional information, or have suggestions for how we could improve our information resources.

Sincerely,

Bryce A. Maxell
Montana Natural Heritage Program
(406) 444-3989
bmaxell@mt.gov

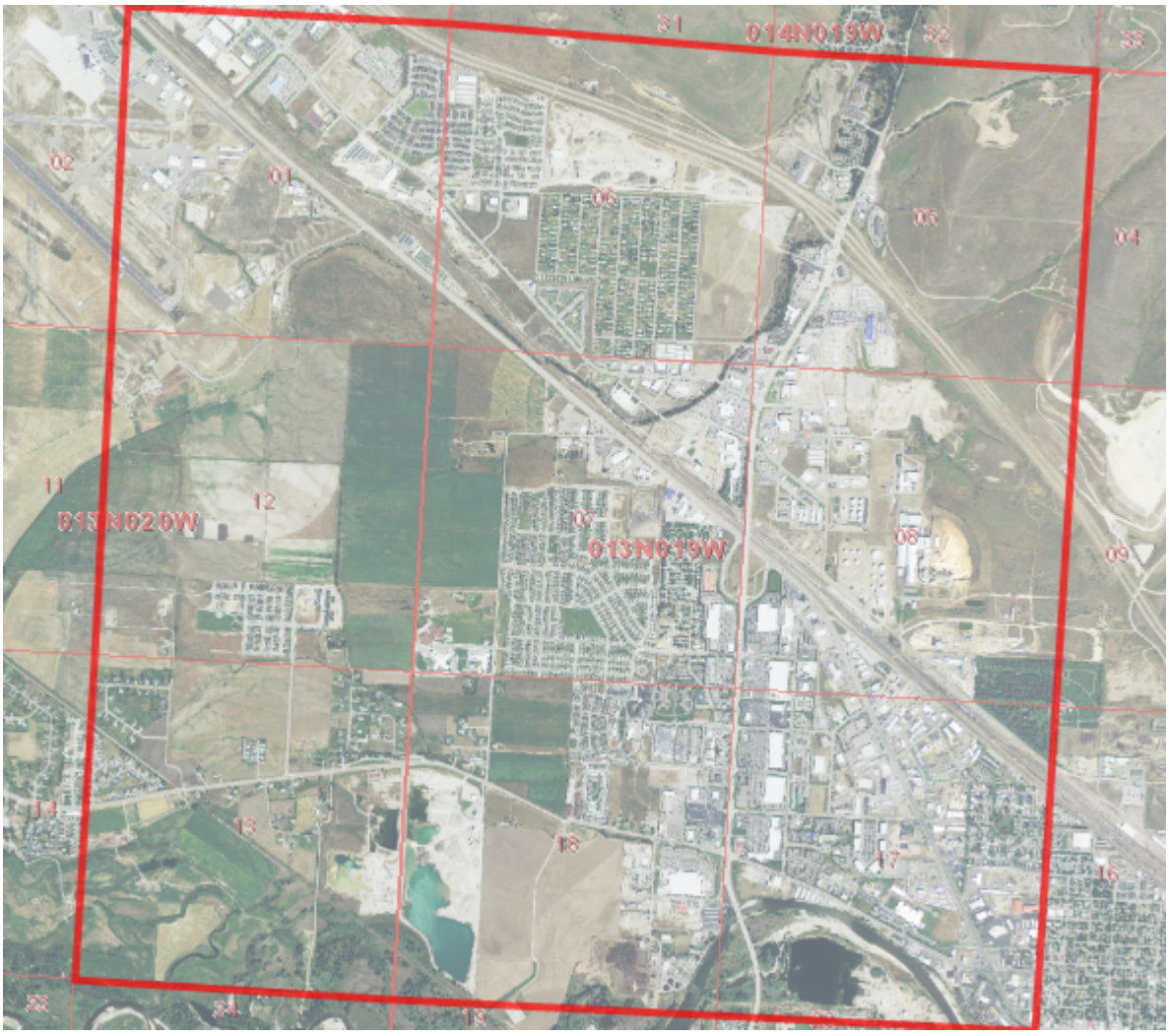
Environmental Summary

MONTANA
Natural Heritage Program

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

Latitude	Longitude
46.87543	-114.01846
46.92394	-114.08133

Summarized by:
013N019W007
(Buffered PLSS Section)



Suggested Citation
Montana Natural Heritage Program. Environmental Summary Report.
for Latitude 46.87543 to 46.92394 and Longitude -114.01846 to -114.08133. Retrieved on 8/9/2022.

The Montana Natural Heritage Program is part of the Montana State Library's Natural Resource Information System. Since 1985, it has served as a neutral and non-regulatory provider of easily accessible information on Montana's species and biological communities to inform all stakeholders in environmental review, permitting, and planning processes. The program is part of NatureServe, a network of over 80 similar programs in states, provinces, and nations throughout the Western Hemisphere, working to provide current and comprehensive distribution and status information on species and biological communities.

Montana Natural Heritage Program · Montana State Library · NatureServe

Table of Contents

Introduction to Environmental Summary Report

Environmental Summary Reports from the Montana Natural Heritage Program (MTNHP) provide information on species and biological communities to inform all stakeholders in environmental review, permitting, and planning processes. For information on environmental permits in Montana, please see permitting overviews by the Montana Department of Environmental Quality, the Montana Department of Natural Resources and Conservation, the Index of Environmental Permits for Montana and our Suggested Contacts for Natural Resource Management Agencies. The report for your area of interest consists of introductory and related materials in this PDF and an Excel workbook with worksheets summarizing information managed in the MTNHP databases for: (1) species occurrences; (2) other observed species without species occurrences; (3) other species potentially present based on their range, presence of associated habitats, or predictive distribution model output if available; (4) structured surveys that follow a protocol capable of detecting one or more species; (5) land cover mapped as ecological systems; (6) wetland and riparian mapping; (7) land management categories; and (8) biological reports associated with plant and animal observations. If your area of interest corresponds to a statewide polygon layer (e.g., watersheds, counties, or public land survey sections) information summaries in your report will exactly match those boundaries. However, if your report is for a custom area, users should be aware that summaries do not correspond to the exact boundaries of the polygon they have specified, but instead are a summary across a layer of hexagons intersected by the polygon they specified as shown on the report cover. Summarizing by these hexagons which are one square mile in area and approximately one kilometer in length on each side allows for consistent and rapid delivery of summaries based on a uniform grid that has been used for planning efforts across the western United States (e.g., Western Association of Fish and Wildlife Agencies - Crucial Habitat Assessment Tool).

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

MONTANA Natural Heritage Program
A program of the **Montana State Library's Natural Resource Information System**

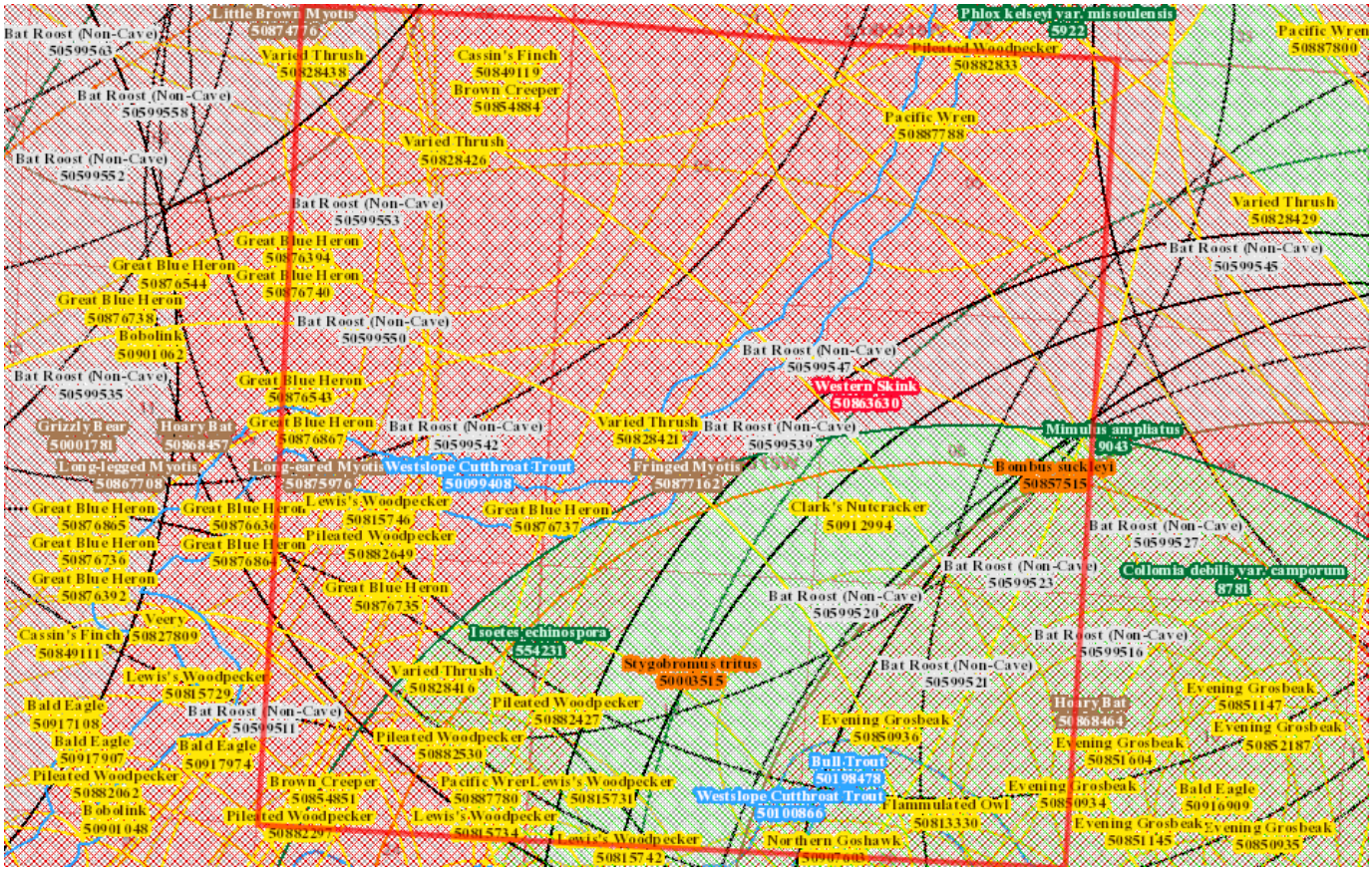
Legend

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

Latitude	Longitude
46.87543	-114.01846
46.92394	-114.08133

Native Species

Summarized by: **013N019W007** *(Buffered PLSS Section)*
All Species (not filtered by Status)



Species Occurrences

	USFWS Sec7	# SO	# Obs	Predicted Model	Range
F - Bull Trout *(Salvelinus confluentus)* SOC	7	1			Y

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

Species of Concern - Native Species Global: **G5** State: **S2** USFWS: **LT; CH** BLM: **THREATENED** FWP SWAP: **SGCN2**

Delineation Criteria Stream reaches and standing water bodies where the species is believed to be present based on the professional judgement of a fisheries biologist, potentially supported by habitat assessment, direct capture, or confirmed presence in adjacent areas. In order to reflect the importance of adjacent terrestrial habitats to survival, stream reaches are buffered 100 meters, standing water bodies greater than 1 acre are buffered 50 meters, and standing water bodies less than 1 acre are buffered 30 meters into the terrestrial habitat based on PACFISH/INFISH Riparian Conservation Area standards. (Last Updated: Jul 18, 2022)

Predicted Models: N 81% Suitable (native range) (deductive)

F - Westslope Cutthroat Trout *(Oncorhynchus clarkii lewisi)* SOC		2	1		Y

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

Species of Concern - Native/Non-native Species - (depends on location or taxa) Global: **G5T4** State: **S2**
USFS: **Sensitive - Known in Forests (BD, BRT, KOOT, LOLO)**
Species of Conservation Concern in Forests (CG, HLC) BLM: **SENSITIVE** FWP SWAP: **SGCN2**

Delineation Criteria Stream reaches and standing water bodies where the species presence has been confirmed through direct capture or where they are believed to be present based on the professional judgement of a fisheries biologist due to confirmed presence in adjacent areas. In order to reflect the importance of adjacent terrestrial habitats to survival, stream reaches are buffered 100 meters, standing water bodies greater than 1 acre are buffered 50 meters, and standing water bodies less than 1 acre are buffered 30 meters into the terrestrial habitat based on PACFISH/INFISH Riparian Conservation Area standards. (Last Updated: Jul 25, 2022)

Predicted Models: N 81% Suitable (native range) (deductive)

V - Collomia debilis var. camporum *(Alpine Collomia)* SOC		1			Y

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

Species of Concern - Native Species Global: **G5T2** State: **S1S2** MNPS: **3**

Delineation Criteria Individual occurrences are generally based upon a discretely mapped area provided by an observer and are not separated by any pre-defined distance. Individual clusters of plants mapped at fine spatial scales (separated by less than approximately 25-50 meters) may be grouped together into one occurrence if they are not separated by distinct areas of habitat or terrain features. Point observations are buffered to encompass any locational uncertainty associated with the observation. (Last Updated: Apr 26, 2018)

Predicted Models: N 43% Suitable (native range) (deductive)

B - Lewis's Woodpecker *(Melanerpes lewis)* SOC		6	8		S M

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

Species of Concern - Native Species Global: **G4** State: **S2B** USFWS: **MBTA; BCC10; BCC17** USFS: **Species of Conservation Concern in Forests (HLC)**
BLM: **SENSITIVE** FWP SWAP: **SGCN2** 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 300 meters in order to encompass the likely foraging area used by breeding adults around the nest tree and otherwise is buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. (Last Updated: Apr 13, 2022)

Predicted Models: O 17% Optimal (inductive), M 53% Moderate (inductive), L 30% Low (inductive)

B - Great Blue Heron *(Ardea herodias)* SOC 13 60 Y S M

View in Field Guide View Predicted Models 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: Jul 20, 2022)

Predicted Models: O 9% Optimal (inductive), M 48% Moderate (inductive), L 43% Low (inductive)

B - Bald Eagle *(Haliaeetus leucocephalus)* SSS 4 58 Y

View in Field Guide View Predicted Models View Range Maps

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

Delineation Criteria Confirmed nesting area buffered by a minimum distance of 2,000 meters in order to be conservative about encompassing the breeding territory and area commonly used for renesting and otherwise buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. (Last Updated: Jul 26, 2022)

Predicted Models: O 9% Optimal (inductive), M 46% Moderate (inductive), L 37% Low (inductive)

B - Veery *(Catharus fuscescens)* SOC 1 S M

View in Field Guide View Predicted Models View Range Maps

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

Delineation Criteria Observations with evidence of breeding activity buffered by a minimum distance of 300 meters in order to be conservative about encompassing home ranges and otherwise buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. (Last Updated: Apr 14, 2022)

Predicted Models: O 9% Optimal (inductive), M 2% Moderate (inductive), L 88% Low (inductive)

M - Long-legged Myotis *(Myotis volans)* SOC 1 Y

View in Field Guide View Predicted Models View Range Maps

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

Delineation Criteria Confirmed area of occupancy based on the documented presence (mistnet captures, definitively identified acoustic recordings, and definitively identified roosting individuals) of adults or juveniles. Point observation location is buffered by a minimum distance of 2,000 meters in order to encompass the average distances traveled from capture locations to roosts in Washington, Oregon, and in the Black Hills of South Dakota and otherwise buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. When cave locations are involved, point observations are mapped in the center of a one-square mile hexagon to protect the exact location of the cave entrance as per the Federal Cave Resource Protection Act and associated regulations (U.S. Code Title 16 Chapter 63, Code of Federal Regulations Title 43 Subtitle A Part 37). The outer edges of the hexagon are then buffered by a distance of 2,000 meters and otherwise by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. All of the one-square mile hexagons intersecting this buffered area are presented as the Species Occurrence record. (Last Updated: Jul 20, 2022)

Predicted Models: O 1% Optimal (inductive), M 87% Moderate (inductive), L 12% Low (inductive)

I - Bombus suckleyi *(Suckley Cuckoo Bumble Bee)* SOC 1 Y

View in Field Guide View Predicted Models View Range Maps

Species of Concern - Native Species Global: **G2G3** State: **S1**

Delineation Criteria Confirmed breeding area based on the presence of a resident animal of any age. Point observation location is buffered by a minimum distance of 1700 meters in order to encompass the home range of the individual as well as adjacent habitat likely to support other individuals and otherwise is buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. (Last Updated: Jun 22, 2022)

Predicted Models: M 100% Moderate (inductive)

B - Evening Grosbeak *(Coccothraustes vespertinus)* SOC 3 23 Y WM

View in Field Guide View Predicted Models View Range Maps

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

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: Apr 14, 2022)

Predicted Models: M 98% Moderate (inductive), L 2% Low (inductive)

M - Little Brown Myotis *(Myotis lucifugus)* SOC 1 Y

View in Field Guide View Predicted Models View Range Maps

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

Delineation Criteria Confirmed area of occupancy based on the documented presence (mistnet captures, definitively identified acoustic recordings, or definitively identified roosting individuals) of adults or juveniles. Point observation location is buffered by a distance of 1,600 meters in order to encompass the greater than 1,500 meters foraging distance reported for the species in New Brunswick, Canada and otherwise buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. When cave locations are involved, point observations are mapped in the center of a one-square mile hexagon to protect the exact location of the cave entrance as per the Federal Cave Resource Protection Act and associated regulations (U.S. Code Title 16 Chapter 63, Code of Federal Regulations Title 43 Subtitle A Part 37). The outer edges of the hexagon are then buffered by a distance of 1,600 meters and otherwise by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. All of the one-square mile hexagons intersecting this buffered area are presented as the Species Occurrence record. (Last Updated: Jul 20, 2022)

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

M - Fringed Myotis *(Myotis thysanodes)* SOC 1 Y

View in Field Guide View Predicted Models View Range Maps

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

Delineation Criteria Confirmed area of occupancy based on the documented presence (mistnet captures, definitively identified acoustic recordings, and definitively identified roosting individuals) of adults or juveniles. Point observation location is buffered by a minimum distance of 2,000 meters in order to encompass the range of distances traveled from capture locations to roosts in the Black Hills of South Dakota and otherwise buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. When cave locations are involved, point observations are mapped in the center of a one-square mile hexagon to protect the exact location of the cave entrance as per the Federal Cave Resource Protection Act and associated regulations (U.S. Code Title 16 Chapter 63, Code of Federal Regulations Title 43 Subtitle A Part 37). The outer edges of the hexagon are then buffered by a distance of 2,000 meters and otherwise by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. All of the one-square mile hexagons intersecting this buffered area are presented as the Species Occurrence record. (Last Updated: Jul 21, 2022)

Predicted Models: M 52% Moderate (inductive), L 47% Low (inductive)

M - Long-eared Myotis *(Myotis evotis)* SOC 1 Y

View in Field Guide View Predicted Models View Range Maps

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

Delineation Criteria Confirmed area of occupancy based on the documented presence (mistnet captures, definitively identified acoustic recordings, and definitively identified roosting individuals) of adults or juveniles. Point observation location is buffered by a minimum distance of 1,000 meters in order to encompass the average distances traveled from capture locations to roosts and between roosts in western Montana, Alberta, and Oregon and otherwise buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. When cave locations are involved, point observations are mapped in the center of a one-square mile hexagon to protect the exact location of the cave entrance as per the Federal Cave Resource Protection Act and associated regulations (U.S. Code Title 16 Chapter 63, Code of Federal Regulations Title 43 Subtitle A Part 37). The outer edges of the hexagon are then buffered by a distance of 1,000 meters and otherwise by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. All of the one-square mile hexagons intersecting this buffered area are presented as the Species Occurrence record. (Last Updated: Jul 20, 2022)

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

R - Western Skink *(Plestiodon skiltonianus)* SOC 1 Y

View in Field Guide View Predicted Models View Range Maps

Species of Concern - Native Species Global: **G5** State: **S3** FWP SWAP: **SGCN3, SGIN**

Delineation Criteria Confirmed breeding area based on the presence of a resident animal of any age. Point observation location is buffered by a minimum distance of 200 meters in order to encompass habitats supporting other individuals in adjacent territories. Otherwise the point observation is buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. (Last Updated: Jul 14, 2022)

Predicted Models: M 19% Moderate (inductive), L 65% Low (inductive)

M - Hoary Bat *(Lasiurus cinereus)* SOC | 2 | S M

View in Field Guide View Predicted Models View Range Maps

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

Delineation Criteria Confirmed area of occupancy based on the documented presence (mistnet captures, definitively identified acoustic recordings, and definitively identified roosting individuals) of adults or juveniles during the active season. Point observation location is buffered by a minimum distance of 3,500 meters in order to be conservative about encompassing the maximum reported foraging distance for the congeneric Lasiurus borealis and otherwise buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. (Last Updated: Jul 20, 2022)

Predicted Models: M 9% Moderate (inductive), L 91% Low (inductive)

B - Pileated Woodpecker *(Dryocopus pileatus)* SOC | 6 | 23 | Y

View in Field Guide View Predicted Models View Range Maps

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

Delineation Criteria Observations with evidence of breeding activity buffered by a minimum distance of 1,500 meters in order to be conservative about encompassing home ranges and otherwise buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. (Last Updated: Jul 21, 2022)

Predicted Models: M 9% Moderate (inductive), L 1% Low (inductive)

B - Cassin's Finch *(Haemorhous cassinii)* SOC | 2 | 6 | Y

View in Field Guide View Predicted Models View Range Maps

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

Delineation Criteria Observations with evidence of breeding activity buffered by a minimum distance of 300 meters in order to be conservative about encompassing the courtship and foraging distance from nesting areas and otherwise buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. (Last Updated: Apr 14, 2022)

Predicted Models: L 50% Low (inductive)

V - Isoetes echinospora *(Spiny-spore Quillwort)* SOC | 1 | Y

View in Field Guide View Predicted Models View Range Maps

Species of Concern - Native Species Global: **G5** State: **S3** MNPS: **3**

Predicted Models: L 41% Low (inductive)

B - Bobolink *(Dolichonyx oryzivorus)* SOC | 1 | S M

View in Field Guide View Predicted Models View Range Maps

Species of Concern - Native Species Global: **G5** State: **S3B** USFWS: **MBTA; BCC10; BCC11; BCC17** FWP SWAP: **SGCN3** PIF: **3**

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 150 meters in order to conservatively encompass male 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: Jul 21, 2022)

Predicted Models: L 38% Low (inductive)

B - Brown Creeper *(Certhia americana)* SOC | 2 | 3 | Not Available | Y

View in Field Guide View Range Maps

Species of Concern - Native Species Global: **G5** State: **S3** USFWS: **MBTA** FWP SWAP: **SGCN3** PIF: **1**

Delineation Criteria Observations with evidence of breeding activity buffered by a minimum distance of 300 meters in order to be conservative about encompassing home ranges and otherwise buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. (Last Updated: Apr 15, 2022)

B - Northern Goshawk *(Accipiter gentilis)* SOC | 1 | 1 | Not Available | Y | W M

View in Field Guide View Range Maps

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

Delineation Criteria Confirmed nesting area buffered by a minimum distance of 750 meters in order to encompass the area around the nest known to be defended by adults and otherwise buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. (Last Updated: Jul 21, 2022)

B - Pacific Wren *(Troglodytes pacificus)* SOC | 2 | 2 | Not Available | Y

View in Field Guide View Range Maps

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

Delineation Criteria Observations with evidence of breeding activity buffered by a minimum distance of 300 meters in order to be conservative about encompassing home ranges and otherwise buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. (Last Updated: Jul 21, 2022)

I - Stygobromus tritus *(A Subterranean Amphipod)* SOC | 1 | Not Available | Y

View in Field Guide View Range Maps

Species of Concern - Native Species Global: **G1G2** State: **S1S2**

Delineation Criteria Confirmed breeding area based on the presence of a resident animal of any age. Point observation location is buffered by a minimum distance of 300 meters in order to encompass the cave system the species is dependent on. (Last Updated: Jan 17, 2008)

B - Flammulated Owl *(Psiloscops flammeolus)* SOC | 1 | 1 | Not Available | S M

View in Field Guide View Range Maps

Species of Concern - Native Species Global: **G4** State: **S3B** USFWS: **MBTA; BCC10** USFS: **Sensitive - Known in Forests (BD, BRT, KOOT, LOLO)** **Species of Conservation Concern in Forests (FLAT, HLC)** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **1**

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 300 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: Apr 13, 2022)

B - Varied Thrush *(Ixoreus naevius)* SOC | 4 | 1 | Not Available | S M

View in Field Guide View Range Maps

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

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 225 meters in order to encompass the reported minimum stand size occupied by breeding pairs and otherwise is buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. (Last Updated: Apr 14, 2022)

O - Bat Roost (Non-Cave) *(Bat Roost (Non-Cave))* IAH | 13 | Not Available

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

Latitude	Longitude
46.87543	-114.01846
46.92394	-114.08133

Native Species

Summarized by: **013N019W007** *(Buffered PLSS Section)*
All Species (not filtered by Status)

Other Observed Species

	USFWS Sec7	# Obs	Predicted Model	Range
B - Hooded Merganser *(Lophodytes cucullatus)* PSOC		29		Y M
B - Barrow's Goldeneye *(Bucephala islandica)* PSOC		23		Y W M
B - Rufous Hummingbird *(Selasphorus rufus)* PSOC		1		S M
B - Trumpeter Swan *(Cygnus buccinator)* SOC		1		Y M
B - Horned Grebe *(Podiceps auritus)* SOC		14		S M
B - Golden Eagle *(Aquila chrysaetos)* SOC		5	Not Available	Y
B - Peregrine Falcon *(Falco peregrinus)* SOC		2	Not Available	Y
B - Common Loon *(Gavia immer)* SOC		1	Not Available	M
B - Ferruginous Hawk *(Buteo regalis)* SOC		16	Not Available	M
B - Franklin's Gull *(Leucophaeus pipixcan)* SOC		1	Not Available	M
B - White-faced Ibis *(Plegadis chihi)* SOC		1	Not Available	M

View in Field Guide **View Predicted Models** **View Range Maps**
Potential Species of Concern - Native Species Global: **G5** State: **S4** USFWS: **MBTA** FWP SWAP: **SGIN** PIF: **2**
Predicted Models: O 83% Optimal (inductive), M 17% Moderate (inductive)

View in Field Guide **View Predicted Models** **View Range Maps**
Potential Species of Concern - Native Species Global: **G5** State: **S4** USFWS: **MBTA** FWP SWAP: **SGIN** PIF: **2**
Predicted Models: O 27% Optimal (inductive), M 58% Moderate (inductive), L 15% Low (inductive)

View in Field Guide **View Predicted Models** **View Range Maps**
Potential Species of Concern - Native Species Global: **G4** State: **S4B** USFWS: **MBTA; BCC10** PIF: **3**
Predicted Models: O 1% Optimal (inductive), M 99% Moderate (inductive), L 0% Low (inductive)

View in Field Guide **View Predicted Models** **View Range Maps**
Species of Concern - Native Species Global: **G4** State: **S3** USFWS: **MBTA** USFS: **Sensitive - Known in Forests (BD)** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **1**
Predicted Models: M 16% Moderate (inductive), L 84% Low (inductive)

View in Field Guide **View Predicted Models** **View Range Maps**
Species of Concern - Native Species Global: **G5** State: **S3B** USFWS: **MBTA** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **2**
Predicted Models: M 1% Moderate (inductive), L 47% Low (inductive)

View in Field Guide **View Range Maps**
Species of Concern - Native Species Global: **G5** State: **S3** USFWS: **BGEPA; MBTA** BLM: **SENSITIVE** FWP SWAP: **SGCN3**

View in Field Guide **View Range Maps**
Species of Concern - Native Species Global: **G4** State: **S3** USFWS: **MBTA** USFS: **Sensitive - Known in Forests (BD, BRT, KOOT, LOLO)** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **2**

View in Field Guide **View Range Maps**
Species of Concern - Native Species Global: **G5** State: **S3B** USFWS: **MBTA** USFS: **Sensitive - Known in Forests (KOOT, LOLO)** FWP SWAP: **SGCN3** PIF: **1**

View in Field Guide **View Range Maps**
Species of Concern - Native Species Global: **G4** State: **S3B** USFWS: **MBTA; BCC17** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **2**

View in Field Guide **View Range Maps**
Species of Concern - Native Species Global: **G5** State: **S3B** USFWS: **MBTA; BCC10; BCC11; BCC17** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **2**

View in Field Guide **View Range Maps**
Species of Concern - Native Species Global: **G5** State: **S3B** USFWS: **MBTA** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **2**

MONTANA Natural Heritage Program
A program of the **Montana State Library's Natural Resource Information System**

Legend

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

Latitude	Longitude
46.87543	-114.01846
46.92394	-114.08133

Native Species

Summarized by: **013N019W007** *(Buffered PLSS Section)*
All Species (not filtered by Status)

Other Potential Species

	USFWS Sec7	Predicted Model	Range
M - Western Spotted Skunk *(Spilogale gracilis)* PSOC			Y
B - Broad-tailed Hummingbird *(Selasphorus platycercus)* PSOC			S M
V - Dichanthelium acuminatum *(Panic Grass)* SOC			Y
V - Carex scoparia *(Pointed Broom Sedge)* SOC			Y
B - Yellow-billed Cuckoo *(Coccyzus americanus)* SOC	7		S M
V - Wolffia columbiana *(Columbia Water-meal)* SOC			Y
V - Impatiens aurella *(Pale-yellow Jewel-weed)* SOC			Y
B - Western Screech-Owl *(Megascops kennicottii)* PSOC			Y
V - Eleocharis rostellata *(Beaked Spikerush)* SOC			Y
V - Cypripedium parviflorum *(Small Yellow Lady's-slipper)* PSOC			Y
B - American White Pelican *(Pelecanus erythrorhynchos)* SOC			S M
V - Utricularia intermedia *(Flatleaf Bladderwort)* SOC			Y
M - Western Pygmy Shrew *(Sorex eximius)* SOC			Y
M - North American Porcupine *(Erethizon dorsatum)* PSOC			Y

M - Western Spotted Skunk *(Spilogale gracilis)* PSOC

View in Field Guide | View Predicted Models | View Range Maps
Potential Species of Concern - Native Species Global: **G5** State: **SNR** FWP SWAP: **SGIN**
Predicted Models: O 42% Optimal (inductive), M 58% Moderate (inductive)

B - Broad-tailed Hummingbird *(Selasphorus platycercus)* PSOC

View in Field Guide | View Predicted Models | View Range Maps
Potential Species of Concern - Native Species Global: **G5** State: **S4B** USFWS: **MBTA; BCC10** FWP SWAP: **SGIN**
Predicted Models: O 41% Optimal (inductive), M 57% Moderate (inductive), L 2% Low (inductive)

V - Dichanthelium acuminatum *(Panic Grass)* SOC

View in Field Guide | View Predicted Models | View Range Maps
Species of Concern - Native Species Global: **G5** State: **S2S3** MNPS: **2**
Predicted Models: O 31% Optimal (inductive), M 69% Moderate (inductive)

V - Carex scoparia *(Pointed Broom Sedge)* SOC

View in Field Guide | View Predicted Models | View Range Maps
Species of Concern - Native Species Global: **G5** State: **S1S2** MNPS: **4**
Predicted Models: O 28% Optimal (inductive), M 72% Moderate (inductive)

B - Yellow-billed Cuckoo *(Coccyzus americanus)* SOC

View in Field Guide | View Predicted Models | View Range Maps
Species of Concern - Native Species Global: **G5** State: **S3B** USFWS: **PS: LT; MBTA** BLM: **THREATENED** FWP SWAP: **SGCN3, SGIN** PIF: **2**
Predicted Models: O 20% Optimal (inductive), M 80% Moderate (inductive), L 0% Low (inductive)

V - Wolffia columbiana *(Columbia Water-meal)* SOC

View in Field Guide | View Predicted Models | View Range Maps
Species of Concern - Native Species Global: **G5** State: **S2S3** MNPS: **3**
Predicted Models: O 9% Optimal (inductive), M 88% Moderate (inductive), L 2% Low (inductive)

V - Impatiens aurella *(Pale-yellow Jewel-weed)* SOC

View in Field Guide | View Predicted Models | View Range Maps
Species of Concern - Native Species Global: **G4** State: **S3** MNPS: **3**
Predicted Models: O 2% Optimal (inductive), M 96% Moderate (inductive), L 2% Low (inductive)

B - Western Screech-Owl *(Megascops kennicottii)* PSOC

View in Field Guide | View Predicted Models | View Range Maps
Potential Species of Concern - Native Species Global: **G4G5** State: **S3S4** USFWS: **MBTA** FWP SWAP: **SGIN** PIF: **3**
Predicted Models: O 1% Optimal (inductive), M 89% Moderate (inductive), L 10% Low (inductive)

V - Eleocharis rostellata *(Beaked Spikerush)* SOC

View in Field Guide | View Predicted Models | View Range Maps
USFS: **Sensitive - Known in Forests (BD)**
Species of Concern - Native Species Global: **G5** State: **S3** **Species of Conservation Concern in Forests (CG, FLAT, HLC)** MNPS: **2**
Predicted Models: O 1% Optimal (inductive), M 47% Moderate (inductive), L 25% Low (inductive)

V - Cypripedium parviflorum *(Small Yellow Lady's-slipper)* PSOC

View in Field Guide | View Predicted Models | View Range Maps
USFS: **Sensitive - Known in Forests (KOOT, LOLO)**
Sensitive - Suspected in Forests (BRT)
Potential Species of Concern - Native Species Global: **G5** State: **S3S4** **Species of Conservation Concern in Forests (CG, HLC)** MNPS: **2**
Predicted Models: O 1% Optimal (inductive), M 8% Moderate (inductive), L 91% Low (inductive)

B - American White Pelican *(Pelecanus erythrorhynchos)* SOC

View in Field Guide | View Predicted Models | View Range Maps
Species of Concern - Native Species Global: **G4** State: **S3B** USFWS: **MBTA** FWP SWAP: **SGCN3** PIF: **3**
Predicted Models: M 85% Moderate (inductive), L 15% Low (inductive)

V - Utricularia intermedia *(Flatleaf Bladderwort)* SOC

View in Field Guide | View Predicted Models | View Range Maps
Species of Concern - Native Species Global: **G5** State: **S2** USFWS: **Sensitive - Known in Forests (KOOT)** MNPS: **3**
Predicted Models: M 80% Moderate (inductive), L 18% Low (inductive)

M - Western Pygmy Shrew *(Sorex eximius)* SOC

View in Field Guide | View Predicted Models | View Range Maps
Species of Concern - Native Species Global: **GNR** State: **S3** FWP SWAP: **SGCN3**
Predicted Models: M 68% Moderate (inductive), L 32% Low (inductive)

M - North American Porcupine *(Erethizon dorsatum)* PSOC

View in Field Guide View Predicted Models View Range Maps
Potential Species of Concern - Native Species Global: **G5** State: **S3S4** FWP SWAP: **SGIN**
Predicted Models: M 65% Moderate (inductive), L 35% Low (inductive)

V - Psilocarphus brevissimus *(Dwarf woolly-heads)* SOC

View in Field Guide View Predicted Models View Range Maps
Species of Concern - Native Species Global: **G4** State: **S2S3** USFS: **Sensitive - Known in Forests (KOOT)** MNPS: **3**
Predicted Models: M 43% Moderate (inductive), L 56% Low (inductive)

M - North American Water Vole *(Microtus richardsoni)* PSOC

View in Field Guide View Predicted Models View Range Maps
Potential Species of Concern - Native Species Global: **G5** State: **S4**
Predicted Models: M 42% Moderate (inductive), L 53% Low (inductive)

V - Botrychium lineare *(Linearleaf Moonwort)* SOC

View in Field Guide View Predicted Models View Range Maps
Species of Concern - Native Species Global: **G3** State: **S1S2** MNPS: **4**
Predicted Models: M 42% Moderate (inductive), L 53% Low (inductive)

V - Juncus covillei *(Coville's Rush)* SOC

View in Field Guide View Predicted Models View Range Maps
Species of Concern - Native Species Global: **G5** State: **S2S3** MNPS: **3**
Predicted Models: M 34% Moderate (inductive), L 66% Low (inductive)

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

View in Field Guide View Predicted Models View Range Maps
Species of Concern - Native Species Global: **G5** State: **S3B** USFWS: **MBTA; BCC11** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **2**
Predicted Models: M 24% Moderate (inductive), L 76% Low (inductive)

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

View in Field Guide View Predicted Models View Range Maps
Potential Species of Concern - Native Species Global: **G3G4** State: **S4**
Predicted Models: M 21% Moderate (inductive), L 79% Low (inductive)

V - Ligusticum verticillatum *(Idaho Lovage)* SOC

View in Field Guide View Predicted Models View Range Maps
Species of Concern - Native Species Global: **G4G5** State: **S3** MNPS: **3**
Predicted Models: M 20% Moderate (inductive), L 10% Low (inductive)

A - Western Toad *(Anaxyrus boreas)* SOC

View in Field Guide View Predicted Models View Range Maps
Species of Concern - Native Species Global: **G4** State: **S2** USFS: **Sensitive - Known in Forests (BD, BRT, KOOT, LOLO)** BLM: **SENSITIVE** FWP SWAP: **SGCN2**
Predicted Models: M 16% Moderate (inductive), L 84% Low (inductive)

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

View in Field Guide View Predicted Models View Range Maps
Species of Concern - Native Species Global: **G4G5** State: **S2?** MNPS: **3**
Predicted Models: M 9% Moderate (inductive), L 75% Low (inductive)

B - Meesia triquetra *(Meesia Moss)* SOC

View in Field Guide View Predicted Models View Range Maps
USFS: **Sensitive - Known in Forests (BRT, KOOT)**
Sensitive - Suspected in Forests (LOLO)
Species of Concern - Native Species Global: **G5** State: **S2** **Species of Conservation Concern in Forests (CG, FLAT)**
Predicted Models: M 9% Moderate (inductive), L 75% Low (inductive)

V - Carex crawei *(Crawe's Sedge)* SOC

View in Field Guide View Predicted Models View Range Maps
Species of Concern - Native Species Global: **G5** State: **S2S3** MNPS: **3**
Predicted Models: M 9% Moderate (inductive), L 55% Low (inductive)

V - Centunculus minimus *(Chaffweed)* SOC

View in Field Guide View Predicted Models View Range Maps
Species of Concern - Native Species Global: **G5** State: **S2** MNPS: **3**
Predicted Models: M 9% Moderate (inductive), L 17% Low (inductive)

B - Black-backed Woodpecker *(Picoides arcticus)* SOC

View in Field Guide View Predicted Models View Range Maps
Species of Concern - Native Species Global: **G5** State: **S3** USFWS: **MBTA** USFS: **Sensitive - Known in Forests (BD, BRT, KOOT, LOLO)** BLM: **SENSITIVE**
FWP SWAP: **SGCN3** PIF: **1**
Predicted Models: M 6% Moderate (inductive), L 83% Low (inductive)

M - Yuma Myotis *(Myotis yumanensis)* SOC

View in Field Guide View Predicted Models View Range Maps
Species of Concern - Native Species Global: **G5** State: **S3** FWP SWAP: **SGIN**
Predicted Models: M 1% Moderate (inductive), L 82% Low (inductive)

V - Stellaria crassifolia *(Fleshy Stitchwort)* SOC

View in Field Guide View Predicted Models View Range Maps
Species of Concern - Native Species Global: **G5** State: **S2** MNPS: **3**
Predicted Models: M 1% Moderate (inductive), L 81% Low (inductive)

V - Draba densifolia *(Dense-leaf Draba)* SOC

View in Field Guide View Predicted Models View Range Maps
Species of Concern - Native Species Global: **G5** State: **S2** USFS: **Species of Conservation Concern in Forests (CG, HLC)** MNPS: **2**
Predicted Models: M 1% Moderate (inductive), L 21% Low (inductive)

V - Musineon vaginatum *(Rydberg's Parsley)* PSOC

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

Potential Species of Concern - Native Species Global: **G3G4** State: **S3S4**

Predicted Models: M 1% Moderate (inductive), L 20% Low (inductive)

M - Canada Lynx *(Lynx canadensis)* SOC

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

Species of Concern - Native Species Global: **G5** State: **S3** USFWS: **LT; CH** BLM: **THREATENED** FWP SWAP: **SGCN3**

Predicted Models: L 100% Low (inductive)

B - Ovenbird *(Seiurus aurocapilla)* PSOC

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

Potential Species of Concern - Native Species Global: **G5** State: **S4B** USFWS: **MBTA** PIF: **3**

Predicted Models: L 98% Low (inductive)

B - Harlequin Duck *(Histrionicus histrionicus)* SOC

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

Species of Concern - Native Species Global: **G4** State: **S2B** USFWS: **MBTA** USFS: **Sensitive - Known in Forests (BD, KOOT, LOLO)** FWP SWAP: **SGCN2** PIF: **1**

Predicted Models: L 70% Low (inductive)

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

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

Potential Species of Concern - Native Species Global: **G5** State: **S4** USFWS: **MBTA; BCC11; BCC17** PIF: **3**

Predicted Models: L 59% Low (inductive)

V - Phlox kelseyi var. missoulensis *(Missoula Phlox)* SOC

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

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

Species of Concern - Native Species Global: **G3** State: **S3** **Species of Conservation Concern in Forests (HLC)** MNPS: **1**

Predicted Models: L 58% Low (inductive)

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

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

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

Species of Concern - Native Species Global: **G5** State: **S1,S4** **Sensitive - Suspected in Forests (BRT, LOLO)** BLM: **SENSITIVE** FWP SWAP: **SGCN1**

Predicted Models: L 52% Low (inductive)

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

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

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

Predicted Models: L 48% Low (inductive)

V - Ranunculus hyperboreus *(High Northern Buttercup)* PSOC

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

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

Predicted Models: L 41% Low (inductive)

R - Northern Alligator Lizard *(Elgaria coerulea)* SOC

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

Species of Concern - Native Species Global: **G5** State: **S3** FWP SWAP: **SGCN3, SGIN**

Predicted Models: L 27% Low (inductive)

R - Snapping Turtle *(Chelydra serpentina)* SOC

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

Species of Concern - Native/Non-native Species - (depends on location or taxa) Global: **G5** State: **S3** BLM: **SENSITIVE** FWP SWAP: **SGCN3, SGIN**

Predicted Models: I 45% Suitable (introduced range) (deductive)

F - Lake Trout *(Salvelinus namaycush)* SOC

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

Species of Concern - Native/Non-native Species - (depends on location or taxa) Global: **G5** State: **S2** FWP SWAP: **SGCN2**

Predicted Models: I 18% Suitable (introduced range) (deductive)

M - Wolverine *(Gulo gulo)* SOC

View in Field Guide | View Range Maps

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

Latitude	Longitude
46.87543	-114.01846
46.92394	-114.08133

Structured Surveys

Summarized by: **013N019W007** *(Buffered PLSS Section)*

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

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

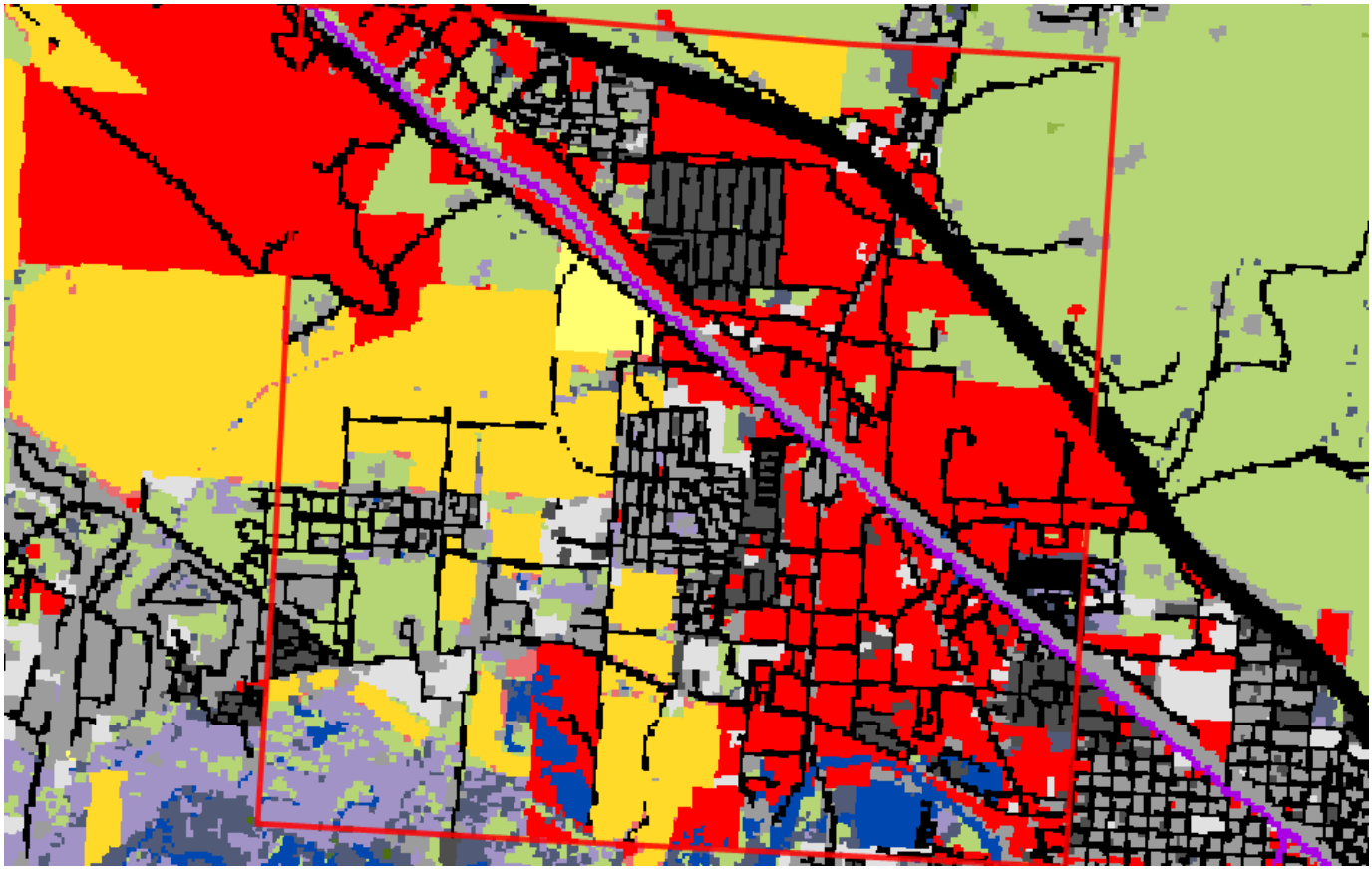
Within the report area you have requested, structured surveys are summarized by the number of each type of structured survey protocol that has been conducted, the number of species detections/observations resulting from these surveys, and the most recent year a survey has been conducted.

B-Colonial-nesting Waterbirds *(Colonial-nesting Waterbird Surveys)*	**Survey Count**: 2	**Obs Count**:	**Recent Survey**: 2011
B-Great Blue Heron Rookery *(Great Blue Heron Rookery)*	**Survey Count**: 1	**Obs Count**:	**Recent Survey**: 2021
B-Owl Banding *(ORI Owl Nest Survey and Banding)*	**Survey Count**: 1	**Obs Count**: 1	**Recent Survey**: 1997
B-Point Count *(Bird Point Count)*	**Survey Count**: 5	**Obs Count**: 43	**Recent Survey**: 1994
B-Raptor nest *(Raptor Nest Survey)*	**Survey Count**: 1	**Obs Count**: 1	**Recent Survey**: 2009
E-Eastern Heath Snail *(Eastern Heath Snail Survey)*	**Survey Count**: 2	**Obs Count**:	**Recent Survey**: 2012
E-Noxious Weed, Road-based *(Noxious Weed Road-based Visual Surveys)*	**Survey Count**: 21	**Obs Count**: 36	**Recent Survey**: 2003
F-Fish Electrofishing *(Fish Electrofishing Surveys)*	**Survey Count**: 1	**Obs Count**: 3	**Recent Survey**: 2001
F-Fish Other Survey *(Fish Other Survey (FWP Survey Type))*	**Survey Count**: 1	**Obs Count**: 1	**Recent Survey**: 1984
M-Bat Roost (Active Season) *(Bat Roost (Active Season) Survey)*	**Survey Count**: 4	**Obs Count**: 2	**Recent Survey**: 2014
P-Algal scraping *(Algal Scraping)*	**Survey Count**: 2	**Obs Count**: 74	**Recent Survey**: 2004

Latitude	Longitude
46.87543	-114.01846
46.92394	-114.08133

Land Cover

Summarized by: **013N019W007** *(Buffered PLSS Section)*



No Image

26% (*1,470 Acres*)

Human Land Use
Developed
Commercial / Industrial

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

No Image

18% (*1,014 Acres*)

Human Land Use
Developed
Other Roads

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

15% (*877 Acres*)

Grassland Systems
Montane Grassland
Rocky Mountain Lower Montane, Foothill, and Valley Grassland

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

14% (*794 Acres*)

Human Land Use
Agriculture
Cultivated Crops

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

8% (*465 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.

3% (*198 Acres*)

Human Land Use
Developed

High Intensity Residential

Includes areas with a mixture of constructed materials and vegetation. Impervious surfaces account for 50-80% of the total cover. These areas most commonly include single-family housing units in urban areas. Paved roadways, parking lots, and other large impervious surfaces may be classified into this category.

3% (*182 Acres*)

Wetland and Riparian Systems
Wet meadow

Alpine-Montane Wet Meadow

These moderate-to-high-elevation systems are found throughout the Rocky Mountains, dominated by herbaceous species found on wetter sites with very low-velocity surface and subsurface flows. Occurrences range in elevation from montane to alpine at 1,000 to 3,353 meters (3,280-11,000 feet). This system typically occurs in cold, moist basins, seeps and alluvial terraces of headwater streams or as a narrow strip adjacent to alpine lakes (Hansen et al., 1996). Wet meadows are typically found on flat areas or gentle slopes, but may also occur on sub-irrigated sites with slopes up to 10 percent. In alpine regions, sites are typically small depressions located below late-melting snow patches or on snowbeds. The growing season may only last for one to two months. Soils of this system may be mineral or organic. In either case, soils show typical hydric soil characteristics, including high organic content and/or low chroma and redoximorphic features. This system often occurs as a mosaic of several plant associations, often dominated by graminoids such as tufted hairgrass (*Deschampsia caespitosa*), and a diversity of montane or alpine sedges such as small-head sedge (*Carex illota*), small-winged sedge (*Carex microptera*), black alpine sedge (*Carex nigricans*), Holmâ€™s Rocky Mountain sedge (*Carex scopulorum*) shortstalk sedge (*Carex podocarpa*) and Paysonâ€™s sedge (*Carex paysonis*). Drummondâ€™s rush (*Juncus drummondii*), Mertenâ€™s rush (*Juncus mertensianus*), and high elevation bluegrasses (*Poa arctica* and *Poa alpina*) are often present. Forbs such as arrow-leaf groundsel (*Senecio triangularis*), slender-sepal marsh marigold (*Caltha leptosepala*), and spreading globeflower (*Trollius laxus*) often form high cover in higher elevation meadows. Wet meadows are associated with snowmelt and are usually not subjected to high disturbance events such as flooding.

No Image

3% (*162 Acres*)

Human Land Use
Developed

Interstate

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

3% (*149 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.

2% (*141 Acres*)

Wetland and Riparian Systems
Open Water

Open Water

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

2% (*98 Acres*)

Wetland and Riparian Systems
Floodplain and Riparian

Northern Rocky Mountain Lower Montane Riparian Woodland and Shrubland

This ecological system is found throughout the Rocky Mountain and Colorado Plateau regions. In Montana, sites occur at elevations of 609-1,219 meters (2,000-4,000 feet) west of the Continental Divide. East of the Continental Divide, this system ranges up to 1,676 meters (5,500 feet). It generally comprises a mosaic of multiple communities that are tree-dominated with a diverse shrub component. It is dependent on a natural hydrologic regime with annual to episodic flooding, so it is usually found within the flood zone of rivers, on islands, sand or cobble bars, and along streambanks. It can form large, wide occurrences on mid-channel islands in larger rivers, or narrow bands on small, rocky canyon tributaries and well-drained benches. It is also typically found in backwater channels and other perennially wet but less scoured sites, such as floodplains, swales and irrigation ditches. In some locations, occurrences extend into moderately high intermountain basins where the adjacent vegetation is sage steppe. Black cottonwood (*Populus balsamifera* ssp. *trichocarpa*) is the key indicator species. Other dominant trees may include boxelder maple (*Acer negundo*), narrowleaf cottonwood (*Populus angustifolia*), eastern cottonwood (*Populus deltoides*), Douglas-fir (*Pseudotsuga menziesii*), peachleaf willow (*Salix amygdaloides*), or Rocky Mountain juniper (*Juniperus scopulorum*). Dominant shrubs include Rocky Mountain maple (*Acer glabrum*), thinleaf alder (*Alnus incana*), river birch (*Betula occidentalis*), redoiser dogwood (*Cornus sericea*), hawthorne (*Crataegus* species), chokecherry (*Prunus virginiana*), skunkbush sumac (*Rhus trilobata*), willows (*Salix* species), rose (*Rosa* species), silver buffaloberry (*Shepherdia argentea*), or snowberry (*Symphoricarpos* species).

Additional Limited Land Cover

1% (*63 Acres*) Railroad
1% (*56 Acres*) Pasture/Hay
1% (*34 Acres*) Major Roads
<1% (*26 Acres*) Introduced Upland Vegetation - Annual and Biennial Forbland
<1% (*1 Acres*) Rocky Mountain Montane-Foothill Deciduous Shrubland
<1% (*1 Acres*) Rocky Mountain Dry-Mesic Montane Mixed Conifer Forest

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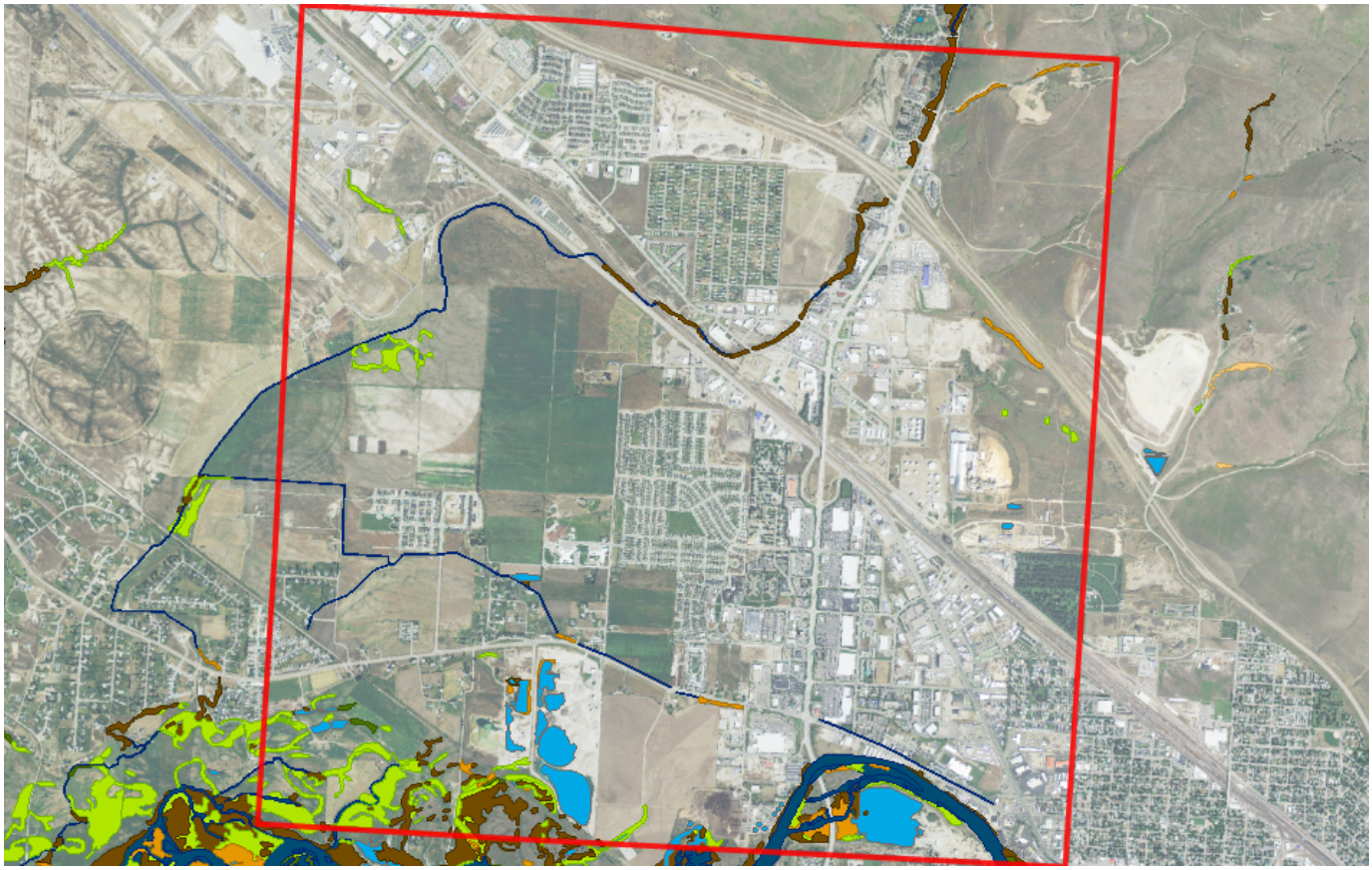
Latitude	Longitude
46.87543	-114.01846
46.92394	-114.08133

Wetland and Riparian

Summarized by: **013N019W007** *(Buffered PLSS Section)*



Wetland and Riparian Mapping

Explain

P - Palustrine

AB - Aquatic Bed

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

F - Semipermanently Flooded	67 Acres	
(no modifier)	**2 Acres**	**PABF**
h - Diked/Impounded	**5 Acres**	**PABFh**
x - Excavated	**60 Acres**	**PABFx**
G - Intermittently Exposed	5 Acres	
x - Excavated	**5 Acres**	**PABGx**
K - Artificially Flooded	2 Acres	
x - Excavated	**2 Acres**	**PABKx**

US - Unconsolidated Shore

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

A - Temporarily Flooded	<1 Acres	
x - Excavated	**<1 Acres**	**PUSAx**

EM - Emergent

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

A - Temporarily Flooded	56 Acres	
(no modifier)	**49 Acres**	**PEMA**
f - Farmed	**6 Acres**	**PEMAf**
x - Excavated	**1 Acres**	**PEMAx**
C - Seasonally Flooded	16 Acres	
(no modifier)	**16 Acres**	**PEMC**
F - Semipermanently Flooded	4 Acres	
(no modifier)	**4 Acres**	**PEMF**

SS - Scrub-Shrub

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

A - Temporarily Flooded	1 Acres	
(no modifier)	**1 Acres**	**PSSA**
C - Seasonally Flooded	3 Acres	
(no modifier)	**3 Acres**	**PSSC**

R - Riverine (Rivers)

3 - Upper Perennial

UB - Unconsolidated Bottom

G - Intermittently Exposed	35 Acres	
(no modifier)	**35 Acres**	**R3UBG**

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

US - Unconsolidated Shore

A - Temporarily Flooded	10 Acres	
(no modifier)	**10 Acres**	**R3USA**

R - Riverine (Rivers), 3 - Upper Perennial, US - Unconsolidated Shore
Shorelines with less than 75% areal cover of stones, boulders, or bedrock and less than 30% vegetation cover. The area is also irregularly exposed due to seasonal or irregular flooding and subsequent drying.

4 - Intermittent

SB - Stream Bed

C - Seasonally Flooded	19 Acres	
(no modifier)	**3 Acres**	**R4SBC**
x - Excavated	**16 Acres**	**R4SBCx**

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

Rp - Riparian

1 - Lotic

SS - Scrub-Shrub
(no modifier) **18 Acres** **Rp1SS**

Rp - Riparian, 1 - Lotic, SS - Scrub-Shrub
This type of riparian area is dominated by woody vegetation that is less than 6 meters (20 feet) tall. Woody vegetation includes tree saplings and trees that are stunted due to environmental conditions.

FO - Forested
(no modifier) **63 Acres** **Rp1FO**

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

2 - Lentic

SS - Scrub-Shrub
(no modifier) **2 Acres** **Rp2SS**

Rp - Riparian, 2 - Lentic, SS - Scrub-Shrub
This type of riparian area is dominated by woody vegetation that is less than 6 meters (20 feet) tall. Woody vegetation includes tree saplings and trees that are stunted due to environmental conditions.

FO - Forested
(no modifier) **1 Acres** **Rp2FO**

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

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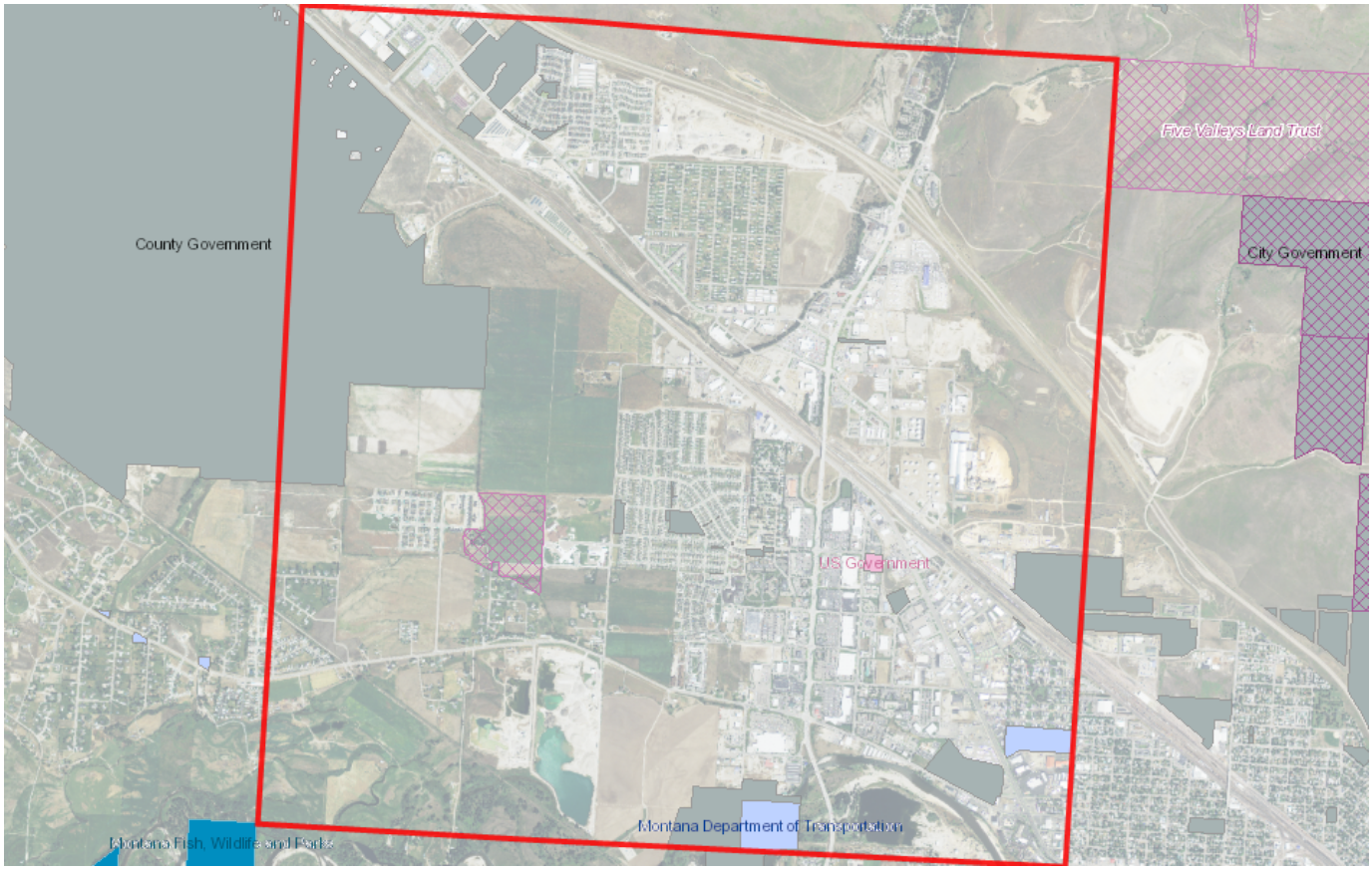
Land Management

Summarized by: **013N019W007** *(Buffered PLSS Section)*



Land Management Summary

Explain

	Ownership	Tribal	Easements	Other Boundaries (possible overlap)
Public Lands	637 Acres (11%)			
Federal	3 Acres (<1%)			
US Government	3 Acres (<1%)			
US Government Owned	3 Acres (<1%)			
State	39 Acres (1%)			
Montana Department of Transportation	39 Acres (1%)			
MTDOT Owned	39 Acres (1%)			
Local	595 Acres (10%)			
Local Government	595 Acres (10%)			
Local Government Owned	595 Acres (10%)			
Conservation Easements			48 Acres (1%)	
Private			48 Acres (1%)	
Five Valleys Land Trust			48 Acres (1%)	
Private Lands or Unknown Ownership	5,044 Acres (88%)			

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Biological Reports

Summarized by: **013N019W007** *(Buffered PLSS Section)*

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

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

- Missoula County Weed District. ***Geodatabases with sample site location data related to AIS surveys beginning in 2011 on waterbodies in western Montana***

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Legend

Model Icons	Habitat Icons	Range Icons	Num Obs
N Suitable (native range)	C Common	N Non-native	Count of obs with 'good precision' (<=1000m)
O Optimal Suitability	O Occasional		+ indicates additional 'poor precision' obs (1001m-10,000m)
M Moderate Suitability			
L Low Suitability			
I Suitable (introduced range)			

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Invasive and Pest Species

Summarized by: **013N019W007** *(Buffered PLSS Section)*

Aquatic Invasive Species

V - Iris pseudacorus *(Yellowflag Iris)* N2A/AIS — # Obs: 2 — Predicted Model — Range: N

View in Field Guide | View Predicted Models | View Range Maps
Noxious Weed: Priority 2A - Aquatic Invasive Species - Non-native Species — Global: **GNR** State: **SNA**
Predicted Models: O 98% Optimal (inductive), M 2% Moderate (inductive), L 0% Low (inductive)

V - Potamogeton crispus *(Curly-leaf Pondweed)* N2B/AIS — # Obs: 1 — Predicted Model — Range: N

View in Field Guide | View Predicted Models | View Range Maps
Noxious Weed: Priority 2B - Aquatic Invasive Species - Non-native Species — Global: **G5** State: **SNA**
Predicted Models: O 12% Optimal (inductive), M 26% Moderate (inductive), L 55% Low (inductive)

V - Butomus umbellatus *(Flowering-rush)* N2A/AIS — Predicted Model — Range: N

View in Field Guide | View Predicted Models | View Range Maps
Noxious Weed: Priority 2A - Aquatic Invasive Species - Non-native Species — Global: **G5** State: **SNA**
Predicted Models: O 10% Optimal (inductive), M 1% Moderate (inductive), L 69% Low (inductive)

A - American Bullfrog *(Lithobates catesbeianus)* AIS — Predicted Model — Range: N

View in Field Guide | View Predicted Models | View Range Maps
Aquatic Invasive Species - Non-native Species — Global: **G5** State: **SNA**
Predicted Models: M 1% Moderate (inductive), L 97% Low (inductive)

V - Myriophyllum spicatum *(Eurasian Water-milfoil)* N2A/AIS — Predicted Model — Range: N

View in Field Guide | View Predicted Models | View Range Maps
Noxious Weed: Priority 2A - Aquatic Invasive Species - Non-native Species — Global: **GNR** State: **SNA**
Predicted Models: L 31% Low (inductive)

V - Nymphaea odorata *(American Water-lily)* AIS — Predicted Model — Range: N

View in Field Guide | View Predicted Models | View Range Maps
Aquatic Invasive Species - Non-native Species — Global: **G5** State: **SNA**
Predicted Models: I 43% Suitable (introduced range) (deductive)

Noxious Weeds: Priority 1A

V - Centaurea solstitialis *(Yellow Starthistle)* N1A — Predicted Model — Range: N

View in Field Guide | View Predicted Models | View Range Maps
Noxious Weed: Priority 1A - Non-native Species — Global: **GNR** State: **SNA**
Predicted Models: O 98% Optimal (inductive), M 2% Moderate (inductive), L 0% Low (inductive)

V - Isatis tinctoria *(Dyer's Woad)* N1A — Predicted Model — Range: N

View in Field Guide | View Predicted Models | View Range Maps
Noxious Weed: Priority 1A - Non-native Species — Global: **GNR** State: **SNA**
Predicted Models: O 86% Optimal (inductive), M 14% Moderate (inductive), L 0% Low (inductive)

V - Taeniatherum caput-medusae *(Medusahead)* N1A — Predicted Model — Range: N

View in Field Guide | View Predicted Models | View Range Maps
Noxious Weed: Priority 1A - Non-native Species — Global: **G4G5** State: **SNA**
Predicted Models: O 23% Optimal (inductive), M 57% Moderate (inductive), L 20% Low (inductive)

V - Phragmites australis ssp. australis *(European Common Reed)* N1A — Predicted Model — Range: N

View in Field Guide | View Predicted Models | View Range Maps
Noxious Weed: Priority 1A - Non-native Species — Global: **G5T5** State: **SNA**
Predicted Models: O 1% Optimal (inductive), M 59% Moderate (inductive), L 38% Low (inductive)

Noxious Weeds: Priority 1B

V - Lythrum salicaria *(Purple Loosestrife)* N1B — Predicted Model — Range: N

View in Field Guide | View Predicted Models | View Range Maps
Noxious Weed: Priority 1B - Non-native Species — Global: **G5** State: **SNA**
Predicted Models: O 98% Optimal (inductive), M 2% Moderate (inductive), L 0% Low (inductive)

V - Polygonum cuspidatum *(Japanese Knotweed)* N1B — # Obs: 6 — Predicted Model — Range: N

View in Field Guide | View Predicted Models | View Range Maps
Noxious Weed: Priority 1B - Non-native Species — Global: **GNRTNR** State: **SNA**
Predicted Models: O 64% Optimal (inductive), M 36% Moderate (inductive)

V - Cytisus scoparius *(Scotch Broom)* N1B — Predicted Model — Range: N

View in Field Guide | View Predicted Models | View Range Maps
Noxious Weed: Priority 1B - Non-native Species — Global: **GNR** State: **SNA**
Predicted Models: O 30% Optimal (inductive), M 41% Moderate (inductive), L 29% Low (inductive)

V - Echium vulgare *(Blueweed)* N1B — Predicted Model — Range: N

View in Field Guide | View Predicted Models | View Range Maps
Noxious Weed: Priority 1B - Non-native Species — Global: **GNR** State: **SNA**
Predicted Models: M 100% Moderate (inductive), L 0% Low (inductive)

V - Chondrilla juncea *(Rush Skeletonweed)* N1B — Predicted Model — Range: N

View in Field Guide View Predicted Models View Range Maps
Noxious Weed: Priority 1B - Non-native Species Global: **GNR** State: **SNA**
Predicted Models: O 20% Moderate (inductive), L 80% Low (inductive)

Noxious Weeds: Priority 2A

V - Iris pseudacorus *(Yellowflag Iris)* N2A/AIS — 2 — N

View in Field Guide View Predicted Models View Range Maps
Noxious Weed: Priority 2A - Aquatic Invasive Species - Non-native Species Global: **GNR** State: **SNA**
Predicted Models: O 98% Optimal (inductive), M 2% Moderate (inductive), L 0% Low (inductive)

V - Rhamnus cathartica *(Common Buckthorn)* N2A — 16 — N

View in Field Guide View Predicted Models View Range Maps
Noxious Weed: Priority 2A - Non-native Species Global: **GNR** State: **SNA**
Predicted Models: O 80% Optimal (inductive), M 15% Moderate (inductive), L 5% Low (inductive)

V - Ventenata dubia *(Ventenata)* N2A — 30 — N

View in Field Guide View Predicted Models View Range Maps
Noxious Weed: Priority 2A - Non-native Species Global: **GNR** State: **SNA**
Predicted Models: O 47% Optimal (inductive), M 32% Moderate (inductive), L 21% Low (inductive)

V - Lepidium latifolium *(Perennial Pepperweed)* N2A — 118 — N

View in Field Guide View Predicted Models View Range Maps
Noxious Weed: Priority 2A - Non-native Species Global: **GNR** State: **SNA**
Predicted Models: O 38% Optimal (inductive), M 53% Moderate (inductive), L 9% Low (inductive)

V - Butomus umbellatus *(Flowering-rush)* N2A/AIS — N

View in Field Guide View Predicted Models View Range Maps
Noxious Weed: Priority 2A - Aquatic Invasive Species - Non-native Species Global: **G5** State: **SNA**
Predicted Models: O 10% Optimal (inductive), M 1% Moderate (inductive), L 69% Low (inductive)

V - Hieracium praealtum *(Kingdevil Hawkweed)* N2A — N

View in Field Guide View Predicted Models View Range Maps
Noxious Weed: Priority 2A - Non-native Species Global: **GNR** State: **SNA**
Predicted Models: O 1% Optimal (inductive), M 40% Moderate (inductive), L 48% Low (inductive)

V - Ranunculus acris *(Tall Buttercup)* N2A — N

View in Field Guide View Predicted Models View Range Maps
Noxious Weed: Priority 2A - Non-native Species Global: **G5** State: **SNA**
Predicted Models: M 38% Moderate (inductive), L 62% Low (inductive)

V - Hieracium aurantiacum *(Orange Hawkweed)* N2A — N

View in Field Guide View Predicted Models View Range Maps
Noxious Weed: Priority 2A - Non-native Species Global: **GNR** State: **SNA**
Predicted Models: M 37% Moderate (inductive), L 63% Low (inductive)

V - Senecio jacobaea *(Tansy Ragwort)* N2A — N

View in Field Guide View Predicted Models View Range Maps
Noxious Weed: Priority 2A - Non-native Species Global: **GNR** State: **SNA**
Predicted Models: L 59% Low (inductive)

V - Myriophyllum spicatum *(Eurasian Water-milfoil)* N2A/AIS — N

View in Field Guide View Predicted Models View Range Maps
Noxious Weed: Priority 2A - Aquatic Invasive Species - Non-native Species Global: **GNR** State: **SNA**
Predicted Models: L 31% Low (inductive)

V - Hieracium caespitosum *(Meadow Hawkweed)* N2A — N

View in Field Guide View Predicted Models View Range Maps
Noxious Weed: Priority 2A - Non-native Species Global: **GNR** State: **SNA**
Predicted Models: L 21% Low (inductive)

Noxious Weeds: Priority 2B

V - Tanacetum vulgare *(Common Tansy)* N2B — 299 — N

View in Field Guide View Predicted Models View Range Maps
Noxious Weed: Priority 2B - Non-native Species Global: **GNR** State: **SNA**
Predicted Models: O 98% Optimal (inductive), M 2% Moderate (inductive), L 0% Low (inductive)

V - Linaria dalmatica *(Dalmatian Toadflax)* N2B — 602 — N

View in Field Guide View Predicted Models View Range Maps
Noxious Weed: Priority 2B - Non-native Species Global: **G5** State: **SNA**
Predicted Models: O 85% Optimal (inductive), M 15% Moderate (inductive)

V - Centaurea diffusa *(Diffuse Knapweed)* N2B — N

View in Field Guide View Predicted Models View Range Maps
Noxious Weed: Priority 2B - Non-native Species Global: **GNR** State: **SNA**
Predicted Models: O 25% Optimal (inductive), M 42% Moderate (inductive), L 33% Low (inductive)

V - Potamogeton crispus *(Curly-leaf Pondweed)* N2B/AIS — 1 — N

View in Field Guide View Predicted Models View Range Maps
Noxious Weed: Priority 2B - Aquatic Invasive Species - Non-native Species Global: **G5** State: **SNA**
Predicted Models: O 12% Optimal (inductive), M 26% Moderate (inductive), L 55% Low (inductive)

V - Linaria vulgaris *(Yellow Toadflax)* N2B — 1 — N

View in Field Guide View Predicted Models View Range Maps
Noxious Weed: Priority 2B - Non-native Species Global: **GNR** State: **SNA**
Predicted Models: O 9% Optimal (inductive), M 70% Moderate (inductive), L 21% Low (inductive)

V - Cynoglossum officinale *(Common Hound's-tongue)* N2B — 189 — N

View in Field Guide View Predicted Models View Range Maps
Noxious Weed: Priority 2B - Non-native Species Global: **GNR** State: **SNA**
Predicted Models: M 100% Moderate (inductive), L 0% Low (inductive)

V - Hypericum perforatum *(Common St. John's-wort)* N2B — 2 — N

View in Field Guide View Predicted Models View Range Maps
Noxious Weed: Priority 2B - Non-native Species Global: **GNR** State: **SNA**
Predicted Models: M 100% Moderate (inductive), L 0% Low (inductive)

V - Leucanthemum vulgare *(Oxeye Daisy)* N2B — 1 — N

View in Field Guide View Predicted Models View Range Maps
Noxious Weed: Priority 2B - Non-native Species Global: **GNR** State: **SNA**
Predicted Models: M 100% Moderate (inductive)

V - Potentilla recta *(Sulphur Cinquefoil)* N2B — 310 — N

View in Field Guide View Predicted Models View Range Maps
Noxious Weed: Priority 2B - Non-native Species Global: **GNR** State: **SNA**
Predicted Models: M 99% Moderate (inductive), L 1% Low (inductive)

V - Centaurea stoebe *(Spotted Knapweed)* N2B — 549 — N

View in Field Guide View Predicted Models View Range Maps
Noxious Weed: Priority 2B - Non-native Species Global: **GNR** State: **SNA**
Predicted Models: M 66% Moderate (inductive), L 34% Low (inductive)

V - Acroptilon repens *(Russian Knapweed)* N2B — 12 — N

View in Field Guide View Predicted Models View Range Maps
Noxious Weed: Priority 2B - Non-native Species Global: **GNR** State: **SNA**
Predicted Models: M 43% Moderate (inductive), L 57% Low (inductive)

V - Lepidium draba *(Whitetop)* N2B — 270 — N

View in Field Guide View Predicted Models View Range Maps
Noxious Weed: Priority 2B - Non-native Species Global: **GNR** State: **SNA**
Predicted Models: M 29% Moderate (inductive), L 71% Low (inductive)

V - Euphorbia virgata *(Leafy Spurge)* N2B — 769 — N

View in Field Guide View Predicted Models View Range Maps
Noxious Weed: Priority 2B - Non-native Species Global: **GNRTNR** State: **SNA**
Predicted Models: M 9% Moderate (inductive), L 91% Low (inductive)

V - Cirsium arvense *(Canada Thistle)* N2B — 163 — N

View in Field Guide View Predicted Models View Range Maps
Noxious Weed: Priority 2B - Non-native Species Global: **G5** State: **SNA**
Predicted Models: M 8% Moderate (inductive), L 92% Low (inductive)

V - Convolvulus arvensis *(Field Bindweed)* N2B — 121 — N

View in Field Guide View Predicted Models View Range Maps
Noxious Weed: Priority 2B - Non-native Species Global: **GNR** State: **SNA**
Predicted Models: M 4% Moderate (inductive), L 95% Low (inductive)

V - Berteroa incana *(Hoary False-alyssum)* N2B — N

View in Field Guide View Predicted Models View Range Maps
Noxious Weed: Priority 2B - Non-native Species Global: **GNR** State: **SNA**
Predicted Models: L 83% Low (inductive)

Regulated Weeds: Priority 3

V - Bromus tectorum *(Cheatgrass)* R3 — 227 — N

View in Field Guide View Predicted Models View Range Maps
Regulated Weed: Priority 3 - Non-native Species Global: **GNR** State: **SNA**
Predicted Models: M 79% Moderate (inductive), L 21% Low (inductive)

V - Elaeagnus angustifolia *(Russian Olive)* R3 — 4 — N

View in Field Guide View Predicted Models View Range Maps
Regulated Weed: Priority 3 - Non-native Species Global: **GNR** State: **SNA**
Predicted Models: L 47% Low (inductive)

Biocontrol Species

I - Oberea erythrocephala *(Red-headed Leafy Spurge Stem Borer)* BIOCNTRL — N

View in Field Guide View Predicted Models View Range Maps
Biocontrol Species - Non-native Species Global: **GNR** State: **SNA**
Predicted Models: O 100% Optimal (inductive)

I - Cyphocleonus achates *(Knapweed Root Weevil)* BIOCNTRL — N

View in Field Guide View Predicted Models View Range Maps
Biocontrol Species - Non-native Species Global: **GNR** State: **SNA**
Predicted Models: O 78% Optimal (inductive), M 22% Moderate (inductive)

I - Mecinus janthiniformis *(Dalmatian Toadflax Stem-boring Weevil)* BIOCNTRL — 1 — N

View in Field Guide View Predicted Models View Range Maps
Biocontrol Species - Non-native Species Global: **GNR** State: **SNA**
Predicted Models: O 45% Optimal (inductive), M 55% Moderate (inductive)

I - Mecinus janthinus *(Yellow Toadflax Stem-boring Weevil)* BIOCNTRL — N

View in Field Guide View Predicted Models View Range Maps
Biocontrol Species - Non-native Species Global: **GNR** State: **SNA**
Predicted Models: O 29% Optimal (inductive), M 66% Moderate (inductive), L 5% Low (inductive)

I - Aphthona lacertosa *(Brown-legged Leafy Spurge Flea Beetle)* BIOCNTRL — N

View in Field Guide View Predicted Models View Range Maps
Biocontrol Species - Non-native Species Global: **GNR** State: **SNA**
Predicted Models: M 91% Moderate (inductive), L 9% Low (inductive)

I - Aphthona nigriscutis *(Black Dot Leafy Spurge Flea Beetle)* BIOCNTRL N

View in Field Guide View Predicted Models View Range Maps
Biocontrol Species - Non-native Species Global: **GNR** State: **SNA**
Predicted Models: M 58% Moderate (inductive), L 40% Low (inductive)

Introduction to Montana Natural Heritage Program

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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 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. 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 is botanical, zoological, and ecological information that describes the distribution (e.g., observations, structured surveys, range polygons, predicted habitat suitability models), conservation status (e.g., global and state conservation status ranks, including threats), and other supporting information (e.g., accounts and references) on the biology and ecology of species and 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 four 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. See Contact Information for MTNHP Staff
- 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 enter or cross 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 Management 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 permitting and planning processes and management decisions. We encourage you to contact state, federal, and tribal resource management agencies in the area where your project is located and review the permitting overviews by the Montana Department of Environmental Quality, the Montana Department of Natural Resources and Conservation and the Index of Environmental Permits for Montana for 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 Consultation (IPAC) website 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	Kristian Smucker KSmucker@mt.gov (406) 444-5209
Grizzly Bear Greater Sage Grouse Trumpeter Swan Big Game Upland Game Birds Furbearers	Brian Wakeling Brian.Wakeling@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	https://fwp.mt.gov/buyandapply/commercialwildlifeandscientificpermits/scientific 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	Charlie Sperry CSperry@mt.gov (406) 444-3888 See https://fwp.mt.gov/conservation/living-with-wildlife/subdivision-recommendations
Regional Contacts  	Region 1 (Kalispell) (406) 752-5501 fwprg12@mt.gov Region 2 (Missoula) (406) 542-5500 fwprg22@mt.gov Region 3 (Bozeman) (406) 577-7900 fwprg3@mt.gov Region 4 (Great Falls) (406) 454-5840 fwprg42@mt.gov Region 5 (Billings) (406) 247-2940 fwprg52@mt.gov Region 6 (Glasgow) (406) 228-3700 fwprg62@mt.gov Region 7 (Miles City) (406) 234-0900 fwprg72@mt.gov

Montana Department of Agriculture
General Contact Information: https://agr.mt.gov/About/Office-Locations/Office-Locations-and-Field-Offices
Noxious Weeds: https://agr.mt.gov/Noxious-Weeds

Montana Department of Environmental Quality
Permitting and Operator Assistance for all Environmental Permits: https://deq.mt.gov/Permitting

Montana Department of Natural Resources and Conservation
Overview of, and contacts for, licenses and permits for state lands, water, and forested lands:
http://dnrc.mt.gov/licenses-and-permits

Stream Permitting (310 permits) and an overview of various water and stream related permits (e.g., Stream Protection Act 124, Federal Clean Water Act 404, Federal Rivers and Harbors Act Section 10, Short-term Water Quality Standard for Turbidity 318 Authorization, etc.).
http://dnrc.mt.gov/divisions/cardd/conservation-districts/the-310-law

Flood and Fire Resources: http://dnrc.mt.gov/flood-and-fire

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 Army Corps of Engineers
Montana Regulatory Office for federal permits related to construction in water and wetlands
https://www.nwo.usace.army.mil/Missions/Regulatory-Program/Montana/ (406) 441-1375

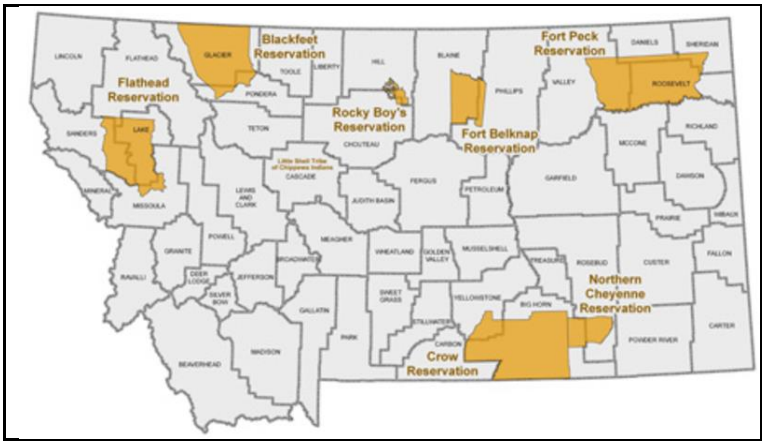
United States Environmental Protection Agency
Environmental information, notices, permitting, and contacts https://www.epa.gov/mt
Gateway to state resource locators https://www.envcap.org/srl/index.php

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

United States Forest Service

Regional Office – Missoula, Montana Contacts			
Wildlife Program Leader	Tammy Fletcher	tammy.fletcher2@usda.gov	(406) 329-3086
Wildlife Ecologist	Cara Staab	cara.staab@usda.gov	(406) 329-3677
Fish Program Leader	Scott Spaulding	scott.spaulding@usda.gov	(406) 329-3287
Fish Ecologist	Cameron Thomas	cameron.thomas@usda.gov	(406) 329-3087
TES Program	Lydia Allen	lydia.allen@usda.gov	(406) 329-3558
Interagency Grizzly Bear Coordinator	Scott Jackson	scott.jackson@usda.gov	(406) 329-3664
Acting Regional Botanist	Amanda Hendrix	amanda.hendrix@usda.gov	(651) 447-3016
Regional Vegetation Ecologist	Mary Manning	marry.manning@usda.gov	(406) 329-3304
Invasive Species Program Manager	Michelle Cox	michelle.cox2@usda.gov	(406) 329-3669

Tribal Nations



[Assiniboine & Gros Ventre Tribes – Fort Belknap Reservation]

[Assiniboine & Sioux Tribes – Fort Peck Reservation]

[Blackfeet Tribe - Blackfeet Reservation]

[Chippewa Creek Tribe - Rocky Boy's Reservation]

[Crow Tribe – Crow Reservation]

[Little Shell Chippewa Tribe]

[Northern Cheyenne Tribe – Northern Cheyenne Reservation]

[Salish & Kootenai Tribes - Flathead Reservation]

Natural Heritage Programs and Conservation Data Centers in Surrounding States and Provinces

[Alberta Conservation Information Management System]
[British Columbia Conservation Data Centre]
[Idaho Natural Heritage Program]
[North Dakota Natural Heritage Program]
[Saskatchewan Conservation Data Centre]
[South Dakota Natural Heritage Program]
[Wyoming Natural Diversity Database]

Invasive Species Management Contacts and Information

Aquatic Invasive Species

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

Noxious Weeds

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

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 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 animal observations that you would like to contribute, you can submit them to our Animal Observation Entry Tool You can also submit plant and animal observations via Excel spreadsheets posted at https://mtnhp.org/observations.asp or via the Montana Natural Heritage Observations project in iNaturalist

Observations

The MTNHP manages information on several 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/or 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

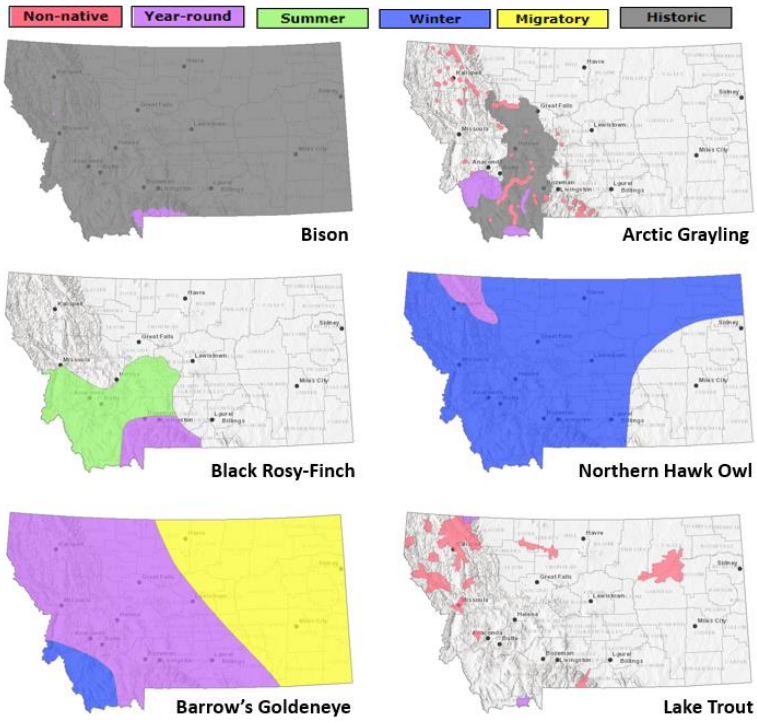
The location of a verified observation or specimen record typically known or assumed to represent a breeding population or a portion of a breeding population. Animal SO's are generally: (1) buffers of terrestrial point observations based on documented species' home range sizes; (2) buffers of stream 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 are still under development for most plant and invertebrate species. Native year-round, summer, winter, migratory and historic geographic range polygons as well as polygons for introduced populations have been defined for most vertebrate 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

Predicted habitat suitability models have been created for plant and animal Species of Concern and are undergoing development for non-Species of Concern. For species for which models have been completed, the environmental summary report includes simple rule-based associations with streams for aquatic species and seasonal habitats for game species as well as 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 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 webpage. 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 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 1:100,000, 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 web 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 deep water 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 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.**

See a detailed overview, with examples, of both wetland and riparian classification systems and associated codes

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 led 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, Forest Pests, and Biocontrol species that have been documented or potentially occur there based on the predicted suitability of habitat. 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) 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 limited, 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 mtnhp.org/AddObs or via Excel spreadsheets posted at mtnhp.org/observations.asp

Additional Information Resources

- 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 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 Index of Environmental Permits, 21st Edition (2018)
- Montana Environmental Policy Act (MEPA)
- Montana Environmental Policy Act Analysis Resource List
- Laws, Treaties, Regulations, and Agreements on Animals and Plants
- Montana Spatial Data Infrastructure Layers
- Montana State Historic Preservation Office Review and Compliance
- Montana Stream Permitting: a guide for conservation district supervisors and others
- 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 Consultation (Section 7 Consultation)
- Web Soil Survey Tool