



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

July 16, 2021

Kara Baszler
406 Engineering, Inc.

, MT

Dear Kara Baszler,

Thank you for your request for Natural Heritage information for DeNova Homes Subdivision, in T13N, R18W, S19 in Missoula County. 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.

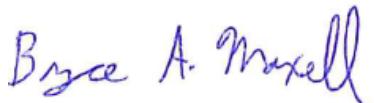
- (3) Additional information on animal, plant, and lichen species and ecological systems in Montana is available on the Montana Field Guide at <http://fieldguide.mt.gov/>
- (4) In addition to the information you receive from us, we encourage you to contact state, federal, and tribal resource management agencies in the area where your project is located (see Environmental Summary report PDF).

In order to help us improve our services to you, we invite you to take a simple survey. The survey is intended to gather some basic information on the value and quality of the information and services you recently received from the Montana Natural Heritage Program. The survey is short and should not take more than a few minutes to complete. All information will be kept confidential and will be used internally to improve the delivery of services and to help document the value of our services. Use this link to go to the survey:

<http://www.surveymonkey.com/s/RYN8Y8L>.

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,

A handwritten signature in blue ink that reads "Bryce A. Maxell".

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

From: [Kaskie, Kyle](#)
To: [Kara Baszler](#)
Subject: MTNHP Request - 22prvt0008
Date: Friday, July 16, 2021 1:31:46 PM

Hi Kara Baszler,

Thank you for your request for information from the Montana Natural Heritage Program. Feel free to pass along questions and comments about this request to me. Other staff may handle future requests.

You can download the products of a query of our data for your project via the following SharePoint link:

[22PRVT0008 - DeNova Homes Subdivision_MTNHP_EnviroSum_2021-07-16_13-25-04.zip](#)
We generally refer to this as an Environmental Summary Report (ESR).

MTNHP is an information provider and is not involved with management of species or review of environmental impacts. We strive to provide easy access to objective information in order for users to save time and money, enable efficient environmental reviews, and inform decision making. We hope you find this information useful - thank you for obtaining data from MTNHP.

A note about the extent of the area used in the data query... Our minimum search area for standard information requests consists of the section a requested area resides in, then buffered by an additional mile in order to capture records that may be immediately adjacent to the requested area. The actual queried extent is a bit larger than this because in order to speed processing of the query, our data is summarized to a statewide grid of hexagons and the data comes from all the hexagons intersected by the buffered area. You can see this illustrated in the first figure of the main ESR PDF. If this extent is insufficient for your needs let me know and I can re-run the query. It's fast and easy to change that extent and add more hexagons.

The Species Occurrence (SO) map, the second figure of the ESR PDF, may be a bit cluttered with SO polygons and associated labels. A few labels may seem to be floating free of any recognizable polygon, but this is mainly due to the tight zoom of the extent where a large polygon boundary may lie entirely or mostly outside the extent of the map. For any request, we will provide a separate PDF map of bald eagle and/or golden eagle occurrences when they are observed within the search area, this is so they can be seen clearly.

Here's what you will find in the zipped ESR file:

22PRVT0008 - DeNova Homes Subdivision_MTNHP_EnviroSum_2021-07-16_13-25-04.pdf

This is the ESR PDF of the data. Instructions on how to digest all the information is put towards the back of the PDF. There are also some descriptive bits in the Cover Letter PDF below.

22PRVT0008 - DeNova Homes Subdivision_MTNHP_EnviroSum_2021-07-16_13-25-04.xls

This is the data in Excel spreadsheets where you can sort and query things to get your hands in the guts of the monster.

Cover_Letter_MapViewer_Enviro_Summary_22prvt0008.pdf

This is a standard cover letter we send along with the ESR with information on the data and its potential uses and limitations.

22prvt0008_BAEA_SOReport.pdf

This is a map of only the Bald Eagle Species Occurrence (SO) polygons to provide you with a clearer view of these sites without the clutter of the other SO polygons.

22prvt0008_GOEA_SOReport.pdf

This is a map of only the Golden Eagle Species Occurrence (SO) polygons to provide you with a clearer view of these sites without the clutter of the other SO polygons.

The FG PDFs – there are additional files which are extractions of species accounts from our online Field Guide (<http://fieldguide.mt.gov/>) for: Species of Concern, other observed species, species that could potentially be found in the area (based on range and habitat), and invasive species.

Let me know if I can be of further assistance,

Kyle Kaskie | Biological Data Scientist
Montana Natural Heritage Program
1515 East Sixth Ave. | Helena, MT 59620
kkaskie@mt.gov



In order to help us improve our services to you, we invite you to take a simple survey. The survey is intended to gather some basic information on the value and quality of the information and services you recently received from the Montana Natural Heritage Program. The survey is short and should not take more than a few minutes to complete. All information will be kept confidential and will be used internally to improve the delivery of services and to help document the value of our services. Use this link to go to the survey:

<http://www.surveymonkey.com/s/RYN8Y8L>



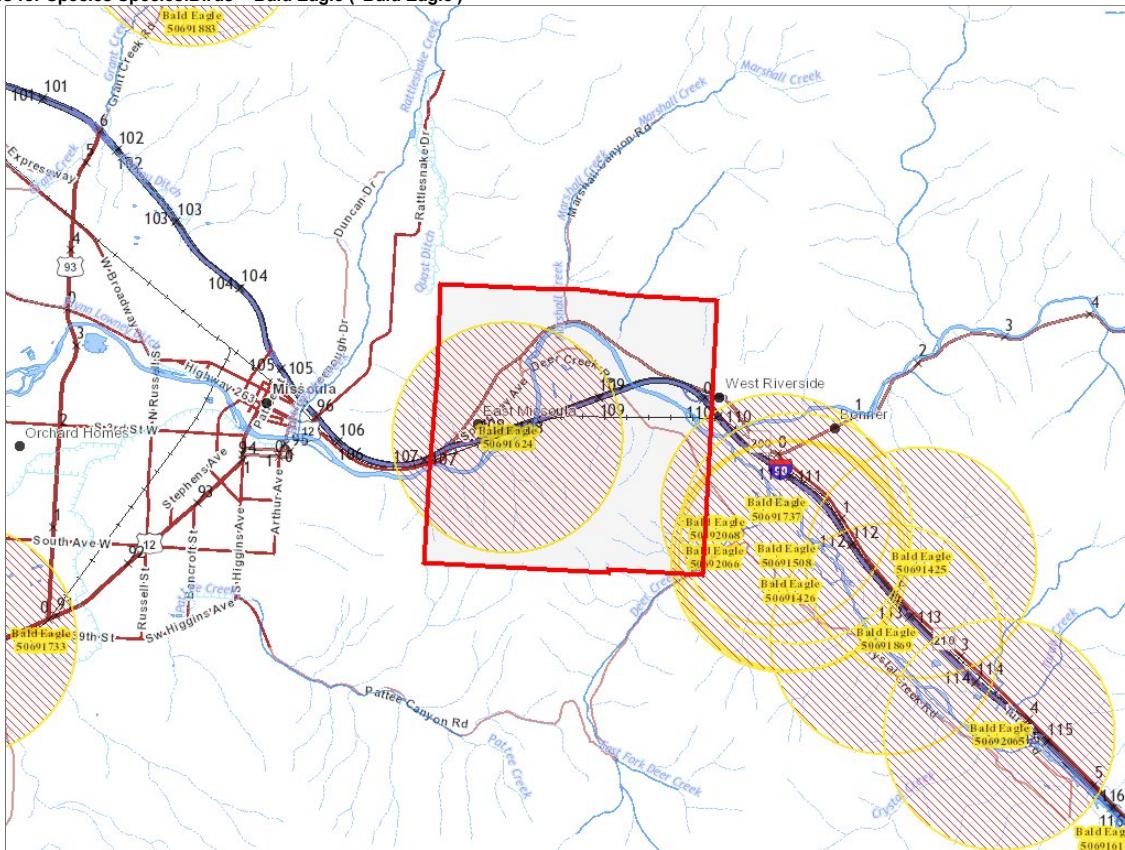
Latitude 46.80807 Longitude -113.76594



Montana SOC Occurrences Report

SOC Occurrences for Species Species.Birds = Bald Eagle ("Bald Eagle")

Report generated 7/16/2021 1:26:40 PM



Birds - Bald Eagle (*Haliaeetus leucocephalus*)

SO Count: 18 Obs Count: 85 Earliest Obs: 1990 Recent Obs: 2018

Last Updated

Jul 07, 2021

Special Status Species	Agency Status	Delineation Criteria	Acres	Obs Count	Earliest Obs	Recent Obs
Native Species						
Global Rank: G5	USFWs: DM; BGEPA; MBTA	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.				
State Rank: S4	USFS: Sensitive - Known on Forests (BD, BRT, CG, HLC, KOOT, Lolo) BLM: SENSITIVE FWP SWAP: PIF: 2					
<input checked="" type="checkbox"/> SO ID: 50691424			Acres: 3.095	Obs Count: 10	Earliest Obs: 2008	Recent Obs: 2017
<input checked="" type="checkbox"/> SO ID: 50691425			Acres: 3,105	Obs Count: 1	Earliest Obs: 2006	Recent Obs: 2006
<input checked="" type="checkbox"/> SO ID: 50691426			Acres: 3,105	Obs Count: 17	Earliest Obs: 2000	Recent Obs: 2017
<input checked="" type="checkbox"/> SO ID: 50691429			Acres: 3,095	Obs Count: 12	Earliest Obs: 2004	Recent Obs: 2016
<input checked="" type="checkbox"/> SO ID: 50691430			Acres: 3,105	Obs Count: 1	Earliest Obs: 2017	Recent Obs: 2017
<input checked="" type="checkbox"/> SO ID: 50691508			Acres: 3,105	Obs Count: 6	Earliest Obs: 1994	Recent Obs: 1999
<input checked="" type="checkbox"/> SO ID: 50691509			Acres: 3,095	Obs Count: 2	Earliest Obs: 2014	Recent Obs: 2015
<input checked="" type="checkbox"/> SO ID: 50691620			Acres: 3,105	Obs Count: 1	Earliest Obs: 2008	Recent Obs: 2008
<input checked="" type="checkbox"/> SO ID: 50691624			Acres: 3,095	Obs Count: 17	Earliest Obs: 2006	Recent Obs: 2017
<input checked="" type="checkbox"/> SO ID: 50691626			Acres: 3,105	Obs Count: 1	Earliest Obs: 2018	Recent Obs: 2018
<input checked="" type="checkbox"/> SO ID: 50691733			Acres: 3,105	Obs Count: 1	Earliest Obs: 2006	Recent Obs: 2006
<input checked="" type="checkbox"/> SO ID: 50691737			Acres: 3,105	Obs Count: 1	Earliest Obs: 1990	Recent Obs: 1990
<input checked="" type="checkbox"/> SO ID: 50691739			Acres: 3,095	Obs Count: 2	Earliest Obs: 2003	Recent Obs: 2007
<input checked="" type="checkbox"/> SO ID: 50691869			Acres: 3,105	Obs Count: 5	Earliest Obs: 2008	Recent Obs: 2012
<input checked="" type="checkbox"/> SO ID: 50691871			Acres: 3,105	Obs Count: 4	Earliest Obs: 2005	Recent Obs: 2006
<input checked="" type="checkbox"/> SO ID: 50692065			Acres: 3,105	Obs Count: 1	Earliest Obs: 2017	Recent Obs: 2017
<input checked="" type="checkbox"/> SO ID: 50692066			Acres: 3,105	Obs Count: 1	Earliest Obs: 2007	Recent Obs: 2007
<input checked="" type="checkbox"/> SO ID: 50692068			Acres: 3,105	Obs Count: 2	Earliest Obs: 1992	Recent Obs: 1993

Citation for this report:

Montana SOC Occurrences Report
SOC Occurrences for Species Species.Birds = Bald Eagle ("Bald Eagle")
Within Lat/Long: (46.80807,-113.76594) to (46.93346,-114.08066)
Natural Heritage Map Viewer. Montana Natural Heritage Program.
Retrieved on July 16, 2021, from <http://mtnhp.org/MapView/SOReport.aspx>

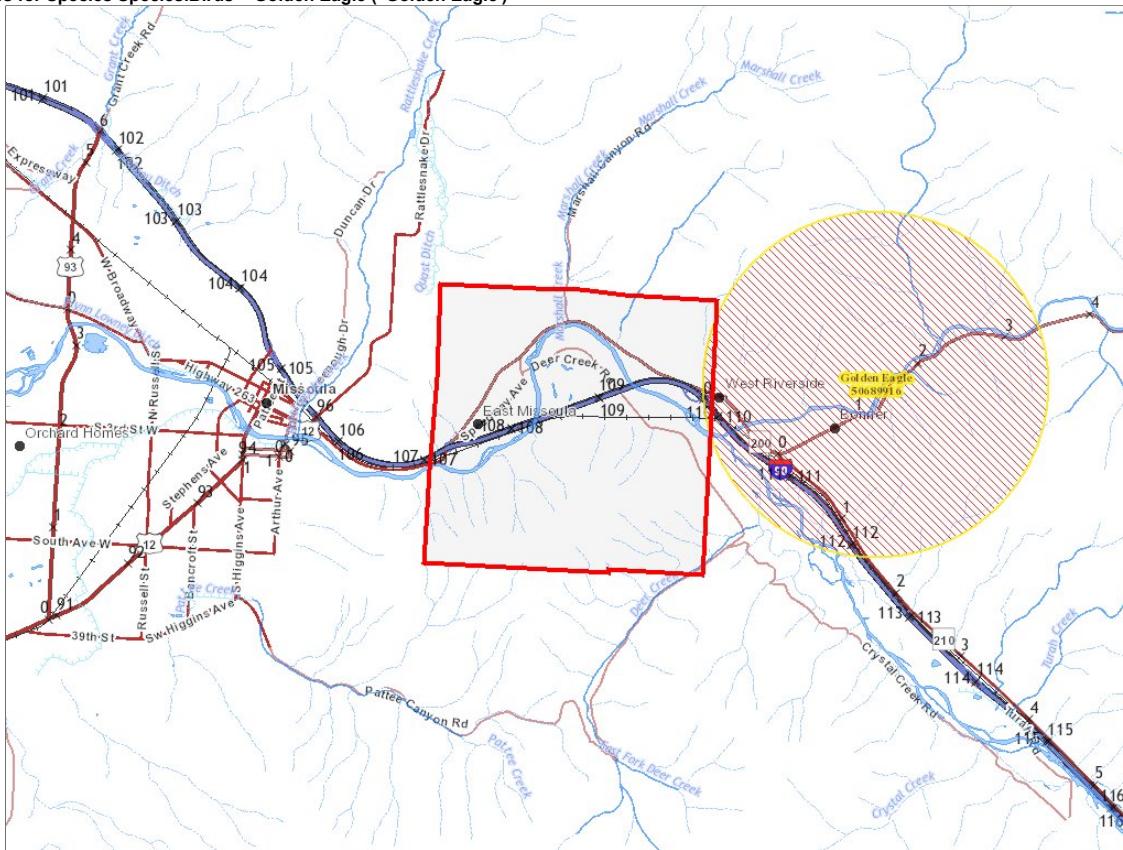


Latitude 46.80807
46.93346
Longitude -113.76594
-114.08066

Montana SOC Occurrences Report

SOC Occurrences for Species Species.Birds = Golden Eagle ("Golden Eagle")

Report generated 7/16/2021 1:27:19 PM



Birds - Golden Eagle (*Aquila chrysaetos*)

SO Count: 1 Obs Count: 3 Earliest Obs: 2010 Recent Obs: 2014

Last Updated
Jul 07, 2021

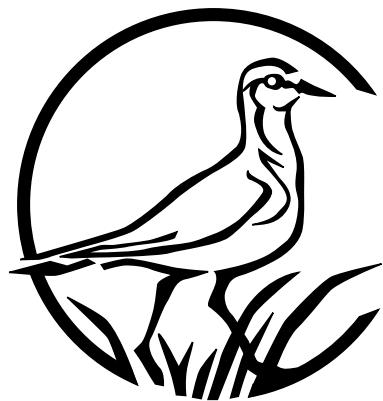
Species of Concern	Agency Status	Delineation Criteria
Native Species	USFWS: BGEPA; MBTA	
Global Rank: G5	USFS:	Confirmed nesting area buffered by a minimum distance of 3,000 meters in order to be conservative about encompassing the entire breeding territory and area commonly used
State Rank: S3	BLM: SENSITIVE	for renesting and otherwise buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters.
	FWP SWAP: SGCN3	
	PIF:	

SO ID: 50689916

Acres: 6.972 Obs Count: 3 Earliest Obs: 2010 Recent Obs: 2014

Citation for this report:

Montana SOC Occurrences Report
SOC Occurrences for Species Species.Birds = Golden Eagle ("Golden Eagle")
Within Lat/Long: (46.80807,-113.76594) to (46.93346,-114.08066)
Natural Heritage Map Viewer. Montana Natural Heritage Program.
Retrieved on July 16, 2021, from <http://mtnhp.org/MapView/SOReport.aspx>



MONTANA Natural Heritage Program

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



Latitude Longitude
46.84694 -113.89195
46.89479 -113.95499

Summarized by:
013N018W019
(Buffered PLSS Section)



Suggested Citation

Montana Natural Heritage Program. Environmental Summary Report.
for Latitude 46.84694 to 46.89479 and Longitude -113.89195 to -113.95499. Retrieved on 7/16/2021.

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

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



Environmental Summary

Table of Contents

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

Introduction to Environmental Summary Report

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

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



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

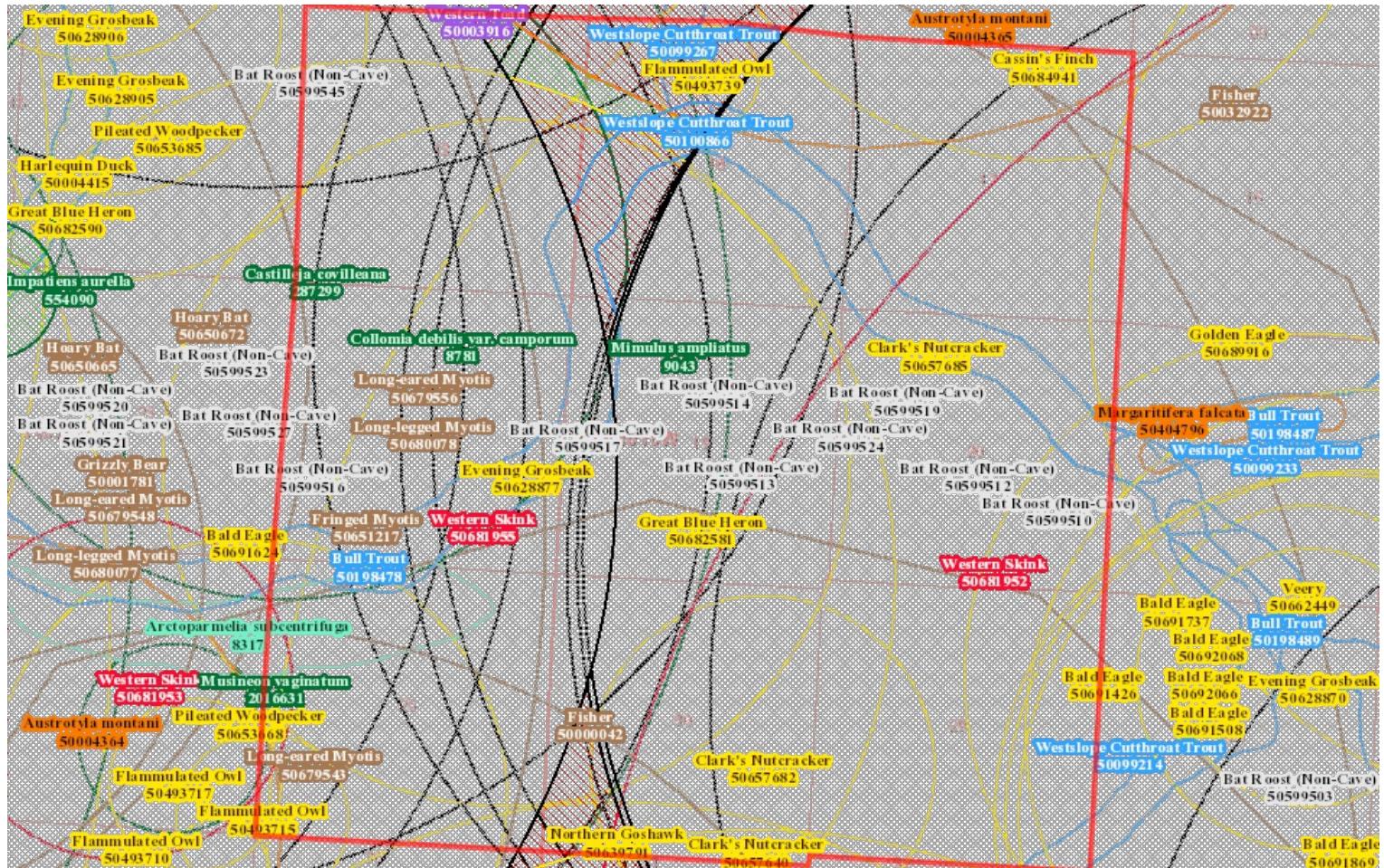


Native Species

Summarized by: 013N018W019 (Buffered PLSS Section)

Filtered by:

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



Species Occurrences

[View in Field Guide](#) [View Predicted Models](#) [View Range Maps](#)**Species of Concern - Native Species** Global: **G5** State: **S2** USFWS: **LT; CH**USFS: **Threatened, Critical Habitat on Forests (BD, BRT, HLC, KOOT, LOLO)** 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/INFFISH Riparian Conservation Area standards. (Last Updated: Mar 30, 2018)

Predictive Models:  64% Suitable (native range) (deductive)

View in Field Guide	View Predicted Models	View Range Maps	1	1		Not Assigned	
-------------------------------------	---------------------------------------	---------------------------------	---	---	---	--------------	---

[View in Field Guide](#) [View Predicted Models](#) [View Range Maps](#)**Potential Species of Concern - Native Species** Global: **G3G4** State: **S3S4**

Predictive Models:  5% Suitable (native range) (deductive)

View in Field Guide	View Predicted Models	View Associated Habitat	View Range Maps	1			
-------------------------------------	---------------------------------------	---	---------------------------------	---	---	---	---

[View in Field Guide](#) [View Predicted Models](#) [View Associated Habitat](#) [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: Jan 03, 2020)

Predictive Models:  67% Moderate (inductive),  33% Low (inductive) **Associated Habitats:**  63% Common,  1% Occasional

View in Field Guide	View Predicted Models	View Associated Habitat	View Range Maps	1		
-------------------------------------	---------------------------------------	---	---------------------------------	---	---	---

[View in Field Guide](#) [View Predicted Models](#) [View Associated Habitat](#) [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: Apr 08, 2021)

Predictive Models:  66% Moderate (inductive),  34% Low (inductive) **Associated Habitats:**  60% Common,  27% Occasional

View in Field Guide	View Predicted Models	View Associated Habitat	View Range Maps	6	22		
-------------------------------------	---------------------------------------	---	---------------------------------	---	----	---	---

[View in Field Guide](#) [View Predicted Models](#) [View Associated Habitat](#) [View Range Maps](#)**Special Status Species - Native Species** Global: **G5** State: **S4** USFWS: **DM; BGEPA; MBTA**USFS: **Sensitive - Known on Forests (BD, BRT, CG, HLC, KOOT, LOLO)** BLM: **SENSITIVE** PIF: **2**

Delineation Criteria Confirmed nesting area buffered by a minimum distance of 2,000 meters in order to be conservative about encompassing the breeding territory and area commonly used for renesting and otherwise buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. (Last Updated: Jul 07, 2021)

Predictive Models:  64% Moderate (inductive),  34% Low (inductive) **Associated Habitats:**  36% Common,  20% Occasional

View in Field Guide	View Predicted Models	View Associated Habitat	View Range Maps	3		
-------------------------------------	---------------------------------------	---	---------------------------------	---	---	---

[View in Field Guide](#) [View Predicted Models](#) [View Associated Habitat](#) [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: Apr 08, 2021)

Predictive Models:  61% Moderate (inductive),  39% Low (inductive) **Associated Habitats:**  61% Common,  33% Occasional

View in Field Guide	View Predicted Models	View Associated Habitat	View Range Maps	3	1		
-------------------------------------	---------------------------------------	---	---------------------------------	---	---	---	---

[View in Field Guide](#) [View Predicted Models](#) [View Associated Habitat](#) [View Range Maps](#)**Species of Concern - Native Species** Global: **G5** State: **S3** USFWS: **MBTA** USFS: **Species of Conservation Concern on Forests (FLAT)**FWP SWAP: **SGCN3** PIF: **3**

Delineation Criteria Observations with direct evidence of breeding activity or indirect evidence of breeding activity between early March and mid-July within forested habitats containing Whitebark Pine (*Pinus albicaulis*), Limber Pine (*Pinus flexilis*), or Ponderosa Pine (*Pinus ponderosa*). Observations are buffered by a minimum distance of 1,000 meters in order to encompass the spring/summer breeding territory size reported for the species or the locational uncertainty of the observation to a maximum distance of 10,000 meters. (Last Updated: Dec 23, 2020)

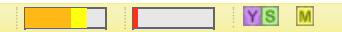
Predictive Models:  60% Moderate (inductive),  40% Low (inductive) **Associated Habitats:**  38% Common

View in Field Guide	View Predicted Models	View Associated Habitat	View Range Maps	1		
-------------------------------------	---------------------------------------	---	---------------------------------	---	---	---

[View in Field Guide](#) [View Predicted Models](#) [View Associated Habitat](#) [View Range Maps](#)**Species of Concern - Native Species** Global: **G4** State: **S3** BLM: **SENSITIVE** FWP SWAP: **SGCN3**

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: Dec 18, 2020)

Predictive Models:  58% Moderate (inductive),  42% Low (inductive) **Associated Habitats:**  60% Common,  27% Occasional

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

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

Species of Concern - Native Species Global: **G5** State: **S3** USFWS: **MBTA** 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: Apr 09, 2021)

Predictive Models:  57% Moderate (inductive),  18% Low (inductive) **Associated Habitats:**  3% Common

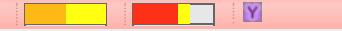
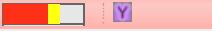
B - Pileated Woodpecker (*Dryocopus pileatus*) **SOC**  

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

Species of Concern - Native Species Global: **G5** State: **S3** USFWS: **MBTA** 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: Dec 23, 2020)

Predictive Models:  55% Moderate (inductive),  45% Low (inductive) **Associated Habitats:**  35% Common,  5% Occasional

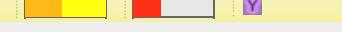
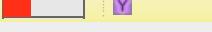
R - Western Skink (*Plestiodon skiltonianus*) **SOC**  

[View in Field Guide](#) [View Predicted Models](#) [View Associated Habitat](#) [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: Apr 09, 2021)

Predictive Models:  51% Moderate (inductive),  49% Low (inductive) **Associated Habitats:**  55% Common,  13% Occasional

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

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

Species of Concern - Native Species Global: **G5** State: **S3** USFWS: **MBTA; 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 09, 2021)

Predictive Models:  45% Moderate (inductive),  55% Low (inductive) **Associated Habitats:**  34% Common

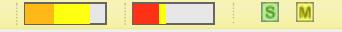
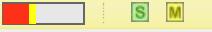
M - Hoary Bat (*Lasiurus cinereus*) **SOC**  

[View in Field Guide](#) [View Predicted Models](#) [View Associated Habitat](#) [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: Dec 18, 2020)

Predictive Models:  36% Moderate (inductive),  64% Low (inductive) **Associated Habitats:**  72% Common,  22% Occasional

B - Flammulated Owl (*Psiloscops flammeolus*) **SOC**  

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

Species of Concern - Native Species Global: **G4** State: **S3B** USFWS: **MBTA; BCC10**

USFS: **Sensitive - Known on Forests (BD, BRT, HLC, KOOT, LOLO)**

Sensitive - Suspected on Forests (CG)

Species of Conservation Concern on Forests (FLAT) 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: May 02, 2019)

Predictive Models:  35% Moderate (inductive),  44% Low (inductive) **Associated Habitats:**  32% Common,  8% Occasional

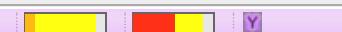
B - Golden Eagle (*Aquila chrysaetos*) **SOC**  

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

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

Delineation Criteria Confirmed nesting area buffered by a minimum distance of 3,000 meters in order to be conservative about encompassing the entire breeding territory and area commonly used for renesting and otherwise buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. (Last Updated: Jul 07, 2021)

Predictive Models:  12% Moderate (inductive),  88% Low (inductive) **Associated Habitats:**  41% Common,  2% Occasional

A - Western Toad (*Anaxyrus boreas*) **SOC**  

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

Species of Concern - Native Species Global: **G4** State: **S2** USFS: **Sensitive - Known on Forests (BD, BRT, CG, HLC, KOOT, LOLO)**

BLM: **SENSITIVE** FWP SWAP: **SGCN2**

Delineation Criteria Standing water bodies or portions of large water bodies with confirmed evidence of reproduction (calling adults, eggs, larvae or new metamorphs) buffered by 100 meters in order to reflect importance of adjacent terrestrial habitats to survival of breeding adults and newly metamorphosed juveniles. (Last Updated: Dec 29, 2020)

Predictive Models:  11% Moderate (inductive),  75% Low (inductive) **Associated Habitats:**  52% Common,  33% Occasional

M - Grizzly Bear (*Ursus arctos*) **SOC**  

[View in Field Guide](#)[View Predicted Models](#)[View Associated Habitat](#)[View Range Maps](#)**Species of Concern - Native Species**Global: **G4** State: **S2S3** USFWS: **PS: LT; XN** USFS: **Threatened on Forests (BD, CG, HLC, KOOT, LOLO)**BLM: **THREATENED** FWP SWAP: **SGCN2-3**

Delineation Criteria Species Occurrence polygons represent areas delineated by the U.S. Fish and Wildlife Service (USFWS) that encompass both home ranges and potential transitory movements based on verified sightings. Within these areas, the USFWS wants project proponents to consider whether the species may be present when evaluating the potential impacts of a project and to work with the USFWS to develop and implement best management practices to minimize or eliminate project effects on the species. (Last Updated: Dec 29, 2020)

Predictive Models: 100% Low (inductive) **Associated Habitats:** 67% Common, 3% Occasional

B - Northern Goshawk (*Accipiter gentilis*) **SOC**[View in Field Guide](#)[View Predicted Models](#)[View Associated Habitat](#)[View Range Maps](#)**Species of Concern - Native Species**Global: **G5** State: **S3** USFWS: **MBTA** 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: Dec 17, 2020)

Predictive Models: 77% Low (inductive) **Associated Habitats:** 31% Common, 4% Occasional

M - Fisher (*Pekania pennanti*) **SOC**[View in Field Guide](#)[View Predicted Models](#)[View Associated Habitat](#)[View Range Maps](#)**Species of Concern - Native Species**Global: **G5** State: **S3** USFS: **Sensitive - Known on Forests (BD, BRT, HLC, KOOT, LOLO)** BLM: **SENSITIVE**FWP SWAP: **SGCN3**

Delineation Criteria Confirmed area of occupancy based on the documented presence of adults or juveniles within tracking regions containing core habitat for the species. Outer boundaries of tracking regions are defined by areas of forest cover on individual mountain ranges or clusters of adjacent mountain ranges with continuous forest cover. (Last Updated: Aug 27, 2014)

Predictive Models: 42% Low (inductive) **Associated Habitats:** 20% Common, 15% Occasional

V - Mimulus ampliatus (*Stalk-leaved Monkeyflower*) **SOC**[View in Field Guide](#)[View Predicted Models](#)[View Range Maps](#)**Species of Concern - Native Species**Global: **G3** State: **S3** USFS: **Sensitive - Known on Forests (KOOT)**

Delineation Criteria Individual occurrences are generally based upon a discretely mapped area provided by an observer and are not separated by any pre-defined distance. Individual clusters of plants mapped at fine spatial scales (separated by less than approximately 25-50 meters) may be grouped together into one occurrence if they are not separated by distinct areas of habitat or terrain features. Point observations are buffered to encompass any locational uncertainty associated with the observation. (Last Updated: Jan 29, 2021)

Predictive Models: 33% Low (inductive)

V - Castilleja covilleana (*Coville Indian Paintbrush*) **SOC**[View in Field Guide](#)[View Predicted Models](#)[View Associated Habitat](#)[View Range Maps](#)USFS: **Sensitive - Known on Forests (BRT)****Species of Concern - Native Species**Global: **G3G4** State: **S3** **Sensitive - Suspected on Forests (BD)** MNPS: **2**

Delineation Criteria Individual occurrences are generally based upon a discretely mapped area provided by an observer and are not separated by any pre-defined distance. Individual clusters of plants mapped at fine spatial scales (separated by less than approximately 25-50 meters) may be grouped together into one occurrence if they are not separated by distinct areas of habitat or terrain features. Point observations are buffered to encompass any locational uncertainty associated with the observation. (Last Updated: Jan 29, 2021)

Predictive Models: 8% Low (inductive) **Associated Habitats:** 51% Common, 3% Occasional

I - Austrotyla montani (*A Millipede*) **SOC**[View in Field Guide](#)**Species of Concern - Native Species**Global: **G1G3** State: **S1S3**

Delineation Criteria Confirmed breeding area based on the presence of a resident animal of any age. Point observation location is buffered by a minimum distance of 100 meters in order to encompass the 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: Feb 05, 2008)

L - Arctoparmelia subcentrifuga (*Subcentric Ring Lichen*) **SOC**[View in Field Guide](#)**Species of Concern - Native Species**Global: **G4G5** State: **S1****O - Bat Roost (Non-Cave)** (*Bat Roost (Non-Cave)*) **IAH**[View in Field Guide](#)**Important Animal Habitat - Native Species**Global: **GNR** State: **SNR**

Delineation Criteria Confirmed area of occupancy based on the documented presence of adults or juveniles of any bat species at non-cave natural roost sites (e.g. rock outcrops, trees), below ground human created roost sites (e.g. mines), and above ground human created roost sites (e.g., bridges, buildings). Point observation locations are buffered by a distance of 4,500 meters in order to encompass the 95% confidence interval for nightly foraging distance reported for Townsend's Big-eared Bat (a resident Montana bat Species of Concern) and otherwise by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. (Last Updated: Oct 22, 2019)



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

Legend

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



Latitude: 46.84694
Longitude: -113.89195

Latitude: 46.89479
Longitude: -113.95499

Native Species

Summarized by: 013N018W019 (Buffered PLSS Section)

Filtered by:

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

Other Observed Species

	USFWS Sect7	# Obs	Predictive Model	Associated Habitat	Range
■ B - Hooded Merganser (<i>Lophodytes cucullatus</i>) PSOC		1	■ ■	■	■ ■ ■
View in Field Guide	View Predicted Models	View Associated Habitat	View Range Maps		
Potential Species of Concern - Native Species					
Global: G5 State: S4 USFWS: MBTA FWP SWAP: SGIN PIF: 2					
Predictive Models: ■ 45% Moderate (inductive), ■ 19% Low (inductive) Associated Habitats: ■ 5% Common					
■ B - Peregrine Falcon (<i>Falco peregrinus</i>) SOC		1	■ ■	■ ■	■ ■
View in Field Guide	View Predicted Models	View Associated Habitat	View Range Maps		
Species of Concern - Native Species					
Global: G4 State: S3 USFWS: DM; MBTA					
USFS: Sensitive - Known on Forests (BD, BRT, CG, HLC, KOOT, LOLO) BLM: SENSITIVE FWP SWAP: SGCN3 PIF: 2					
Predictive Models: ■ 16% Moderate (inductive), ■ 82% Low (inductive) Associated Habitats: ■ 40% Common, ■ 4% Occasional					
■ B - Black-backed Woodpecker (<i>Picoides arcticus</i>) SOC		1	■ ■	■ ■	■ ■
View in Field Guide	View Predicted Models	View Associated Habitat	View Range Maps		
Species of Concern - Native Species					
Global: G5 State: S3 USFWS: MBTA					
USFS: Sensitive - Known on Forests (BD, BRT, CG, HLC, KOOT, LOLO) BLM: SENSITIVE FWP SWAP: SGCN3 PIF: 1					
Predictive Models: ■ 5% Moderate (inductive), ■ 76% Low (inductive) Associated Habitats: ■ 35% Common					



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

Legend

Model Icons	Habitat Icons	Range Icons	Num Obs
			Common
			Occasional
			Year-round
			Summer
			Winter
			Migratory
			Historic



Latitude: 46.84694
Longitude: -113.89195
Latitude: 46.89479
Longitude: -113.95499

Native Species

Summarized by: 013N018W019 (Buffered PLSS Section)

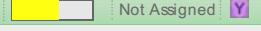
Filtered by:

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

Other Potential Species

		USFWS Sec7	Predictive Model	Associated Habitat	Range
	B - Harlequin Duck (<i>Histrionicus histrionicus</i>) SOC				
View in Field Guide	View Predicted Models	View Associated Habitat	View Range Maps		
Species of Concern - Native Species	Global: G4 State: S2B USFWS: MBTA USFS: Sensitive - Known on Forests (BD, CG, HLC, KOOT, LOLO) FWP SWAP: SGCN2 PIF: 1				
Predictive Models:	2% Suitable (native range) (deductive)	Associated Habitats:	3% Common, 2% Occasional		
	V - Carex scoparia (<i>Pointed Broom Sedge</i>) SOC				
View in Field Guide	View Predicted Models	View Associated Habitat	View Range Maps		
Species of Concern - Native Species	Global: G5 State: S1S2				
Predictive Models:	45% Optimal (inductive), 55% Moderate (inductive)				
	B - Lewis's Woodpecker (<i>Melanerpes lewis</i>) SOC				
View in Field Guide	View Predicted Models	View Associated Habitat	View Range Maps		
Species of Concern - Native Species	Global: G4 State: S2B USFWS: MBTA; BCC10; BCC17 BLM: SENSITIVE FWP SWAP: SGCN2 PIF: 2				
Predictive Models:	21% Optimal (inductive), 37% Moderate (inductive), 42% Low (inductive)	Associated Habitats:	35% Common, 1% Occasional		
	B - Western Screech-Owl (<i>Megascops kennicottii</i>) PSOC				
View in Field Guide	View Predicted Models	View Associated Habitat	View Range Maps		
Potential Species of Concern - Native Species	Global: G4G5 State: S3S4 USFWS: MBTA FWP SWAP: SGIN PIF: 3				
Predictive Models:	10% Optimal (inductive), 61% Moderate (inductive), 29% Low (inductive)	Associated Habitats:	64% Common, 1% Occasional		
	V - Dichanthelium acuminatum (<i>Panic Grass</i>) SOC				
View in Field Guide	View Predicted Models	View Associated Habitat	View Range Maps		
Species of Concern - Native Species	Global: G5 State: S2S3				
Predictive Models:	10% Optimal (inductive), 55% Moderate (inductive), 24% Low (inductive)				
	M - Western Spotted Skunk (<i>Spilogale gracilis</i>) PSOC				
View in Field Guide	View Predicted Models	View Associated Habitat	View Range Maps		
Potential Species of Concern - Native Species	Global: G5 State: SNR FWP SWAP: SGIN				
Predictive Models:	97% Moderate (inductive), 3% Low (inductive)	Associated Habitats:	53% Common, 13% Occasional		
	M - Townsend's Big-eared Bat (<i>Corynorhinus townsendii</i>) SOC				
View in Field Guide	View Predicted Models	View Associated Habitat	View Range Maps		
Species of Concern - Native Species	Global: G4 State: S3 USFS: Sensitive - Known on Forests (BD, BRT, CG, HLC, KOOT, LOLO) BLM: SENSITIVE FWP SWAP: SGCN3				
Predictive Models:	92% Moderate (inductive), 8% Low (inductive)	Associated Habitats:	60% Common, 20% Occasional		
	V - Impatiens aurella (<i>Pale-yellow Jewel-weed</i>) SOC				
View in Field Guide	View Predicted Models	View Associated Habitat	View Range Maps		
Species of Concern - Native Species	Global: G4 State: S3				
Predictive Models:	76% Moderate (inductive), 5% Low (inductive)				
	B - Rufous Hummingbird (<i>Selasphorus rufus</i>) PSOC				
View in Field Guide	View Predicted Models	View Associated Habitat	View Range Maps		
Potential Species of Concern - Native Species	Global: G4 State: S4B USFWS: MBTA; BCC10 PIF: 3				
Predictive Models:	75% Moderate (inductive), 25% Low (inductive)	Associated Habitats:	83% Common, 1% Occasional		
	B - Veery (<i>Cathartes fuscescens</i>) SOC				
View in Field Guide	View Predicted Models	View Associated Habitat	View Range Maps		
Species of Concern - Native Species	Global: G5 State: S3B USFWS: MBTA BLM: SENSITIVE FWP SWAP: SGCN3 PIF: 2				
Predictive Models:	62% Moderate (inductive), 38% Low (inductive)	Associated Habitats:	3% Common, 16% Occasional		
	M - North American Porcupine (<i>Erethizon dorsatum</i>) PSOC				

View in Field Guide	View Predicted Models	View Associated Habitat	View Range Maps	
Potential Species of Concern - Native Species Global: G5 State: S3S4 FWP SWAP: SGIN				
Predictive Models: 58% Moderate (inductive), 42% Low (inductive) Associated Habitats: 70% Common				
<input type="checkbox"/> V - <i>Draba densifolia</i> (<i>Dense-leaf Draba</i>) SOC	View in Field Guide	View Predicted Models	View Associated Habitat	View Range Maps
Species of Concern - Native Species Global: G5 State: S2 MNPS: 2				
Predictive Models: 55% Moderate (inductive), 45% Low (inductive) Associated Habitats: 1% Common				
<input type="checkbox"/> M - <i>North American Water Vole</i> (<i>Microtus richardsoni</i>) PSOC	View in Field Guide	View Predicted Models	View Associated Habitat	View Range Maps
Potential Species of Concern - Native Species Global: G5 State: S4				
Predictive Models: 53% Moderate (inductive), 1% Low (inductive) Associated Habitats: 21% Common, 1% Occasional				
<input type="checkbox"/> M - <i>Silver-haired Bat</i> (<i>Lasionycteris noctivagans</i>) PSOC	View in Field Guide	View Predicted Models	View Associated Habitat	View Range Maps
Potential Species of Concern - Native Species Global: G3G4 State: S4				
Predictive Models: 50% Moderate (inductive), 50% Low (inductive) Associated Habitats: 71% Common, 18% Occasional				
<input type="checkbox"/> M - <i>Little Brown Myotis</i> (<i>Myotis lucifugus</i>) SOC	View in Field Guide	View Predicted Models	View Associated Habitat	View Range Maps
Species of Concern - Native Species Global: G3 State: S3 FWP SWAP: SGCN3				
Predictive Models: 47% Moderate (inductive), 53% Low (inductive) Associated Habitats: 85% Common, 15% Occasional				
<input type="checkbox"/> R - <i>Northern Alligator Lizard</i> (<i>Elgaria coerulea</i>) SOC	View in Field Guide	View Predicted Models	View Associated Habitat	View Range Maps
Species of Concern - Native Species Global: G5 State: S3 FWP SWAP: SGCN3, SGIN				
Predictive Models: 36% Moderate (inductive), 64% Low (inductive) Associated Habitats: 48% Common, 33% Occasional				
<input type="checkbox"/> M - <i>Yuma Myotis</i> (<i>Myotis yumanensis</i>) SOC	View in Field Guide	View Predicted Models	View Associated Habitat	View Range Maps
Species of Concern - Native Species Global: G5 State: S3 FWP SWAP: SGIN				
Predictive Models: 35% Moderate (inductive), 53% Low (inductive) Associated Habitats: 67% Common, 21% Occasional				
<input type="checkbox"/> B - <i>Common Poorwill</i> (<i>Phalaenoptilus nuttallii</i>) PSOC	View in Field Guide	View Predicted Models	View Associated Habitat	View Range Maps
Potential Species of Concern - Native Species Global: G5 State: S4B USFWS: MBTA FWP SWAP: SGIN PIF: 3				
Predictive Models: 33% Moderate (inductive), 67% Low (inductive) Associated Habitats: 35% Common, 30% Occasional				
<input type="checkbox"/> V - <i>Utricularia intermedia</i> (<i>Flatleaf Bladderwort</i>) SOC	View in Field Guide	View Predicted Models	View Range Maps	
Species of Concern - Native Species Global: G5 State: S2 USFS: Sensitive - Known on Forests (KOOT) MNPS: 3				
Predictive Models: 26% Moderate (inductive), 36% Low (inductive)				
<input type="checkbox"/> V - <i>Madia minima</i> (<i>Small-headed Tarweed</i>) PSOC	View in Field Guide	View Predicted Models	View Range Maps	
Potential Species of Concern - Native Species Global: G4 State: S3S4				
Predictive Models: 17% Moderate (inductive), 10% Low (inductive)				
<input type="checkbox"/> V - <i>Botrychium simplex</i> (<i>Least Moonwort</i>) SOC	View in Field Guide	View Predicted Models	View Associated Habitat	View Range Maps
Species of Concern - Native Species Global: G5 State: S2				
Predictive Models: 14% Moderate (inductive), 42% Low (inductive) Associated Habitats: 1% Common				
<input type="checkbox"/> V - <i>Eleocharis rostellata</i> (<i>Beaked Spikerush</i>) SOC	View in Field Guide	View Predicted Models	View Range Maps	
USFS: Sensitive - Known on Forests (BD, CG, HLC) Species of Concern - Native Species Global: G5 State: S3 Species of Conservation Concern on Forests (FLAT) MNPS: 3				
Predictive Models: 14% Moderate (inductive), 33% Low (inductive)				
<input type="checkbox"/> V - <i>Botrychium hesperium</i> (<i>Western Moonwort</i>) SOC	View in Field Guide	View Predicted Models	View Range Maps	
Species of Concern - Native Species Global: G4 State: S3 USFS: Sensitive - Known on Forests (BD, KOOT) MNPS: 2				
Predictive Models: 14% Moderate (inductive), 29% Low (inductive)				
<input type="checkbox"/> V - <i>Allium acuminatum</i> (<i>Tapertip Onion</i>) SOC	View in Field Guide	View Predicted Models	View Range Maps	
Species of Concern - Native Species Global: G5 State: S2S3 USFS: Sensitive - Known on Forests (BD, BRT, LOLO)				
Predictive Models: 5% Moderate (inductive), 13% Low (inductive)				
<input type="checkbox"/> B - <i>Barrow's Goldeneye</i> (<i>Bucephala islandica</i>) PSOC	View in Field Guide	View Predicted Models	View Associated Habitat	View Range Maps
Potential Species of Concern - Native Species Global: G5 State: S4 USFWS: MBTA FWP SWAP: SGIN PIF: 2				
Predictive Models: 3% Moderate (inductive), 53% Low (inductive) Associated Habitats: 5% Common				

<input type="checkbox"/> V - <i>Stipa lettermanii</i> (<i>Letterman's Needlegrass</i>) SOC		Not Assigned 
View in Field Guide View Predicted Models View Range Maps		
Species of Concern - Native Species Global: G5 State: S1S3		
Predictive Models:  3% Moderate (inductive),  32% Low (inductive)		
<input type="checkbox"/> B - Horned Grebe (<i>Podiceps auritus</i>) SOC		
View in Field Guide View Predicted Models View Associated Habitat View Range Maps		
Species of Concern - Native Species Global: G5 State: S3B USFWS: MBTA BLM: SENSITIVE FWP SWAP: SGCN3 PIF: 2		
Predictive Models:  3% Moderate (inductive),  24% Low (inductive) Associated Habitats:  2% Common		
<input type="checkbox"/> V - <i>Polygonum austiniæ</i> (<i>Austin's Knotweed</i>) PSOC		
View in Field Guide View Predicted Models View Associated Habitat View Range Maps		
Potential Species of Concern - Native Species Global: G5T4 State: S3S4 USFS: Sensitive - Known on Forests (BD, HLC) MNPS: 2		
Predictive Models:  1% Moderate (inductive),  22% Low (inductive) Associated Habitats:  20% Common		
<input type="checkbox"/> M - Canada Lynx (<i>Lynx canadensis</i>) SOC		
View in Field Guide View Predicted Models View Associated Habitat View Range Maps		
Species of Concern - Native Species Global: G5 State: S3 USFWS: LT; CH BLM: Threatened, Critical Habitat on Forests (CG, HLC, KOOT, LOLO) FWP SWAP: SGCN3		
Predictive Models:  98% Low (inductive) Associated Habitats:  29% Common,  18% Occasional		
<input type="checkbox"/> B - Great Gray Owl (<i>Strix nebulosa</i>) SOC		
View in Field Guide View Predicted Models View Associated Habitat View Range Maps		
Species of Concern - Native Species Global: G5 State: S3 USFWS: MBTA BLM: SENSITIVE FWP SWAP: SGCN3, SGIN PIF: 3		
Predictive Models:  87% Low (inductive) Associated Habitats:  22% Common,  16% Occasional		
<input type="checkbox"/> B - Pacific Wren (<i>Troglodytes pacificus</i>) SOC		
View in Field Guide View Predicted Models View Associated Habitat View Range Maps		
Species of Concern - Native Species Global: G5 State: S3 USFWS: MBTA FWP SWAP: SGCN3 PIF: 2		
Predictive Models:  86% Low (inductive) Associated Habitats:  34% Common,  1% Occasional		
<input type="checkbox"/> B - Varied Thrush (<i>Ixoreus naevius</i>) SOC		
View in Field Guide View Predicted Models View Associated Habitat View Range Maps		
Species of Concern - Native Species Global: G5 State: S3B USFWS: MBTA FWP SWAP: SGCN3 PIF: 3		
Predictive Models:  80% Low (inductive) Associated Habitats:  49% Common,  1% Occasional		
<input type="checkbox"/> B - Brown Creeper (<i>Certhia americana</i>) SOC		
View in Field Guide View Predicted Models View Associated Habitat View Range Maps		
Species of Concern - Native Species Global: G5 State: S3 USFWS: MBTA FWP SWAP: SGCN3 PIF: 1		
Predictive Models:  65% Low (inductive) Associated Habitats:  34% Common,  1% Occasional		
<input type="checkbox"/> B - Yellow-billed Cuckoo (<i>Coccyzus americanus</i>) SOC		
View in Field Guide View Predicted Models View Associated Habitat View Range Maps		
Species of Concern - Native Species Global: G5 State: S3B USFWS: PS: LT; MBTA USFS: Threatened on Forests (BRT, LOLO) BLM: THREATENED FWP SWAP: SGCN3, SGIN PIF: 2		
Predictive Models:  60% Low (inductive) Associated Habitats:  3% Common		
<input type="checkbox"/> B - Meesia triquetra (<i>Meesia Moss</i>) SOC		Not Assigned 
View in Field Guide View Predicted Models View Range Maps		
USFS: Sensitive - Known on Forests (BRT, CG, KOOT) Sensitive - Suspected on Forests (LOLO)		
Species of Concern - Native Species Global: G5 State: S2 Species of Conservation Concern on Forests (FLAT)		
Predictive Models:  59% Low (inductive)		
<input type="checkbox"/> B - Bobolink (<i>Dolichonyx oryzivorus</i>) SOC		
View in Field Guide View Predicted Models View Associated Habitat View Range Maps		
Species of Concern - Native Species Global: G5 State: S3B USFWS: MBTA; BCC10; BCC11; BCC17 FWP SWAP: SGCN3 PIF: 3		
Predictive Models:  58% Low (inductive) Associated Habitats:  34% Common,  1% Occasional		
<input type="checkbox"/> V - <i>Carex crawei</i> (<i>Crawe's Sedge</i>) SOC		Not Assigned 
View in Field Guide View Predicted Models View Range Maps		
Species of Concern - Native Species Global: G5 State: S2S3 MNPS: 2		
Predictive Models:  58% Low (inductive)		
<input type="checkbox"/> B - American Bittern (<i>Botaurus lentiginosus</i>) SOC		
View in Field Guide View Predicted Models View Associated Habitat View Range Maps		
Species of Concern - Native Species Global: G5 State: S3B USFWS: MBTA BLM: SENSITIVE FWP SWAP: SGCN3 PIF: 3		
Predictive Models:  57% Low (inductive) Associated Habitats:  3% Common		
<input type="checkbox"/> M - Wolverine (<i>Gulo gulo</i>) SOC		

View in Field Guide	View Predicted Models	View Associated Habitat	View Range Maps
Species of Concern - Native Species	Global: G4 State: S3 USFS: Proposed on Forests (BD, BRT, CG, HLC, KOOT, LOLO) BLM: SENSITIVE FWP SWAP: SGCN3		
Predictive Models:  53% Low (inductive) Associated Habitats:  19% Common,  23% Occasional			
 B - Brewer's Sparrow (<i>Spizella breweri</i>) SOC			      
View in Field Guide View Predicted Models View Associated Habitat View Range Maps			
Species of Concern - Native Species	Global: G5 State: S3B USFWS: MBTA BLM: SENSITIVE FWP SWAP: SGCN3 PIF: 2		
Predictive Models:  53% Low (inductive) Associated Habitats:  1% Common			
 B - Black Swift (<i>Cypseloides niger</i>) SOC			      
View in Field Guide View Predicted Models View Associated Habitat View Range Maps			
Species of Concern - Native Species	Global: G4 State: S1B USFWS: MBTA; BCC10 USFS: Species of Conservation Concern on Forests (FLAT) FWP SWAP: SGCN1, SGIN PIF: 2		
Predictive Models:  49% Low (inductive) Associated Habitats:  3% Common			
 V - Psilocarphus brevissimus (<i>Dwarf woolly-heads</i>) SOC			      
View in Field Guide View Predicted Models View Range Maps			
Species of Concern - Native Species	Global: G4 State: S2S3 USFS: Sensitive - Known on Forests (KOOT) MNPS: 3		
Predictive Models:  47% Low (inductive)			
 A - Northern Leopard Frog (<i>Lithobates pipiens</i>) SOC			      
View in Field Guide View Predicted Models View Associated Habitat View Range Maps			
Species of Concern - Native Species	Global: G5 State: S1,S4 Sensitive - Suspected on Forests (BRT, LOLO)	BLM: SENSITIVE	
FWP SWAP: SGCN1			
Predictive Models:  46% Low (inductive) Associated Habitats:  2% Common,  3% Occasional			
 B - Black Tern (<i>Chlidonias niger</i>) SOC			      
View in Field Guide View Predicted Models View Associated Habitat View Range Maps			
Species of Concern - Native Species	Global: G4G5 State: S3B USFWS: MBTA; BCC10; BCC11; BCC17 BLM: SENSITIVE FWP SWAP: SGCN3 PIF: 2		
Predictive Models:  45% Low (inductive) Associated Habitats:  2% Common,  1% Occasional			
 B - Long-billed Curlew (<i>Numenius americanus</i>) SOC			      
View in Field Guide View Predicted Models View Associated Habitat View Range Maps			
Species of Concern - Native Species	Global: G5 State: S3B USFWS: MBTA; BCC11 BLM: SENSITIVE FWP SWAP: SGCN3 PIF: 2		
Predictive Models:  34% Low (inductive) Associated Habitats:  19% Common,  1% Occasional			
 B - Short-eared Owl (<i>Asio flammeus</i>) PSOC			      
View in Field Guide View Predicted Models View Associated Habitat View Range Maps			
Potential Species of Concern - Native Species	Global: G5 State: S4 USFWS: MBTA; BCC11; BCC17 PIF: 3		
Predictive Models:  32% Low (inductive) Associated Habitats:  27% Common,  22% Occasional			
 V - Ageratina occidentalis (<i>Western Joe-pye-weed</i>) SOC			      
View in Field Guide View Predicted Models View Associated Habitat View Range Maps			
Species of Concern - Native Species	Global: G4 State: S2 Sensitive - Suspected on Forests (BD, KOOT, LOLO)	USFS: Sensitive - Known on Forests (BRT)	
Predictive Models:  29% Low (inductive) Associated Habitats:  1% Common			
 V - Ligusticum verticillatum (<i>Idaho Lovage</i>) SOC			      
View in Field Guide View Predicted Models View Range Maps			
Species of Concern - Native Species	Global: G4G5 State: S3		
Predictive Models:  25% Low (inductive)			
 V - Elodea bifolia (<i>Long-sheath Waterweed</i>) SOC			      
View in Field Guide View Predicted Models View Associated Habitat View Range Maps			
Species of Concern - Native Species	Global: G4G5 State: S2? MNPS: 3		
Predictive Models:  21% Low (inductive) Associated Habitats:  2% Common			
 V - Cypripedium fasciculatum (<i>Clustered Lady's-slipper</i>) SOC			      
View in Field Guide View Predicted Models View Associated Habitat View Range Maps			
Species of Concern - Native Species	Global: G4 State: S3 Species of Conservation Concern on Forests (FLAT) MNPS: 1	USFS: Sensitive - Known on Forests (KOOT, LOLO)	
Predictive Models:  20% Low (inductive) Associated Habitats:  16% Common			
 V - Phlox kelseyi var. missoulensis (<i>Missoula Phlox</i>) SOC			      
View in Field Guide View Predicted Models View Associated Habitat View Range Maps			
Species of Concern - Native Species	Global: G3 State: S3 Sensitive - Suspected on Forests (LOLO)	USFS: Sensitive - Known on Forests (BD, HLC) MNPS: 2	
Predictive Models:  18% Low (inductive) Associated Habitats:  20% Common			
 V - Isoetes echinospora (<i>Spiny-spore Quillwort</i>) SOC			      
View in Field Guide View Predicted Models View Associated Habitat View Range Maps			
Species of Concern - Native Species		Not Assigned	

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

Species of Concern - Native Species

Global: G5 State: S3

Predictive Models: 14% Low (inductive)

<p><input type="checkbox"/> V - <i>Epipactis gigantea</i> (Giant Helleborine) SOC</p> <p>View in Field Guide View Predicted Models View Range Maps</p> <p>USFS: Sensitive - Known on Forests (BD, HLC, LOLO) Sensitive - Suspected on Forests (BRT, CG, KOOT)</p> <p>Species of Concern - Native Species Global: G4 State: S2S3 Species of Conservation Concern on Forests (FLAT) MNPS: 2</p> <p>Predictive Models: 13% Low (inductive)</p>
<p><input type="checkbox"/> V - <i>Scheuchzeria palustris</i> (Pod Grass) SOC</p> <p>View in Field Guide View Predicted Models View Range Maps</p> <p>USFS: Sensitive - Known on Forests (BD, KOOT, LOLO) Sensitive - Suspected on Forests (BRT)</p> <p>Species of Concern - Native Species Global: G5 State: S3 MNPS: 2</p> <p>Predictive Models: 11% Low (inductive)</p>
<p><input type="checkbox"/> V - <i>Heterocodon rariflorum</i> (Western Pearl-flower) SOC</p> <p>View in Field Guide View Predicted Models View Range Maps</p> <p>Species of Concern - Native Species Global: G5 State: S2 USFS: Sensitive - Known on Forests (BRT, KOOT, LOLO) MNPS: 2</p> <p>Predictive Models: 5% Low (inductive)</p>
<p><input type="checkbox"/> V - <i>Botrychium crenulatum</i> (Wavy Moonwort) SOC</p> <p>View in Field Guide View Predicted Models View Associated Habitat View Range Maps</p> <p>Species of Concern - Native Species Global: G4 State: S3 USFS: Sensitive - Known on Forests (BD, HLC, KOOT, LOLO) MNPS: 2</p> <p>Predictive Models: 4% Low (inductive) Associated Habitats: 1% Common</p>
<p><input type="checkbox"/> V - <i>Botrychium lanceolatum</i> (Lanceleaf Moonwort) SOC</p> <p>View in Field Guide View Predicted Models View Range Maps</p> <p>Species of Concern - Native Species Global: G5 State: S3</p> <p>Predictive Models: 4% Low (inductive)</p>
<p><input type="checkbox"/> V - <i>Botrychium paradoxum</i> (Peculiar Moonwort) SOC</p> <p>View in Field Guide View Predicted Models View Associated Habitat View Range Maps</p> <p>USFS: Sensitive - Known on Forests (BD, HLC, KOOT) Sensitive - Suspected on Forests (LOLO)</p> <p>Species of Concern - Native Species Global: G3G4 State: S3 Species of Conservation Concern on Forests (FLAT) BLM: SENSITIVE MNPS: 2</p> <p>Predictive Models: 3% Low (inductive) Associated Habitats: 1% Common</p>
<p><input type="checkbox"/> V - <i>Ranunculus hyperboreus</i> (High Northern Buttercup) PSOC</p> <p>View in Field Guide View Predicted Models View Associated Habitat View Range Maps</p> <p>Potential Species of Concern - Native Species Global: G5 State: S3S4</p> <p>Predictive Models: 3% Low (inductive) Associated Habitats: 1% Common</p>
<p><input type="checkbox"/> V - <i>Trichophorum cespitosum</i> (Tufted Club-rush) SOC</p> <p>View in Field Guide View Predicted Models View Associated Habitat View Range Maps</p> <p>USFS: Sensitive - Known on Forests (BD, HLC, KOOT)</p> <p>Species of Concern - Native Species Global: G5 State: S2 Species of Conservation Concern on Forests (FLAT) MNPS: 3</p> <p>Predictive Models: 3% Low (inductive) Associated Habitats: 1% Common</p>
<p><input type="checkbox"/> V - <i>Botrychium pedunculosum</i> (Stalked Moonwort) SOC</p> <p>View in Field Guide View Predicted Models View Range Maps</p> <p>USFS: Sensitive - Known on Forests (KOOT)</p> <p>Species of Concern - Native Species Global: G3G4 State: S2 Species of Conservation Concern on Forests (FLAT) MNPS: 3</p> <p>Predictive Models: 3% Low (inductive)</p>
<p><input type="checkbox"/> V - <i>Centunculus minimus</i> (Chaffweed) SOC</p> <p>View in Field Guide View Predicted Models View Range Maps</p> <p>Species of Concern - Native Species Global: G5 State: S2</p> <p>Predictive Models: 3% Low (inductive)</p>
<p><input type="checkbox"/> B - <i>Boreal Owl</i> (<i>Aegolius funereus</i>) PSOC</p> <p>View in Field Guide View Predicted Models View Associated Habitat View Range Maps</p> <p>Potential Species of Concern - Native Species Global: G5 State: S3S4 USFWS: MBTA FWP SWAP: SGIN PIF: 3</p> <p>Predictive Models: 1% Low (inductive) Associated Habitats: 30% Common, 3% Occasional</p>
<p><input type="checkbox"/> V - <i>Botrychium ascendens</i> (Upward-lobed Moonwort) SOC</p> <p>View in Field Guide View Predicted Models View Associated Habitat View Range Maps</p> <p>Species of Concern - Native Species Global: G3 State: S3 USFS: Sensitive - Known on Forests (HLC, KOOT) MNPS: 2</p> <p>Predictive Models: 1% Low (inductive) Associated Habitats: 1% Common</p>
<p><input type="checkbox"/> V - <i>Botrychium pinnatum</i> (Northern Moonwort) SOC</p> <p>View in Field Guide View Predicted Models View Range Maps</p> <p>Species of Concern - Native Species Global: G5 State: S3</p> <p>Predictive Models: 1% Low (inductive)</p>

<p><input type="checkbox"/> F - Lake Trout (<i>Salvelinus namaycush</i>) SOC</p> <p>View in Field Guide View Predicted Models View Range Maps</p> <p>Species of Concern - Native/Non-native Species - (depends on location or taxa) Global: G5 State: S2 FWP SWAP: SGCN2</p> <p>Predictive Models:  62% Suitable (introduced range) (deductive)</p>	 Not Assigned 
<p><input type="checkbox"/> R - Snapping Turtle (<i>Chelydra serpentina</i>) SOC</p> <p>View in Field Guide View Predicted Models View Associated Habitat View Range Maps</p> <p>Species of Concern - Native/Non-native Species - (depends on location or taxa) Global: G5 State: S3 BLM: SENSITIVE FWP SWAP: SGCN3, SGIN</p> <p>Predictive Models:  53% Suitable (introduced range) (deductive) Associated Habitats:  2% Common</p>	  
<p><input type="checkbox"/> M - Western Pygmy Shrew (<i>Sorex eximius</i>) SOC</p> <p>View in Field Guide View Associated Habitat View Range Maps</p> <p>Species of Concern - Native Species Global: GNR State: S3 FWP SWAP: SGCN3</p> <p>Associated Habitats:  43% Common,  11% Occasional</p>	 Not Available  
<p><input type="checkbox"/> M - Bison (<i>Bos bison</i>) SOC</p> <p>View in Field Guide View Associated Habitat View Range Maps</p> <p>Species of Concern - Native Species Global: G4 State: S2 FWP SWAP: SGCN2</p> <p>Associated Habitats:  38% Common,  1% Occasional</p>	 Not Available 
<p><input type="checkbox"/> B - Northern Hawk Owl (<i>Surnia ulula</i>) SOC</p> <p>View in Field Guide View Associated Habitat View Range Maps</p> <p>Species of Concern - Native Species Global: G5 State: S3 USFWS: MBTA FWP SWAP: SGCN3, SGIN</p> <p>Associated Habitats:  35% Common,  1% Occasional</p>	 Not Available  
<p><input type="checkbox"/> V - Trifolium gymnocarpon (<i>Hollyleaf Clover</i>) SOC</p> <p>View in Field Guide View Associated Habitat View Range Maps</p> <p>Species of Concern - Native Species Global: G5 State: S2 Sensitive - Known on Forests (BRT, LOLO) USFS: Sensitive - Known on Forests (BRT, LOLO)</p> <p>Associated Habitats:  35% Common</p>	 Not Available  
<p><input type="checkbox"/> B - Sharp-tailed Grouse (<i>Tympanuchus phasianellus</i>) SOC</p> <p>View in Field Guide View Associated Habitat View Range Maps</p> <p>Species of Concern - Native Species Global: G5 State: SX, S4 FWP SWAP: SGCN1 PIF: 2</p> <p>Associated Habitats:  34% Common,  3% Occasional</p>	 Not Available 
<p><input type="checkbox"/> B - Loggerhead Shrike (<i>Lanius ludovicianus</i>) SOC</p> <p>View in Field Guide View Associated Habitat View Range Maps</p> <p>Species of Concern - Native Species Global: G4 State: S3B USFWS: MBTA BLM: SENSITIVE FWP SWAP: SGCN3 PIF: 2</p> <p>Associated Habitats:  33% Common,  1% Occasional</p>	 Not Available  
<p><input type="checkbox"/> B - Tennessee Warbler (<i>Leiothlypis peregrina</i>) PSOC</p> <p>View in Field Guide View Associated Habitat View Range Maps</p> <p>Potential Species of Concern - Native Species Global: G5 State: S3S4B USFWS: MBTA</p> <p>Associated Habitats:  31% Common</p>	 Not Available 
<p><input type="checkbox"/> B - Ferruginous Hawk (<i>Buteo regalis</i>) SOC</p> <p>View in Field Guide View Associated Habitat View Range Maps</p> <p>Species of Concern - Native Species Global: G4 State: S3B USFWS: MBTA; BCC17 BLM: SENSITIVE FWP SWAP: SGCN3 PIF: 2</p> <p>Associated Habitats:  24% Common,  1% Occasional</p>	 Not Available 
<p><input type="checkbox"/> I - Polygonia progne (<i>Gray Comma</i>) SOC</p> <p>View in Field Guide View Associated Habitat View Range Maps</p> <p>Species of Concern - Native Species Global: G5 State: S2</p> <p>Associated Habitats:  21% Common,  1% Occasional</p>	 Not Available  
<p><input type="checkbox"/> V - Erigeron linearis (<i>Linear-leaf Fleabane</i>) SOC</p> <p>View in Field Guide View Associated Habitat View Range Maps</p> <p>Species of Concern - Native Species Global: G5 State: S2 MNPS: 2</p> <p>Associated Habitats:  20% Common</p>	 Not Available  
<p><input type="checkbox"/> I - Aeshna tuberculifera (<i>Black-tipped Darner</i>) PSOC</p> <p>View in Field Guide View Associated Habitat View Range Maps</p> <p>Potential Species of Concern - Native Species Global: G5 State: S2S4</p> <p>Associated Habitats:  5% Occasional</p>	 Not Available  
<p><input type="checkbox"/> I - Argia alberta (<i>Paiute Dancer</i>) PSOC</p> <p>View in Field Guide View Associated Habitat View Range Maps</p> <p>Potential Species of Concern - Native Species Global: G4 State: S2S3</p> <p>Associated Habitats:  5% Occasional</p>	 Not Available 
<p><input type="checkbox"/> I - Leucorrhinia glacialis (<i>Crimson-ringed Whiteface</i>) PSOC</p> <p>View in Field Guide View Associated Habitat View Range Maps</p>	 Not Available 

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

Potential Species of Concern - Native Species

Global: G5 State: S3

Associated Habitats:  5% Occasional

<input type="checkbox"/> I - Ophiogomphus occidentis (<i>Sinuous Snaketail</i>) PSOC	Not Available	  
View in Field Guide View Associated Habitat View Range Maps		
Potential Species of Concern - Native Species	Global: G5 State: S2S4	
Associated Habitats:  5% Common		
<input type="checkbox"/> B - Common Tern (<i>Sterna hirundo</i>) SOC	Not Available	  
View in Field Guide View Associated Habitat View Range Maps		
Species of Concern - Native Species	Global: G5 State: S3B USFWS: MBTA BLM: SENSITIVE FWP SWAP: SGCN3 PIF: 2	
Associated Habitats:  5% Common		
<input type="checkbox"/> B - Black-crowned Night-Heron (<i>Nycticorax nycticorax</i>) SOC	Not Available	 
View in Field Guide View Associated Habitat View Range Maps		
Species of Concern - Native Species	Global: G5 State: S3B USFWS: MBTA FWP SWAP: SGCN3 PIF: 3	
Associated Habitats:  5% Common		
<input type="checkbox"/> B - Trumpeter Swan (<i>Cygnus buccinator</i>) SOC	Not Available	 
View in Field Guide View Associated Habitat View Range Maps		
Species of Concern - Native Species	Global: G4 State: S3 USFWS: MBTA USFS: Sensitive - Known on Forests (BD, CG) BLM: SENSITIVE FWP SWAP: SGCN3 PIF: 1	
Associated Habitats:  5% Common		
<input type="checkbox"/> B - White-faced Ibis (<i>Plegadis chihi</i>) SOC	Not Available	 
View in Field Guide View Associated Habitat View Range Maps		
Species of Concern - Native Species	Global: G5 State: S3B USFWS: MBTA BLM: SENSITIVE FWP SWAP: SGCN3 PIF: 2	
Associated Habitats:  5% Common		
<input type="checkbox"/> I - Euphydryas gillettii (<i>Gillette's Checkerspot</i>) SOC	Not Available	 
View in Field Guide View Associated Habitat View Range Maps		
Species of Concern - Native Species	Global: G3 State: S2	
Associated Habitats:  4% Common,  23% Occasional		
<input type="checkbox"/> I - Colias gigantea (<i>Giant Sulphur</i>) PSOC	Not Available	 
View in Field Guide View Associated Habitat View Range Maps		
Potential Species of Concern - Native Species	Global: G5 State: S3	
Associated Habitats:  4% Common,  3% Occasional		
<input type="checkbox"/> I - Limenitis arthemis (<i>Red-spotted Admiral</i>) PSOC	Not Available	 
View in Field Guide View Associated Habitat View Range Maps		
Potential Species of Concern - Native Species	Global: G5 State: S2S3	
Associated Habitats:  3% Common,  3% Occasional		
<input type="checkbox"/> B - Franklin's Gull (<i>Leucophaeus pipixcan</i>) SOC	Not Available	 
View in Field Guide View Associated Habitat View Range Maps		
Species of Concern - Native Species	Global: G5 State: S3B USFWS: MBTA; BCC10; BCC11; BCC17 BLM: SENSITIVE FWP SWAP: SGCN3 PIF: 2	
Associated Habitats:  3% Common,  3% Occasional		
<input type="checkbox"/> M - Northern Bog Lemming (<i>Synaptomys borealis</i>) SOC	Not Available	 
View in Field Guide View Associated Habitat View Range Maps		
Species of Concern - Native Species	Global: G5 State: S2 USFS: Sensitive - Known on Forests (BD, BRT, HLC, KOOT, LOLO) FWP SWAP: SGCN2, SGIN	
Associated Habitats:  3% Common,  1% Occasional		
<input type="checkbox"/> I - Aeshna constricta (<i>Lance-tipped Darner</i>) PSOC	Not Available	 
View in Field Guide View Associated Habitat View Range Maps		
Potential Species of Concern - Native Species	Global: G5 State: S1S3	
Associated Habitats:  3% Common,  1% Occasional		
<input type="checkbox"/> I - Aeshna eremita (<i>Lake Darner</i>) PSOC	Not Available	  
View in Field Guide View Associated Habitat View Range Maps		
Potential Species of Concern - Native Species	Global: G5 State: S3S4	
Associated Habitats:  3% Common,  1% Occasional		
<input type="checkbox"/> I - Aeshna subarctica (<i>Subarctic Darner</i>) SOC	Not Available	 
View in Field Guide View Associated Habitat View Range Maps		
Species of Concern - Native Species	Global: G5 State: S1S2	
Associated Habitats:  3% Occasional		
<input type="checkbox"/> I - Somatochlora hudsonica (<i>Hudsonian Emerald</i>) PSOC	Not Available	 

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

Potential Species of Concern - Native Species

Global: **G5** State: **S2S4**

Associated Habitats: 3% Occasional

<input type="checkbox"/> V - Rotala ramosior (<i>Toothcup</i>) SOC	Not Available
View in Field Guide View Associated Habitat View Range Maps	
Species of Concern - Native Species	Global: G5 State: S1S2 MNPS: 4
Associated Habitats: 3% Common	
<input type="checkbox"/> V - Senecio eremophilus (<i>Desert Groundsel</i>) SOC	Not Available
View in Field Guide View Associated Habitat View Range Maps	
Potential Species of Concern - Native Species	Global: G5 State: S1S2
Associated Habitats: 3% Common	
<input type="checkbox"/> I - Libellula saturata (<i>Flame Skimmer</i>) PSOC	Not Available
View in Field Guide View Associated Habitat View Range Maps	
Potential Species of Concern - Native Species	Global: G5 State: S2S4
Associated Habitats: 2% Common, 3% Occasional	
<input type="checkbox"/> I - Somatochlora albicincta (<i>Ringed Emerald</i>) PSOC	Not Available
View in Field Guide View Associated Habitat View Range Maps	
Potential Species of Concern - Native Species	Global: G5 State: S1S3
Associated Habitats: 2% Common, 3% Occasional	
<input type="checkbox"/> I - Somatochlora minor (<i>Ocellated Emerald</i>) PSOC	Not Available
View in Field Guide View Associated Habitat View Range Maps	
Potential Species of Concern - Native Species	Global: G5 State: S2S4
Associated Habitats: 2% Common, 3% Occasional	
<input type="checkbox"/> B - Black-necked Stilt (<i>Himantopus mexicanus</i>) SOC	Not Available
View in Field Guide View Associated Habitat View Range Maps	
Species of Concern - Native Species	Global: G5 State: S3B USFWS: MBTA FWP SWAP: SGCN3 PIF: 3
Associated Habitats: 2% Common, 3% Occasional	
<input type="checkbox"/> B - Forster's Tern (<i>Sterna forsteri</i>) SOC	Not Available
View in Field Guide View Associated Habitat View Range Maps	
Species of Concern - Native Species	Global: G5 State: S3B USFWS: MBTA BLM: SENSITIVE FWP SWAP: SGCN3 PIF: 2
Associated Habitats: 2% Common, 3% Occasional	
<input type="checkbox"/> B - Caspian Tern (<i>Hydroprogne caspia</i>) SOC	Not Available
View in Field Guide View Associated Habitat View Range Maps	
Species of Concern - Native Species	Global: G5 State: S2B USFWS: MBTA BLM: SENSITIVE FWP SWAP: SGCN2 PIF: 2
Associated Habitats: 2% Common, 3% Occasional	
<input type="checkbox"/> M - Hoary Marmot (<i>Marmota caligata</i>) PSOC	Not Available
View in Field Guide View Associated Habitat View Range Maps	
Potential Species of Concern - Native Species	Global: G5 State: S3S4 FWP SWAP: SGIN
Associated Habitats: 2% Common, 1% Occasional	
<input type="checkbox"/> I - Epitheca spinigera (<i>Spiny Baskettail</i>) PSOC	Not Available
View in Field Guide View Associated Habitat View Range Maps	
Potential Species of Concern - Native Species	Global: G5 State: S3S5
Associated Habitats: 2% Common, 1% Occasional	
<input type="checkbox"/> I - Argia emma (<i>Emma's Dancer</i>) PSOC	Not Available
View in Field Guide View Associated Habitat View Range Maps	
Potential Species of Concern - Native Species	Global: G5 State: S3S5
Associated Habitats: 2% Common	
<input type="checkbox"/> I - Enallagma clausum (<i>Alkali Bluet</i>) PSOC	Not Available
View in Field Guide View Associated Habitat View Range Maps	
Potential Species of Concern - Native Species	Global: G5 State: S2S4
Associated Habitats: 2% Occasional	
<input type="checkbox"/> I - Ladona julia (<i>Chalk-fronted Corporal</i>) PSOC	Not Available
View in Field Guide View Associated Habitat View Range Maps	
Potential Species of Concern - Native Species	Global: G5 State: S3S4
Associated Habitats: 2% Common	
<input type="checkbox"/> I - Rhionaeschna californica (<i>California Darner</i>) PSOC	Not Available
View in Field Guide View Associated Habitat View Range Maps	
Potential Species of Concern - Native Species	Global: G5 State: S3S5
Associated Habitats: 2% Occasional	

<p><input type="checkbox"/> I - <i>Rhionaeschna multicolor</i> (Blue-eyed Darner) PSOC</p> <p>View in Field Guide View Associated Habitat View Range Maps</p> <p>Potential Species of Concern - Native Species Global: G5 State: S2S4</p> <p>Associated Habitats: 2% Common</p>	Not Available
<p><input type="checkbox"/> B - <i>American White Pelican</i> (<i>Pelecanus erythrorhynchos</i>) SOC</p> <p>View in Field Guide View Associated Habitat View Range Maps</p> <p>Species of Concern - Native Species Global: G4 State: S3B USFWS: MBTA FWP SWAP: SGCN3 PIF: 3</p> <p>Associated Habitats: 2% Common</p>	Not Available
<p><input type="checkbox"/> B - <i>Clark's Grebe</i> (<i>Aechmophorus clarkii</i>) SOC</p> <p>View in Field Guide View Associated Habitat View Range Maps</p> <p>Species of Concern - Native Species Global: G5 State: S3B USFWS: MBTA; BCC10; BCC11 FWP SWAP: SGCN3 PIF: 3</p> <p>Associated Habitats: 2% Common</p>	Not Available
<p><input type="checkbox"/> B - <i>Common Loon</i> (<i>Gavia immer</i>) SOC</p> <p>View in Field Guide View Associated Habitat View Range Maps</p> <p>Species of Concern - Native Species Global: G5 State: S3B USFWS: MBTA USFS: Sensitive - Known on Forests (KOOT, LOLO) FWP SWAP: SGCN3 PIF: 1</p> <p>Associated Habitats: 2% Common</p>	Not Available
<p><input type="checkbox"/> I - <i>Aeshna sitchensis</i> (Zigzag Darner) PSOC</p> <p>View in Field Guide View Associated Habitat View Range Maps</p> <p>Potential Species of Concern - Native Species Global: G5 State: S2S3</p> <p>Associated Habitats: 1% Common, 12% Occasional</p>	Not Available
<p><input type="checkbox"/> I - <i>Argia vivida</i> (Vivid Dancer) PSOC</p> <p>View in Field Guide View Associated Habitat View Range Maps</p> <p>Potential Species of Concern - Native Species Global: G5 State: S3S5</p> <p>Associated Habitats: 1% Common, 5% Occasional</p>	Not Available
<p><input type="checkbox"/> I - <i>Aeshna juncea</i> (Sedge Darner) PSOC</p> <p>View in Field Guide View Associated Habitat View Range Maps</p> <p>Potential Species of Concern - Native Species Global: G5 State: S3S5</p> <p>Associated Habitats: 1% Common, 2% Occasional</p>	Not Available
<p><input type="checkbox"/> I - <i>Leucorrhinia borealis</i> (Boreal Whiteface) SOC</p> <p>View in Field Guide View Associated Habitat View Range Maps</p> <p>Species of Concern - Native Species Global: G5 State: S1</p> <p>Associated Habitats: 1% Common, 2% Occasional</p>	Not Available
<p><input type="checkbox"/> I - <i>Sympetrum madidum</i> (Red-veined Meadowhawk) PSOC</p> <p>View in Field Guide View Associated Habitat View Range Maps</p> <p>Potential Species of Concern - Native Species Global: G5 State: S2S3</p> <p>Associated Habitats: 1% Common, 2% Occasional</p>	Not Available
<p><input type="checkbox"/> B - <i>Gray-crowned Rosy-Finch</i> (<i>Leucosticte tephrocotis</i>) SOC</p> <p>View in Field Guide View Associated Habitat View Range Maps</p> <p>Species of Concern - Native Species Global: G5 State: S2 USFWS: MBTA FWP SWAP: SGCN2, SGIN</p> <p>Associated Habitats: 1% Common</p>	Not Available
<p><input type="checkbox"/> I - <i>Somatochlora semicircularis</i> (Mountain Emerald) PSOC</p> <p>View in Field Guide View Associated Habitat View Range Maps</p> <p>Potential Species of Concern - Native Species Global: G5 State: S3S5</p> <p>Associated Habitats: 1% Common</p>	Not Available
<p><input type="checkbox"/> V - <i>Botrychium michiganense</i> (Michigan Moonwort) SOC</p> <p>View in Field Guide View Associated Habitat View Range Maps</p> <p>Species of Concern - Native Species Global: G3 State: S2</p> <p>Associated Habitats: 1% Common</p>	Not Available
<p><input type="checkbox"/> V - <i>Braya humilis</i> (Low Braya) SOC</p> <p>View in Field Guide View Associated Habitat View Range Maps</p> <p>Species of Concern - Native Species Global: G5 State: S2 MNPS: 2</p> <p>Associated Habitats: 1% Common</p>	Not Available
<p><input type="checkbox"/> V - <i>Dryopteris cristata</i> (Crested Shieldfern) PSOC</p> <p>View in Field Guide View Associated Habitat View Range Maps</p> <p>Species of Concern - Native Species Global: G5 State: S3 USFS: Sensitive - Known on Forests (BRT, KOOT, LOLO) Species of Conservation Concern on Forests (FLAT) MNPS: 3</p> <p>Associated Habitats: 1% Common</p>	Not Available
<p><input type="checkbox"/> V - <i>Hornungia procumbens</i> (<i>Hutchinsia</i>) SOC</p> <p>View in Field Guide View Associated Habitat View Range Maps</p>	Not Available

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

Species of Concern - Native Species

Global: **G5** State: **S2** MNPS: **3**Associated Habitats:  1% CommonV - *Juncus covillei* (Coville's Rush) **SOC**

Not Available

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

Species of Concern - Native Species

Global: **G5** State: **S2S3**Associated Habitats:  1% CommonV - *Pinus albicaulis* (Whitebark Pine) **SOC**

Not Available

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

Species of Concern - Native Species

Global: **G3G4** State: **S3** USFWS: **P** USFS: **Candidate on Forests (BD, BRT, CG, HLC, KOOT, LOLO)**BLM: **SENSITIVE**Associated Habitats:  1% CommonV - *Polystichum kruckebergii* (Kruckeberg's Swordfern) **SOC**

Not Available

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

Species of Concern - Native Species

Global: **G4** State: **S2S3**Associated Habitats:  1% CommonV - *Ranunculus orthorhynchus* (Straightbeak Buttercup) **SOC**

Not Available

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

Species of Concern - Native Species

Global: **G5** State: **S1S2** MNPS: **1**Associated Habitats:  1% CommonV - *Ranunculus pedatifidus* (Northern Buttercup) **SOC**

Not Available

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

Species of Concern - Native Species

Global: **G5** State: **S3** MNPS: **2**Associated Habitats:  1% CommonB - *Black Rosy-Finch* (*Leucosticte atrata*) **SOC**

Not Available

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

Species of Concern - Native Species

Global: **G4** State: **S2** USFWS: **MBTA; BCC10** FWP SWAP: **SGCN2, SGIN** PIF: **2**Associated Habitats:  1% CommonB - *Sage Thrasher* (*Oreoscoptes montanus*) **SOC**

Not Available

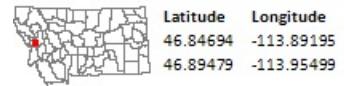
[View in Field Guide](#)[View Associated Habitat](#)[View Range Maps](#)

Species of Concern - Native Species

Global: **G4** State: **S3B** USFWS: **MBTA** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **3**Associated Habitats:  1% Common



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



Structured Surveys

Summarized by: **013N018W019 (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.

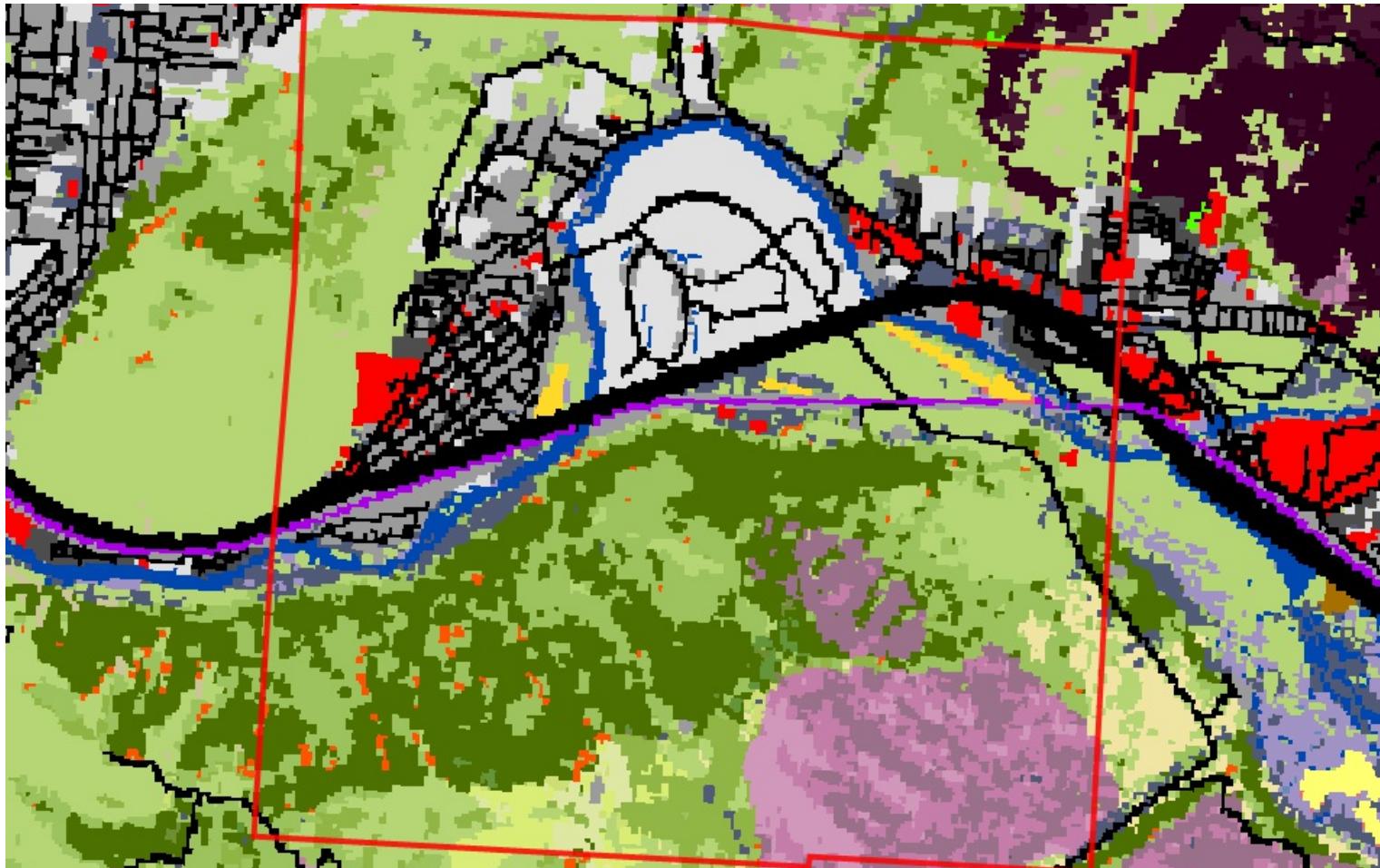
B-Bald Eagle Nest <i>(Bald Eagle Nest Survey)</i>	Survey Count: 17	Obs Count: 17	Recent Survey: 2017
B-Flammulated Owl Call Playback <i>(Flammulated Owl Call Playback Survey)</i>	Survey Count: 5	Obs Count: 3	Recent Survey: 2009
B-Point Count <i>(Bird Point Count)</i>	Survey Count: 6	Obs Count: 49	Recent Survey: 2013
B-Raptor nest <i>(Raptor Nest Survey)</i>	Survey Count: 1	Obs Count: 1	Recent Survey: 2018
E-Eastern Heath Snail <i>(Eastern Heath Snail Survey)</i>	Survey Count: 1	Obs Count:	Recent Survey: 2012
E-Eurasian Water-milfoil Rake <i>(Rake tows/pulls for Eurasian Water-milfoil)</i>	Survey Count: 7	Obs Count: 5	Recent Survey: 2019
E-Invasive Mussel Plankton Tow <i>(Plankton tows for veligers of Invasive Mussels)</i>	Survey Count: 2	Obs Count:	Recent Survey: 2020
E-Kicknet <i>(Kicknet Collection Survey for Invasive Mussels and Snails)</i>	Survey Count: 3	Obs Count: 1	Recent Survey: 2020
E-Noxious Weed, Road-based <i>(Noxious Weed Road-based Visual Surveys)</i>	Survey Count: 12	Obs Count: 25	Recent Survey: 2003
E-Noxious Weed, Visual <i>(Noxious Weed Visual Surveys)</i>	Survey Count: 3	Obs Count: 21	Recent Survey: 2009
E-Visual Aquatic Invasives <i>(Visual Encounter Surveys for Aquatic Invasives on Shorelines or Underwater)</i>	Survey Count: 5	Obs Count: 1	Recent Survey: 2020
F-Fish Electrofishing <i>(Fish Electrofishing Surveys)</i>	Survey Count: 7	Obs Count: 4	Recent Survey: 2014
I-Aquatic Invert Lotic Dipnet <i>(Invertebrate Lotic Site Dipnet and Visual Encounter Survey)</i>	Survey Count: 2	Obs Count: 43	Recent Survey: 2003
I-Mussel <i>(Stream Mussel Survey)</i>	Survey Count: 3	Obs Count:	Recent Survey: 2007
M-Bat Roost (Active Season) <i>(Bat Roost (Active Season) Survey)</i>	Survey Count: 1	Obs Count: 1	Recent Survey: 2014



Latitude	Longitude
46.84694	-113.89195
46.89479	-113.95499

Land Cover

Summarized by: 013N018W019 (Buffered PLSS Section)



Grassland Systems Montane Grassland

Rocky Mountain Lower Montane, Foothill, and Valley Grassland

19% (1,089
Acres)

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



Forest and Woodland Systems

Conifer-dominated forest and woodland (xeric-mesic)

Rocky Mountain Dry-Mesic Montane Mixed Conifer Forest

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



Forest and Woodland Systems

Conifer-dominated forest and woodland (xeric-mesic)

Rocky Mountain Ponderosa Pine Woodland and Savanna

This system occurs on warm, dry, exposed sites in the foothills of the Rocky Mountains in west-central and central Montana, at the ecotone between grasslands or shrublands and more mesic coniferous forests. Elevations range from 1,066 to 1,676 meters (3,500-5,500 feet), with higher elevation examples mostly confined to central Montana. Occurrences are found on all slopes and aspects; however, moderately steep to very steep slopes or ridgetops are most common. True savanna types are infrequent; the system is more characteristically an open forest with a grassy understory. In the western part of the state, this system is seen mostly on dry slopes in the rainshadow of the Bitterroot Mountains. East of the Continental Divide, it is most widespread around Helena and Lewistown, although it occurs throughout mountain ranges as far east as the Little Rocky and Bearpaw Mountains. Ponderosa pine (*Pinus ponderosa*) is the dominant conifer. Douglas-fir (*Pseudotsuga menziesii*) and western larch (*Larix occidentalis*) may be present in the tree canopy in the more western areas, but are usually absent. In central Montana, limber pine (*Pinus flexilis*) and horizontal juniper (*Juniperus horizontalis*) are frequently components. Although the understory of ponderosa pine forests is often shrubby in other states, in Montana, habitats are mostly dominated by graminoids, although bitterbrush (*Purshia tridentata*), white snowberry (*Symporicarpos albus*), and skunkrush (*Rhus trilobata*) occur in forests on benchlands and rocky slopes in the central portion of the state. Understory vegetation is more typically grasses and forbs that resprout following low to moderate intensity surface fires. Prolonged drought, beetle kill and exotic invasion are rapidly changing the dynamics of this system.



Human Land Use

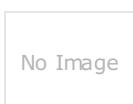
Developed

Developed, Open Space

8% (437 Acres)

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.



Human Land Use

Developed

Other Roads

6% (369 Acres)

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



Human Land Use

Developed

Low Intensity Residential

6% (329 Acres)

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.



Recently Disturbed or Modified

Harvested Forest

Harvested forest-tree regeneration

5% (281 Acres)

Land cover has been modified by logging. New growth is primarily trees.



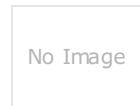
Recently Disturbed or Modified

Harvested Forest

Harvested forest-shrub regeneration

4% (219 Acres)

Land cover has been modified by logging. New growth is primarily shrubs.

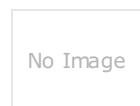


Human Land Use Developed

Interstate

3% (168 Acres)

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



Shrubland, Steppe and Savanna Systems Deciduous Shrubland

Rocky Mountain Montane-Foothill Deciduous Shrubland

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



Wetland and Riparian Systems Floodplain and Riparian

Northern Rocky Mountain Lower Montane Riparian Woodland and Shrubland

3% (160 Acres)

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 amygdaloidea*), or Rocky Mountain juniper (*Juniperus scopulorum*). Dominant shrubs include Rocky Mountain maple (*Acer glabrum*), thinleaf alder (*Alnus incana*), river birch (*Betula occidentalis*), redosier 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 (*Symporicarpos* species).



Wetland and Riparian Systems Open Water

Open Water

2% (135 Acres)

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



Recently Disturbed or Modified Harvested Forest

Harvested forest-grass regeneration

2% (109 Acres)

Land cover has been modified by logging. New growth is primarily herbaceous species.

Additional Limited Land Cover

1% (80 Acres) Commercial / Industrial

1% (58 Acres) Major Roads

1% (56 Acres) High Intensity Residential

1% (50 Acres) Recently burned forest

1% (48 Acres) Rocky Mountain Subalpine-Upper Montane Grassland

1% (39 Acres) Railroad

1% (35 Acres) Rocky Mountain Subalpine Deciduous Shrubland

1% (33 Acres) Montane Sagebrush Steppe

1% (30 Acres) Insect-Killed Forest

<1% (28 Acres) Cultivated Crops

<1% (18 Acres) Rocky Mountain Cliff, Canyon and Massive Bedrock

<1% (13 Acres) Alpine-Montane Wet Meadow

<1% (13 Acres) Recently burned shrubland

- <1% (13 Acres) █ [Rocky Mountain Subalpine-Montane Mesic Meadow](#)
- <1% (12 Acres) █ [Rocky Mountain Lodgepole Pine Forest](#)
- <1% (3 Acres) █ [Rocky Mountain Subalpine Dry-Mesic Spruce-Fir Forest and Woodland](#)
- <1% (2 Acres) █ [Introduced Upland Vegetation - Annual and Biennial Forbland](#)
- <1% (1 Acres) █ [Aspen Forest and Woodland](#)
- <1% (1 Acres) █ [Post-Fire Recovery](#)
- <1% (0 Acres) █ [Rocky Mountain Subalpine Mesic Spruce-Fir Forest and Woodland](#)
- <1% (0 Acres) █ [Rocky Mountain Conifer Swamp](#)

Wetland and Riparian

Summarized by: 013N018W019 (Buffered PLSS Section)



Wetland and Riparian Mapping

[Explain](#)

P - Palustrine

 AB - Aquatic Bed

F - Semipermanently Flooded

7 Acres

 h - Diked/Impounded
 x - Excavated

 2 Acres PABFh
 5 Acres PABFx

P - Palustrine, AB - Aquatic Bed

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

 EM - Emergent

A - Temporarily Flooded

2 Acres

(no modifier)

2 Acres PEMA

P - Palustrine, EM - Emergent

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

C - Seasonally Flooded

<1 Acres

(no modifier)

<1 Acres PEMC

 SS - Scrub-Shrub

A - Temporarily Flooded

4 Acres

(no modifier)

4 Acres PSSA

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.

C - Seasonally Flooded

<1 Acres

(no modifier)

<1 Acres PSSC

L - Lacustrine (Lakes)

1 - Limnetic

■ UB - Unconsolidated Bottom

H - Permanently Flooded

6 Acres

h - Diked/Impounded

6 Acres L1UBHh

L - Lacustrine (Lakes), 1 - Limnetic, UB - Unconsolidated Bottom

Deep waterbodies with mud or silt covering at least 25% of the bottom.

2 - Littoral

■ UB - Unconsolidated Bottom

H - Permanently Flooded

<1 Acres

h - Diked/Impounded

<1 Acres L2UBHh

L - Lacustrine (Lakes), 2 - Littoral, UB - Unconsolidated Bottom

Shorelines where mud, silt or other fine particles comprise at least 25% of the substrate.

R - Riverine (Rivers)

2 - Lower Perennial

■ UB - Unconsolidated Bottom

H - Permanently Flooded

55 Acres

(no modifier)

55 Acres R2UBH

R - Riverine (Rivers), 2 - Lower 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

4 Acres

(no modifier)

4 Acres R2USA

R - Riverine (Rivers), 2 - Lower 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.

3 - Upper Perennial

■ UB - Unconsolidated Bottom

H - Permanently Flooded

75 Acres

(no modifier)

75 Acres R3UBH

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

2 Acres

(no modifier)

2 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.

Rp - Riparian

1 - Lotic

■ SS - Scrub-Shrub

(no modifier)

27 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)

31 Acres Rp1FO

Rp - Riparian, 1 - Lotic, FO - Forested

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

■ EM - Emergent

(no modifier)

12 Acres Rp1EM

Rp - Riparian, 1 - Lotic, EM - Emergent

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



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



Latitude 46.84694
Longitude -113.89195
Latitude 46.89479
Longitude -113.95499

Land Management

Summarized by: 013N018W019 (Buffered PLSS Section)



Land Management Summary

[Explain](#)

	Ownership	Tribal	Easements	Other Boundaries (possible overlap)
Public Lands	2,974 Acres (52%)			
Federal	2,349 Acres (41%)			
US Forest Service	2,348 Acres (41%)			
USFS Owned	2,348 Acres (41%)			
USFS Ranger Districts				664 Acres
Lolo National Forest, Missoula Ranger District				664 Acres
USFS National Forest Boundaries				664 Acres
Lolo National Forest				664 Acres
US Government	1 Acres (<1%)			
US Government Owned	1 Acres (<1%)			
State	226 Acres (4%)			
Montana State Trust Lands	149 Acres (3%)			
MT State Trust Owned	149 Acres (3%)			
Montana Fish, Wildlife and Parks	70 Acres (1%)			
MTFWP Owned	70 Acres (1%)			
MTFWP Fishing Access Sites				1 Acres
Sha-Ron Fishing Access Site				1 Acres
Montana University System	3 Acres (<1%)			
MUS Owned	3 Acres (<1%)			
Montana Department of Transportation	3 Acres (<1%)			

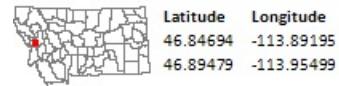
Land Management Summary

[Explain](#)

	Ownership	Tribal	Easements	Other Boundaries (possible overlap)
MTDOT Owned	3 Acres (<1%)			
+ State of Montana	1 Acres (<1%)			
State of Montana Owned	1 Acres (<1%)			
+ Local	399 Acres (7%)			
Local Government	399 Acres (7%)			
Local Government Owned	399 Acres (7%)			
Conservation Easements				155 Acres (3%)
+ Private				155 Acres (3%)
Five Valleys Land Trust				155 Acres (3%)
Private Lands or Unknown Ownership	2,614 Acres (46%)			



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



Biological Reports

Summarized by: **013N018W019 (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

- Loomis, H.F. and Rupert Schmitt. 1971. ***The ecology, distribution, and taxonomy of the millipedes of Montana west of the continental divide.*** Northwest Science. Vol. 45 No. 2:107-131.
- Missoula County Weed District. ***Geodatabases with sample site location data related to AIS surveys beginning in 2011 on waterbodies in western Montana***



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

Legend

Model Icons	Habitat Icons	Range Icons	Num Obs	Latitude	Longitude
Suitable (native range)	Common	Suspect (invasive / pest)	Count of obs with 'good precision' (<=1000m)	46.84694	-113.89195
Optimal Suitability	Occasional	Documented (invasive / pest)	+ indicates additional 'poor precision' obs (1001m-10,000m)	46.89479	-113.95499
Moderate Suitability		Released (biocontrol)			
Low Suitability		Established (biocontrol)			
Suitable (introduced range)					

Invasive and Pest Species

Summarized by: 013N018W019 (Buffered PLSS Section)

	# Obs	Predictive Model	Associated Habitat	Range
Aquatic Invasive Species				
V - <i>Iris pseudacorus</i> (Yellowflag Iris) N2A/AIS	4		Not Assigned	
View in Field Guide View Predicted Models View Range Maps				
Noxious Weed: Priority 2A - Aquatic Invasive Species - Non-native Species				
Predictive Models: 55% Optimal (inductive), 6% Moderate (inductive), 15% Low (inductive)				
V - <i>Butomus umbellatus</i> (Flowering-rush) N2A/AIS			Not Assigned	
View in Field Guide View Predicted Models View Range Maps				
Noxious Weed: Priority 2A - Aquatic Invasive Species - Non-native Species				
Predictive Models: 10% Optimal (inductive), 11% Moderate (inductive), 37% Low (inductive)				
A - American Bullfrog (<i>Lithobates catesbeianus</i>) AIS				
View in Field Guide View Predicted Models View Associated Habitat View Range Maps				
Aquatic Invasive Species - Non-native Species				
Predictive Models: 66% Low (inductive) Associated Habitats: 5% Common, 1% Occasional				
V - <i>Myriophyllum spicatum</i> (Eurasian Water-milfoil) N2A/AIS			Not Assigned	
View in Field Guide View Predicted Models View Range Maps				
Noxious Weed: Priority 2A - Aquatic Invasive Species - Non-native Species				
Predictive Models: 48% Low (inductive)				
V - <i>Nymphaea odorata</i> (American Water-lily) AIS			Not Available	
View in Field Guide View Associated Habitat View Range Maps				
Aquatic Invasive Species - Non-native Species				
Associated Habitats: 2% Common				
Noxious Weeds: Priority 1A				
V - <i>Centaurea solstitialis</i> (Yellow Starthistle) N1A			Not Assigned	
View in Field Guide View Predicted Models View Range Maps				
Noxious Weed: Priority 1A - Non-native Species				
Predictive Models: 58% Optimal (inductive), 2% Moderate (inductive), 22% Low (inductive)				
V - <i>Isatis tinctoria</i> (Dyer's Woad) N1A			Not Assigned	
View in Field Guide View Predicted Models View Range Maps				
Noxious Weed: Priority 1A - Non-native Species				
Predictive Models: 55% Moderate (inductive), 15% Low (inductive)				
V - <i>Taeniatherum caput-medusae</i> (Medusahead) N1A			Not Assigned	
View in Field Guide View Predicted Models View Range Maps				
Noxious Weed: Priority 1A - Non-native Species				
Predictive Models: 64% Low (inductive)				
V - <i>Phragmites australis</i> ssp. <i>australis</i> (European Common Reed) N1A			Not Assigned	
View in Field Guide View Predicted Models View Range Maps				
Noxious Weed: Priority 1A - Non-native Species				
Predictive Models: 44% Low (inductive)				
Noxious Weeds: Priority 1B				
V - <i>Cytisus scoparius</i> (Scotch Broom) N1B			Not Assigned	
View in Field Guide View Predicted Models View Range Maps				
Noxious Weed: Priority 1B - Non-native Species				
Predictive Models: 64% Optimal (inductive), 36% Moderate (inductive), 0% Low (inductive)				
V - <i>Polygonum cuspidatum</i> (Japanese Knotweed) N1B	2		Not Assigned	
View in Field Guide View Predicted Models View Range Maps				
Noxious Weed: Priority 1B - Non-native Species				
Predictive Models: 55% Optimal (inductive), 5% Moderate (inductive), 29% Low (inductive)				
V - <i>Lythrum salicaria</i> (Purple Loosestrife) N1B			Not Assigned	
View in Field Guide View Predicted Models View Range Maps				
Noxious Weed: Priority 1B - Non-native Species				
Predictive Models: 64% Optimal (inductive), 36% Moderate (inductive), 0% Low (inductive)				

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

Noxious Weed: Priority 1B - Non-native Species

Global: **G5** State: **SNA**Predictive Models:  34% Optimal (inductive),  31% Moderate (inductive),  4% Low (inductive) V - *Echium vulgare* (Blueweed) **N1B**

Not Assigned

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

Noxious Weed: Priority 1B - Non-native Species

Global: **GNR** State: **SNA**Predictive Models:  32% Optimal (inductive),  33% Moderate (inductive),  34% Low (inductive) V - *Chondrilla juncea* (Rush Skeletonweed) **N1B**

Not Assigned

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

Noxious Weed: Priority 1B - Non-native Species

Global: **GNR** State: **SNA**Predictive Models:  21% Moderate (inductive),  64% Low (inductive)**Noxious Weeds: Priority 2A** V - *Hieracium praealtum* (Kingdevil Hawkweed) **N2A**

Not Assigned

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

Noxious Weed: Priority 2A - Non-native Species

Global: **GNR** State: **SNA**Predictive Models:  60% Optimal (inductive),  18% Moderate (inductive),  19% Low (inductive) V - *Iris pseudacorus* (Yellowflag Iris) **N2A/AIS**

4



Not Assigned

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

Noxious Weed: Priority 2A - Aquatic Invasive Species - Non-native Species

Global: **GNR** State: **SNA**Predictive Models:  55% Optimal (inductive),  6% Moderate (inductive),  15% Low (inductive) V - *Rhamnus cathartica* (Common Buckthorn) **N2A**

1



Not Assigned

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

Noxious Weed: Priority 2A - Non-native Species

Global: **GNR** State: **SNA**Predictive Models:  47% Optimal (inductive),  13% Moderate (inductive),  11% Low (inductive) V - *Lepidium latifolium* (Perennial Pepperweed) **N2A**

119



Not Assigned

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

Noxious Weed: Priority 2A - Non-native Species

Global: **GNR** State: **SNA**Predictive Models:  42% Optimal (inductive),  14% Moderate (inductive),  14% Low (inductive) V - *Ventenata dubia* (Ventenata) **N2A**

Not Assigned

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

Noxious Weed: Priority 2A - Non-native Species

Global: **GNR** State: **SNA**Predictive Models:  28% Optimal (inductive),  56% Moderate (inductive),  16% Low (inductive) V - *Butomus umbellatus* (Flowering-rush) **N2A/AIS**

Not Assigned

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

Noxious Weed: Priority 2A - Aquatic Invasive Species - Non-native Species

Global: **G5** State: **SNA**Predictive Models:  10% Optimal (inductive),  11% Moderate (inductive),  37% Low (inductive) V - *Hieracium aurantiacum* (Orange Hawkweed) **N2A**

1



Not Assigned

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

Noxious Weed: Priority 2A - Non-native Species

Global: **GNR** State: **SNA**Predictive Models:  58% Moderate (inductive),  42% Low (inductive) V - *Ranunculus acris* (Tall Buttercup) **N2A**

8



Not Assigned

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

Noxious Weed: Priority 2A - Non-native Species

Global: **G5** State: **SNA**Predictive Models:  55% Moderate (inductive),  45% Low (inductive) V - *Hieracium caespitosum* (Meadow Hawkweed) **N2A**

Not Assigned

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

Noxious Weed: Priority 2A - Non-native Species

Global: **GNR** State: **SNA**Predictive Models:  33% Moderate (inductive),  67% Low (inductive) V - *Senecio jacobaea* (Tansy Ragwort) **N2A**

Not Assigned

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

Noxious Weed: Priority 2A - Non-native Species

Global: **GNR** State: **SNA**Predictive Models:  100% Low (inductive) V - *Myriophyllum spicatum* (Eurasian Water-milfoil) **N2A/AIS**

Not Assigned

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

Noxious Weed: Priority 2A - Aquatic Invasive Species - Non-native Species

Global: **GNR** State: **SNA**Predictive Models:  48% Low (inductive)**Noxious Weeds: Priority 2B** V - *Tanacetum vulgare* (Common Tansy) **N2B**

311



Not Assigned



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

Noxious Weed: Priority 2B - Non-native Species

Global: **GNR** State: **SNA**Predictive Models:  58% Optimal (inductive),  31% Moderate (inductive),  11% Low (inductive)

<input type="checkbox"/> V - <i>Linaria dalmatica</i> (Dalmatian Toadflax) N2B	1122	  	Not Assigned	
View in Field Guide View Predicted Models View Range Maps				
Noxious Weed: Priority 2B - Non-native Species	Global: G5 State: SNA			
Predictive Models:  45% Optimal (inductive),  27% Moderate (inductive),  28% Low (inductive)				
<input type="checkbox"/> V - <i>Centaurea diffusa</i> (Diffuse Knapweed) N2B		  	Not Assigned	
View in Field Guide View Predicted Models View Range Maps				
Noxious Weed: Priority 2B - Non-native Species	Global: GNR State: SNA			
Predictive Models:  11% Optimal (inductive),  34% Moderate (inductive),  32% Low (inductive)				
<input type="checkbox"/> V - <i>Hypericum perforatum</i> (Common St. John's-wort) N2B	10	  	Not Assigned	
View in Field Guide View Predicted Models View Range Maps				
Noxious Weed: Priority 2B - Non-native Species	Global: GNR State: SNA			
Predictive Models:  10% Optimal (inductive),  61% Moderate (inductive),  29% Low (inductive)				
<input type="checkbox"/> V - <i>Linaria vulgaris</i> (Yellow Toadflax) N2B	1	  	Not Assigned	
View in Field Guide View Predicted Models View Range Maps				
Noxious Weed: Priority 2B - Non-native Species	Global: GNR State: SNA			
Predictive Models:  3% Optimal (inductive),  68% Moderate (inductive),  28% Low (inductive)				
<input type="checkbox"/> V - <i>Cynoglossum officinale</i> (Common Hound's-tongue) N2B	74	  	Not Assigned	
View in Field Guide View Predicted Models View Range Maps				
Noxious Weed: Priority 2B - Non-native Species	Global: GNR State: SNA			
Predictive Models:  77% Moderate (inductive),  23% Low (inductive)				
<input type="checkbox"/> V - <i>Potentilla recta</i> (Sulphur Cinquefoil) N2B	111	  	Not Assigned	
View in Field Guide View Predicted Models View Range Maps				
Noxious Weed: Priority 2B - Non-native Species	Global: GNR State: SNA			
Predictive Models:  75% Moderate (inductive),  25% Low (inductive)				
<input type="checkbox"/> V - <i>Leucanthemum vulgare</i> (Oxeye Daisy) N2B	9	  	Not Assigned	
View in Field Guide View Predicted Models View Range Maps				
Noxious Weed: Priority 2B - Non-native Species	Global: GNR State: SNA			
Predictive Models:  65% Moderate (inductive),  35% Low (inductive)				
<input type="checkbox"/> V - <i>Centaurea stoebe</i> (Spotted Knapweed) N2B	639	  	Not Assigned	
View in Field Guide View Predicted Models View Range Maps				
Noxious Weed: Priority 2B - Non-native Species	Global: GNR State: SNA			
Predictive Models:  32% Moderate (inductive),  66% Low (inductive)				
<input type="checkbox"/> V - <i>Euphorbia virgata</i> (Leafy Spurge) N2B	799	  	Not Assigned	
View in Field Guide View Predicted Models View Range Maps				
Noxious Weed: Priority 2B - Non-native Species	Global: GNR State: SNA			
Predictive Models:  32% Moderate (inductive),  57% Low (inductive)				
<input type="checkbox"/> V - <i>Acroptilon repens</i> (Russian Knapweed) N2B		  	Not Assigned	
View in Field Guide View Predicted Models View Range Maps				
Noxious Weed: Priority 2B - Non-native Species	Global: GNR State: SNA			
Predictive Models:  3% Moderate (inductive),  68% Low (inductive)				
<input type="checkbox"/> V - <i>Berteroa incana</i> (Hoary False-alyssum) N2B		  	Not Assigned	
View in Field Guide View Predicted Models View Range Maps				
Noxious Weed: Priority 2B - Non-native Species	Global: GNR State: SNA			
Predictive Models:  95% Low (inductive)				
<input type="checkbox"/> V - <i>Cirsium arvense</i> (Canada Thistle) N2B	54	  	Not Assigned	
View in Field Guide View Predicted Models View Range Maps				
Noxious Weed: Priority 2B - Non-native Species	Global: G5 State: SNA			
Predictive Models:  87% Low (inductive)				
<input type="checkbox"/> V - <i>Lepidium draba</i> (Whitetop) N2B	58	  	Not Assigned	
View in Field Guide View Predicted Models View Range Maps				
Noxious Weed: Priority 2B - Non-native Species	Global: GNR State: SNA			
Predictive Models:  67% Low (inductive)				
<input type="checkbox"/> V - <i>Convolvulus arvensis</i> (Field Bindweed) N2B	26	  	Not Assigned	
View in Field Guide View Predicted Models View Range Maps				
Noxious Weed: Priority 2B - Non-native Species	Global: GNR State: SNA			
Predictive Models:  45% Low (inductive)				

<input type="checkbox"/> V - Tamarix ramosissima (Salt Cedar) N2B	2		Not Assigned	
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 2B - Non-native Species Global: GNR State: SNA				
Predictive Models: 24% Low (inductive)				
Regulated Weeds: Priority 3				
<input type="checkbox"/> V - Bromus tectorum (Cheatgrass) R3	157		Not Assigned	
View in Field Guide View Predicted Models View Range Maps Regulated Weed: Priority 3 - Non-native Species Global: GNR State: SNA				
Predictive Models: 1% Optimal (inductive), 99% Moderate (inductive)				
<input type="checkbox"/> V - Elaeagnus angustifolia (Russian Olive) R3	4		Not Assigned	
View in Field Guide View Predicted Models View Range Maps Regulated Weed: Priority 3 - Non-native Species Global: GNR State: SNA				
Predictive Models: 79% Low (inductive)				
Biocontrol Species				
<input type="checkbox"/> I - Oberea erythrocephala (Red-headed Leafy Spurge Stem Borer) BIOCCTRL			Not Assigned	
View in Field Guide View Predicted Models View Range Maps Biocontrol Species - Non-native Species Global: GNR State: SNA				
Predictive Models: 50% Optimal (inductive), 37% Moderate (inductive), 9% Low (inductive)				
<input type="checkbox"/> I - Mecinus janthinus (Yellow Toadflax Stem-boring Weevil) BIOCCTRL			Not Assigned	
View in Field Guide View Predicted Models View Range Maps Biocontrol Species - Non-native Species Global: GNR State: SNA				
Predictive Models: 43% Optimal (inductive), 21% Moderate (inductive), 2% Low (inductive)				
<input type="checkbox"/> I - Cyphocleonus achates (Knapweed Root Weevil) BIOCCTRL			Not Assigned	
View in Field Guide View Predicted Models View Range Maps Biocontrol Species - Non-native Species Global: GNR State: SNA				
Predictive Models: 11% Optimal (inductive), 50% Moderate (inductive), 37% Low (inductive)				
<input type="checkbox"/> I - Mecinus janthiniformis (Dalmatian Toadflax Stem-boring Weevil) BIOCCTRL			Not Assigned	
View in Field Guide View Predicted Models View Range Maps Biocontrol Species - Non-native Species Global: GNR State: SNA				
Predictive Models: 10% Optimal (inductive), 83% Moderate (inductive), 7% Low (inductive)				
<input type="checkbox"/> I - Aphthona lacertosa (Brown-legged Leafy Spurge Flea Beetle) BIOCCTRL			Not Assigned	
View in Field Guide View Predicted Models View Range Maps Biocontrol Species - Non-native Species Global: GNR State: SNA				
Predictive Models: 50% Moderate (inductive), 10% Low (inductive)				
<input type="checkbox"/> I - Aphthona nigricutis (Black Dot Leafy Spurge Flea Beetle) BIOCCTRL			Not Assigned	
View in Field Guide View Predicted Models View Range Maps Biocontrol Species - Non-native Species Global: GNR State: SNA				
Predictive Models: 34% Moderate (inductive), 42% Low (inductive)				

Introduction to Montana Natural Heritage Program



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

INTRODUCTION

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

VISION

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

CORE VALUES

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

CONFIDENTIALITY

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

INFORMATION MANAGED

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

Data Use Terms and Conditions

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

Suggested Contacts for Natural Resource Agencies

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

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

Montana Fish, Wildlife, and Parks

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

United States Fish and Wildlife Service:

Information Planning and Conservation (IPAC) website: <http://ecos.fws.gov/ipac/>

Montana Ecological Services Field Office: <http://www.fws.gov/montanafieldoffice/> (406) 449-5225

Bureau of Land Management

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

United States Forest Service

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

Tribal Nations

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

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

[Alberta Conservation Information Management System](#)

[British Columbia Conservation Data Centre](#)

[Idaho Natural Heritage Program](#)

[North Dakota Natural Heritage Program](#)

[Saskatchewan Conservation Data Centre](#)

[South Dakota Natural Heritage Program](#)

[Wyoming Natural Diversity Database](#)

Invasive Species Management Contacts and Information

Aquatic Invasive Species

[Montana Fish, Wildlife, and Parks Aquatic Invasive Species staff](#)

[Montana Department of Natural Resources and Conservation's Aquatic Invasive Species Grant Program](#)

[Montana Invasive Species Council \(MISC\)](#)

[Upper Columbia Conservation Commission \(UC3\)](#)

Noxious Weeds

[Montana Weed Control Association Contacts Webpage](#)

[Montana Biological Weed Control Coordination Project](#)

[Montana Department of Agriculture - Noxious Weeds](#)

[Montana Weed Control Association](#)

[Montana Fish, Wildlife, and Parks - Noxious Weeds](#)

[Montana State University Integrated Pest Management Extension](#)

[Integrated Noxious Weed Management after Wildfires](#)

Introduction to Native Species

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

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

Observations

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

Species Occurrences

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

Plant Species Occurrences

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

Animal Species Occurrences

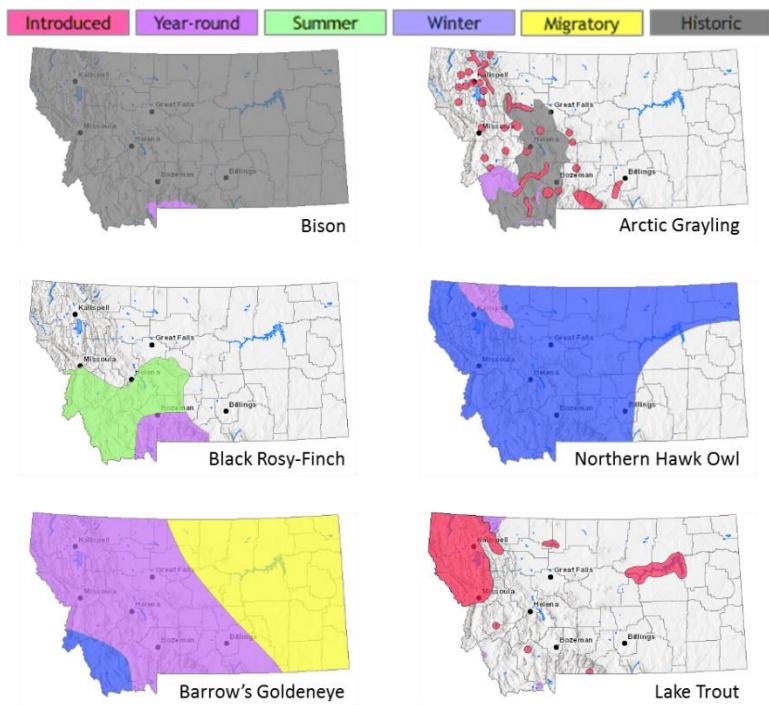
The location of a verified observation or specimen record typically known or assumed to represent a breeding population or a portion of a breeding population. Animal SO's are generally: (1) buffers of terrestrial point observations based on documented species' home range sizes; (2) buffers of stream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

Other Occurrence Polygons

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

Geographic Range Polygons

Geographic range polygons have not yet been defined for most plant species. Native year-round, summer, winter, migratory and historic geographic range polygons as well as polygons for introduced populations have



been defined for most animal species for which there are enough observations, surveys, and knowledge of appropriate seasonal habitat use to define them (see examples to left). These native or introduced range polygons bound the extent of known or likely occupied habitats for non-migratory and relative sedentary species and the regular extent of known or likely occupied habitats for migratory and long-distance dispersing species; polygons may include unsuitable intervening habitats. For most species, a single polygon can represent the year-round or seasonal range, but breeding ranges of some colonial nesting water birds and some introduced species are represented more patchily when supported by data. Some ranges are mapped more broadly than actual distributions in order to be visible on statewide maps (e.g., fish).

Predicted Suitable Habitat Models

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

Associated Habitats

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

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

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

Introduction to Land Cover

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

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

Literature Cited

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

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

Introduction to Wetland and Riparian

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

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

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

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

Literature Cited

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

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

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

Introduction to Land Management

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

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

Public and private conservation land polygons are attributed with the name of the entity that owns it. The data are derived from the statewide Montana Cadastral Parcel layer. Conservation easement data shows land parcels on which a public agency or qualified land trust has placed a conservation easement in cooperation with the land owner. The dataset contains no information about ownership or status of the mineral estate. For questions about the dataset or to report errors, please contact the Montana Natural Heritage Program at (406) 444-5363 or mtnhp@mt.gov. You can download various components of the Land Management Database and view associated metadata at the Montana State Library’s [GIS Data List](#) at the following links:

[Public Lands](#)

[Conservation Easements](#)

[Private Conservation Lands](#)

[Managed Areas](#)

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

Introduction to Invasive and Pest Species

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

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

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

Additional Information Resources

[Home Page for Montana Natural Heritage Program \(MTNHP\)](#)

[MTNHP Staff Contact Information](#)

[Montana Field Guide](#)

[MTNHP Species of Concern Report - Animals and Plants](#)

[MTNHP Species Status Codes - Explanation](#)

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

[MTNHP Request Information page](#)

[Montana Cadastral](#)

[Montana Code Annotated](#)

[Montana Department of Environmental Quality](#)

[Montana Fisheries Information System](#)

[Montana Fish, Wildlife, and Parks Subdivision Recommendations](#)

[Montana GIS Data Layers](#)

[Montana GIS Data Bundler](#)

[Montana Greater Sage-Grouse Project Submittal Site](#)

[Montana Ground Water Information Center](#)

[Montana Legislative Environmental Policy Office Publications](#)

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

[Montana Environmental Policy Act \(MEPA\)](#)

[MEPA Analysis Resource List](#)

[Laws, Treaties, Regulations, and Permits on Animals and Plants](#)

[Montana Spatial Data Infrastructure Layers](#)

[Montana State Historic Preservation Office Review and Compliance](#)

[Montana Water Information System](#)

[Montana Web Map Services](#)

[National Environmental Policy Act](#)

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

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

[Web Soil Survey Tool](#)