

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Gallatin County, Montana



Local office

Montana Ecological Services Field Office

☎ (406) 449-5225

📅 (406) 449-5339

585 Shephard Way, Suite 1
Helena, MT 59601-6287

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

- 1. Draw the project location and click CONTINUE.
- 2. Click DEFINE PROJECT.
- 3. Log in (if directed to do so).
- 4. Provide a name and description for your project.
- 5. Click REQUEST SPECIES LIST.

Listed species¹ and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries²).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

- 1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
- 2. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
Canada Lynx <i>Lynx canadensis</i> There is final critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/3652	Threatened
Grizzly Bear <i>Ursus arctos horribilis</i> There is proposed critical habitat for this species. https://ecos.fws.gov/ecp/species/7642	Threatened
North American Wolverine <i>Gulo gulo luscus</i> Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/5123	Threatened

Insects

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> Wherever found There is proposed critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/9743	Proposed Threatened

Suckley's Cuckoo Bumble Bee *Bombus suckleyi*

Proposed Endangered

No critical habitat has been designated for this species.
<https://ecos.fws.gov/ecp/species/10885>

Conifers and Cycads

NAME	STATUS
Whitebark Pine <i>Pinus albicaulis</i> Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/1748	Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

You are still required to determine if your project(s) may have effects on all above listed species.

Bald & Golden Eagles

Bald and Golden Eagles are protected under the Bald and Golden Eagle Protection Act ² and the Migratory Bird Treaty Act (MBTA) ¹. Any person or organization who plans or conducts activities that may result in impacts to Bald or Golden Eagles, or their nests, should follow appropriate regulations and implement required avoidance and minimization measures, as described in the various links on this page.

The [data](#) in this location indicates that no eagles have been observed in this area. This does not mean eagles are not present in your project area, especially if the area is difficult to survey. Please review the 'Steps to Take When No Results Are Returned' section of the [Supplemental Information on Migratory Birds and Eagles document](#) to determine if your project is in a poorly surveyed area. If it is, you may need to rely on other resources to determine if eagles may be present (e.g. your local FWS field office, state surveys, your own surveys).

Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds>
- Nationwide avoidance and minimization measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>
- Supplemental Information for Migratory Birds and Eagles in IPaC <https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

Bald and Golden Eagle information is not available at this time

Bald & Golden Eagles FAQs

What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are an eagle ([Bald and Golden Eagle Protection Act](#) requirements may apply).

Proper interpretation and use of your eagle report

On the graphs provided, please look carefully at the survey effort (indicated by the black vertical line) and for the existence of the "no data" indicator (a red horizontal line). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort line or no data line (red horizontal) means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list and associated information help you know what to look for to confirm presence and helps guide you in knowing when to implement avoidance and minimization measures to eliminate or reduce potential impacts from your project activities or get the appropriate permits should presence be confirmed.

How do I know if eagles are breeding, wintering, or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating, or resident), you may query your location using the [RAIL Tool](#) and view the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If an eagle on your IPaC migratory bird species list has a breeding season associated with it (indicated by yellow vertical bars on the phenology graph in your "IPaC PROBABILITY OF PRESENCE SUMMARY" at the top of your results list), there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

Interpreting the Probability of Presence Graphs

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. A taller bar indicates a higher probability of species presence. The survey effort can be used to establish a level of confidence in the presence score.

How is the probability of presence score calculated? The calculation is done in three steps:

The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.

The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season ()

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort ()

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data ()

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

Migratory birds

The Migratory Bird Treaty Act (MBTA) ¹ prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior [authorization](#) by the Department of Interior U.S. Fish and Wildlife Service (FWS).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds>
- Nationwide avoidance and minimization measures for birds
- Supplemental Information for Migratory Birds and Eagles in IPaC <https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

Migratory bird information is not available at this time

Migratory Bird FAQs

Tell me more about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Avoidance & Minimization Measures for Birds](#) describes measures that can help avoid and minimize impacts to all birds at any location year-round. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is one of the most effective ways to minimize impacts. To see when birds are most likely to occur and breed in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location, such as those listed under the Endangered Species Act or the [Bald and Golden Eagle Protection Act](#) and those species marked as "Vulnerable". See the FAQ "What are the levels of concern for migratory birds?" for more information on the levels of concern covered in the IPaC migratory bird species list.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) with which your project intersects. These species have been identified as warranting special attention because they are BCC species in that area, an eagle ([Bald and Golden Eagle Protection Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, and to verify survey effort when no results present, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

Why are subspecies showing up on my list?

Subspecies profiles are included on the list of species present in your project area because observations in the AKN for **the species** are being detected. If the species are present, that means that the subspecies may also be present. If a subspecies shows up on your list, you may need to rely on other resources to determine if that subspecies may be present (e.g. your local FWS field office, state surveys, your own surveys).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go to the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating, or resident), you may query your location using the [RAIL Tool](#) and view the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your IPaC migratory bird species list has a breeding season associated with it (indicated by yellow vertical bars on the phenology graph in your "IPaC PROBABILITY OF PRESENCE SUMMARY" at the top of your results list), there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern \(BCC\)](#) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Bald and Golden Eagle Protection Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially BCC species. For more information on avoidance and minimization measures you can implement to help avoid and minimize migratory bird impacts, please see the FAQ "Tell me more about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds".

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Proper interpretation and use of your migratory bird report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please look carefully at the survey effort (indicated by the black vertical line) and for the existence of the "no data" indicator (a red horizontal line). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list does not represent all birds present in your project area. It is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list and associated information help you know what to look for to confirm presence and helps guide implementation of avoidance and minimization measures to eliminate or reduce potential impacts from your project activities, should presence be confirmed. To learn more about avoidance and minimization measures, visit the FAQ "Tell me about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds".

Interpreting the Probability of Presence Graphs

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Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Wetland information is not available at this time

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the [NWI map](#) to view wetlands at this location.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

NOT FOR CONSULTATION



MONTANA STATE LIBRARY

NATURAL HERITAGE PROGRAM

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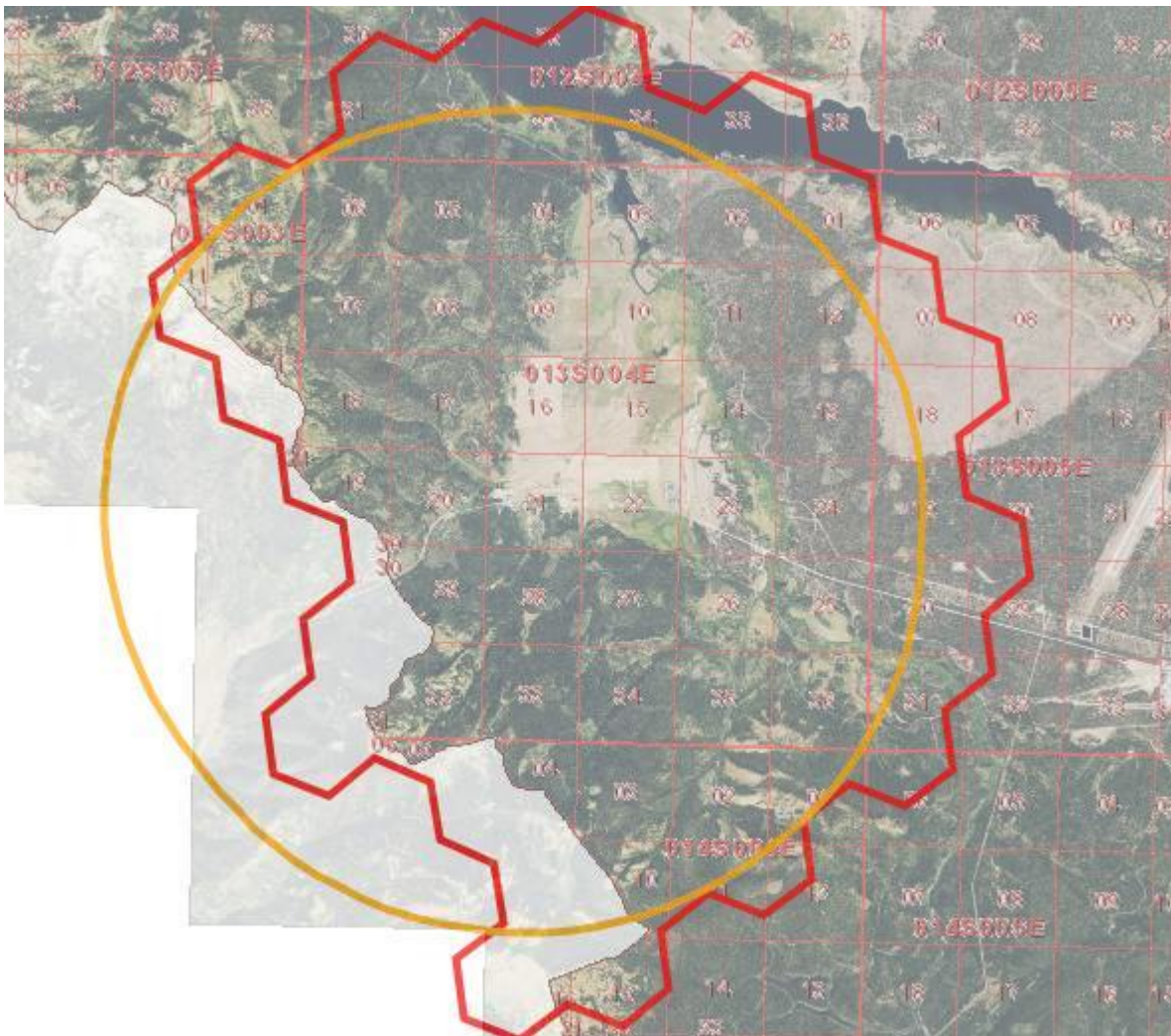


Latitude	Longitude
44.60460	-111.14370
44.76274	-111.32421

Summarized by:

25PRVT0265 - Eagles Landing

(Custom Area of Interest)



Suggested Citation

Montana Natural Heritage Program. Environmental Summary Report.

for Latitude 44.60460 to 44.76274 and Longitude -111.14370 to -111.32421. Retrieved on 4/2/2025.

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



Environmental Summary

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Introduction to Environmental Summary Report

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

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

Legend

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



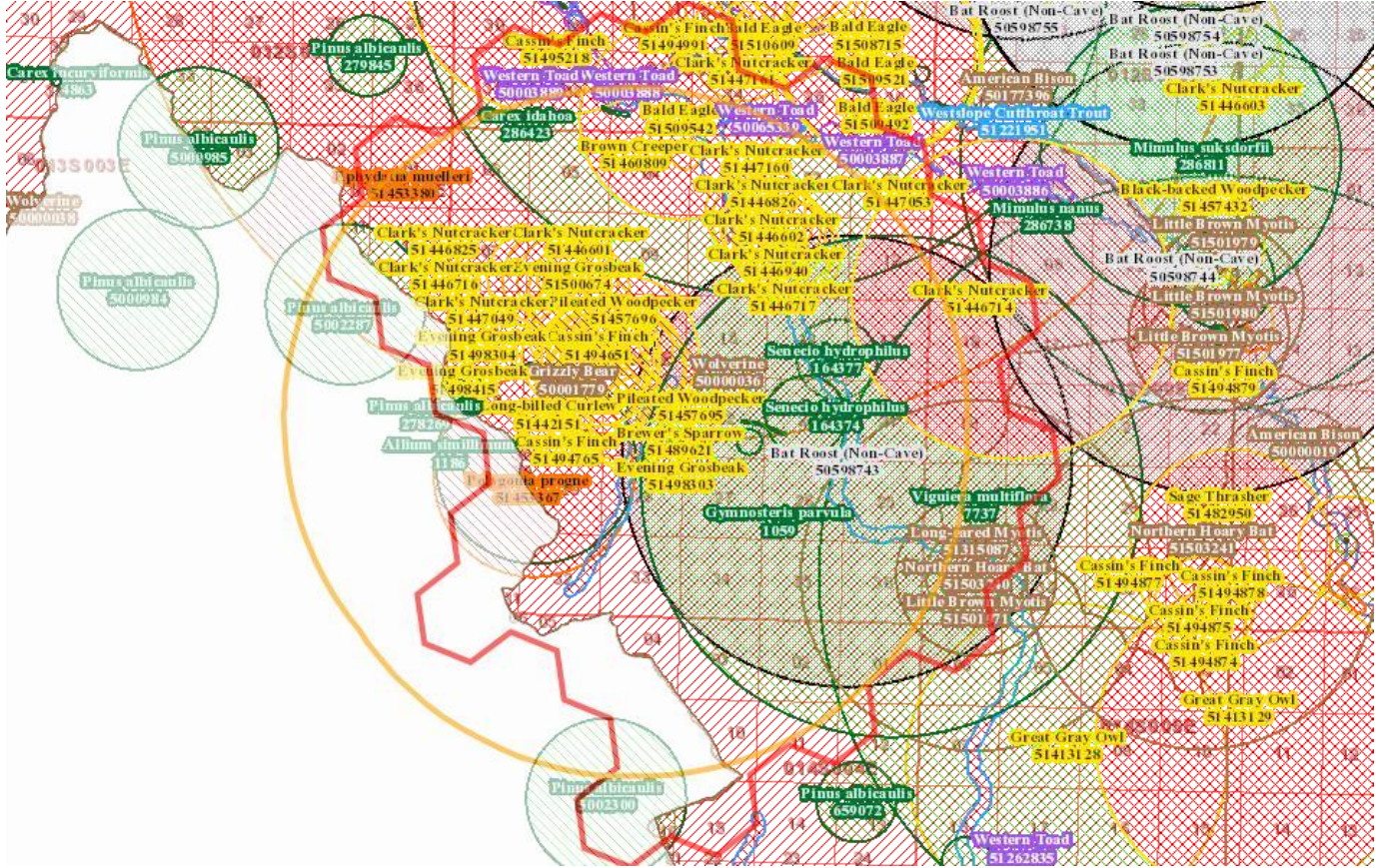
Latitude 44.60460 Longitude -111.14370
44.76274 -111.32421

Native Species

Summarized by: **25PRVT0265 - Eagles Landing (Custom Area of Interest)**

Filtered by:

Native Species reports are filtered for Species with MT Status = Species of Concern, Special Status, Important Animal Habitat, Potential SOC



Species Occurrences

	USFWS Sec7	# SO	# Obs	Predicted Model	Range
V - <i>Gymnosteris parvula</i> (Small-flower <i>Gymnosteris</i>) SOC		1			
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G4 State: S2 Plant Threat Score: No Known Threats 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) Predicted Models: 48% Suitable (native range) (deductive)					
F - <i>Westslope Cutthroat Trout</i> (<i>Oncorhynchus lewisi</i>) SOC		1			
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native/Non-native Species - (depends on location or taxa) Global: G4 State: S2 USFS: Sensitive - Known in Forests (BD, BRT, KOOT, LOLO) Species of Conservation Concern in Forests (CG, HLC) BLM: SENSITIVE FWP SWAP: SGCN2 Delineation Criteria Stream reaches and standing water bodies where the species presence has been confirmed through direct capture or where they are believed to be present based on the professional judgement of a fisheries biologist due to confirmed presence in adjacent areas. In order to reflect the importance of adjacent terrestrial habitats to survival, stream reaches are buffered 100 meters, standing water bodies greater than 1 acre are buffered 50 meters, and standing water bodies less than 1 acre are buffered 30 meters into the terrestrial habitat based on PACFISH/INFISH Riparian Conservation Area standards. (Last Updated: Mar 08, 2024) Predicted Models: 37% Suitable (native range) (deductive)					
V - <i>Viguiera multiflora</i> (Many-flowered <i>Viguiera</i>) SOC		1			
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G4G5 State: S2S3 Plant Threat Score: No Known Threats 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: Mar 17, 2023) Predicted Models: 23% Suitable (native range) (deductive)					

V - Senecio hydrophilus (Alkali-marsh Ragwort) SOC		2	2		Y
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G5 State: S3 Plant Threat Score: No Known Threats Predicted Models: 8% Suitable (native range) (deductive)					
V - Myriophyllum quitense (Andean Water-milfoil) SOC		3	3		Y
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G4? State: S3 Plant Threat Score: No Known Threats Predicted Models: 3% Suitable (native range) (deductive)					
V - Mimulus nanus (Dwarf Purple Monkeyflower) SOC		3	2		Y
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G5 State: S2S3 USFS: Sensitive - Known in Forests (BRT) Species of Conservation Concern in Forests (CG) Plant Threat Score: High - Low CCVI: Extremely Vulnerable Delineation Criteria Individual occurrences are generally based upon a discretely mapped area provided by an observer and are not separated by any pre-defined distance. Individual clusters of plants mapped at fine spatial scales (separated by less than approximately 25-50 meters) may be grouped together into one occurrence if they are not separated by distinct areas of habitat or terrain features. Point observations are buffered to encompass any locational uncertainty associated with the observation. (Last Updated: May 01, 2024) Predicted Models: 18% Optimal (inductive), 38% Moderate (inductive), 33% Low (inductive)					
V - Castilleja gracillima (Slender Indian Paintbrush) SOC		4	4		Y
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G3G4 State: S2 Plant Threat Score: Low CCVI: Highly Vulnerable Delineation Criteria Individual occurrences are generally based upon a discretely mapped area provided by an observer and are not separated by any pre-defined distance. Individual clusters of plants mapped at fine spatial scales (separated by less than approximately 25-50 meters) may be grouped together into one occurrence if they are not separated by distinct areas of habitat or terrain features. Point observations are buffered to encompass any locational uncertainty associated with the observation. (Last Updated: May 07, 2024) Predicted Models: 12% Optimal (inductive), 28% Moderate (inductive), 50% Low (inductive)					
M - Grizzly Bear (Ursus arctos) SOC		1	7		Y
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G4 State: S3 USFWS: LT BLM: THREATENED FWP SWAP: SGCN2-3 Delineation Criteria Species Occurrence polygons represent areas delineated by the U.S. Fish and Wildlife Service (USFWS) that encompass both home ranges and potential transitory movements based on verified sightings. Within these areas, the USFWS wants project proponents to consider whether the species "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 26, 2024) Predicted Models: 10% Optimal (inductive), 80% Moderate (inductive), 2% Low (inductive)					
B - Clark's Nutcracker (Nucifraga columbiana) SOC		23	45		Y
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G5 State: S3 USFWS: MBTA USFS: Species of Conservation Concern in Forests (FLAT) FWP SWAP: SGCN3 PIF: 3 Delineation Criteria Observations with direct evidence of breeding activity or indirect evidence of breeding activity between early March and mid-July within forested habitats containing Whitebark Pine (Pinus albicaulis), Limber Pine (Pinus flexilis), or Ponderosa Pine (Pinus ponderosa). Observations are buffered by a minimum distance of 1,000 meters in order to encompass the spring/summer breeding territory size reported for the species or the locational uncertainty of the observation to a maximum distance of 5,000 meters. (Last Updated: Dec 18, 2024) Predicted Models: 85% Moderate (inductive), 10% Low (inductive)					
M - Wolverine (Gulo gulo) SOC		7	1		Y
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G4 State: S3 USFWS: LT USFS: Sensitive - Known in Forests (LOLO) BLM: THREATENED FWP SWAP: SGCN3 Delineation Criteria Confirmed area of occupancy supported by recent (post-1980), nearby (within 10 kilometers) observations of adults or juveniles. Tracking regions were defined by areas of primary habitat and adjacent female dispersal habitat as modeled by Inman et al. (2013). These regions were buffered by 1 kilometer in order to link smaller areas and account for potential inaccuracies in independent variables used in the model. (Last Updated: Dec 26, 2024) Predicted Models: 85% Moderate (inductive), 7% Low (inductive)					
B - Cassin's Finch (Haemorhous cassinii) SOC		8	17		Y
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G5 State: S4 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 5,000 meters. (Last Updated: Dec 26, 2024) Predicted Models: 77% Moderate (inductive), 15% Low (inductive)					
B - Pileated Woodpecker (Dryocopus pileatus) SOC		2	4		Y
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G5 State: S3 USFWS: MBTA FWP SWAP: SGCN3 PIF: 2 Delineation Criteria Observations with evidence of breeding activity buffered by a minimum distance of 1,500 meters in order to be conservative about encompassing home ranges and otherwise buffered by the locational uncertainty associated with the observation up to a maximum distance of 5,000 meters. (Last Updated: Dec 20, 2024) Predicted Models: 63% Moderate (inductive), 22% Low (inductive)					
B - Great Gray Owl (Strix nebulosa) PSOC		1	3		Y
View in Field Guide View Predicted Models View Range Maps Potential Species of Concern - Native Species Global: G5 State: S3S4 USFWS: MBTA BLM: SENSITIVE FWP SWAP: SGCN3, SGIN PIF: 3 Predicted Models: 58% Moderate (inductive), 30% Low (inductive)					
B - Evening Grosbeak (Coccothraustes vespertinus) SOC		9	15		Y
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G5 State: S3 USFWS: MBTA; BCC10 FWP SWAP: SGCN3 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 5,000 meters. (Last Updated: Dec 26, 2024) Predicted Models: 53% Moderate (inductive), 38% Low (inductive)					

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B - Long-billed Curlew (Numenius americanus) SOC		8	22		S M
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G4 State: S3B USFWS: MBTA; BCC11 BLM: SENSITIVE FWP SWAP: SGCN3 PIF: 2 Delineation Criteria Confirmed breeding area based on the presence of a nest, chicks, or territorial adults during the breeding season. Point observation location is buffered by a minimum distance of 200 meters in order to approximate the breeding territory size reported for the species in Idaho and otherwise is buffered by the locational uncertainty associated with the observation up to a maximum distance of 5,000 meters. (Last Updated: Dec 18, 2024) Predicted Models: 15% Low (inductive)					
M - American Bison (Bos bison) SOC		1	1	Not Assessed:	Y H
View in Field Guide View Range Maps Species of Concern - Native Species Global: G4 State: S3 FWP SWAP: SGCN2 Delineation Criteria Managed areas where the species occurs for at least a portion of the year as a free ranging herd, including areas where they are heavily managed to prevent the spread of brucellosis to cattle through spatial and temporal separation of bison and cattle. (Last Updated: Mar 29, 2016)					
I - Polygonia progne (Gray Comma) SOC		1	1	Not Assessed:	Y
View in Field Guide View Range Maps Species of Concern - Native Species Global: G5 State: S2 Delineation Criteria Confirmed breeding area based on the presence of a resident animal of any age/stage. Point observation location is buffered by a minimum distance of 2,000 meters in order to encompass documented travel distances of some butterfly species 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: Dec 18, 2024)					
V - Allium simillimum (Simil Onion) SOC		1		Not Assessed:	Y
View in Field Guide View Range Maps Species of Concern - Native Species Global: G4 State: S2? USFS: Sensitive - Known in Forests (BD, KOOT) Plant Threat Score: No Known Threats Delineation Criteria Individual occurrences are generally based upon a discretely mapped area provided by an observer and are not separated by any pre-defined distance. Individual clusters of plants mapped at fine spatial scales (separated by less than approximately 25-50 meters) may be grouped together into one occurrence if they are not separated by distinct areas of habitat or terrain features. Point observations are buffered to encompass any locational uncertainty associated with the observation. (Last Updated: Jan 20, 2023)					
V - Carex idahoa (Idaho Sedge) SOC		1		Not Assessed:	Y
View in Field Guide View Range Maps Species of Concern - Native Species Global: G3 State: S3 USFS: Sensitive - Known in Forests (BD) BLM: SENSITIVE Plant Threat Score: High CCVI: Highly Vulnerable Delineation Criteria Individual occurrences are generally based upon a discretely mapped area provided by an observer and are not separated by any pre-defined distance. Individual clusters of plants mapped at fine spatial scales (separated by less than approximately 25-50 meters) may be grouped together into one occurrence if they are not separated by distinct areas of habitat or terrain features. Point observations are buffered to encompass any locational uncertainty associated with the observation. (Last Updated: Mar 17, 2023)					
I - Ephydatia muelleri (Mueller's Freshwater Sponge) SSS		1		Not Assessed:	
View in Field Guide Special Status Species - Native Species Global: G2G4 State: SNR					
O - Bat Roost (Non-Cave) (Bat Roost (Non-Cave)) IAH		2		Not Assessed:	
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 5,000 meters. (Last Updated: Oct 22, 2019)					

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



Latitude 44.60460
Longitude -111.14370
44.76274 -111.32421

Native Species

Summarized by: **25PRVT0265 - Eagles Landing** (*Custom Area of Interest*)

Filtered by:

Native Species reports are filtered for Species with MT Status = Species of Concern, Special Status, Important Animal Habitat, Potential SOC

Other Observed Species

	USFWS Sec7	# Obs	Predicted Model	Range
☐ B - Barrow's Goldeneye (<i>Bucephala islandica</i>) PSOC		12		
View in Field Guide View Predicted Models View Range Maps Potential Species of Concern - Native Species Global: G5 State: S4 USFWS: MBTA FWP SWAP: SGIN PIF: 2 Predicted Models: 10% Optimal (inductive), 38% Moderate (inductive), 35% Low (inductive)				
☐ B - American Goshawk (<i>Accipiter atricapillus</i>) SOC		2		
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G5 State: S3 USFWS: MBTA FWP SWAP: SGCN3 PIF: 2 Predicted Models: 7% Optimal (inductive), 48% Moderate (inductive), 33% Low (inductive)				
☐ B - Trumpeter Swan (<i>Cygnus buccinator</i>) SOC		12		
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G4 State: S3 USFWS: MBTA BLM: SENSITIVE FWP SWAP: SGCN3 PIF: 1 Predicted Models: 7% Optimal (inductive), 10% Moderate (inductive), 23% Low (inductive)				
☐ B - White-faced Ibis (<i>Plegadis chihi</i>) SOC		1		
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G5 State: S3B USFWS: MBTA BLM: SENSITIVE FWP SWAP: SGCN3 PIF: 2 Predicted Models: 7% Optimal (inductive), 8% Low (inductive)				
☐ B - Broad-tailed Hummingbird (<i>Selasphorus platycercus</i>) PSOC		10		
View in Field Guide View Predicted Models View Range Maps Potential Species of Concern - Native Species Global: G5 State: S4B USFWS: MBTA; BCC10 FWP SWAP: SGIN Predicted Models: 2% Optimal (inductive), 25% Moderate (inductive), 55% Low (inductive)				
☐ M - Uinta Ground Squirrel (<i>Urocitellus armatus</i>) PSOC		1		
View in Field Guide View Predicted Models View Range Maps Potential Species of Concern - Native Species Global: G5 State: SU FWP SWAP: SGIN Predicted Models: 43% Moderate (inductive), 15% Low (inductive)				
☐ B - Boreal Owl (<i>Aegolius funereus</i>) PSOC		14		
View in Field Guide View Predicted Models View Range Maps Potential Species of Concern - Native Species Global: G5 State: S3S4B USFWS: MBTA FWP SWAP: SGIN PIF: 3 Predicted Models: 32% Moderate (inductive), 50% Low (inductive)				
☐ M - North American Porcupine (<i>Erethizon dorsatum</i>) PSOC		5		
View in Field Guide View Predicted Models View Range Maps Potential Species of Concern - Native Species Global: G5 State: S3S4 FWP SWAP: SGIN Predicted Models: 17% Moderate (inductive), 63% Low (inductive)				
☐ B - American White Pelican (<i>Pelecanus erythrorhynchos</i>) SOC		56		
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G4 State: S3B USFWS: MBTA FWP SWAP: SGCN3 PIF: 3 Predicted Models: 15% Moderate (inductive), 37% Low (inductive)				
☐ B - Rufous Hummingbird (<i>Selasphorus rufus</i>) PSOC		3		
View in Field Guide View Predicted Models View Range Maps Potential Species of Concern - Native Species Global: G4 State: S4B USFWS: MBTA; BCC10 PIF: 3 Predicted Models: 12% Moderate (inductive), 50% Low (inductive)				
☐ B - Black-backed Woodpecker (<i>Picoides arcticus</i>) SOC		1		
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G5 State: S3 USFWS: MBTA USFS: Sensitive - Known in Forests (LOLO) BLM: SENSITIVE FWP SWAP: SGCN3 PIF: 1 Predicted Models: 12% Moderate (inductive), 45% Low (inductive)				
☐ M - Silver-haired Bat (<i>Lasiurus noctivagans</i>) SOC		1		
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G3G4 State: S3 Predicted Models: 8% Moderate (inductive), 83% Low (inductive)				

B - Franklin's Gull (<i>Leucophaeus pipixcan</i>)	SOC	2		S M
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G5 State: S3B USFWS: MBTA; BCC10; BCC11; BCC17 BLM: SENSITIVE FWP SWAP: SGCN3 PIF: 2 Predicted Models: M 3% Moderate (inductive), L 10% Low (inductive)				
B - Great Blue Heron (<i>Ardea herodias</i>)	SOC	50		Y S M
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G5 State: S3 USFWS: MBTA FWP SWAP: SGCN3 Predicted Models: M 2% Moderate (inductive), L 23% Low (inductive)				
B - Hooded Merganser (<i>Lophodytes cucullatus</i>)	PSOC	2		Y M
View in Field Guide View Predicted Models View Range Maps Potential Species of Concern - Native Species Global: G5 State: S4 USFWS: MBTA FWP SWAP: SGIN PIF: 2 Predicted Models: L 30% Low (inductive)				
B - Golden Eagle (<i>Aquila chrysaetos</i>)	SOC	5		Y
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G5 State: S3 USFWS: BGEPA; MBTA BLM: SENSITIVE FWP SWAP: SGCN3 Predicted Models: L 3% Low (inductive)				
B - Sharp-tailed Grouse (<i>Tympanuchus phasianellus</i>)	SOC	1	Not Assessed	Y
View in Field Guide View Range Maps Species of Concern - Native Species Global: G5 State: S3S4 FWP SWAP: SGCN1 PIF: 2				
B - Western Screech-Owl (<i>Megascops kennicottii</i>)	PSOC	2	Not Assessed	Y
View in Field Guide View Range Maps Potential Species of Concern - Native Species Global: G4G5 State: S3S4 USFWS: MBTA FWP SWAP: SGIN PIF: 3				
I - Agapetus montanus (<i>Mountain Saddlecase Caddisfly</i>)	PSOC	1	Not Assessed	Y
View in Field Guide View Range Maps Potential Species of Concern - Native Species Global: G3 State: S3				
I - Somatochlora minor (<i>Ocellated Emerald</i>)	PSOC	1	Not Assessed	Y
View in Field Guide View Range Maps Potential Species of Concern - Native Species Global: G5 State: S2S4				
B - Ferruginous Hawk (<i>Buteo regalis</i>)	SOC	1	Not Assessed	S M
View in Field Guide View Range Maps Species of Concern - Native Species Global: G4 State: S3B USFWS: MBTA; BCC17 BLM: SENSITIVE FWP SWAP: SGCN3 PIF: 2				
B - Caspian Tern (<i>Hydroprogne caspia</i>)	SOC	4	Not Assessed	M
View in Field Guide View Range Maps Species of Concern - Native Species Global: G5 State: S2B USFWS: MBTA BLM: SENSITIVE FWP SWAP: SGCN2 PIF: 2				
B - Common Loon (<i>Gavia immer</i>)	SOC	7	Not Assessed	M
View in Field Guide View Range Maps Species of Concern - Native Species Global: G5 State: S3B USFWS: MBTA USFS: Sensitive - Known in Forests (LOLO) FWP SWAP: SGCN3 PIF: 1				
B - Solitary Sandpiper (<i>Tringa solitaria</i>)	SOC	1	Not Assessed	M
View in Field Guide View Range Maps Species of Concern - Native Species Global: G5 State: S2B USFWS: MBTA				
B - Whooping Crane (<i>Grus americana</i>)	SOC	7 1	Not Assessed	
View in Field Guide Species of Concern - Native Species Global: G1 State: S1M USFWS: LE; MBTA BLM: ENDANGERED FWP SWAP: SGCN1				

Legend

Model Icons

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

Habitat Icons

- Common
- Occasional

Range Icons

- Native / Year-round
- Summer
- Winter
- Migratory
- Non-native
- Historical

Num Obs
Count of obs with
'good precision'
(≤1000m)

+ indicates
additional 'poor
precision' obs
(1001m-
10,000m)



Latitude 44.60460
Longitude -111.14370
44.76274 -111.32421

Native Species

Summarized by: **25PRVT0265 - Eagles Landing** (*Custom Area of Interest*)

Filtered by:

Native Species reports are filtered for Species with MT Status = Species of Concern, Special Status, Important Animal Habitat, Potential SOC

Other Potential Species

	USFWS Sec7	Predicted Model	Range
V - <i>Isoetes echinospora</i> (<i>Spiny-spore Quillwort</i>) SOC View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G5 State: S3 Plant Threat Score: No Known Threats CCVI: Less Vulnerable Predicted Models: 23% Optimal (inductive), 25% Moderate (inductive), 43% Low (inductive)			
V - <i>Mimulus suksdorfii</i> (<i>Suksdorf Monkeyflower</i>) PSOC View in Field Guide View Predicted Models View Range Maps Potential Species of Concern - Native Species Global: G4 State: S3S4 Plant Threat Score: No Known Threats Predicted Models: 5% Optimal (inductive), 8% Moderate (inductive), 17% Low (inductive)			
I - <i>Margaritifera falcata</i> (<i>Western Pearlshell</i>) SOC View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G3G4 State: S2 Species of Conservation Concern in Forests (CG, HLC) USFS: Sensitive - Known in Forests (BD, BRT, KOOT, LOLO) BLM: SENSITIVE FWP SWAP: SGCN2 Predicted Models: 3% Optimal (inductive), 20% Moderate (inductive), 28% Low (inductive)			
V - <i>Potentilla platensis</i> (<i>Platte Cinquefoil</i>) SOC View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G4 State: S3 Plant Threat Score: No Known Threats CCVI: Highly Vulnerable Predicted Models: 2% Optimal (inductive), 17% Moderate (inductive), 8% Low (inductive)			
V - <i>Stellaria crassifolia</i> (<i>Fleshy Stitchwort</i>) SOC View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G5 State: S2 Plant Threat Score: No Known Threats Predicted Models: 2% Optimal (inductive), 13% Moderate (inductive), 8% Low (inductive)			
V - <i>Draba globosa</i> (<i>Round-fruited Draba</i>) SOC View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G3 State: S2S3 USFS: Sensitive - Known in Forests (BRT) Plant Threat Score: No Known Threats CCVI: Extremely Vulnerable Predicted Models: 2% Optimal (inductive), 2% Low (inductive)			
M - <i>North American Water Vole</i> (<i>Microtus richardsoni</i>) PSOC View in Field Guide View Predicted Models View Range Maps Potential Species of Concern - Native Species Global: G5 State: S4 Predicted Models: 57% Moderate (inductive), 35% Low (inductive)			
V - <i>Aquilegia formosa</i> (<i>Sitka Columbine</i>) SOC View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G5 State: S3 Plant Threat Score: Low CCVI: Moderately Vulnerable Predicted Models: 55% Moderate (inductive), 20% Low (inductive)			
V - <i>Balsamorhiza macrophylla</i> (<i>Large-leaved Balsamroot</i>) PSOC View in Field Guide View Predicted Models View Range Maps Potential Species of Concern - Native Species Global: G3G5 State: S3S4 Plant Threat Score: No Known Threats Predicted Models: 55% Moderate (inductive), 12% Low (inductive)			
V - <i>Botrychium paradoxum</i> (<i>Peculiar Moonwort</i>) SOC View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G3G4 State: S3 Species of Conservation Concern in Forests (CG, FLAT, HLC) USFS: Sensitive - Known in Forests (BD, KOOT) Sensitive - Suspected in Forests (LOLO) BLM: SENSITIVE Predicted Models: 50% Moderate (inductive), 40% Low (inductive)			
V - <i>Botrychium simplex</i> (<i>Least Moonwort</i>) SOC View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G5 State: S2 USFS: Sensitive - Known in Forests (BD, BRT, KOOT) CCVI: Less Vulnerable Predicted Models: 50% Moderate (inductive), 33% Low (inductive)			

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V - <i>Carex crawei</i> (<i>Crawe's Sedge</i>) SOC		
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G5 State: S2S3 Plant Threat Score: Low Predicted Models: 7% Moderate (inductive), 22% Low (inductive)		
V - <i>Eriogonum caespitosum</i> (<i>Mat Buckwheat</i>) SOC		
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G5 State: S2S3 Plant Threat Score: No Known Threats Predicted Models: 7% Moderate (inductive), 15% Low (inductive)		
V - <i>Kobresia simpliciuscula</i> (<i>Simple Kobresia</i>) SOC		
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G5 State: S3 Plant Threat Score: Unknown Predicted Models: 7% Moderate (inductive), 15% Low (inductive)		
V - <i>Eriophorum gracile</i> (<i>Slender Cottongrass</i>) SOC		
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G5 State: S3 USFS: Species of Conservation Concern in Forests (FLAT) Plant Threat Score: Unknown CCVI: Moderately Vulnerable Predicted Models: 5% Moderate (inductive), 53% Low (inductive)		
V - <i>Carex stenoptila</i> (<i>Small-winged Sedge</i>) SOC		
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G3 State: S2S3 Plant Threat Score: No Known Threats CCVI: Less Vulnerable Predicted Models: 5% Moderate (inductive), 23% Low (inductive)		
L - <i>Rhizoplaca haydenii</i> (<i>Hayden's Rimmed Navel Lichen</i>) SOC		
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G2G3 State: S1S2 USFS: Sensitive - Known in Forests (BRT) Predicted Models: 3% Moderate (inductive), 5% Low (inductive)		
V - <i>Mimulus primuloides</i> (<i>Primrose Monkeyflower</i>) SOC		
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G4 State: S3 USFS: Sensitive - Known in Forests (BD, BRT) Plant Threat Score: Low CCVI: Extremely Vulnerable Predicted Models: 2% Moderate (inductive), 63% Low (inductive)		
V - <i>Botrychium pinnatum</i> (<i>Northern Moonwort</i>) SOC		
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G5 State: S3 USFS: Sensitive - Known in Forests (BD) CCVI: Less Vulnerable Predicted Models: 2% Moderate (inductive), 58% Low (inductive)		
V - <i>Draba densifolia</i> (<i>Dense-leaf Draba</i>) SOC		
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G5 State: S2 USFS: Sensitive - Known in Forests (BD, BRT) Species of Conservation Concern in Forests (CG, HLC) Plant Threat Score: Low CCVI: Moderately Vulnerable Predicted Models: 2% Moderate (inductive), 32% Low (inductive)		
B - <i>Sage Thrasher</i> (<i>Oreoscoptes montanus</i>) SOC		
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G4 State: S3B USFWS: MBTA BLM: SENSITIVE FWP SWAP: SGCN3 PIF: 3 Predicted Models: 2% Moderate (inductive), 32% Low (inductive)		
I - <i>Danaus plexippus</i> (<i>Monarch</i>) SOC		
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G4 State: S2S3 USFWS: P USFS: Sensitive - Migratory in Forests (BD, BRT, KOOT) Predicted Models: 2% Moderate (inductive), 32% Low (inductive)		
B - <i>American Bittern</i> (<i>Botaurus lentiginosus</i>) SOC		
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G5 State: S3B USFWS: MBTA BLM: SENSITIVE FWP SWAP: SGCN3 PIF: 3 Predicted Models: 2% Moderate (inductive), 23% Low (inductive)		
V - <i>Dichanthelium acuminatum</i> (<i>Panic Grass</i>) SOC		
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G5 State: S2S3 Plant Threat Score: Unknown Predicted Models: 2% Moderate (inductive), 12% Low (inductive)		
V - <i>Ranunculus pedatifidus</i> (<i>Northern Buttercup</i>) SOC		
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G5 State: S3 USFS: Species of Conservation Concern in Forests (HLC) Plant Threat Score: Unknown Predicted Models: 2% Moderate (inductive), 10% Low (inductive)		
V - <i>Pedicularis pulchella</i> (<i>Mountain Lousewort</i>) SOC		
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G3 State: S3 Plant Threat Score: Unknown CCVI: Extremely Vulnerable Predicted Models: 2% Moderate (inductive), 3% Low (inductive)		

V - Draba porsildii (Porsild's Draba)

SOC

[View in Field Guide](#)

[View Predicted Models](#)

[View Range Maps](#)

Species of Concern - Native Species

Global: G3G4 State: S2S3 Plant Threat Score: No Known Threats CCVI: Extremely Vulnerable

Predicted Models:

2% Moderate (inductive)

V - Thalictrum alpinum (Alpine Meadowrue)

SOC

[View in Field Guide](#)

[View Predicted Models](#)

[View Range Maps](#)

Species of Concern - Native Species

Global: G5 State: S2 USFS: Sensitive - Known in Forests (BD, KOOT) Plant Threat Score: High - Medium CCVI: Highly Vulnerable

Predicted Models:

72% Low (inductive)

V - Adoxa moschatellina (Musk-root)

SOC

[View in Field Guide](#)

[View Predicted Models](#)

[View Range Maps](#)

Species of Concern - Native Species

Global: G5 State: S3 USFS: Sensitive - Known in Forests (BD, LOLO) Species of Conservation Concern in Forests (CG, HLC) Plant Threat Score: Low CCVI: Highly Vulnerable

Predicted Models:

57% Low (inductive)

M - Dwarf Shrew (Sorex nanus)

PSOC

[View in Field Guide](#)

[View Predicted Models](#)

[View Range Maps](#)

Potential Species of Concern - Native Species

Global: G4 State: S2S3 FWP SWAP: SGCN2-3

Predicted Models:

45% Low (inductive)

B - Veery (Catharus fuscescens)

SOC

[View in Field Guide](#)

[View Predicted Models](#)

[View Range Maps](#)

Species of Concern - Native Species

Global: G5 State: S3B USFWS: MBTA BLM: SENSITIVE FWP SWAP: SGCN3 PIF: 2

Predicted Models:

35% Low (inductive)

B - Flammulated Owl (Psilosops flammeolus)

SOC

[View in Field Guide](#)

[View Predicted Models](#)

[View Range Maps](#)

Species of Concern - Native Species

Global: G4 State: S3B USFWS: MBTA; BCC10 Species of Conservation Concern in Forests (FLAT, HLC) BLM: SENSITIVE FWP SWAP: SGCN3 PIF: 1

Predicted Models:

25% Low (inductive)

V - Physaria pulchella (Beautiful Bladderpod)

SOC

[View in Field Guide](#)

[View Predicted Models](#)

[View Range Maps](#)

Species of Concern - Native Species

Global: G3G4T3 State: S3 USFS: Sensitive - Known in Forests (BD) BLM: SENSITIVE Plant Threat Score: Unknown CCVI: Moderately Vulnerable

Predicted Models:

23% Low (inductive)

M - Merriam's Shrew (Sorex merriami)

SOC

[View in Field Guide](#)

[View Predicted Models](#)

[View Range Maps](#)

Species of Concern - Native Species

Global: G4 State: S3 FWP SWAP: SGCN3

Predicted Models:

20% Low (inductive)

B - Sprague's Pipit (Anthus spragueii)

SOC

[View in Field Guide](#)

[View Range Maps](#)

Species of Concern - Native Species

Global: G3G4 State: S3B USFWS: MBTA; BCC11; BCC17 BLM: SENSITIVE FWP SWAP: SGCN3 PIF: 1

Predicted Models:

Not Assessed

Structured Surveys

Summarized by: **25PRVT0265 - Eagles Landing** (*Custom Area of Interest*)

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

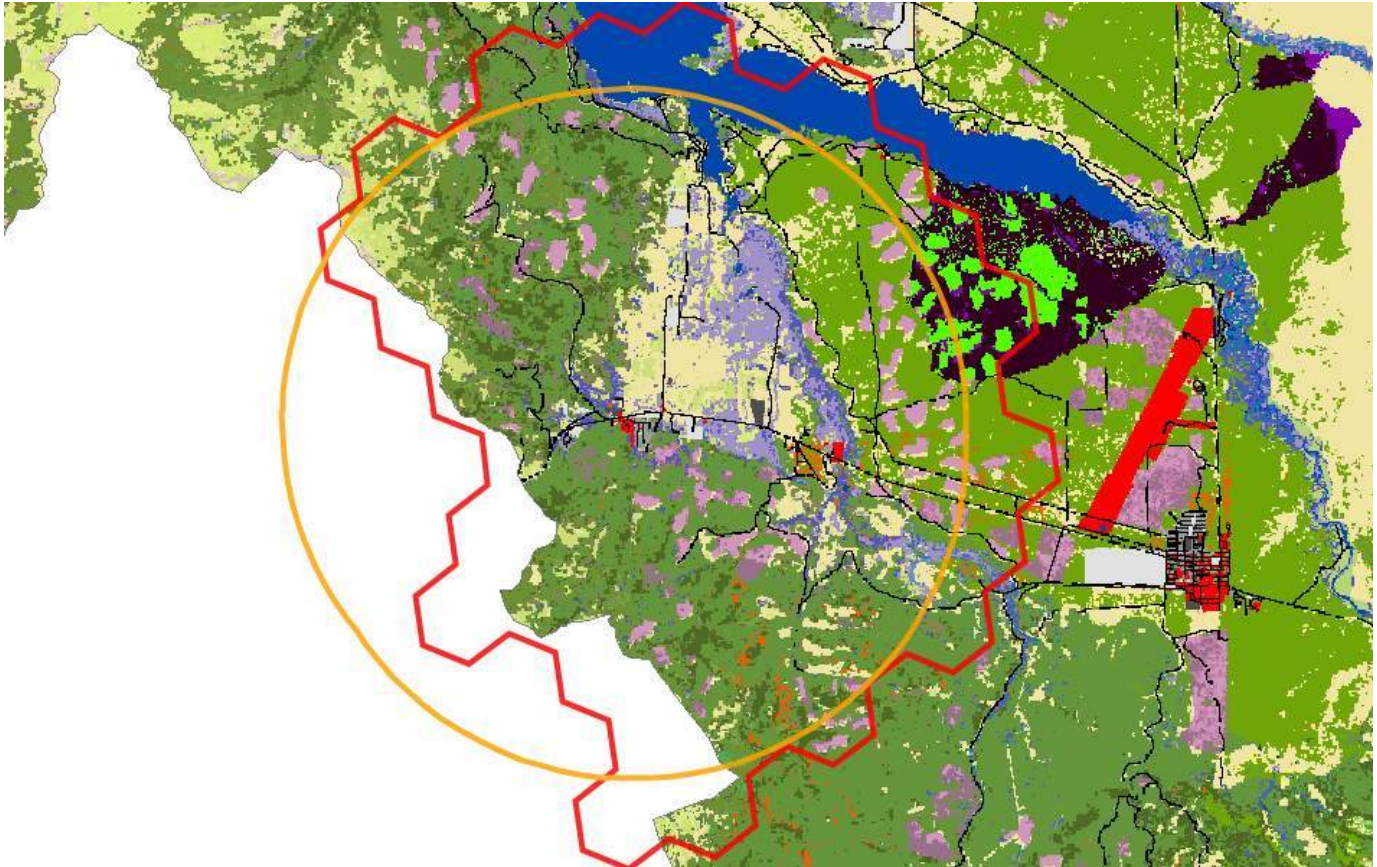
MTNHP does not typically manage information on structured surveys for plants; surveys for invasive species may be a future exception.

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

A-Nocturnal Calling Amphibian (<i>Nocturnal Breeding Amphibian Calling Survey</i>)	Survey Count: 18	Obs Count: 2	Recent Survey: 2013
AR-Amphibian/Reptile Lentic (<i>Lentic Amphibian/Reptile Surveys</i>)	Survey Count: 11	Obs Count: 13	Recent Survey: 2016
B-Bald Eagle Nest (<i>Bald Eagle Nest Survey</i>)	Survey Count: 5	Obs Count: 5	Recent Survey: 2014
B-Flammuled Owl Call Playback (<i>Flammulated Owl Call Playback Survey</i>)	Survey Count: 4	Obs Count:	Recent Survey: 2013
B-Great Gray Owl ARUs (<i>Great Gray Owl Passive Acoustic Recording</i>)	Survey Count: 4	Obs Count:	Recent Survey: 2022
B-Grid-based Point Count (<i>RMBO Generalized Random-tessellation Stratification</i>)	Survey Count: 135	Obs Count: 1424	Recent Survey: 2024
B-Point Count (<i>Bird Point Count</i>)	Survey Count: 184	Obs Count: 1831	Recent Survey: 2004
B-Winter Breeding Owl (<i>Late Winter Breeding Owl Survey</i>)	Survey Count: 44	Obs Count: 17	Recent Survey: 2022
E-Eastern Heath Snail (<i>Eastern Heath Snail Survey</i>)	Survey Count: 2	Obs Count:	Recent Survey: 2012
E-Eurasian Water-milfoil Rake (<i>Rake tows/pulls for Eurasian Water-milfoil</i>)	Survey Count: 129	Obs Count: 136	Recent Survey: 2023
E-Invasive Mussel Plankton Tow (<i>Plankton tows for veligers of Invasive Mussels</i>)	Survey Count: 41	Obs Count:	Recent Survey: 2023
E-Kicknet (<i>Kicknet Collection Survey for Invasive Mussels and Snails</i>)	Survey Count: 25	Obs Count: 11	Recent Survey: 2023
E-Noxious Weed, Road-based (<i>Noxious Weed Road-based Visual Surveys</i>)	Survey Count: 7	Obs Count: 19	Recent Survey: 2004
E-Visual Aquatic Invasives (<i>Visual Encounter Surveys for Aquatic Invasives on Shorelines or Underwater</i>)	Survey Count: 40	Obs Count: 30	Recent Survey: 2022
F-Fish Electrofishing (<i>Fish Electrofishing Surveys</i>)	Survey Count: 7	Obs Count: 6	Recent Survey: 2021
F-Fish Other Survey (<i>Fish Other Survey (FWP Survey Type)</i>)	Survey Count: 4	Obs Count: 7	Recent Survey: 1959
I-Aquatic Invert Lotic Dipnet (<i>Invertebrate Lotic Site Dipnet and Visual Encounter Survey</i>)	Survey Count: 1	Obs Count: 41	Recent Survey: 1995
I-Bumble Bee (<i>Bumble Bee Collection Surveys</i>)	Survey Count: 2	Obs Count: 9	Recent Survey: 2009
I-Mussel (<i>Stream Mussel Survey</i>)	Survey Count: 3	Obs Count:	Recent Survey: 2013
M-Bat Acoustic (<i>Bat Acoustic Survey</i>)	Survey Count: 1	Obs Count: 4	Recent Survey: 2008
M-Bat Roost (Active Season) (<i>Bat Roost (Active Season) Survey</i>)	Survey Count: 1	Obs Count: 1	Recent Survey: 2019
M-Beaver Sign (<i>Field survey for beaver or beaver sign.</i>)	Survey Count: 41	Obs Count: 427	Recent Survey: 2017
M-Camera Trap (Montane) (<i>Carnivore Camera Trap (Montane)</i>)	Survey Count: 2	Obs Count: 2	Recent Survey: 2022
P-PIBO Cross Section (<i>PIBO Riparian Vegetation Cross Section</i>)	Survey Count: 4	Obs Count: 112	Recent Survey: 2021
P-USFS ECODATA Plot (<i>USFS ECODATA Ecological Inventory Survey Plot</i>)	Survey Count: 1	Obs Count: 10	Recent Survey: 1995

Land Cover

Summarized by: **25PRVT0265 - Eagles Landing** (*Custom Area of Interest*)



**21% (7,953
Acres)**

Forest and Woodland Systems

Conifer-dominated forest and woodland (xeric-mesic)

Rocky Mountain Lodgepole Pine Forest

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



**11% (4,100
Acres)**

Forest and Woodland Systems

Conifer-dominated forest and woodland (xeric-mesic)

Rocky Mountain Poor Site Lodgepole Pine Forest

This ecological system is widespread but patchy in distribution in upper montane to subalpine zones of the Montana Rocky Mountains, and east into mountain island ranges of central Montana. These are upper montane to subalpine forests where the dominance of lodgepole pine (*Pinus contorta*) is related to fire history, topo-edaphic conditions and nutrient-poor soils. Presence of this system is determined more by substrate than by other factors. The most notable occurrence of this system is in the West Yellowstone Basin and surrounding Yellowstone Highlands, such as the Madison Plateau. In this region of Montana, cold-air ponding and coarse, rhyolitic outwash obsidian sands are the major factors contributing to the extensive development of this system in southwestern Montana. Fire is infrequent in this system, averaging every 150-400 years in subalpine forests. Following stand-replacing fires, lodgepole pinewill colonize rapidly on sites that are too extreme for the establishment of other coniferous species, developing into dense, persistent, even-aged stands. Mature stands are primarily open, and develop past their initial even-aged structure to become a multi-aged structure. These stands last for longer intervals between disturbances than do conventional lodgepole pine-dominated stands.



9% (3,378 Acres)

Shrubland, Steppe and Savanna Systems Sagebrush Steppe

Montane Sagebrush Steppe

This system dominates the montane and subalpine landscape of southwestern Montana from valley bottoms to subalpine ridges and is found as far north as Glacier National Park. It can also be seen in the island mountain ranges of the north-central and south-central portions of the state. It primarily occurs on deep-soiled to stony flats, ridges, nearly flat ridgetops, and mountain slopes. In general, this system occurs in areas of gentle topography, fine soils, subsurface moisture or mesic conditions, within zones of higher precipitation and areas of snow accumulation. It occurs on all slopes and aspects, variable substrates and all soil types. The shrub component of this system is generally dominated by mountain big sagebrush (*Artemisia tridentata* ssp. *vaseyana*). Other co-dominant shrubs include silver sagebrush (*Artemisia cana* ssp. *viscidula*), subalpine big sagebrush (*Artemisia tridentata* ssp. *spiciformis*), three tip sagebrush (*Artemisia tripartita* ssp. *tripartita*) and antelope bitterbrush (*Purshia tridentata*). Little sagebrush (*Artemisia arbuscula* ssp. *arbuscula*) shrublands are only found in southwestern Montana on sites with a perched water table. Wyoming big sagebrush (*Artemisia tridentata* ssp. *wyomingensis*) sites may be included within this system if occurrences are at montane elevations, and are associated with montane graminoids such as Idaho fescue (*Festuca idahoensis*), spike fescue (*Leucopoa kingii*), or poverty oatgrass (*Danthonia intermedia*). In areas where sage has been eliminated by human activities like burning, disking or poisoning, other shrubs may be dominant, especially rubber rabbitbrush (*Ericameria nauseosa*), and green rabbitbrush (*Chrysothamnus viscidiflorus*). Because of the mesic site conditions, most occurrences support a diverse herbaceous undergrowth of grasses and forbs. Shrub canopy cover is extremely variable, ranging from 10 percent to as high as 40 or 50 percent.



6% (2,292 Acres)

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

Rocky Mountain Montane Douglas-fir Forest and Woodland

In Montana, this ecological system occurs on the east side of the Continental Divide, north to about the McDonald Pass area, and along the Rocky Mountain Front. This system is associated with a dry to submesic continental climate regime with annual precipitation ranging from 51 to 102 centimeters (20-40 inches), with a maximum in winter or late spring. Winter snowpacks typically melt off in early spring at lower elevations. Elevations range from valley bottoms to 1,980 meters (6500 feet) in northern Montana and up to 2,286 meters (7500 feet) on warm aspects in southern Montana. It occurs on north-facing aspects in most areas, and south-facing aspects at higher elevations. This is a Douglas-fir (*Pseudotsuga menziesii*) dominated system without any maritime floristic composition. Fire disturbance intervals are as infrequent as 500 years, and as a result, individual trees and forests can attain great age on some sites (500 to 1,500 years). In Montana, this system occurs from lower montane to lower subalpine environments and is prevalent on calcareous substrates. Common understory shrubs include common ninebark (*Physocarpus malvaceus*), common juniper (*Juniperus communis*), Rocky Mountain juniper (*Juniperus scopulorum*), birch-leaf spiraea (*Spiraea betulifolia*), snowberry (*Symphoricarpos* species), creeping Oregon grape (*Mahonia repens*) and Canadian buffaloberry (*Shepherdia canadensis*). The Douglas-fir/pinegrass (*Calamagrostis rubescens*) type is the most ubiquitous association found within this system in Montana.



6% (2,168 Acres)

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

Rocky Mountain Subalpine Dry-Mesic Spruce-Fir Forest and Woodland

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



5% (2,043 Acres)

Wetland and Riparian Systems Open Water

Open Water

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



4% (1,564 Acres)

Wetland and Riparian Systems Wet meadow

Alpine-Montane Wet Meadow

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



4% (1,372 Acres)

Recently Disturbed or Modified Harvested Forest

Harvested forest-grass regeneration

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



4% (1,367 Acres)

Forest and Woodland Systems

Deciduous dominated forest and woodland

Aspen Forest and Woodland

This widespread ecological system is more common in the southern and central Rocky Mountains, but occurs in the montane and subalpine zones throughout much of Montana north into Canada. It is similar to the Inter-Mountain Basins Aspen Mixed Conifer Forest-Woodland found in the Big Snowy Mountains, but lacks the conifer component. Distribution of this system is primarily limited by adequate soil moisture required to meet its high evapotranspirative demand, length of growing season, and temperatures. Mean annual precipitation where these systems occur is generally greater than 38 centimeters (15 inches) and typically greater than 51 centimeters (20 inches), except in semi-arid environments where occurrences are restricted to mesic microsites such as seeps or areas below large snow drifts. Stands can occur on gentle to moderate slopes, in swales, or on level sites. At lower elevations, occurrences are found on cooler, north aspects and mesic sites. Soils are usually deep and well developed with rock often absent from the soil. Soil texture ranges from sandy loam to clay loams. This system describes mesic forests and woodlands dominated by quaking aspen (*Populus tremuloides*) without a significant conifer component (<25% relative tree cover). This aspen system can be stable and long-lived with little encroachment of coniferous species. The understory structure may be complex with multiple shrub and herbaceous layers, or simple, with just an herbaceous layer. The herbaceous layer may be dense or sparse, dominated by mesic grasses or forbs. Occurrences of this system often originate, and are likely maintained, by stand-replacing disturbances such as crown fire, disease, windthrow, elk and beaver activity.



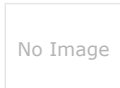
3% (1,339 Acres)

Grassland Systems

Montane Grassland

Rocky Mountain Subalpine-Montane Mesic Meadow

This system is restricted to sites from lower montane to subalpine elevations where finely textured soils, snow deposition, or windswept conditions limit tree establishment. Many occurrences are small patches, and are often found in mosaics within woodlands, dense shrublands, or just below alpine communities. Elevations range from 600 to 2,011 meters (2,000-6,600 feet) in the northern Rocky Mountains and up to 2,286- 2,682 meters (7,500-8,800 feet) in the mountains of southwestern Montana. This system occurs on gentle to moderate-gradient slopes and in relatively moist habitats. Soils are typically seasonally moist to saturated in the spring, but dry out later in the growing season. At montane elevations, soils are usually clays or silt loams, and some occurrences may have inclusions of hydric soils in low, depressional areas. At subalpine elevations, soils are derived a variety of parent materials, and are usually rocky or gravelly with good aeration and drainage, but with a well developed organic layer. Some occurrences are more heavily dominated by grasses, while others are more dominated by forbs. Common grasses include tufted hairgrass (*Deschampsia caespitosa*), showy oniongrass (*Melica spectabilis*), mountain brome (*Bromus carinatus*), blue wildrye (*Elymus glaucus*), awned sedge (*Carex atherodes*), and small wing sedge (*Carex microptera*). Forb dominated meadows usually comprise a wide species diversity which differs from montane to subalpine elevations. Shrubs such as shrubby cinquefoil (*Dasiphora fruticosa* ssp. *floribunda*) and snowberry (*Symphoricarpos* species) are occasional but not abundant. This system differs from the Rocky Mountain Alpine Montane Wet Meadow system in that it soils dry out by mid-summer.



3% (1,090 Acres)

Human Land Use

Developed

Other Roads

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



3% (964 Acres)

Wetland and Riparian Systems

Floodplain and Riparian

Rocky Mountain Lower Montane-Foothill Riparian Woodland and Shrubland

This ecological system is found throughout the Rocky Mountain and Colorado Plateau regions. In Montana, it ranges from approximately 945 to 2,042 meters (3,100 to 6,700 feet), characteristically occurring as a mosaic of multiple communities that are tree-dominated with a diverse shrub component. It is dependent on a natural hydrologic regime, especially annual to episodic flooding. Occurrences are found within the flood zone of rivers, on islands, sand or cobble bars, and on immediate 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. Dominant trees may include boxelder maple (*Acer negundo*), narrowleaf cottonwood (*Populus angustifolia*), Plains cottonwood (*Populus deltoides*), Douglas-fir (*Pseudotsuga menziesii*), peachleaf willow (*Salix amygdaloides*), or Rocky Mountain juniper (*Juniperus scopulorum*). Dominant shrubs include Rocky Mountain maple (*Acer glabrum*), thinleaf alder (*Alnus incana*), river birch (*Betula occidentalis*), redberry dogwood (*Cornus sericea*), hawthorne (*Crataegus* spp.), chokecherry (*Prunus virginiana*), skunkbush sumac (*Rhus trilobata*), Drummond's willow (*Salix drummondiana*), sandbar willow (*Salix exigua*), Pacific willow (*Salix lucida*), rose (*Rosa* species), silver buffaloberry (*Shepherdia argentea*), or snowberry (*Symphoricarpos* species). Exotic trees of Russian olive (*Elaeagnus angustifolia*) and saltcedar (*Tamarix* species) may invade some stands in southeastern and south-central Montana.



2% (767 Acres)

Recently Disturbed or Modified

Recently burned

Recently burned forest

Land cover is apparently modified by recent fires which have burned forest and woodland vegetation. Vegetation is a mixture of herbaceous, shrub, and tree species.



2% (625 Acres)

Recently Disturbed or Modified

Harvested Forest

Harvested forest-tree regeneration

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

Additional Limited Land Cover

- 1% (566 Acres) [Post-Fire Recovery](#)
- 1% (451 Acres) [Rocky Mountain Subalpine Mesic Spruce-Fir Forest and Woodland](#)
- 1% (323 Acres) [Rocky Mountain Subalpine-Upper Montane Grassland](#)
- 1% (292 Acres) [Insect-Killed Forest](#)
- <1% (191 Acres) [Harvested forest-shrub regeneration](#)
- <1% (152 Acres) [Low Intensity Residential](#)
- <1% (126 Acres) [Developed, Open Space](#)
- <1% (113 Acres) [Rocky Mountain Subalpine Woodland and Parkland](#)
- <1% (99 Acres) [Burned Sagebrush](#)
- <1% (92 Acres) [Emergent Marsh](#)

<1% (80 Acres)  [Aspen and Mixed Conifer Forest](#)

<1% (64 Acres)  [Rocky Mountain Subalpine-Montane Riparian Woodland](#)

<1% (57 Acres)  [Rocky Mountain Subalpine Deciduous Shrubland](#)

<1% (50 Acres)  [High Intensity Residential](#)

<1% (48 Acres)  [Commercial / Industrial](#)

<1% (29 Acres)  [Rocky Mountain Lower Montane, Foothill, and Valley Grassland](#)

<1% (20 Acres)  [Low Sagebrush Shrubland](#)

<1% (11 Acres)  [Alpine Bedrock and Scree](#)

<1% (9 Acres)  [Rocky Mountain Subalpine-Montane Riparian Shrubland](#)

<1% (2 Acres)  [Rocky Mountain Wooded Vernal Pool](#)

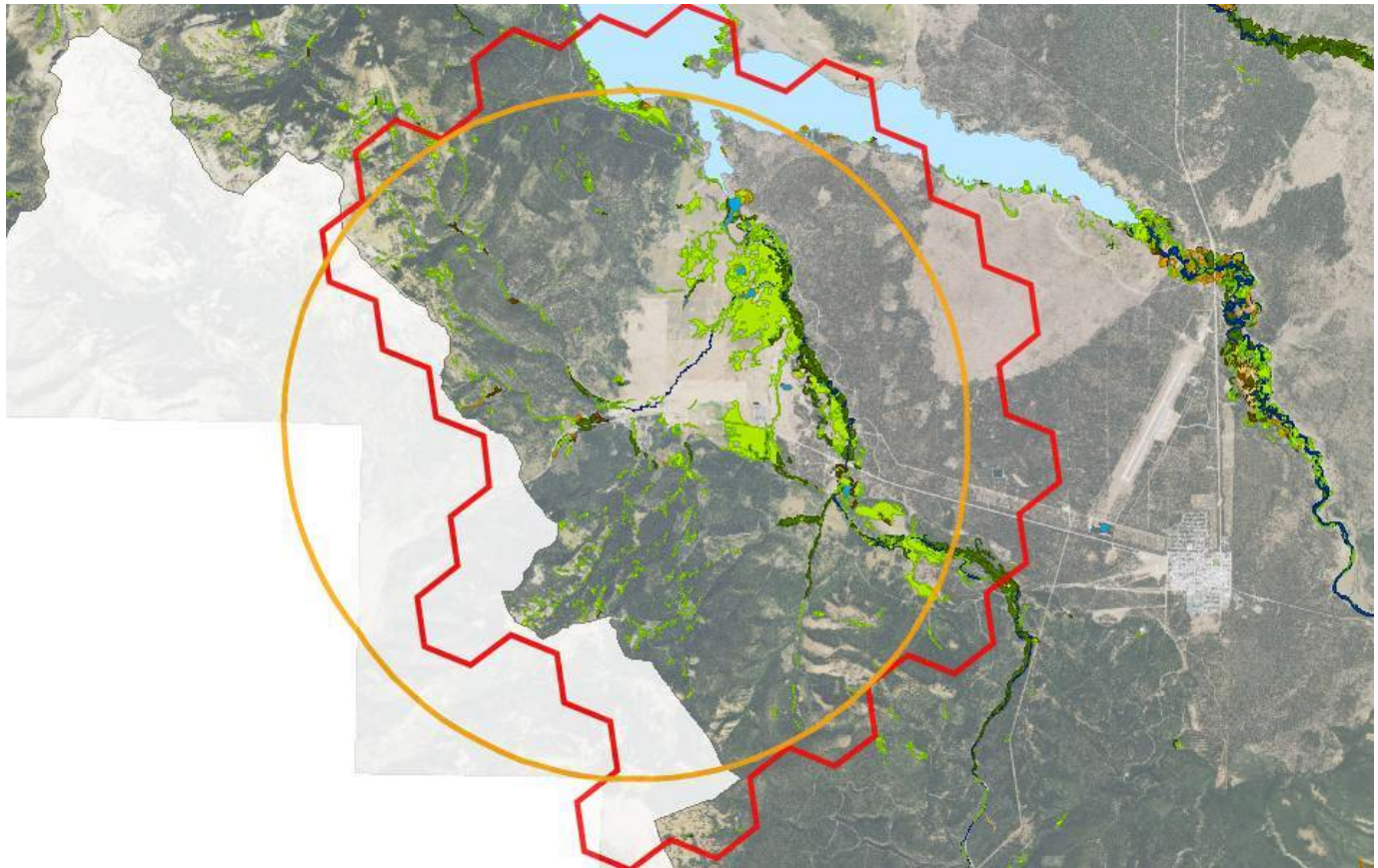
<1% (1 Acres)  [Mountain Mahogany Woodland and Shrubland](#)

<1% (0 Acres)  [Recently burned shrubland](#)

<1% (0 Acres)  [Rocky Mountain Lower Montane-Foothill Shrubland](#)

Wetland and Riparian

Summarized by: **25PRVT0265 - Eagles Landing** (Custom Area of Interest)



Wetland and Riparian Mapping

P - Palustrine

■ AB - Aquatic Bed	
F - Semipermanently Flooded	56 Acres
(no modifier)	13 Acres PABF
b - Beaver	3 Acres PABFb
h - Diked/Impounded	29 Acres PABFh
x - Excavated	11 Acres PABFx
G - Intermittently Exposed	28 Acres
(no modifier)	28 Acres PABG
K - Artificially Flooded	2 Acres
x - Excavated	2 Acres PABKx

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

■ US - Unconsolidated Shore	
A - Temporarily Flooded	4 Acres
(no modifier)	<1 Acres PUSA
h - Diked/Impounded	1 Acres PUSAh
x - Excavated	3 Acres PUSAx
C - Seasonally Flooded	<1 Acres
(no modifier)	<1 Acres PUSC

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

■ EM - Emergent	
A - Temporarily Flooded	1,371 Acres
(no modifier)	1,300 Acres PEMA
f - Farmed	1 Acres PEMAf
h - Diked/Impounded	70 Acres PEMAh
C - Seasonally Flooded	276 Acres
(no modifier)	220 Acres PEMC
h - Diked/Impounded	56 Acres PEMCh
x - Excavated	<1 Acres PEMCx
F - Semipermanently Flooded	15 Acres
(no modifier)	15 Acres PEMF
h - Diked/Impounded	<1 Acres PEMFh

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

SS - Scrub-Shrub		
A - Temporarily Flooded		354 Acres
(no modifier)	346 Acres	PSSA
h - Diked/Impounded	8 Acres	PSSAh
x - Excavated	<1 Acres	PSSAx
C - Seasonally Flooded		43 Acres
(no modifier)	42 Acres	PSSC
h - Diked/Impounded	1 Acres	PSSCh
F - Semipermanently Flooded		1 Acres
(no modifier)	1 Acres	PSSF

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.

FO - Forested		
A - Temporarily Flooded		1 Acres
(no modifier)	1 Acres	PFOA

P - Palustrine, FO - Forested
Wetlands dominated by woody vegetation greater than 6 meters (20 feet) tall.

L - Lacustrine (Lakes)

1 - Limnetic

UB - Unconsolidated Bottom		
H - Permanently Flooded		1,977 Acres
h - Diked/Impounded	1,977 Acres	L1UBHh

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

2 - Littoral

US - Unconsolidated Shore		
C - Seasonally Flooded		1 Acres
h - Diked/Impounded	1 Acres	L2USCh

L - Lacustrine (Lakes), 2 - Littoral, US - Unconsolidated Shore
Shorelines where there is less than 75% areal cover of stones, boulders, or bedrock, and less than 30% vegetation cover. The area is also irregularly exposed due to seasonal or irregular flooding and subsequent drying.

R - Riverine (Rivers)

2 - Lower Perennial

US - Unconsolidated Shore		
A - Temporarily Flooded		<1 Acres
(no modifier)	<1 Acres	R2USA
C - Seasonally Flooded		1 Acres
(no modifier)	1 Acres	R2USC

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		
F - Semipermanently Flooded		63 Acres
(no modifier)	63 Acres	R3UBF

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		
C - Seasonally Flooded		2 Acres
(no modifier)	2 Acres	R3USC

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

4 - Intermittent

SB - Stream Bed		
C - Seasonally Flooded		7 Acres
(no modifier)	7 Acres	R4SBC

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

Rp - Riparian

1 - Lotic

SS - Scrub-Shrub		
(no modifier)	9 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)	34 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)	7 Acres	Rp1EM

Rp - Riparian, 1 - Lotic, EM - Emergent
Riparian areas that have erect, rooted herbaceous vegetation during most of the growing season.

2 - Lentic

SS - Scrub-Shrub		
(no modifier)	15 Acres	Rp2SS

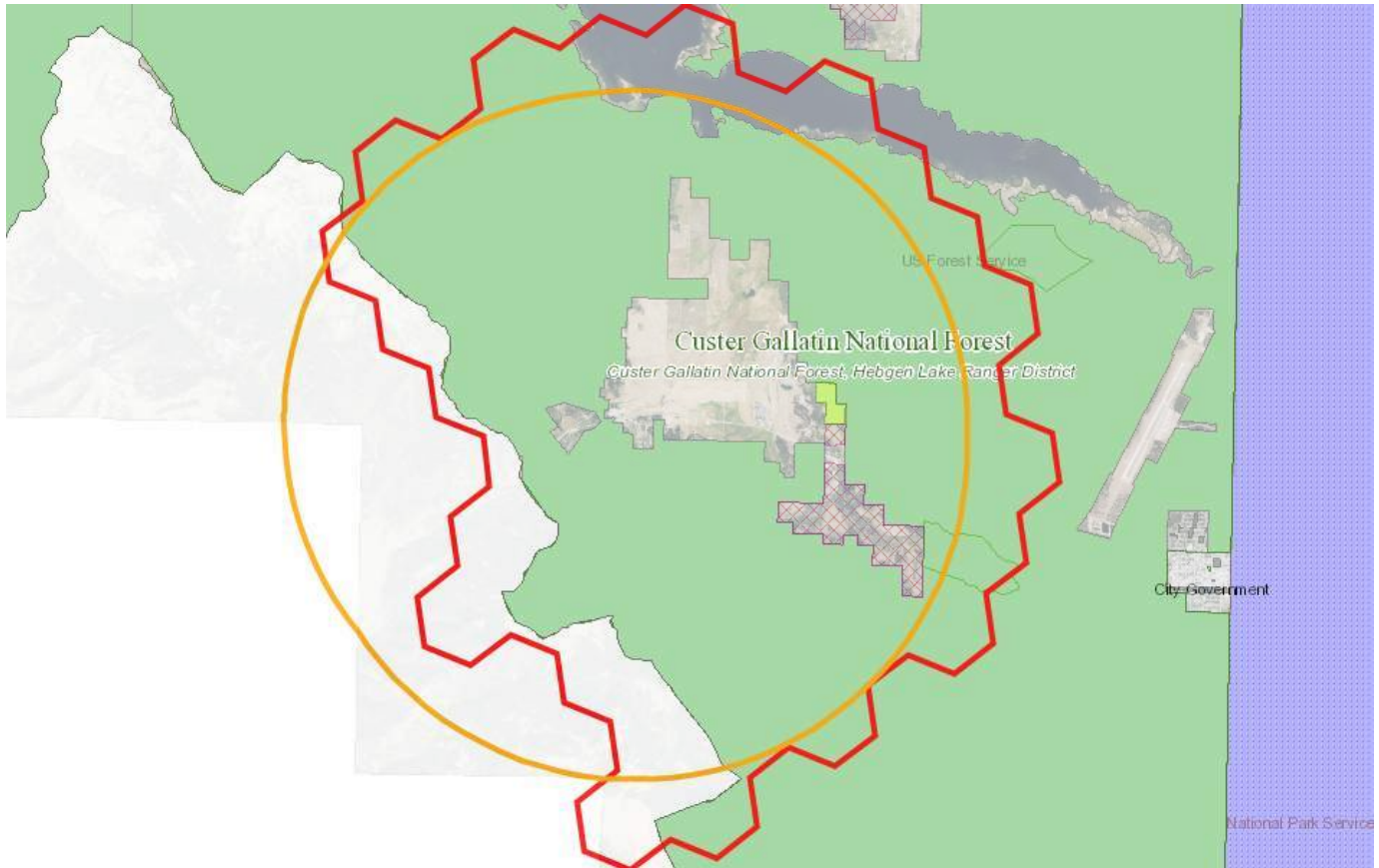
Rp - Riparian, 2 - Lentic, SS - Scrub-Shrub
This type of riparian area is dominated by woody vegetation that is less than 6 meters (20 feet) tall. Woody vegetation includes tree saplings and trees that are stunted due to environmental conditions.

FO - Forested		
(no modifier)	11 Acres	Rp2FO

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

Land Management

Summarized by: **25PRVT0265 - Eagles Landing** (Custom Area of Interest)



Land Management Summary

	Ownership	Tribal	Easements	Other Boundaries (possible overlap)
Public Lands	27,429 Acres (71%)			
Federal	27,429 Acres (71%)			
US Forest Service	27,429 Acres (71%)			
USFS Owned	27,429 Acres (71%)			
USFS Ranger Districts				33,822 Acres
Custer Gallatin National Forest, Hebgen Lake Ranger District				33,822 Acres
USFS National Forest Boundaries				33,822 Acres
Custer Gallatin National Forest				33,822 Acres
USFS Research Natural Areas				2 Acres
Obsidian Sands Research Natural Area				2 Acres
USFS Special Interest Areas				367 Acres
Black Sand Spring Botanical Area				367 Acres
Private Conservation Lands	81 Acres (<1%)			
TNC Owned	81 Acres (<1%)			
TNC - South Fork Madison Preserve				81 Acres
Conservation Easements			747 Acres (2%)	
Private			747 Acres (2%)	
The Nature Conservancy			747 Acres (2%)	
Private Lands or Unknown Ownership	10,159 Acres (26%)			



Biological Reports

Summarized by: **25PRVT0265 - Eagles Landing** (*Custom Area of Interest*)

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

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

- Greater Yellowstone Coordinating Committee. ***GYA Weed Mapping Update and Database Augmentation***. 2000-04.
- Ritter, Torrey. 2018. ***Ecosystem pioneers: Beaver dispersal and settlement site selection in the context of habitat restoration***. M.Sc. Thesis. Bozeman, MT: Montana State University. 212 p.
- Roberts, B. 2010. ***2009 Hebgen Basin Reptile and Amphibian Inventory, USDA Forest Service Annual Progress Report to PPL-Montana***. Gallatin National Forest, Bozeman Ranger District. Bozeman, MT. 23 pp.
- Sestrich, C. 2004. ***Hebgen Reservoir Amphibian Survey: USDA Forest Service annual progress report to PPL Montana***. 17 pp + appendix
- Sestrich, Clint. 2006. 2006 Hebgen Reservoir Amphibian Survey, USDA Forest Service Annual Progress Report to PPL Montana. Hebgen Lake Ranger District. Gallatin National Forest. West Yellowstone Montana.
-  Watschke, D.A. 2006. ***Assessment of tributary potential for wild rainbow trout recruitment in Hebgen Reservoir, Montana***. M.Sc. Thesis. Bozeman, MT: Montana State University. 139 p.

Legend

Model Icons

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

Habitat Icons

-  Common
-  Occasional

Range Icons

-  Non-native

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



Latitude Longitude
44.60460 -111.14370
44.76274 -111.32421

Invasive and Pest Species

Summarized by: **25PRVT0265 - Eagles Landing** (*Custom Area of Interest*)

Aquatic Invasive Species

# Obs	Predicted Model	Range
V - Myriophyllum spicatum (<i>Eurasian Water-milfoil</i>) N2A/AIS		
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 2A - Aquatic Invasive Species - Non-native Species Global: GNR State: SNA Predicted Models:  2% Moderate (inductive),  33% Low (inductive)		
V - Potamogeton crispus (<i>Curly-leaf Pondweed</i>) N2B/AIS		
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 2B - Aquatic Invasive Species - Non-native Species Global: G5 State: SNA Predicted Models:  17% Low (inductive)		
V - Nymphaea odorata (<i>American Water-lily</i>) AIS		
View in Field Guide View Predicted Models View Range Maps Aquatic Invasive Species - Non-native Species Global: G5 State: SNA Predicted Models:  25% Suitable (introduced range) (deductive)		
I - Faxonius virilis (<i>Virile Crayfish</i>) AIS		
View in Field Guide View Range Maps Aquatic Invasive Species - Native/Non-native Species - (depends on location or taxa) Global: G5 State: S5		

Noxious Weeds: Priority 1A

V - Isatis tinctoria (<i>Dyer's Woad</i>) N1A		
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 1A - Non-native Species Global: GNR State: SNA Predicted Models:  7% Optimal (inductive),  33% Moderate (inductive),  18% Low (inductive)		
V - Centaurea solstitialis (<i>Yellow Starthistle</i>) N1A		
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 1A - Non-native Species Global: GNR State: SNA Predicted Models:  5% Optimal (inductive),  22% Moderate (inductive),  10% Low (inductive)		

Noxious Weeds: Priority 1B

V - Cytisus scoparius (<i>Scotch Broom</i>) N1B		
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 1B - Non-native Species Global: GNR State: SNA Predicted Models:  5% Moderate (inductive),  52% Low (inductive)		
V - Polygonum x bohemicum (<i>Bohemian Knotweed</i>) N1B		
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 1B - Non-native Species Global: GNA State: SNA Predicted Models:  5% Moderate (inductive),  18% Low (inductive)		
V - Echium vulgare (<i>Blueweed</i>) N1B		
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 1B - Non-native Species Global: GNR State: SNA Predicted Models:  2% Moderate (inductive),  42% Low (inductive)		

Noxious Weeds: Priority 2A

V - Hieracium piloselloides (<i>Tall Hawkweed</i>) N2A		
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 2A - Non-native Species Global: GNR State: SNA Predicted Models:  17% Optimal (inductive),  70% Moderate (inductive),  2% Low (inductive)		
V - Ranunculus acris (<i>Tall Buttercup</i>) N2A		
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 2A - Non-native Species Global: G5 State: SNA Predicted Models:  12% Optimal (inductive),  38% Moderate (inductive),  42% Low (inductive)		
V - Rhamnus cathartica (<i>Common Buckthorn</i>) N2A		
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 2A - Non-native Species Global: GNR State: SNA Predicted Models:  2% Optimal (inductive),  22% Moderate (inductive),  50% Low (inductive)		
V - Hieracium caespitosum (<i>Meadow Hawkweed</i>) N2A		
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 2A - Non-native Species Global: GNR State: SNA Predicted Models:  67% Moderate (inductive),  25% Low (inductive)		

V - Hieracium praealtum (Kingdevil Hawkweed) N2A	14		N
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 2A - Non-native Species Global: GNR State: SNA Predicted Models: M 42% Moderate (inductive), L 42% Low (inductive)			
V - Hieracium aurantiacum (Orange Hawkweed) N2A	14		N
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 2A - Non-native Species Global: GNR State: SNA Predicted Models: M 20% Moderate (inductive), L 62% Low (inductive)			
V - Ventenata dubia (Ventenata) N2A			N
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 2A - Non-native Species Global: GNR State: SNA Predicted Models: M 2% Moderate (inductive), L 57% Low (inductive)			
V - Myriophyllum spicatum (Eurasian Water-milfoil) N2A/AIS			N
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 2A - Aquatic Invasive Species - Non-native Species Global: GNR State: SNA Predicted Models: M 2% Moderate (inductive), L 33% Low (inductive)			

Noxious Weeds: Priority 2B

V - Linaria vulgaris (Yellow Toadflax) N2B	250		N
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 2B - Non-native Species Global: GNR State: SNA Predicted Models: R 57% Optimal (inductive), M 30% Moderate (inductive), L 5% Low (inductive)			
V - Berteroa incana (Hoary False-alyssum) N2B	76		N
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 2B - Non-native Species Global: GNR State: SNA Predicted Models: R 50% Optimal (inductive), M 25% Moderate (inductive), L 17% Low (inductive)			
V - Tanacetum vulgare (Common Tansy) N2B	41		N
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 2B - Non-native Species Global: GNR State: SNA Predicted Models: R 28% Optimal (inductive), M 57% Moderate (inductive), L 7% Low (inductive)			
V - Leucanthemum vulgare (Oxeye Daisy) N2B	12		N
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 2B - Non-native Species Global: GNR State: SNA Predicted Models: R 28% Optimal (inductive), M 48% Moderate (inductive), L 13% Low (inductive)			
V - Cynoglossum officinale (Common Hound's-tongue) N2B	3		N
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 2B - Non-native Species Global: GNR State: SNA Predicted Models: R 18% Optimal (inductive), M 72% Moderate (inductive), L 2% Low (inductive)			
V - Potentilla recta (Sulphur Cinquefoil) N2B	2		N
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 2B - Non-native Species Global: GNR State: SNA Predicted Models: R 13% Optimal (inductive), M 35% Moderate (inductive), L 42% Low (inductive)			
V - Centaurea stoebe (Spotted Knapweed) N2B	76		N
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 2B - Non-native Species Global: GNR State: SNA Predicted Models: M 62% Moderate (inductive), L 33% Low (inductive)			
V - Cirsium arvense (Canada Thistle) N2B	39		N
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 2B - Non-native Species Global: G5 State: SNA Predicted Models: M 45% Moderate (inductive), L 47% Low (inductive)			
V - Linaria dalmatica (Dalmatian Toadflax) N2B	10		N
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 2B - Non-native Species Global: G5 State: SNA Predicted Models: M 28% Moderate (inductive), L 35% Low (inductive)			
V - Lepidium draba (Whitetop) N2B	7		N
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 2B - Non-native Species Global: GNR State: SNA Predicted Models: M 20% Moderate (inductive), L 27% Low (inductive)			
V - Hypericum perforatum (Common St. John's-wort) N2B	2		N
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 2B - Non-native Species Global: GNR State: SNA Predicted Models: M 7% Moderate (inductive), L 70% Low (inductive)			
V - Centaurea diffusa (Diffuse Knapweed) N2B	1		N
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 2B - Non-native Species Global: GNR State: SNA Predicted Models: M 5% Moderate (inductive), L 53% Low (inductive)			

V - Acroptilon repens <i>(Russian Knapweed)</i> N2B 1 N	View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 2B - Non-native Species Global: GNR State: SNA Predicted Models: 37% Low (inductive)
V - Euphorbia virgata <i>(Leafy Spurge)</i> N2B 19 N	View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 2B - Non-native Species Global: GNR State: SNA Predicted Models: 28% Low (inductive)
V - Potamogeton crispus <i>(Curly-leaf Pondweed)</i> N2B/AIS 8 N	View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 2B - Aquatic Invasive Species - Non-native Species Global: G5 State: SNA Predicted Models: 17% Low (inductive)

Regulated Weeds: Priority 3

V - Bromus tectorum <i>(Cheatgrass)</i> R3 1 N	View in Field Guide View Predicted Models View Range Maps Regulated Weed: Priority 3 - Non-native Species Global: GNR State: SNA Predicted Models: 2% Optimal (inductive), 32% Moderate (inductive), 43% Low (inductive)
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Biocontrol Species

I - Mecinus janthinus <i>(Yellow Toadflax Stem-boring Weevil)</i> BIOCNTL N	View in Field Guide View Predicted Models View Range Maps Biocontrol Species - Non-native Species Global: GNR State: SNA Predicted Models: 35% Optimal (inductive), 5% Moderate (inductive), 13% Low (inductive)
I - Mecinus janthiniformis <i>(Dalmatian Toadflax Stem-boring Weevil)</i> BIOCNTL N	View in Field Guide View Predicted Models View Range Maps Biocontrol Species - Non-native Species Global: GNR State: SNA Predicted Models: 50% Low (inductive)
I - Oberea erythrocephala <i>(Red-headed Leafy Spurge Stem Borer)</i> BIOCNTL N	View in Field Guide View Predicted Models View Range Maps Biocontrol Species - Non-native Species Global: GNR State: SNA Predicted Models: 42% Low (inductive)

Introduction to Montana Natural Heritage Program



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INTRODUCTION

The Montana Natural Heritage Program (MTNHP) is Montana's source for reliable and objective information on Montana's native species and habitats, emphasizing those of conservation concern. MTNHP was created by the Montana legislature in 1983 as part of the Natural Resource Information System (NRIS) at the Montana State Library (MSL). MTNHP is "a program of information acquisition, storage, and retrieval for data relating to the flora, fauna, and biological community types of Montana" (MCA 90-15-102). MTNHP's activities are guided by statute as well as through ongoing interaction with, and feedback from, principal data source agencies such as Montana Fish, Wildlife, and Parks, the Montana Department of Environmental Quality, the Montana Department of Natural Resources and Conservation, the Montana University System, the US Forest Service, and the US Bureau of Land Management. Since the first staff was hired in 1985, the Program has logged a long record of success, and developed into a highly respected, service-oriented program. MTNHP is widely recognized as one of the most advanced and effective of over 60 natural heritage programs that are distributed across North America.

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 to allow users to save time and money, speed environmental reviews, and make informed decisions.

CORE VALUES

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

CONFIDENTIALITY

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

INFORMATION MANAGED

Information managed at the Montana Natural Heritage Program is botanical, zoological, and ecological information that describes the distribution (e.g., observations, structured surveys, range polygons, predicted habitat suitability models), conservation status (e.g., global and state conservation status ranks, including threats), and other supporting information (e.g., accounts and references) on the biology and ecology of species and biological communities.

Data Use Terms and Conditions

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

Suggested Contacts for Natural Resource Management Agencies

As required by Montana statute (MCA 90-15), the Montana Natural Heritage Program works with state, federal, tribal, nongovernmental organizations, and private partners to ensure that the latest animal and plant distribution and status information is incorporated into our databases so that it can be used to inform a variety of permitting and planning processes and management decisions. We encourage you to contact state, federal, and tribal resource management agencies in the area where your project is located and review the permitting overviews by the [Montana Department of Environmental Quality](#), the [Montana Department of Natural Resources and Conservation](#) and the [Index of Environmental Permits for Montana](#) for guidelines relevant to your efforts. In particular, we encourage you to contact the Montana Department of Fish, Wildlife, and Parks for the latest data and management information regarding hunted and high-profile management species and to use the U.S. Fish and Wildlife Service's [Information Planning and Consultation \(IPAC\) website regarding](#) U.S. Endangered Species Act listed Threatened, Endangered, or Candidate species.

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

Montana Fish, Wildlife, and Parks

Fish Species	Zachary Shattuck zshattuck@mt.gov (406) 444-1231 or Eric Roberts eroberts@mt.gov (406) 444-5334
American Bison Black-footed Ferret Black-tailed Prairie Dog Bald Eagle Golden Eagle Common Loon Least Tern Piping Plover Whooping Crane	Kristina Smucker KSmucker@mt.gov (406) 444-5209
Grizzly Bear Greater Sage Grouse Trumpeter Swan Big Game Upland Game Birds Furbearers	Brian Wakeling brian.wakeling@mt.gov (406) 444-3940
Managed Terrestrial Game Data	Adam Messer – MFWP GIS Coordinator amesser@mt.gov (406) 444-0095
Fisheries Data and Nongame Animal Data	Adam Messer – MFWP GIS Coordinator amesser@mt.gov (406) 444-0095
Wildlife and Fisheries Scientific Collector's Permits	https://fwp.mt.gov/buyandapply/commercialwildlifeandscientificpermits/scientific Kristina Smucker for Wildlife ksmucker@mt.gov (406) 444-5209 Dave Schmetterling for Fisheries dschmetterling@mt.gov (406) 542-5514
Fish and Wildlife Recommendations for Subdivision Development	Stevie Burton stevie.burton@mt.gov (406) 594-7354 See https://fwp.mt.gov/conservation/living-with-wildlife/subdivision-recommendations
Regional Contacts 	Region 1 (Kalispell) (406) 752-5501 fwprg12@mt.gov Region 2 (Missoula) (406) 542-5500 fwprg22@mt.gov Region 3 (Bozeman) (406) 577-7900 fwprg3@mt.gov Region 4 (Great Falls) (406) 454-5840 fwprg42@mt.gov Region 5 (Billings) (406) 247-2940 fwprg52@mt.gov Region 6 (Glasgow) (406) 228-3700 fwprg62@mt.gov Region 7 (Miles City) (406) 234-0900 fwprg72@mt.gov

Montana Department of Agriculture

General Contact Information: <https://agr.mt.gov/About/Office-Locations/Office-Locations-and-Field-Offices>

Noxious Weeds: <https://agr.mt.gov/Noxious-Weeds>

Montana Department of Environmental Quality

Permitting and Operator Assistance for all Environmental Permits: <https://deq.mt.gov/Permitting>

Opencut Mining Web Mapping Application for review of opencut mining applications

<https://gis.mtdeq.us/portal/apps/webappviewer/index.html?id=7b60084bc4c444a19c9a7a0867e7635a>

Montana Department of Natural Resources and Conservation

Overview of, and contacts for, licenses and permits for state lands, water, and forested lands:

<https://dnrc.mt.gov/Permits-Services>

Stream Permitting (310 permits) and an overview of various water and stream related permits (e.g., Stream Protection Act 124, Federal Clean Water Act 404, Federal Rivers and Harbors Act Section 10, Short-term Water Quality Standard for Turbidity 318 Authorization, etc.).

<https://dnrc.mt.gov/Licenses-and-Permits/Stream-Permitting>

Wildfire Resources: <https://dnrc.mt.gov/Forestry/Wildfire>

Bureau of Land Management

Montana Field Office Contacts:



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

United States Army Corps of Engineers

Montana Regulatory Office for federal permits related to construction in water and wetlands

<https://www.nwo.usace.army.mil/Missions/Regulatory-Program/Montana/> (406) 441-1375

United States Environmental Protection Agency

Environmental information, notices, permitting, and contacts <https://www.epa.gov/mt>

Gateway to state resource locators <https://www.envcap.org/srl/index.php>

United States Fish and Wildlife Service

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

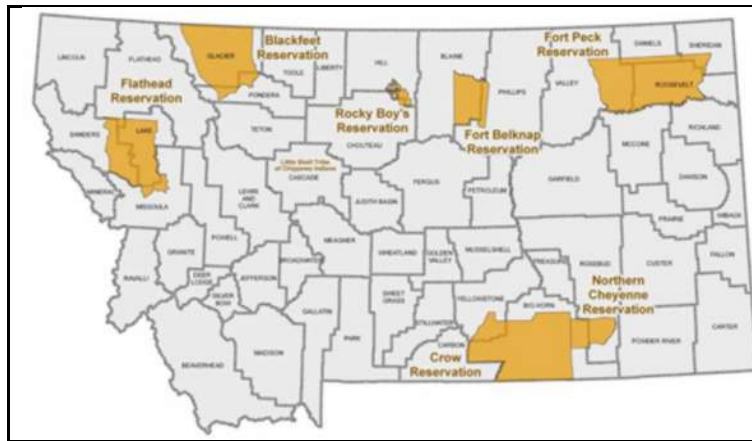
Montana Ecological Services Field Office: <https://www.fws.gov/office/montana-ecological-services> (406) 449-5225

United States Forest Service

Regional Office – Missoula, Montana Contacts

Wildlife Program Leader	Tammy Fletcher	tammy.fletcher2@usda.gov	(406) 329-3086
Aquatic Ecologist	Justin Jimenez	justin.jimenez@usda.gov	(435) 370-6830
TES Program	Lydia Allen	lydia.allen@usda.gov	(406) 329-3558
Interagency Grizzly Bear Coordinator	Scott Jackson	scott.jackson@usda.gov	(406) 329-3664
Regional Botanist	Amanda Hendrix	amanda.hendrix@usda.gov	(651) 447-3016
Regional Vegetation Ecologist	Mary Manning	marry.manning@usda.gov	(406) 329-3304
Invasive Species Program Manager	Michelle Cox	michelle.cox2@usda.gov	(406) 329-3669

Tribal Nations



[Assiniboine & Gros Ventre Tribes – Fort Belknap Reservation](#)

[Assiniboine & Sioux Tribes – Fort Peck Reservation](#)

[Blackfeet Tribe - Blackfeet Reservation](#)

[Chippewa Creek Tribe - Rocky Boy's Reservation](#)

[Crow Tribe – Crow Reservation](#)

[Little Shell Chippewa Tribe](#)

[Northern Cheyenne Tribe – Northern Cheyenne Reservation](#)

[Salish & Kootenai Tribes - Flathead Reservation](#)

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

[Alberta Conservation Information Management System](#)

[British Columbia Conservation Data Centre](#)

[Idaho Natural Heritage Program](#)

[North Dakota Natural Heritage Program](#)

[Saskatchewan Conservation Data Centre](#)

[South Dakota Natural Heritage Program](#)

[Wyoming Natural Diversity Database](#)

Invasive Species Management Contacts and Information

Aquatic Invasive Species

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

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

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

[Western Montana Conservation Commission](#)

Noxious Weeds

[Montana Weed Control Association Contacts Webpage](#)

[Montana Biological Weed Control Coordination Project](#)

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

[Montana Weed Control Association](#)

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

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

[Integrated Noxious Weed Management after Wildfires](#)

[Fire Management and Invasive Plants](#)

Introduction to Native Species

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

If you are aware of observation datasets that the MTNHP is missing, please report them to the Program Botanist apipp@mt.gov or Senior Zoologist dbachen@mt.gov. If you have animal or plant observations that you would like to contribute, you can also submit them via Excel spreadsheets, geodatabases, iNaturalist, or a Survey123 form. Various methods of data submission are reviewed in this playlist of videos: <https://www.youtube.com/playlist?list=PLRaydtZpHu2qOHPoSPq9cnM9uXGmEXACx>

Observations

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

Species Occurrences

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

Plant Species Occurrences

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

Animal Species Occurrences

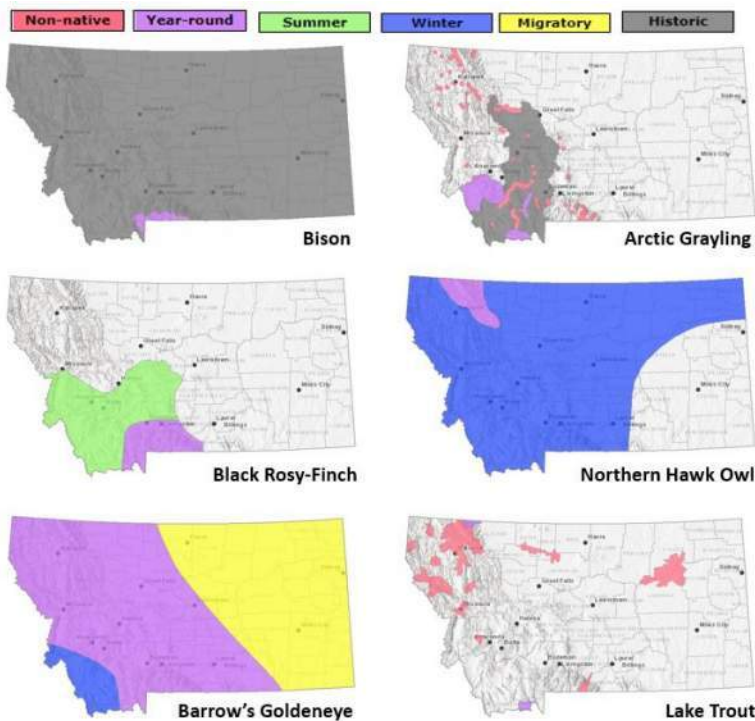
The location of a verified observation or specimen record typically known or assumed to represent a breeding population or a portion of a breeding population. Animal SO's are generally: (1) buffers of terrestrial point observations based on documented species' home range sizes; (2) buffers of stream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

Other Occurrence Polygons

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

Geographic Range Polygons

Geographic range polygons are still under development for most plant and invertebrate species. Native year-round, summer, winter, migratory and historic geographic range polygons as well as polygons for introduced



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

Predicted Suitable Habitat Models

Predicted habitat suitability models have been created for plant and animal Species of Concern and are undergoing development for non-Species of Concern. For species for which models have been completed, the environmental summary report includes simple rule-based associations with streams for aquatic species and seasonal habitats for game species as well as mathematically complex Maximum Entropy models (Phillips et al. 2006, *Ecological Modeling* 190:231-259) constructed from a variety of statewide biotic and abiotic layers and presence only data for individual species for most terrestrial species. For the Maximum Entropy models, we reclassified 90 x 90-meter continuous model output into suitability classes (unsuitable, low, moderate, and optimal) then aggregated that into the one square mile hexagons used in the environmental summary report; this is the finest spatial scale we suggest using this information in management decisions and survey planning. Full model write ups for individual species that discuss model goals, inputs, outputs, and evaluation in much greater detail are posted on the MTNHP's [Predicted Suitable Habitat Models](#) webpage. Evaluations of predictive accuracy and specific limitations are included with the metadata for models of individual species.

Model outputs should not be used in place of on-the-ground surveys for species. Instead model outputs should be used in conjunction with habitat evaluations to determine the need for on-the-ground surveys for species. We suggest that the percentage of predicted optimal and moderate suitable habitat within the report area be used in conjunction with geographic range polygons and the percentage of commonly associated habitats to generate lists of potential species that may occupy broader landscapes for the purposes of landscape-level planning.

Associated Habitats

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

systems mapped in Montana by: (1) using personal knowledge and reviewing literature that summarizes the breeding, overwintering, or migratory habitat requirements of each species; (2) evaluating structural characteristics and distribution of each ecological system relative to the species' range and habitat requirements; (3) examining the observation records for each species in the state-wide point observation database associated with each ecological system; and (4) calculating the percentage of observations associated with each ecological system relative to the percent of Montana covered by each ecological system to get a measure of numbers of observations versus availability of habitat. Species that breed in Montana were only evaluated for breeding habitat use, species that only overwinter in Montana were only evaluated for overwintering habitat use, and species that only migrate through Montana were only evaluated for migratory habitat use. In general, species were listed as associated with an ecological system if structural characteristics of used habitat documented in the literature were present in the ecological system or large numbers of point observations were associated with the ecological system. However, species were not listed as associated with an ecological system if there was no support in the literature for use of structural characteristics in an ecological system, even if point observations were associated with that system. Common versus occasional association with an ecological system was assigned based on the degree to which the structural characteristics of an ecological system matched the preferred structural habitat characteristics for each species as represented in the scientific literature. The percentage of observations associated with each ecological system relative to the percent of Montana covered by each ecological system was also used to guide assignment of common versus occasional association.

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

Introduction to Land Cover

Land Use/Land Cover is one of 15 [Montana Spatial Data Infrastructure](#) framework layers considered vital for making statewide maps of Montana and understanding its geography. The layer records all Montana natural vegetation, land cover and land use, classified from satellite and aerial imagery, mapped at a scale of 1:100,000, and interpreted with supporting ground-level data. The baseline map is adapted from the Northwest ReGAP (NWGAP) project land cover classification, which used 30m resolution multi-spectral Landsat imagery acquired between 1999 and 2001. Vegetation classes were drawn from the Ecological System Classification developed by NatureServe (Comer et al. 2003). The land cover classes were developed by Anderson et al. (1976). The NWGAP effort encompasses 12 map zones. Montana overlaps seven of these zones. The two NWGAP teams responsible for the initial land cover mapping effort in Montana were Sanborn and NWGAP at the University of Idaho. Both Sanborn and NWGAP employed a similar modeling approach in which Classification and Regression Tree (CART) models were applied to Landsat ETM+ scenes. The Spatial Analysis Lab within the Montana Natural Heritage Program was responsible for developing a seamless Montana land cover map with a consistent statewide legend from these two separate products. Additionally, the Montana land cover layer incorporates several other land cover and land use products (e.g., MSDI Structures and Transportation themes and the Montana Department of Revenue Final Land Unit classification) and reclassifications based on plot-level data and the latest NAIP imagery to improve accuracy and enhance the usability of the theme. Updates are done as partner support and funding allow, or when other MSDI datasets can be incorporated. Recent updates include fire perimeters and agricultural land use (annually), energy developments such as wind, oil and gas installations (2014), roads, structures and other impervious surfaces (various years): and local updates/improvements to specific ecological systems (e.g., central Montana grassland and sagebrush ecosystems). Current and previous versions of the Land Use/Land Cover layer with full metadata are available for download from the Montana State Library's [GIS Data List](#). More information on the land cover layer is available at: https://msl.mt.gov/geoinfo/msdi/land_use_land_cover/

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

Literature Cited

- Anderson, J.R. E.E. Hardy, J.T. Roach, and R.E. Witmer. 1976. A land use and land cover classification system for use with remote sensor data. U.S. Geological Survey Professional Paper 964.
- Comer, P., D. Faber-Langendoen, R. Evans, S. Gawler, C. Josse, G. Kittel, S. Menard, M. Pyne, M. Reid, K. Schulz, K. Snow, and J. Teague. 2003. Ecological systems of the United States: A working classification of U.S. terrestrial systems. NatureServe, Arlington, VA.

Introduction to Wetland and Riparian

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

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

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

See detailed overviews, with examples, of both wetland and riparian classification systems and associated codes as a [storymap](#) and companion [guide](#)

Literature Cited

- Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deepwater habitats of the United States. U.S. Fish and Wildlife Service, FWS/OBS-79/31. Washington, D.C. 103pp.
- Federal Geographic Data Committee. 2013. Classification of wetlands and deepwater habitats of the United States. FGDC-STD-004-2013. Second Edition. Wetlands Subcommittee, Federal Geographic Data Committee and U.S. Fish and Wildlife Service, Washington, D.C.
- U.S. Fish and Wildlife Services. 2009. A system for mapping riparian areas in the western United States. Division of Habitat and Resource Conservation, Branch of Resource and Mapping Support, Arlington, Virginia.

Introduction to Land Management

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

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

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

[Public Lands](#)

[Conservation Easements](#)

[Private Conservation Lands](#)

[Managed Areas](#)

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

Introduction to Invasive and Pest Species

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

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

If you are aware of observation or survey datasets for invasive or pest species that the MTNHP is missing, please report them to the Program Coordinator bmaxell@mt.gov Program Botanist apipp@mt.gov or Senior Zoologist dbachen@mt.gov If you have animal or plant observations that you would like to contribute, you can also submit them via Excel spreadsheets, geodatabases, iNaturalist, or a Survey123 form. Various methods of data submission are reviewed in this playlist of videos:
<https://www.youtube.com/playlist?list=PLRaydtZpHu2qOHPoSPq9cnM9uXGmEXACx>

Additional Information Resources

[Effects of Recreation on Rocky Mountain Wildlife](#)

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

[MTNHP Staff Contact Information](#)

[Montana Field Guide](#)

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

[MTNHP Species Status Codes - Explanation](#)

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

[MTNHP Request Information page](#)

[Montana Cadastral](#)

[Montana Code Annotated](#)

[Montana Fisheries Information System](#)

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

[Montana Forestry Best Management Practices](#)

[Montana GIS Data Layers](#)

[Montana GIS Data Bundler](#)

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

[Montana Guide to Streamside Management Zone Law and Rules](#)

[Montana Ground Water Information Center](#)

[Montana Index of Environmental Permits, 21st Edition \(2018\)](#)

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

[Montana Environmental Policy Act Analysis Resource List](#)

[Montana Native Plant Conservation Strategy](#)

[Montana Spatial Data Infrastructure Layers](#)

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

[Montana Stream Permitting: a guide for conservation district supervisors and others](#)

[Montana Water Information System](#)

[Montana Web Map Services](#)

[National Environmental Policy Act](#)

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

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

[Uses of Information from the Montana Natural Heritage Program](#)

[Web Soil Survey Tool](#)

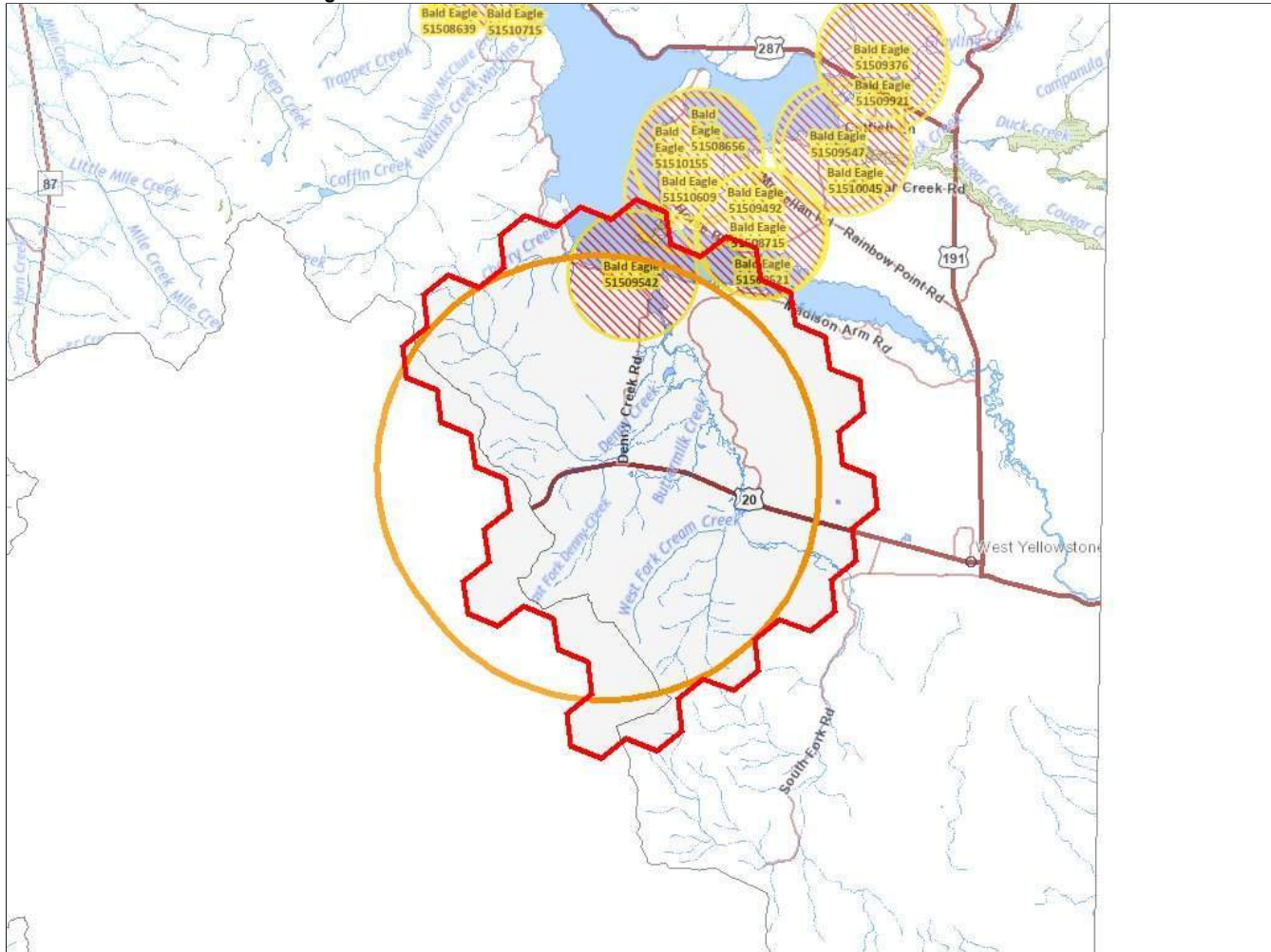
[Xerces Society for Invertebrate Conservation Resources](#)



Montana SOC Occurrences Report

SOC Occurrences for Birds = Bald Eagle

Report generated 4/2/2025 8:41:09 AM



Birds - Bald Eagle (*Haliaeetus leucocephalus*)

SO Count: 33 Obs Count: 245 Earliest Obs: 1930 Recent Obs: 2022

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

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

Delineation Criteria

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

Last Updated
Feb 12, 2025

SO ID	Acres	Obs Count	Earliest Obs	Recent Obs
SO ID: 51508639	Acres: 3,095	Obs Count: 8	Earliest Obs: 2000	Recent Obs: 2007
SO ID: 51508656	Acres: 3,105	Obs Count: 17	Earliest Obs: 1995	Recent Obs: 2011
SO ID: 51508679	Acres: 3,095	Obs Count: 19	Earliest Obs: 1983	Recent Obs: 2004
SO ID: 51508715	Acres: 3,095	Obs Count: 18	Earliest Obs: 1984	Recent Obs: 2014
SO ID: 51509169	Acres: 3,095	Obs Count: 3	Earliest Obs: 2002	Recent Obs: 2021
SO ID: 51509282	Acres: 3,105	Obs Count: 9	Earliest Obs: 1978	Recent Obs: 1986
SO ID: 51509355	Acres: 3,105	Obs Count: 2	Earliest Obs: 1990	Recent Obs: 1991
SO ID: 51509376	Acres: 3,105	Obs Count: 5	Earliest Obs: 1984	Recent Obs: 1988
SO ID: 51509492	Acres: 3,095	Obs Count: 12	Earliest Obs: 2001	Recent Obs: 2012
SO ID: 51509521	Acres: 3,095	Obs Count: 7	Earliest Obs: 1977	Recent Obs: 1983
SO ID: 51509528	Acres: 3,095	Obs Count: 4	Earliest Obs: 2015	Recent Obs: 2022
SO ID: 51509542	Acres: 3,105	Obs Count: 5	Earliest Obs: 2010	Recent Obs: 2014
SO ID: 51509547	Acres: 3,095	Obs Count: 3	Earliest Obs: 1990	Recent Obs: 1994
SO ID: 51509616	Acres: 3,105	Obs Count: 4	Earliest Obs: 1998	Recent Obs: 2001
SO ID: 51509659	Acres: 3,095	Obs Count: 3	Earliest Obs: 1978	Recent Obs: 1997
SO ID: 51509686	Acres: 3,105	Obs Count: 8	Earliest Obs: 1998	Recent Obs: 2014
SO ID: 51509715	Acres: 3,105	Obs Count: 6	Earliest Obs: 1990	Recent Obs: 2009
SO ID: 51509777	Acres: 3,105	Obs Count: 2	Earliest Obs: 1990	Recent Obs: 1991
SO ID: 51509889	Acres: 3,105	Obs Count: 1	Earliest Obs: 2007	Recent Obs: 2007
SO ID: 51509921	Acres: 3,105	Obs Count: 6	Earliest Obs: 1978	Recent Obs: 1983
SO ID: 51510010	Acres: 3,105	Obs Count: 8	Earliest Obs: 1982	Recent Obs: 1994
SO ID: 51510044	Acres: 3,105	Obs Count: 4	Earliest Obs: 2009	Recent Obs: 2014
SO ID: 51510045	Acres: 3,095	Obs Count: 5	Earliest Obs: 2003	Recent Obs: 2007
SO ID: 51510052	Acres: 3,095	Obs Count: 14	Earliest Obs: 1994	Recent Obs: 2014
SO ID: 51510091	Acres: 3,105	Obs Count: 8	Earliest Obs: 1930	Recent Obs: 1995

 SO ID: 51510155	Acres: 3,105	Obs Count: 3	Earliest Obs: 2012	Recent Obs: 2014
 SO ID: 51510269	Acres: 3,095	Obs Count: 9	Earliest Obs: 1989	Recent Obs: 1998
 SO ID: 51510381	Acres: 3,095	Obs Count: 4	Earliest Obs: 1970	Recent Obs: 1978
 SO ID: 51510451	Acres: 3,105	Obs Count: 9	Earliest Obs: 1979	Recent Obs: 1988
 SO ID: 51510461	Acres: 3,105	Obs Count: 2	Earliest Obs: 1988	Recent Obs: 1989
 SO ID: 51510609	Acres: 3,105	Obs Count: 20	Earliest Obs: 1994	Recent Obs: 2014
 SO ID: 51510715	Acres: 3,105	Obs Count: 10	Earliest Obs: 1990	Recent Obs: 1999
 SO ID: 51510721	Acres: 3,105	Obs Count: 7	Earliest Obs: 1987	Recent Obs: 1993

Citation for this report:
Montana SOC Occurrences Report
SOC Occurrences for Birds = Bald Eagle
Within Lat/Long: (44.52981,-110.83327) to (44.83616,-111.63271)
Natural Heritage Map Viewer. Montana Natural Heritage Program.
Retrieved on April 2, 2025, from <https://mtnhp.org/MapView/SOReport.aspx>