

NATURAL RESOURCES AND CONSERVATION



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FINAL ENVIRONMENTAL ASSESSMENT

Project Name:	Victor Sewer and Water District – Wastewater System Improvements
Proposed Implementation Date:	October 2024
Proponent:	Victor Sewer and Water District
Location:	46.409272, -114.138575
County:	Ravalli County

I. TYPE AND PURPOSE OF ACTION

The Victor Water and Sewer District (District) services 414 accounts in the community of Victor, located in the Bitterroot Valley of Montana. Victor is an unincorporated community in Ravalli County and has a population of 789, according to the 2020 census data. The Victor wastewater treatment facility (WWTF) was constructed in 1976 and was last upgraded in 1996. The WWTF consists of two aerated lagoons (Cell 1 and Cell 2), a storage cell, a UV disinfection system, and four rapid infiltration and percolation (IP) cells. After treatment, reclaimed water is applied to adjacent fields via irrigation during summer months and discharged to the IP cells during winter months. (Preliminary Engineering Report (PER)).

The community of Victor is experiencing growth and more capacity will be needed to adequately treat wastewater. The WWTF in its current state has several deficiencies, including:

1. There is sludge buildup in Cell 2 due to deferred service.
2. The liner of Cell 2 is old and cannot be inspected, therefore the condition is unknown. This results in the potential for the cell to leak, polluting the aquifer with partially treated wastewater.
3. The blowers and aeration equipment have exceeded their design life and present a noise hazard to workers.
4. During the growth season, reclaimed water is applied to a 5.7-acre area vegetated with an alfalfa hay crop. Because the area is too small for the amount of water applied, this application area is currently overloaded with water and nutrients. It was estimated that existing field can be used for disposal of 5.61 million gallons (MG) of treated effluent during the growth season between April through October. Based on current wastewater flows of 31.33 MG, 25.7 MG must be disposed through IP cells. Overloading of the alfalfa field leads to potential run off and pollution of nearby surface water and groundwater.
5. Treated effluent is drawn from the storage cell and pumped through the UV disinfection system prior to land application as irrigation of the alfalfa field. Flow that is discharged to the IP cells by gravity is not disinfected using the UV system. This is not in compliance with Montana Department of Environmental Quality (DEQ) requirements and has the potential to transport pathogens to the Class 1 aquifer underneath the IP cells, as well as the

Bitterroot River.

6. The Victor crossing lift station is original to the Facilities' 1976 construction. The equipment is near the end of its expected life cycle. All wastewater collected by the district is pumped via the lift station to the WWTF. Unreliable pumping equipment threatens the collection system and could lead to sewer collection system backups.
7. A significant increase in inflow to the WWTF during summer months indicates inflow and infiltration problems with the collection system in the community of Victor.

The applicant proposes to address the immediate needs of the Victor WWTF in two separate phases:

- Phase 1 consists of Cell 2 sludge removal, Cell 2 liner replacement, the installation of a Cell 2 baffle curtain, and installation of water flow meters, flow and loading data collection, a groundwater study, expansion of the irrigation area and relocation of IP cells.
- Phase 2 consists of conducting an inflow and infiltration study and subsequent establishment of a collection system rehabilitation program, upgrades to the UV disinfection system, and replacement of blowers and aeration equipment.

This environmental assessment evaluates both phases as a single project. Note that in addition to the activities listed in the two phases described above, a rehabilitation of the Victor crossing lift station will be performed using different funding. The entire project area consists of the existing WWTF property, the existing lift station property, and the sewer collection district (see map in PER).

The Department of Natural Resources and Conservation's (DNRC) Conservation and Resource Development Division (CARDD) will fund the Victor Sewer and Water District Wastewater System Improvements project.

II. PROJECT DEVELOPMENT

1. PUBLIC INVOLVEMENT, AGENCIES, GROUPS OR INDIVIDUALS CONTACTED:

Provide a brief chronology of the scoping and ongoing involvement for this project. List number of individuals contacted, number of responses received, and newspapers in which notices were placed and for how long. Briefly summarize issues received from the public.

Meetings with residents of Victor took place in April and June of 2022. Members of the public and the Morrison Maierle engineering team attended the meetings. No public comments were received during the meeting or within the comment period. (See Appendix B of PER for slideshow and attendance of meetings).

DNRC will post a draft of this Environmental Assessment for public comment on the DNRC's webpage for 30 days. For any comments submitted by the public, the MEPA Coordinator will review and work with the Grant manager and applicant to address those comments.

2. OTHER GOVERNMENTAL AGENCIES WITH JURISDICTION, LIST OF PERMITS NEEDED:

Examples: cost-share agreement with U.S. Forest Service, 124 Permit, 3A Authorization, Air Quality Major Open Burning Permit.

As outlined on page 6-5 of the PER, the project will require an excavation permit from the Ravalli County Road and Bridge Department. Construction documents will include requirements for permitting stormwater runoff and dewatering. Plans and specifications will be submitted to the DEQ for review and approval.

3. ALTERNATIVE DEVELOPMENT:

Describe alternatives considered and, if applicable, provide brief description of how the alternatives were developed. List alternatives that were considered but eliminated from further analysis and why. Include the No Action alternative.

Two alternatives were developed. Alternative 1, which consists of two phases and a lift station rehabilitation, addresses the immediate needs of the district. Alternative 2 consists of the Alternative 1 and additional upgrades suggested by the Morrison Maierle engineering team. The no action alternative was also considered.

The first phase of Alternative 1 consist of the following actions and upgrades to the WWTF and reclaimed water management infrastructure:

- **Cell 2 sludge removal** – The sludge in cell 2 has not been removed in over 20 years. This is beyond the typical cleaning timeframe. Sludge removal will return the cell to full capacity and eliminate the significant vegetation buildup currently floating in the basin.
- **Cell 2 liner inspection / replacement** – The Cell 2 liner cannot be inspected, and its integrity is unknown. While the cell is drained for sludge removal, the liner will be replaced if needed.
- **Installation of a Baffle in Cell 2** – Cell 2 is the final treatment cell before flow is transmitted to the storage basin. Installing a baffle in Cell 2 would create a quiescent zone leading to the outlet and help ensure excess solids are not transmitted into the storage basin.
- **Flow and loading data collection** – Having accurate flowrates and wastewater biological oxygen demand (BOD) and nitrogen loading data are critical in forming a basis for detailed design improvement. This requires the installation of an influent flow meter.
- **Conducting a groundwater study** – Due to the facility's use of IP cells and its proximity to the Bitterroot River a groundwater study is recommended. The study will determine flow gradient, interactions with the river, and aquifer properties.
- **Expansion of land application and installation of new IP cells** – The area for effluent application will be expanded and the IP cells will be relocated to meet regulations and become permitted as groundwater discharge.

The second phase of Alternative 1 consists of the following actions to improve the collection system and reclaimed water management:

- **An inflow and infiltration study** – A significant increase in inflow to the WWTF during summer months indicates inflow and infiltration problems with the collection system. This study will identify and recommend solutions for the issues.
- **Collection system rehabilitation program** – This step begins remediation of problems found in the inflow and infiltration study.
- **Installation of reclaimed water disinfection and flow meter** – UV treatment has no impact on chemical composition or dissolved oxygen content of the effluent. There are no special handling or storage requirements for UV treatment. This method is well suited to meet current and future regulations.
- **Replacement of blowers and aeration equipment** – The existing blowers and aeration equipment were installed in 1996 and are at the end of their design life. The new equipment will be more energy efficient and will be sized to accommodate future expansion.

Alternative 1 also includes the lift station rehabilitation, which will be done concurrently and using separate funding.

Alternative 2 consists of all the upgrades listed above for Alternative 1 and the following additional updates to the WWTF:

- **Installation of a third treatment cell** – A third treatment cell will be required to meet potential permit requirements and accommodate future growth. This cell would become the first cell in the treatment train.
- **Addition of a nutrient removal process** – A nitrogen removal process may be needed if a future Montana Ground Water Pollution Control System (MGWPCS) permit includes more stringent effluent limits.

Alternative 2 was not explored further because it does not address the immediate needs of the district.

The no action alternative does not address any of the existing deficiencies in the collection system, lift station, WWTF and reclaimed water management. The alternative of no action will be examined to discuss the environmental effects that would occur if this project were not funded.

See Chapter 4 of PER for a more detailed analysis of the items in these alternatives, including cost and design parameters.

III. IMPACTS ON THE PHYSICAL ENVIRONMENT

- *RESOURCES potentially impacted are listed on the form, followed by common issues that would be considered.*
- *Explain POTENTIAL IMPACTS AND MITIGATIONS following each resource heading.*
- *Enter "NONE" If no impacts are identified or the resource is not present.*

4. GEOLOGY AND SOIL QUALITY, STABILITY AND MOISTURE:

Consider the presence of fragile, compactable or unstable soils. Identify unusual geologic features. Specify any special reclamation considerations. Identify direct, indirect, and cumulative effects to soils.

The project area consists of the existing WWTF property (including the effluent application area), the existing lift station property, and the sewer collection district.

The soils of the WWTF and lift station properties consist predominantly of Sheafman-Victor complex (60% of total area, 1- 4% slopes, 340B), Curlew rarely-flooded-Victor complex (17% of total area, 0 – 4% slopes, 315B), Chereette-Curlew, rarely flooded complex (14% of total area, 0 – 45% slopes, 14F), and Chereete sandy loam (9% of total area, 0 – 45% slopes, 303B). The soil in the current 5.7-acre effluent application area is the Sheafman-Victor complex. This soil is classified as farmland of local importance. This soil is excessively drained and has a high capacity to transmit water. The depth to the water table is more than 80 inches (NRCS Soils Report).

The soils of the sewer collection district consist predominantly of Sheafman-Victor complex (50% of the area, 1 – 4% slopes), Victor gravelly loam (34% of total area, 1 – 4% slopes), and Curlew silt loam (13% of total area, 0 – 4% slopes), rarely flooded.

Currently, reclaimed water is applied to irrigate a field of grass alfalfa crop. According to the engineering report provided by Morrison Maierle (PER) the land application area is overloaded with reclaimed water. This results in the application of more nutrients and water than can be taken up by the crop, which in turn results in excess nutrients entering the aquifer and leaching to the Bitterroot River.

Proposed Alternative – There will be no long-term impacts to the soil or geology of the project area. There will be short-term, direct adverse impacts to the soils in the project area during construction. Any disturbances to the soil of the area will be restored to their pre-construction state.

No Action – There is currently a negative impact to the soils within the application field, as it is overloaded with moisture.

5. WATER QUALITY, QUANTITY AND DISTRIBUTION:

Identify important surface or groundwater resources. Consider the potential for violation of ambient water quality standards, drinking water maximum contaminant levels, or degradation of water quality. Identify direct, indirect, and cumulative effects to water resources.

Groundwater near the project area is relatively shallow. Wells near the project area have a static water level of 20 – 30 feet below ground surface. The groundwater beneath the WWTF is potentially being polluted because of the insufficiencies of the WWTF. Many residents of Victor get their drinking water from this aquifer via public and private wells. This is a Class 1 aquifer, meaning the aquifer must be maintained so that the water is suitable for beneficial uses with little or no treatment. These uses include public and private water supplies, culinary and food production purposes, irrigation, drinking water for livestock and wildlife, and commercial and drinking purposes (rules.mt.gov).

The Bitterroot River is approximately 1000 feet east of the WWTF (Environmental Checklist

provided by Morrison Maierle). The Bitterroot River joins the Clark Fork River near Missoula. The Clark Fork Drainage encompasses 1,891 square miles. The Clark Fork River is part of the Columbia River Drainage Basin. The Columbia River Drainage Basin drains roughly 260,00 square miles to its confluence with the Pacific Ocean (Bureau of Reclamation 2021 SECURE Water Act Report). Due to its location within the Clark Fork and Columbia River Drainages, the health of the Bitterroot River is crucially important. According to the Clean Water Information Center, the Bitterroot River is not fully supporting of aquatic life due to temperature and flow regime modification (CWAIC Report).

Between April and October, reclaimed water is applied as irrigation to a 5.7-acre field of alfalfa hay crop. During the non-irrigation season, the District stores wastewater in the storage cell. When the storage cell reaches capacity, water is discharged into the IP cells. This reclaimed water does not receive disinfection prior to discharge to the groundwater in proximity of a side channel of the Bitterroot River. During the irrigation season, the alfalfa field is currently overloaded with reclaimed water. This leads to run-off which increases the nutrient loading of surface water and infiltration into the groundwater below the alfalfa root system.

Proposed Alternative – The proposed upgrades to the WWTF will have positive long-term and short-term, direct and indirect beneficial effects to surface water of the area including the Bitterroot River. There will be long-term and short-term direct and indirect beneficial effects to the groundwater in the vicinity of the plant.

- Cell 2 liner replacement will eliminate infiltration of pathogens to the groundwater.
- Cell 2 sludge removal, the addition of a baffle in Cell 2 and upgrades to the blowers and aeration equipment will lead to better treatment which will lower potential nutrient loading of the surface water and groundwater near the project site.
- Currently details of the UV disinfection system are unknown. Upgrades to this system will lead to better disinfection prior to land application or infiltration in the IP cells.
- Conducting a groundwater and infiltration study will allow for better design of the IP cells and evaluation of the irrigation area. This will result indirectly in lower nutrient loading of the surface water and groundwater near the project site.
- Expanding the area for reclaimed wastewater application will allow more nutrients to be taken up by the alfalfa. This will eliminate run-off of nutrient loaded water into surface water and groundwater.
- Upgrades to the collection system will eliminate future sources of pollution.

No Action – The no action alternative has direct, indirect, long term, adverse effects to surface and groundwater quality. The many deficiencies of the WWTF are potentially allowing partially treated wastewater to leak into the ground water, and eventually into the aquifer. There is also the risk of nutrient overloading via run-off from the overloaded reclaimed water fields.

6. AIR QUALITY:

What pollutants or particulate would be produced (i.e. particulate matter from road use or harvesting, slash pile burning, prescribed burning, etc)? Identify the Airshed and Impact Zone (if any) according to the Montana/Idaho Airshed Group. Identify direct, indirect, and cumulative effects to air quality.

Victor and the Bitterroot Valley is not in a non-attainment area. This means that the air quality of Victor is in line with the National Ambient Air Quality Standards (information from Montana DEQ Air Quality Database).

Proposed Alternative – There will be no long-term adverse or beneficial impacts to ambient air quality near the project site. There may be short term, adverse effects from construction activities. These will be mitigated by the contractor during the construction process.

No Action – There is currently no impact on air quality in the project area.

7. VEGETATION COVER, QUANTITY AND QUALITY:

What changes would the action cause to vegetative communities? Consider rare plants or cover types that would be affected. Identify direct, indirect, and cumulative effects to vegetation.

The proposed upgrades to the WWTF and lift station will occur within the property boundaries of the WWTF, on private property that is owned by the district. The property and the community of Victor is classified as developed for human use, according to the Montana natural Heritage Environmental Summary. Reclaimed water is applied as irrigation to 5.7-acres of grass alfalfa crop within the project area. As part of the proposed project, more irrigated area will be added. The proposed additional acreage for treated water application is within the existing District property and will not require procuring any additional land. Soils in the proposed application area are suitable for growing alfalfa because alfalfa requires deep soil with adequate draining, as is present at the project site. The current application area can receive 5.6 MG of treated effluent during the growing season.

Proposed Alternative –There will be no impact to vegetation outside of the project area. Adding acreage for alfalfa irrigation will have a direct long-term beneficial impact to the vegetation at the application area. There will be short term, direct adverse effects to vegetation in the project area during construction. When construction is completed, the vegetation will be returned to its original state.

No Action – There are currently adverse impacts to vegetation within the project area. The alfalfa hay crop is overloaded with water and nutrients. The crop is unable to take up all of the water that is applied to it.

8. TERRESTRIAL, AVIAN AND AQUATIC LIFE AND HABITATS:

Consider substantial habitat values and use of the area by wildlife, birds or fish. Identify direct, indirect, and cumulative effects to fish and wildlife.

The WWTF is near the Bitterroot River, which flows into the Clark Fork River near Missoula, Montana. The Bitterroot River is managed as a wild trout fishery, with an emphasis on natural reproduction. The Bitterroot River is home to 10 native fish species and other nonnative species (FWP Bitterroot River Drainage Report). Aquatic species include Westslope Cutthroat Trout and Bull Trout (Montana Natural Heritage Program Environmental Summary).

There is currently a risk of pollution of the groundwater due to the deficiencies of the WWTF. A potential leak in the Cell 2 liner may cause partially treated wastewater to infiltrate into the groundwater. Pathogens may be present in this water as well as in the reclaimed water that infiltrates into the groundwater beneath the IP cells. This groundwater may in turn seep into the streambed, and into surface water of the Bitterroot River. There is also cause for concern because of the overloading of irrigation to the alfalfa field. There is more reclaimed water being applied than what can be taken up, resulting in runoff to surface water. In addition, nutrient rich water has potential to seep into the groundwater below the irrigation area and indirectly contribute nutrients to the Bitterroot River. This nutrient loading has the potential to negatively affect aquatic life and habitat in the Bitterroot River.

Proposed Alternative – The project will have direct and indirect long-term beneficial impacts to aquatic life in the Bitterroot River. There will be no impact to terrestrial or avian species of the area.

No Action – There are currently long-term direct and indirect adverse effects on aquatic life and habitats due to the deficiencies of the WWTF.

9. UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES:

Consider any federally listed threatened or endangered species or habitat identified in the project area. Determine effects to wetlands. Consider Sensitive Species or Species of special concern. Identify direct, indirect, and cumulative effects to these species and their habitat.

There are wetlands within 1000 feet of the treatment plant, more specifically Palustrine wetlands and Riverine wetlands along the Bitterroot River. The lagoons of the treatment facility are included as Palustrine wetlands in the U.S. Fish and Wildlife Wetlands Mapper.

There is no sage grouse habitat identified on or near the project area (Sage Grouse Habitat Map). There are mammal, bird, insect, and fish species that are potentially affected by activities in this location. These include the Canada Lynx, North American Wolverine, the Bull Trout, and the Monarch Butterfly. Bird species include the Yellow Billed Cuckoo, Bald Eagle, Bobolink, Cassin's Finch, Evening Grosbeak, Golden Eagle, Lewis's Woodpecker, Olive-sided Flycatcher, and the Rufous Hummingbird. Reptile species include the Northern Alligator Lizard. Three species of Subterranean Amphipods have been observed. (IPaC Resource List and Montana Natural Heritage Program Environmental Summary).

Proposed Alternative – The project will have direct beneficial short-term and long-term effects to the wetlands near the project area. Eliminating possible sources of pollution by upgrading the WWTF will be beneficial to the wetlands and the species that reside within it.

No Action – There is currently the possibility of nutrient rich water from the WWTF reaching the wetlands and the banks of the Bitterroot. This is a long-term adverse impact.

10. HISTORICAL AND ARCHAEOLOGICAL SITES:

Identify and determine direct, indirect, and cumulative effects to historical, archaeological or paleontological resources.

There are no historical or archaeological sites in the project area. If historical, archaeological, or paleontological resources are discovered during construction, all construction activity will cease, and the appropriate parties will be notified so an assessment of the resources can be made. Contact Jessica Bush, State Archaeologist at jbush@mt.gov, (406) 444-0388.

Proposed Alternative – The proposed plan will have no effect on historical or archaeological sites.

No Action – There is currently no effect on historical or archaeological sites.

11. AESTHETICS:

Determine if the project is located on a prominent topographic feature, or may be visible from populated or scenic areas. What level of noise, light or visual change would be produced? Identify direct, indirect, and cumulative effects to aesthetics.

The project area is currently developed as a WWTF and the lift station. The project area also contains the current Victor sewer collection district. Upgrades to the facility will take place within the existing property boundaries of the WWTF.

Proposed Alternative – There will be adverse, short-term, and direct aesthetic impacts to the site during the construction period. These may include noise from construction activities and equipment, as well as visual impacts during construction. The aesthetic properties of the site will be restored when construction is completed.

No Action – There is currently no impact to the aesthetic of the project area.

12. DEMANDS ON ENVIRONMENTAL RESOURCES OF LAND, WATER, AIR OR ENERGY:

Determine the amount of limited resources the project would require. Identify other activities nearby that the project would affect. Identify direct, indirect, and cumulative effects to environmental resources.

The proposed project will upgrade the existing property without expanding the property boundaries. The existing blower motors will be upgraded to centrifugal blowers, which are more energy efficient. The groundwater beneath the WWTF is at risk of pollution due to the insufficiencies of the WWTF. It is understood that reclaimed water from the WWTF infiltrates into the same aquifer that supplies drinking water to residents of Victor. The current application area is insufficient for the amount of reclaimed water that is being applied. This leads to nutrient loading to groundwater and surface water.

Proposed Alternative – The upgrading of the WWTF will not affect the demand for land in the area. It will have direct, beneficial effects on the amount of energy being used for the pumps. It will also have direct beneficial impacts to the aquifer that supplies drinking water.

No Action – There are currently negative, adverse impacts to water and land in the area due to the insufficiencies of the WWTF. There is an increase in energy usage due to the dated equipment.

13. OTHER ENVIRONMENTAL DOCUMENTS PERTINENT TO THE AREA:

List other studies, plans or projects on this tract. Determine cumulative impacts likely to occur as a result of current private, state or federal actions in the analysis area, and from future proposed state actions in the analysis area that are under MEPA review (scoped) or permitting review by any state agency.

Morrison Maierle engineering has provided a preliminary engineering report for upgrades to the WWTF. This report contains a project overview, analysis of alternatives, a proposed budget with potential funding sources, figures, and an environmental checklist (PER).

IV. IMPACTS ON THE HUMAN POPULATION

- *RESOURCES potentially impacted are listed on the form, followed by common issues that would be considered.*
- *Explain POTENTIAL IMPACTS AND MITIGATIONS following each resource heading.*
- *Enter "NONE" If no impacts are identified or the resource is not present.*

14. HUMAN HEALTH AND SAFETY:

Identify any health and safety risks posed by the project.

The WWTF is not authorized to discharge effluent to a groundwater outfall (IP cells) by the MDEQ as there is no existing permit. In addition, there is potential for partially treated wastewater to infiltrate the groundwater beneath Cell 2, if the liner is not intact. This groundwater infiltrates the aquifer from which many residents of Victor get their drinking water. This is a Class 1 aquifer, meaning the aquifer must be maintained so that the water is suitable for beneficial uses with little or no treatment such as public and private water supplies, culinary and food production purposes, irrigation, drinking water for livestock and wildlife, and commercial and drinking purposes (rules.mt.gov). The potential pollution of this Class 1 aquifer poses a human health and safety risk.

Proposed Alternative – The project will have long-term direct and indirect beneficial effects to human health and safety. The project will include monitoring the quality of discharge as well as preventing pollution by performing upgrades to the facility. Upgrades to the UV system will eliminate the presence of pathogen in the reclaimed water and subsequent transport of these pathogens to surface water and groundwater. This will protect the aquifer and ensure that residents of Victor are not drinking contaminated water.

No Action – The no action alternative will have adverse impacts to human health and safety. The Class 1 aquifer must be maintained for use as drinking water.

15. INDUSTRIAL, COMMERCIAL AND AGRICULTURE ACTIVITIES AND PRODUCTION:

Identify how the project would add to or alter these activities.

Agriculture activities in the project area consists of a 5.7 acre irrigated alfalfa hay field. The field is irrigated with treated wastewater (see figure 0-2 of PER). Calculations show that the current application area is overloaded with reclaimed water. This results in more water and nutrients than can be taken up by the crop. This results in excess nutrients entering the aquifer and river (see page 0-8 of PER).

Alfalfa is a high-water use crop due because it has a long growing season, a deep root system, and a dense mass of vegetation. Commonly used ranges of water requirements of alfalfa are 18 – 36 inches of water per season. Alfalfa uptakes 40% of its water from the top 1.5 inches of its root structure, and 30% from 1.5 to 3 inches of its roots (Montana State University Extension).

A WWTF is classified by the North American Industry Classification System (NAICS) as a sewage treatment facility. The community of Victor in which collection infrastructure is has several commercial activities, including retail spaces, restaurants, and schools.

Proposed Alternative – The project will have long-term beneficial impacts on the WWTF infrastructure including the lift station. The acreage of the crop area will be increased. This will directly beneficially impact the agricultural activities occurring on the project site by producing a larger alfalfa hay crop. Commercial activities in the collection area will benefit from upgraded sewer infrastructure.

No Action – There is currently adverse impact to the agricultural activities occurring on the project site as a result of overloading with irrigation, and that would continue to occur.

16. QUANTITY AND DISTRIBUTION OF EMPLOYMENT:

Estimate the number of jobs the project would create, move or eliminate. Identify direct, indirect, and cumulative effects to the employment market.

In 2014 the unemployment rate in Ravalli County was 6.2%. in 2014, the labor force participation rate of Ravalli County was 57%, this is lower than the state of Montana participation rate at 64% (Ravalli County Poverty Report Card).

Proposed Alternative – The project is expected to have a beneficial impact to the local economy by creating jobs. An engineering firm will be hired for the design of the project. Contractors will be needed to perform the upgrades to the Facility.

No Action – There is currently no impact to employment in Victor or surrounding communities.

17. LOCAL AND STATE TAX BASE AND TAX REVENUES:

Estimate tax revenue the project would create or eliminate. Identify direct, indirect, and cumulative effects to taxes and revenue.

Operation of the WWTF is not dependent on tax revenues. It is financed by enterprise funds collected based on usage of the wastewater collection system and WWTF (see attachment D).

Proposed Alternative – The project will not impact the local and state tax base and revenues.

No Action – There is currently no impact on the local and state tax base and revenues.

18. DEMAND FOR GOVERNMENT SERVICES:

Estimate increases in traffic and changes to traffic patterns. What changes would be needed to fire protection, police, schools, etc.? Identify direct, indirect, and cumulative effects of this and other projects on government services

The WWTF is on private land owned by the district and it does not contain any government services. The WWTF is not located on a main road. Fire hazard at the WWTF is minimal and all new construction will follow codes and regulations for fire safety (Environmental Checklist). Future updates to the collection system will temporarily impact traffic during construction.

Proposed Alternative – There will be no impact to the demand for government services. There will be adverse short term and direct impacts to traffic during any remediation activities of the collection system in Victor.

No Action – There is currently no impact on the demand for government services.

19. LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS:

List State, County, City, USFS, BLM, Tribal, and other zoning or management plans, and identify how they would affect this project.

Victor is a census designated community, meaning it is not a designated town. The WWTF is on property that is owned by the district. Upgrading the WWTF will not require expansion of the property.

Proposed Alternative – There will be no impact to locally adapted environmental plans and goals.

No Action – There is no impact to locally adapted environmental plans and goals.

20. ACCESS TO AND QUALITY OF RECREATIONAL AND WILDERNESS ACTIVITIES:

Identify any wilderness or recreational areas nearby or access routes through this tract. Determine the effects of the project on recreational potential within the tract. Identify direct, indirect, and cumulative effects to recreational and wilderness activities.

The Bitterroot River is ranked within the top five in the state of Montana for fishing pressure, and angling occurs year-round. There are 13 fishing access sites along the mainstream of the Bitterroot River managed by FWP. There are several publicly owned or managed sites along the river that are commonly used by anglers.

Proposed Alternative – The project site is on private land and does not impact any access to angling on the Bitterroot River. The project will have no impact on the access to or quality of recreational and wilderness activities. There will be beneficial long-term indirect impacts to recreational activities on the Bitterroot River due to the improvements in water quality as a result of the upgrades to the WWTF.

No Action – There is no impact on the access to and quality of recreation and wilderness activities. There is currently a risk of harm to fish population in the Bitterroot River.

21. DENSITY AND DISTRIBUTION OF POPULATION AND HOUSING:

Estimate population changes and additional housing the project would require. Identify direct, indirect, and cumulative effects to population and housing.

The WWTF and lift station is not within any housing areas and is within the existing property boundaries of the WWTF. The sewer collection district encompasses the community of Victor. The District services 414 accounts. This includes 361 residential connections, serving a population of 730 people. According to the PER, there is potential for 67 new service connections over the next 20 years. There are empty lots within the existing collection system which could account for 97 new connections.

Proposed Alternative – The project will have no impact on the current density and distribution of population and housing. Upgrades to the WWTF will have long-term direct impacts to the amount of wastewater that can be collected and treated. This will allow for new connections to the collection system.

No Action – There is currently no impact on the density and distribution of population and housing.

22. SOCIAL STRUCTURES AND MORES:

Identify potential disruption of native or traditional lifestyles or communities.

Victor is a census designated place with a population of 789 in 2020. Victor is a close-knit community with over 120 local businesses.

Proposed Alternative – The project will have no impact on the social structure of Victor.

No Action – There is currently no impact on the social structure of Victor.

23. CULTURAL UNIQUENESS AND DIVERSITY:

How would the action affect any unique quality of the area?

The culture of Victor comes from its agricultural background, proximity to the outdoors, and tight knit community.

Proposed Alternative – There will be no impact on cultural uniqueness and diversity of the area.

No Action – There is no impact on the cultural uniqueness and diversity in the area.

24. OTHER APPROPRIATE SOCIAL AND ECONOMIC CIRCUMSTANCES:

Include appropriate economic analysis. Identify potential future uses for the analysis area other than existing management. Identify direct, indirect, and cumulative economic and social effects likely to occur as a result of the proposed action.

The upgrades to the WWTF will increase rates for the users by \$4.85 per month up to \$10.65 per month. The total monthly rate for users will be \$26.93.

Proposed Alternative – There will be a long-term direct adverse economic impact to users of the wastewater collection and treatment infrastructure due to the increase in monthly cost.

No Action – There is currently no impact on economic or social circumstances.

25. DRINKING WATER AND/OR CLEAN WATER

Identify potential impacts to water and/or sewer infrastructure (e.g., community water supply, stormwater, sewage system, solid waste management) and identify direct, indirect, and cumulative effects likely to occur as a result of the proposed action.

This project consists of the updates of the existing wastewater collection and wastewater treatment infrastructure. The wastewater collection system will be rehabilitated after an infiltration study has been performed. Operation of the WWTF will be upgraded by Cell 2 sludge removal, Cell 2 liner inspection/replacement, installation of a baffle in Cell 2, upgrades to the reclaimed water disinfection system, installation of influent and effluents flow meters, installation of new IP cells and replacement of the blowers and aeration equipment.

The deficiencies of the collection system and WWTF may be causing potential pollution of the Class 1 aquifer in the project area. Partially treated wastewater may be entering the groundwater. The aquifer must be maintained so that the water is suitable for beneficial uses with little or no treatment such as public and private water supplies, culinary and food production purposes, irrigation, drinking water for livestock and wildlife, and commercial and drinking purposes (rules.mt.gov). The pollution of this Class 1 aquifer poses potential human health and safety risks. Many residents of Victor and surrounding communities get their drinking water from this aquifer.

Proposed Alternative – Implementing the proposed project will have direct, long term and short-term beneficial effects on the sewer infrastructure of Victor. The proposed project will have direct long-term beneficial effects to the supply of clean and safe drinking water to residents of Victor.

No Action – There are short term, long term, direct, and indirect adverse impacts to the sewer and water infrastructure of Victor that will continue if no action is taken. The WWTF will continue to degrade and pollute the groundwater if no action is taken.

26. ENVIRONMENTAL JUSTICE

Will the proposed project result in disproportionately high or adverse human health or environmental effects on minority or low-income populations per the Environmental Justice Executive Order 12898? Identify potential impacts to and identify direct, indirect, and cumulative effects likely to occur as a result of the proposed action.

There are no environmental justice issues in Victor or the project sites.

Proposed Alternative – The project will have no impact on environmental justice in the area.

No Action – There is no impact on environmental justice in the area.

EA Prepared By:	Name: Samantha Treu	Date: 06/14/2023
	Title: MEPA/NEPA Coordinator	Email: samantha.treu@mt.gov

V. FINDING

27. ALTERNATIVE SELECTED:

Alternative 1 is selected. It consists of two phases and the concurrent lift station upgrade:

- Phase 1 consists of Cell 2 sludge removal, Cell 2 liner replacement, the installation of a Cell 2 baffle curtain, and installation of water flow meters, flow and loading data collection, a groundwater study, expansion of the irrigation area and relocation of IP cells.
- Phase 2 consists of conducting an inflow and infiltration study and subsequent establishment of a collection system rehabilitation program, upgrades to the UV disinfection system, and replacement of blowers and aeration equipment.

28. SIGNIFICANCE OF POTENTIAL IMPACTS:

Finding of No SIGNIFICANT ADVERSE Impacts. General adverse impacts are listed below:

Geology and Soil Quality, Stability and Moisture

Impacts to soil will be mitigated during construction. After construction is completed the soils will be returned to their original state.

Air Quality

Impacts to air quality will be short-term and will be mitigated during construction. There will be no long-term impacts to air quality.

Vegetation Cover, Quantity and Quality

There will be short term adverse impacts to the vegetation within the WWTF and the collection area during construction. These impacts will be mitigated during construction and the vegetation

will be returned to its pre-construction state when construction is completed.

Aesthetics

There will be adverse, short-term, and direct aesthetic impacts to the site during the construction period. These may include noise from construction activities and equipment, as well as visual impacts during construction. The aesthetic properties of the site will be restored when construction is completed.

Other Appropriate Social and Economic Circumstances

There will be an increase in monthly rates for users of the Victor Sewer and Water District. The upgrades to the WWTF will increase rates for the users by \$4.85 per month up to \$10.65 per month. This is in addition to the current monthly rates. The total monthly rate for users will be \$26.93.

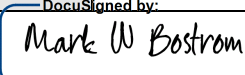
29. NEED FOR FURTHER ENVIRONMENTAL ANALYSIS:

THIS IS THE FINAL ENVIRONMENTAL REVIEW.

EIS

More Detailed EA

No Further Analysis

EA Approved By:	Name: Mark W Bostrom
	Title: Division Administrator
Signature: 	Date: 7/27/2023 12:44:45 PM MDT

DocuSigned by:

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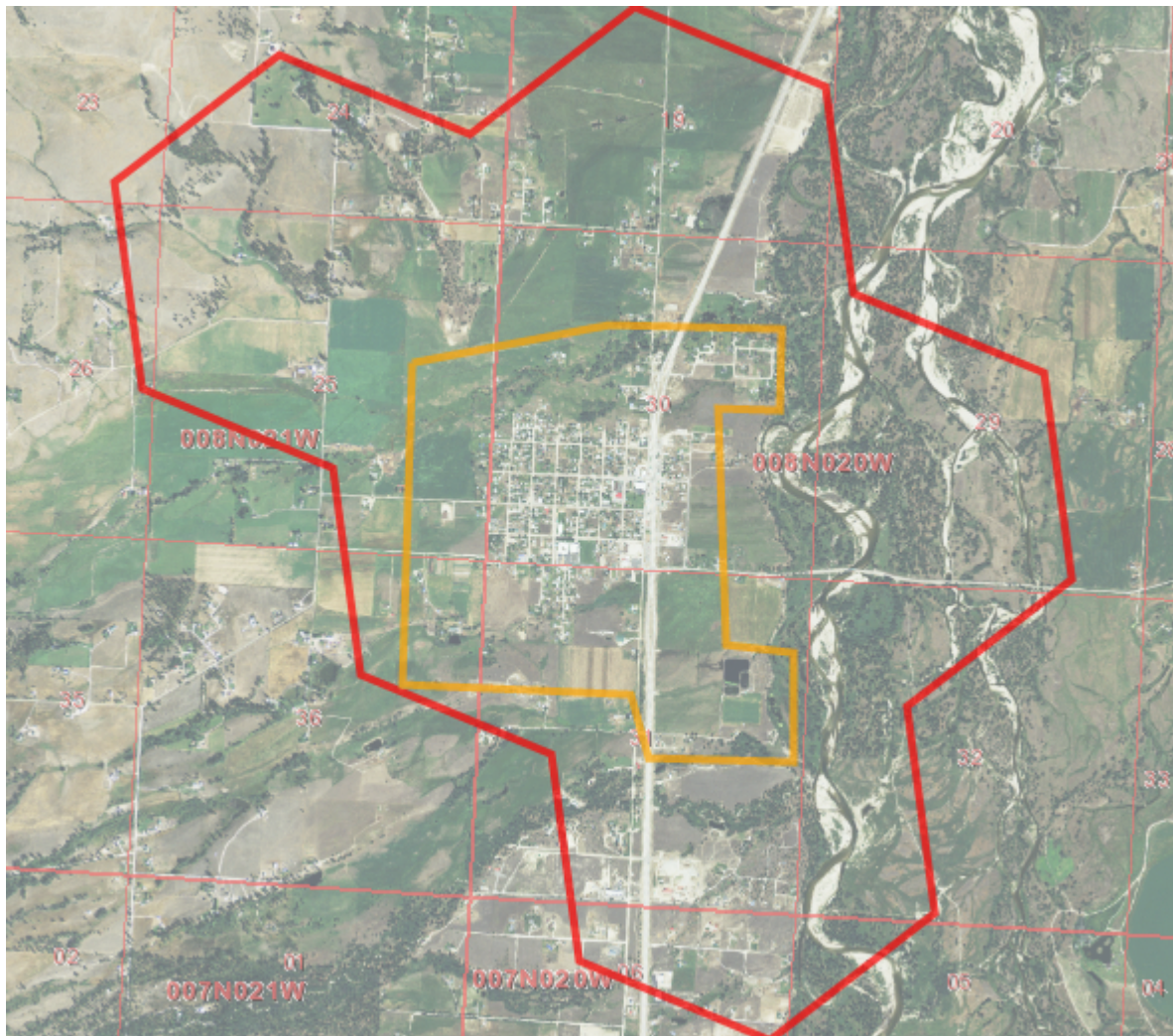
NATURAL HERITAGE PROGRAM mtnhp.org

1201 11th Ave • P.O. Box 201800 • Helena, MT 59620-1800 • fax 406-444-0266 • phone 406-444-3989



Latitude	Longitude
46.39256	-114.12128
46.43958	-114.17718

Summarized by:
Victor Sewer System
(Custom Area of Interest)



Suggested Citation

Montana Natural Heritage Program. Environmental Summary Report.
for Latitude 46.39256 to 46.43958 and Longitude -114.12128 to -114.17718. Retrieved on 6/6/2023.

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.**



A program of the Montana State Library's
Natural Resource Information System

- 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)



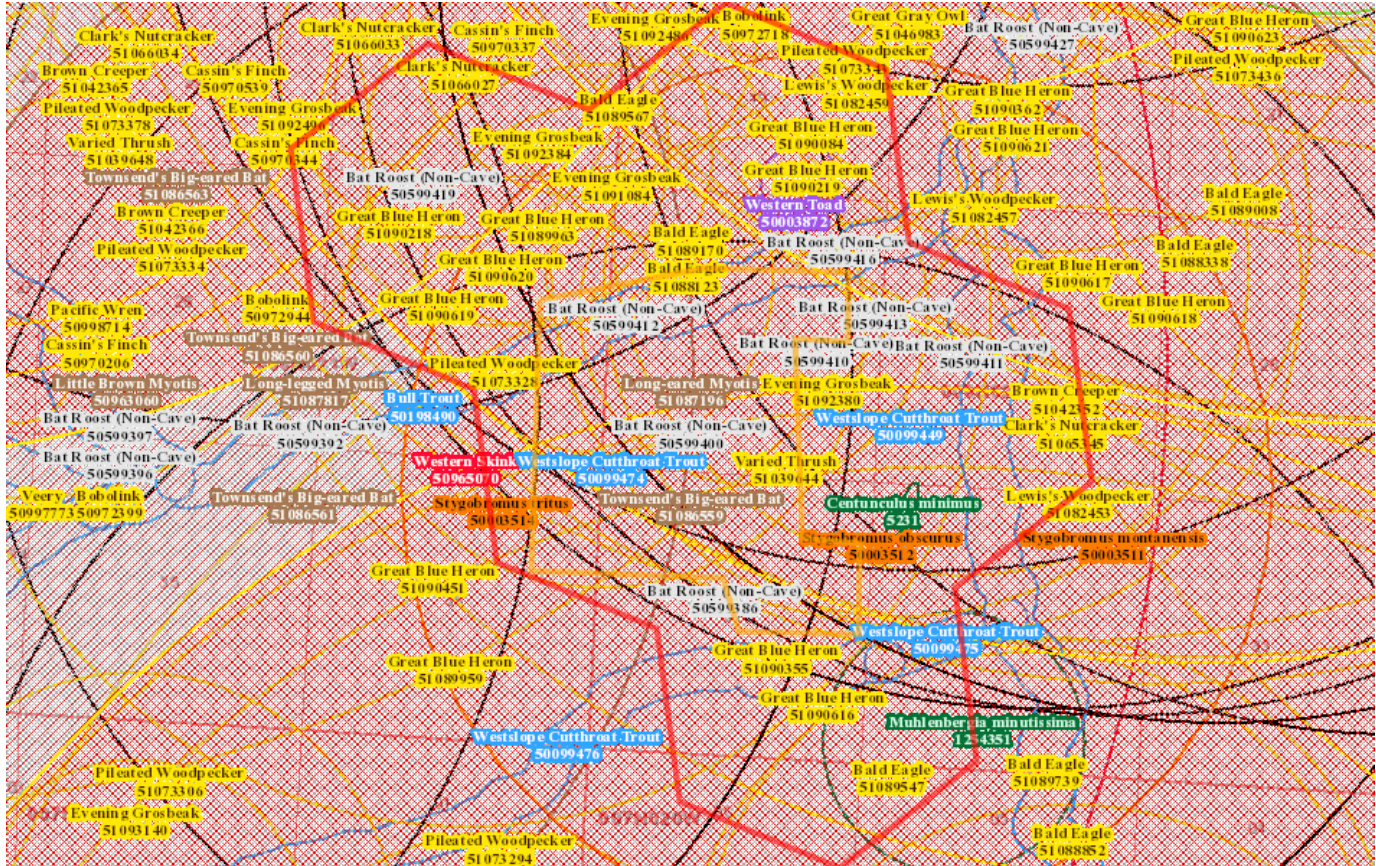
Latitude 46.39256
Longitude -114.12128
Latitude 46.43958
Longitude -114.17718

Native Species

Summarized by: **Victor Sewer System (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

Species	USFWS Sec7	# SO	# Obs	Predicted Model	Range
F - Westslope Cutthroat Trout (<i>Oncorhynchus clarkii lewisii</i>) SOC		4	+	■	■
<p>View in Field Guide View Predicted Models View Range Maps</p> <p>Species of Concern - Native/Non-native Species - (depends on location or taxa) Global: G5T4 State: S2</p> <p>USFS: Sensitive - Known in Forests (BD, BRT, KOOT, LOLO)</p> <p>Species of Conservation Concern in Forests (CG, HLC) BLM: SENSITIVE FWP SWAP: SGCN2</p> <p>Delineation Criteria Stream reaches and standing water bodies where the species presence has been confirmed through direct capture or where they are believed to be present based on the professional judgement of a fisheries biologist due to confirmed presence in adjacent areas. In order to reflect the importance of adjacent terrestrial habitats to survival, stream reaches are buffered 100 meters, standing water bodies greater than 1 acre are buffered 50 meters, and standing water bodies less than 1 acre are buffered 30 meters into the terrestrial habitat based on PACFISH/INFISH Riparian Conservation Area standards. (Last Updated: Jul 25, 2022)</p> <p>Predicted Models: ■ 100% Suitable (native range) (deductive)</p>					
F - Bull Trout (<i>Salvelinus confluentus</i>) SOC	7	1	+	■	■
<p>View in Field Guide View Predicted Models View Range Maps</p> <p>Species of Concern - Native Species Global: G5 State: S2 USFWS: LT; CH BLM: THREATENED FWP SWAP: SGCN2</p> <p>Delineation Criteria Stream reaches and standing water bodies where the species is believed to be present based on the professional judgement of a fisheries biologist, potentially supported by habitat assessment, direct capture, or confirmed presence in adjacent areas. In order to reflect the importance of adjacent terrestrial habitats to survival, stream reaches are buffered 100 meters, standing water bodies greater than 1 acre are buffered 50 meters, and standing water bodies less than 1 acre are buffered 30 meters into the terrestrial habitat based on PACFISH/INFISH Riparian Conservation Area standards. (Last Updated: Jul 18, 2022)</p> <p>Predicted Models: ■ 80% Suitable (native range) (deductive)</p>					
V - Muhlenbergia minutissima (<i>Annual Muhly</i>) SOC		1	1	■	■
<p>View in Field Guide View Predicted Models View Range Maps</p> <p>Species of Concern - Native Species Global: G5 State: S3 Plant Threat Score: No Known Threats</p> <p>Predicted Models: ■ 20% Suitable (native range) (deductive)</p>					
B - Lewis's Woodpecker (<i>Melanerpes lewis</i>) SOC		4	5	■	■ ■
<p>View in Field Guide View Predicted Models View Range Maps</p> <p>Species of Concern - Native Species Global: G4 State: S2B USFWS: MBTA; BCC10; BCC17 USFS: Species of Conservation Concern in Forests (HLC)</p> <p>BLM: SENSITIVE FWP SWAP: SGCN2 PIF: 2</p> <p>Delineation Criteria Confirmed breeding area based on the presence of a nest, chicks, or territorial adults during the breeding season. Point observation location is buffered by a minimum distance of 300 meters in order to encompass the likely foraging area used by breeding adults around the nest tree and otherwise is buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. (Last Updated: Mar 22, 2023)</p> <p>Predicted Models: ■ 80% Optimal (inductive), ■ 20% Moderate (inductive)</p>					

B - Bald Eagle (<i>Haliaeetus leucocephalus</i>) SSS		6	44		
DocuSign Envelope ID: C7FC51E3-47A9-44A5-AB45-43C87B2E9466					
Special Status Species - Native Species Global: G5 State: S4 USFWS: BGEPA; MBTA USFS: Sensitive - Known in Forests (BD, BRT, KOOT, LOLO) BLM: SENSITIVE PIF: 2					
Delineation Criteria Confirmed nesting area buffered by a minimum distance of 2,000 meters in order to be conservative about encompassing the breeding territory and area commonly used for 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: Mar 23, 2023)					
Predicted Models: 20% Optimal (inductive), 60% Moderate (inductive), 20% Low (inductive)					
B - Great Blue Heron (<i>Ardea herodias</i>) SOC		14	15		
View in Field Guide View Predicted Models View Range Maps					
Species of Concern - Native Species Global: G5 State: S3 USFWS: MBTA FWP SWAP: SGCN3					
Delineation Criteria Confirmed nesting area buffered by a minimum distance of 6,500 meters in order to be conservative about encompassing the areas commonly used for foraging near the breeding colony and otherwise buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. (Last Updated: May 23, 2023)					
Predicted Models: 20% Optimal (inductive), 40% Moderate (inductive), 40% Low (inductive)					
B - Veery (<i>Catharus fuscescens</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					
Delineation Criteria Observations with evidence of breeding activity buffered by a minimum distance of 300 meters in order to be conservative about encompassing home ranges and otherwise buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. (Last Updated: Dec 29, 2022)					
Predicted Models: 20% Optimal (inductive), 40% Moderate (inductive), 40% Low (inductive)					
V - Centunculus minimus (<i>Chaffweed</i>) SOC		1	1		
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					
Delineation Criteria Individual occurrences are generally based upon a discretely mapped area provided by an observer and are not separated by any pre-defined distance. Individual clusters of plants mapped at fine spatial scales (separated by less than approximately 25-50 meters) may be grouped together into one occurrence if they are not separated by distinct areas of habitat or terrain features. Point observations are buffered to encompass any locational uncertainty associated with the observation. (Last Updated: Sep 06, 2017)					
Predicted Models: 20% Optimal (inductive), 40% Moderate (inductive), 20% Low (inductive)					
R - Western Skink (<i>Plestiodon skiltonianus</i>) SOC		1	+		
View in Field Guide View Predicted Models View Range Maps					
Species of Concern - Native Species Global: G5 State: S3 FWP SWAP: SGCN3, SGIN					
Delineation Criteria Confirmed breeding area based on the presence of a resident animal of any age. Point observation location is buffered by a minimum distance of 200 meters in order to encompass habitats supporting other individuals in adjacent territories. Otherwise the point observation is buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. (Last Updated: Dec 26, 2022)					
Predicted Models: 100% Moderate (inductive)					
M - Long-legged Myotis (<i>Myotis volans</i>) SOC		1	+		
View in Field Guide View Predicted Models View Range Maps					
Species of Concern - Native Species Global: G4G5 State: S3					
Delineation Criteria Confirmed area of occupancy based on the documented presence (mistnet captures, definitively identified acoustic recordings, and definitively identified roosting individuals) of adults or juveniles. Point observation location is buffered by a minimum distance of 2,000 meters in order to encompass the average distances traveled from capture locations to roosts in Washington, Oregon, and in the Black Hills of South Dakota and otherwise buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. When cave locations are involved, point observations are mapped in the center of a one-square mile hexagon to protect the exact location of the cave entrance as per the Federal Cave Resource Protection Act and associated regulations (U.S. Code Title 16 Chapter 63, Code of Federal Regulations Title 43 Subtitle A Part 37). The outer edges of the hexagon are then buffered by a distance of 2,000 meters and otherwise by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. All of the one-square mile hexagons intersecting this buffered area are presented as the Species Occurrence record. (Last Updated: Mar 22, 2023)					
Predicted Models: 80% Moderate (inductive), 20% Low (inductive)					
B - Bobolink (<i>Dolichonyx oryzivorus</i>) SOC		3	3+		
View in Field Guide View Predicted Models View Range Maps					
Species of Concern - Native Species Global: G5 State: S3B USFWS: MBTA; BCC10; BCC11; BCC17 FWP SWAP: SGCN3 PIF: 3					
Delineation Criteria Confirmed breeding area based on the presence of a nest, chicks, or territorial adults during the breeding season. Point observation location is buffered by a minimum distance of 150 meters in order to conservatively encompass male territory size reported for the species and otherwise is buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. (Last Updated: Dec 28, 2022)					
Predicted Models: 60% Moderate (inductive), 40% Low (inductive)					
M - Long-eared Myotis (<i>Myotis evotis</i>) SOC		1	+		
View in Field Guide View Predicted Models View Range Maps					
Species of Concern - Native Species Global: G5 State: S3					
Delineation Criteria Confirmed area of occupancy based on the documented presence (mistnet captures, definitively identified acoustic recordings, and definitively identified roosting individuals) of adults or juveniles. Point observation location is buffered by a minimum distance of 1,000 meters in order to encompass the average distances traveled from capture locations to roosts and between roosts in western Montana, Alberta, and Oregon and otherwise buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. When cave locations are involved, point observations are mapped in the center of a one-square mile hexagon to protect the exact location of the cave entrance as per the Federal Cave Resource Protection Act and associated regulations (U.S. Code Title 16 Chapter 63, Code of Federal Regulations Title 43 Subtitle A Part 37). The outer edges of the hexagon are then buffered by a distance of 1,000 meters and otherwise by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. All of the one-square mile hexagons intersecting this buffered area are presented as the Species Occurrence record. (Last Updated: Mar 22, 2023)					
Predicted Models: 40% Moderate (inductive), 60% Low (inductive)					
B - Cassin's Finch (<i>Haemorhous cassinii</i>) SOC		4	3+		
View in Field Guide View Predicted Models View Range Maps					
Species of Concern - Native Species Global: G5 State: S3 USFWS: MBTA; BCC10 FWP SWAP: SGCN3 PIF: 3					
Delineation Criteria Observations with evidence of breeding activity buffered by a minimum distance of 300 meters in order to be conservative about encompassing the courtship and foraging distance from nesting areas and otherwise buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. (Last Updated: Dec 28, 2022)					
Predicted Models: 40% Moderate (inductive), 60% Low (inductive)					
B - Pileated Woodpecker (<i>Dryocopus pileatus</i>) SOC		4	8		
View in Field Guide View Predicted Models View Range Maps					
Species of Concern - Native Species Global: G5 State: S3 USFWS: MBTA FWP SWAP: SGCN3 PIF: 2					
Delineation Criteria Observations with evidence of breeding activity buffered by a minimum distance of 1,500 meters in order to be conservative about encompassing home ranges and otherwise buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. (Last Updated: Jan 13, 2023)					
Predicted Models: 40% Moderate (inductive), 60% Low (inductive)					

<p>A - Western Woodrat (<i>Dipodomys boreas</i>) SOC</p> <p>Species of Concern - Native Species Global: G4 State: S2 USFS: Sensitive - Known in Forests (BD, BRT, KOOT, LOLO) BLM: SENSITIVE FWP SWAP: SGCN2</p> <p>Delineation Criteria Standing water bodies or portions of large water bodies with confirmed evidence of reproduction (calling adults, eggs, larvae or new metamorphs) buffered by 100 meters in order to reflect importance of adjacent terrestrial habitats to survival of breeding adults and newly metamorphosed juveniles. (Last Updated: Dec 21, 2022)</p> <p>Predicted Models: <input type="checkbox"/> 40% Moderate (inductive), <input type="checkbox"/> 60% Low (inductive)</p>	<p>10</p>
<p>M - Little Brown Myotis (<i>Myotis lucifugus</i>) SOC</p> <p>View in Field Guide View Predicted Models View Range Maps</p> <p>Species of Concern - Native Species Global: G3G4 State: S3 FWP SWAP: SGCN3</p> <p>Delineation Criteria Confirmed area of occupancy based on the documented presence (mistnet captures, definitively identified acoustic recordings, or definitively identified roosting individuals) of adults or juveniles. Point observation location is buffered by a distance of 1,600 meters in order to encompass the greater than 1,500 meters foraging distance reported for the species in New Brunswick, Canada and otherwise buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. When cave locations are involved, point observations are mapped in the center of a one-square mile hexagon to protect the exact location of the cave entrance as per the Federal Cave Resource Protection Act and associated regulations (U.S. Code Title 16 Chapter 63, Code of Federal Regulations Title 43 Subtitle A Part 37). The outer edges of the hexagon are then buffered by a distance of 1,600 meters and otherwise by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. All of the one-square mile hexagons intersecting this buffered area are presented as the Species Occurrence record. (Last Updated: Dec 22, 2022)</p> <p>Predicted Models: <input type="checkbox"/> 20% Moderate (inductive), <input type="checkbox"/> 80% Low (inductive)</p>	<p>1</p>
<p>M - Townsend's Big-eared Bat (<i>Corynorhinus townsendii</i>) SOC</p> <p>View in Field Guide View Predicted Models View Range Maps</p> <p>Species of Concern - Native Species Global: G4 State: S3 USFS: Sensitive - Known in Forests (BD, BRT, KOOT, LOLO) BLM: SENSITIVE FWP SWAP: SGCN3</p> <p>Delineation Criteria Confirmed area of occupancy based on the documented presence (mistnet captures, definitively identified acoustic recordings, and definitively identified roosting individuals) of adults or juveniles. Point observation location is buffered by a distance of 4,500 meters in order to encompass the 95% confidence interval for nightly foraging distance reported for the species in California and otherwise by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. When cave locations are involved, point observations are mapped in the center of a one-square mile hexagon to protect the exact location of the cave entrance as per the Federal Cave Resource Protection Act and associated regulations (U.S. Code Title 16 Chapter 63, Code of Federal Regulations Title 43 Subtitle A Part 37). The outer edges of the hexagon are then buffered by a distance of 4,500 meters and otherwise by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. All of the one-square mile hexagons intersecting this buffered area are presented as the Species Occurrence record. (Last Updated: Mar 22, 2023)</p> <p>Predicted Models: <input type="checkbox"/> 80% Low (inductive)</p>	<p>4</p>
<p>B - Clark's Nutcracker (<i>Nucifraga columbiana</i>) SOC</p> <p>View in Field Guide View Predicted Models View Range Maps</p> <p>Species of Concern - Native Species Global: G5 State: S3 USFWS: MBTA USFS: Species of Conservation Concern in Forests (FLAT) FWP SWAP: SGCN3 PIF: 3</p> <p>Delineation Criteria Observations with direct evidence of breeding activity or indirect evidence of breeding activity between early March and mid-July within forested habitats containing Whitebark Pine (<i>Pinus albicaulis</i>), Limber Pine (<i>Pinus flexilis</i>), or Ponderosa Pine (<i>Pinus ponderosa</i>). Observations are buffered by a minimum distance of 1,000 meters in order to encompass the spring/summer breeding territory size reported for the species or the locational uncertainty of the observation to a maximum distance of 10,000 meters. (Last Updated: Jan 12, 2023)</p> <p>Predicted Models: <input type="checkbox"/> 80% Low (inductive)</p>	<p>4</p>
<p>B - Evening Grosbeak (<i>Coccothraustes vespertinus</i>) SOC</p> <p>View in Field Guide View Predicted Models View Range Maps</p> <p>Species of Concern - Native Species Global: G5 State: S3 USFWS: MBTA; BCC10 FWP SWAP: SGCN3</p> <p>Delineation Criteria Confirmed breeding area based on the presence of a nest, chicks, or territorial adults during the breeding season. Point observation location is buffered by a minimum distance of 1,000 meters in order to encompass the maximum foraging distance from nests reported for the species and otherwise is buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. (Last Updated: May 23, 2023)</p> <p>Predicted Models: <input type="checkbox"/> 80% Low (inductive)</p>	<p>5</p>
<p>B - Brown Creeper (<i>Certhia americana</i>) SOC</p> <p>View in Field Guide View Range Maps</p> <p>Species of Concern - Native Species Global: G5 State: S3 USFWS: MBTA FWP SWAP: SGCN3 PIF: 1</p> <p>Delineation Criteria Observations with evidence of breeding activity buffered by a minimum distance of 300 meters in order to be conservative about encompassing home ranges and otherwise buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. (Last Updated: Jan 04, 2023)</p>	<p>3</p>
<p>B - Pacific Wren (<i>Troglodytes pacificus</i>) SOC</p> <p>View in Field Guide View Range Maps</p> <p>Species of Concern - Native Species Global: G5 State: S3 USFWS: MBTA FWP SWAP: SGCN3 PIF: 2</p> <p>Delineation Criteria Observations with evidence of breeding activity buffered by a minimum distance of 300 meters in order to be conservative about encompassing home ranges and otherwise buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. (Last Updated: Dec 29, 2022)</p>	<p>1</p>
<p>I - Stygobromus montanensis (<i>A Subterranean Amphipod</i>) SOC</p> <p>View in Field Guide View Range Maps</p> <p>Species of Concern - Native Species Global: G1G2 State: S1S2</p> <p>Delineation Criteria Confirmed breeding area based on the presence of a resident animal of any age. Point observation location is buffered by a minimum distance of 300 meters in order to encompass the cave system the species is dependent on. (Last Updated: Jan 17, 2008)</p>	<p>1</p>
<p>I - Stygobromus obscurus (<i>A Subterranean Amphipod</i>) SOC</p> <p>View in Field Guide View Range Maps</p> <p>Species of Concern - Native Species Global: G1G2 State: S1S2</p> <p>Delineation Criteria Confirmed breeding area based on the presence of a resident animal of any age. Point observation location is buffered by a minimum distance of 300 meters in order to encompass the cave system the species is dependent on. (Last Updated: Jan 17, 2008)</p>	<p>1</p>
<p>I - Stygobromus tritus (<i>A Subterranean Amphipod</i>) SOC</p> <p>View in Field Guide View Range Maps</p> <p>Species of Concern - Native Species Global: G1 State: S1S2</p> <p>Delineation Criteria Confirmed breeding area based on the presence of a resident animal of any age. Point observation location is buffered by a minimum distance of 300 meters in order to encompass the cave system the species is dependent on. (Last Updated: Jan 17, 2008)</p>	<p>1</p>
<p>B - Varied Thrush (<i>Ixoreus naevius</i>) SOC</p> <p>View in Field Guide View Range Maps</p> <p>Species of Concern - Native Species Global: G5 State: S3B USFWS: MBTA FWP SWAP: SGCN3 PIF: 3</p> <p>Delineation Criteria Confirmed breeding area based on the presence of a nest, chicks, or territorial adults during the breeding season. Point observation location is buffered by a minimum distance of 225 meters in order to encompass the reported minimum stand size occupied by breeding pairs and otherwise is buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. (Last Updated: Jan 04, 2023)</p>	<p>2</p>
<p>O - Bat Roost (Non-Cave) (<i>Bat Roost (Non-Cave)</i>) IAH</p> <p>View in Field Guide</p> <p>Important Animal Habitat - Native Species Global: GNR State: SNR</p> <p>Delineation Criteria Confirmed area of occupancy based on the documented presence of adults or juveniles of any bat species at non-cave natural roost sites (e.g. rock outcrops, trees), below ground human created roost sites (e.g. mines), and above ground human created roost sites (e.g., bridges, buildings). Point observation locations are buffered by a distance of 4,500 meters in order to encompass the 95% confidence interval for nightly foraging distance reported for Townsend's Big-eared Bat (a resident Montana bat Species of Concern) and otherwise by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. (Last Updated: Oct 22, 2019)</p>	<p>12</p>



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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 46.39256
Longitude -114.12128
46.43958 -114.17718

Native Species

Summarized by: **Victor Sewer System** (*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

Species Name	USFWS Sec7	# Obs	Predicted Model	Range
B - Hooded Merganser (<i>Lophodytes cucullatus</i>) PSOC		4		
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: 40% Optimal (inductive), 40% Moderate (inductive), 20% Low (inductive)				
B - Rufous Hummingbird (<i>Selasphorus rufus</i>) PSOC		2		
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: 100% Moderate (inductive)				
M - North American Porcupine (<i>Erethizon dorsatum</i>) PSOC		2		
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: 80% Moderate (inductive), 20% Low (inductive)				
V - Impatiens aurella (<i>Pale-yellow Jewel-weed</i>) SOC		1		
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: 60% Moderate (inductive), 40% Low (inductive)				
B - Trumpeter Swan (<i>Cygnus buccinator</i>) SOC		1		
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G4 State: S3 USFWS: MBTA USFS: Sensitive - Known in Forests (BD) BLM: SENSITIVE FWP SWAP: SGCN3 PIF: 1 Predicted Models: 80% Low (inductive)				
M - Canada Lynx (<i>Lynx canadensis</i>) SOC	7	+	Not Assessed	
View in Field Guide View Range Maps Species of Concern - Native Species Global: G5 State: S3 USFWS: LT; CH BLM: THREATENED FWP SWAP: SGCN3				
M - Wolverine (<i>Gulo gulo</i>) SOC	7	+	Not Assessed	
View in Field Guide View Range Maps Species of Concern - Native Species Global: G4 State: S3 USFS: Sensitive - Known in Forests (BD, BRT, KOOT, LOLO) BLM: SENSITIVE FWP SWAP: SGCN3				
B - Golden Eagle (<i>Aquila chrysaetos</i>) SOC		3+	Not Assessed	
View in Field Guide View Range Maps Species of Concern - Native Species Global: G5 State: S3 USFWS: BGEPA; MBTA BLM: SENSITIVE FWP SWAP: SGCN3				
B - Northern Goshawk (<i>Accipiter gentilis</i>) SOC		1	Not Assessed	
View in Field Guide View Range Maps Species of Concern - Native Species Global: G5 State: S3 USFWS: MBTA FWP SWAP: SGCN3 PIF: 2				
B - Short-eared Owl (<i>Asio flammeus</i>) PSOC		+	Not Assessed	
View in Field Guide View Range Maps Potential Species of Concern - Native Species Global: G5 State: S4 USFWS: MBTA; BCC11; BCC17 PIF: 3				
B - White-faced Ibis (<i>Plegadis chihi</i>) SOC		1	Not Assessed	
View in Field Guide View Range Maps Species of Concern - Native Species Global: G5 State: S3B USFWS: MBTA BLM: SENSITIVE FWP SWAP: SGCN3 PIF: 2				



A program of the Montana State Library's
Natural Resource Information System

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	
Moderate Suitability		Winter	+ indicates additional 'poor precision' obs (1001m-10,000m)
Low Suitability		Migratory	
Suitable (introduced range)		Non-native	
		Historical	



Latitude 46.39256
Longitude -114.12128
46.43958 -114.17718

Native Species

Summarized by: **Victor Sewer System** (*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

Species	USFWS Sec7	Predicted Model	Range
V - Carex scoparia (<i>Pointed Broom Sedge</i>) SOC			
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G5 State: S1S2 Plant Threat Score: No Known Threats Predicted Models: 100% Optimal (inductive)			
I - Danaus plexippus (<i>Monarch</i>) SOC			
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G4 State: S2S3 USFWS: C Predicted Models: 40% Optimal (inductive), 60% Moderate (inductive)			
V - Dichanthelium acuminatum (<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: 20% Optimal (inductive), 60% Moderate (inductive), 20% Low (inductive)			
V - Juncus covillei (<i>Coville's Rush</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: 20% Optimal (inductive), 40% Moderate (inductive), 20% Low (inductive)			
M - Western Spotted Skunk (<i>Spilogale gracilis</i>) PSOC			
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: 100% Moderate (inductive)			
V - Utricularia intermedia (<i>Flatleaf Bladderwort</i>) SOC			
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G5 State: S2 USFS: Sensitive - Known in Forests (KOOT) Plant Threat Score: No Known Threats Predicted Models: 100% Moderate (inductive)			
B - Western Screech-Owl (<i>Megascops kennicottii</i>) PSOC			
View in Field Guide View Predicted Models View Range Maps Potential Species of Concern - Native Species Global: G4G5 State: S3S4 USFWS: MBTA FWP SWAP: SGIN PIF: 3 Predicted Models: 80% Moderate (inductive), 20% Low (inductive)			
B - Yellow-billed Cuckoo (<i>Coccyzus americanus</i>) SOC	7		
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G5 State: S3B USFWS: PS: LT; MBTA BLM: THREATENED FWP SWAP: SGCN3, SGIN PIF: 2 Predicted Models: 80% Moderate (inductive), 20% Low (inductive)			
V - Wolffia columbiana (<i>Columbia Water-meal</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: 80% Moderate (inductive)			
M - Western Pygmy Shrew (<i>Sorex eximius</i>) 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: 60% Moderate (inductive), 40% Low (inductive)			
I - Bombus suckleyi (<i>Suckley Cuckoo Bumble Bee</i>) SOC			
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G2G3 State: S1 Predicted Models: 60% Moderate (inductive), 40% Low (inductive)			
B - Meesia triquetra (<i>Meesia Moss</i>) SOC			
View in Field Guide View Predicted Models View Range Maps USFS: Sensitive - Known in Forests (BRT, KOOT) Sensitive - Suspected in Forests (LOLO) Species of Conservation Concern in Forests (CG, FLAT) Species of Concern - Native Species Global: G5 State: S2 Predicted Models: 60% Moderate (inductive), 40% Low (inductive)			
M - Hoary Bat (<i>Lasiurus cinereus</i>) SOC			
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G3G4 State: S3B BLM: SENSITIVE FWP SWAP: SGCN3 Predicted Models: 60% Moderate (inductive), 40% Low (inductive)			

<p>B - Broad-tailed Hummingbird (<i>Selasphorus platycercus</i>) PSOC</p> <p>DocuSign Envelope ID: C7FC51E3-47A9-44A5-AB45-43C87B2E9466</p> <p>Potential Species of Concern - Native Species Global: G5 State: S4B USFWS: MBTA; BCC10 FWP SWAP: SGIN</p> <p>Predicted Models: 60% Moderate (inductive), 40% Low (inductive)</p>
<p>M - Idaho Pocket Gopher (<i>Thomomys idahoensis</i>) PSOC</p> <p>View in Field Guide View Predicted Models View Range Maps</p> <p>Potential Species of Concern - Native Species Global: G4 State: S2S4 FWP SWAP: SGIN</p> <p>Predicted Models: 40% Moderate (inductive), 60% Low (inductive)</p>
<p>B - Barrow's Goldeneye (<i>Bucephala islandica</i>) PSOC</p> <p>View in Field Guide View Predicted Models View Range Maps</p> <p>Potential Species of Concern - Native Species Global: G5 State: S4 USFWS: MBTA FWP SWAP: SGIN PIF: 2</p> <p>Predicted Models: 40% Moderate (inductive), 60% Low (inductive)</p>
<p>V - Eleocharis rostellata (<i>Beaked Spikerush</i>) SOC</p> <p>View in Field Guide View Predicted Models View Range Maps</p> <p>Species of Concern - Native Species Global: G5 State: S3 USFS: Species of Conservation Concern in Forests (CG, FLAT, HLC) Plant Threat Score: Unknown CCVI: Less Vulnerable</p> <p>Predicted Models: 40% Moderate (inductive), 20% Low (inductive)</p>
<p>M - Fringed Myotis (<i>Myotis thysanodes</i>) SOC</p> <p>View in Field Guide View Predicted Models View Range Maps</p> <p>Species of Concern - Native Species Global: G4 State: S3 BLM: SENSITIVE FWP SWAP: SGCN3</p> <p>Predicted Models: 20% Moderate (inductive), 80% Low (inductive)</p>
<p>V - Carex crawei (<i>Crawe's Sedge</i>) SOC</p> <p>View in Field Guide View Predicted Models View Range Maps</p> <p>Species of Concern - Native Species Global: G5 State: S2S3 Plant Threat Score: Low</p> <p>Predicted Models: 20% Moderate (inductive), 80% Low (inductive)</p>
<p>V - Erigeron linearis (<i>Linear-leaf Fleabane</i>) SOC</p> <p>View in Field Guide View Predicted Models View Range Maps</p> <p>Species of Concern - Native Species Global: G5 State: S2 Plant Threat Score: Low CCVI: Less Vulnerable</p> <p>Predicted Models: 20% Moderate (inductive), 80% Low (inductive)</p>
<p>V - Stellaria crassifolia (<i>Fleshy Stitchwort</i>) SOC</p> <p>View in Field Guide View Predicted Models View Range Maps</p> <p>Species of Concern - Native Species Global: G5 State: S2 Plant Threat Score: No Known Threats</p> <p>Predicted Models: 20% Moderate (inductive), 80% Low (inductive)</p>
<p>V - Trifolium gymnocarpon (<i>Hollyleaf Clover</i>) SOC</p> <p>View in Field Guide View Predicted Models View Range Maps</p> <p>Species of Concern - Native Species Global: G5 State: S2 USFS: Sensitive - Known in Forests (BRT, LOLO) Sensitive - Suspected in Forests (BD) Plant Threat Score: Medium - Low</p> <p>Predicted Models: 20% Moderate (inductive), 80% Low (inductive)</p>
<p>B - Common Poorwill (<i>Phalaenoptilus nuttallii</i>) PSOC</p> <p>View in Field Guide View Predicted Models View Range Maps</p> <p>Potential Species of Concern - Native Species Global: G5 State: S4B USFWS: MBTA FWP SWAP: SGIN PIF: 3</p> <p>Predicted Models: 20% Moderate (inductive), 80% Low (inductive)</p>
<p>I - Rhyacophila betteni (<i>A Caddisfly</i>) SSS</p> <p>View in Field Guide View Predicted Models View Range Maps</p> <p>Special Status Species - Native Species Global: G2G4 State: S3S4</p> <p>Predicted Models: 20% Moderate (inductive), 60% Low (inductive)</p>
<p>I - Zumatrichia notosa (<i>A Caddisfly</i>) SOC</p> <p>View in Field Guide View Predicted Models View Range Maps</p> <p>Species of Concern - Native Species Global: G2G4 State: S3</p> <p>Predicted Models: 20% Moderate (inductive), 60% Low (inductive)</p>
<p>V - Athysanus pusillus (<i>Sandweed</i>) SOC</p> <p>View in Field Guide View Predicted Models View Range Maps</p> <p>Species of Concern - Native Species Global: G5 State: S1S2 USFS: Sensitive - Known in Forests (BRT) Sensitive - Suspected in Forests (LOLO) Plant Threat Score: High CCVI: Highly Vulnerable</p> <p>Predicted Models: 20% Moderate (inductive), 60% Low (inductive)</p>
<p>V - Mimulus floribundus (<i>Floriferous Monkeyflower</i>) SOC</p> <p>View in Field Guide View Predicted Models View Range Maps</p> <p>Species of Concern - Native Species Global: G5 State: SH Plant Threat Score: No Known Threats CCVI: Highly Vulnerable</p> <p>Predicted Models: 20% Moderate (inductive), 60% Low (inductive)</p>
<p>V - Gentianopsis simplex (<i>Hiker's Gentian</i>) SOC</p> <p>View in Field Guide View Predicted Models View Range Maps</p> <p>Species of Concern - Native Species Global: G5 State: S2 USFS: Sensitive - Known in Forests (BD) Sensitive - Suspected in Forests (KOOT, LOLO) Species of Conservation Concern in Forests (CG) Plant Threat Score: Unknown CCVI: Extremely Vulnerable</p> <p>Predicted Models: 20% Moderate (inductive), 40% Low (inductive)</p>
<p>V - Heterocodon rariflorum (<i>Western Pearl-flower</i>) SOC</p> <p>View in Field Guide View Predicted Models View Range Maps</p> <p>Species of Concern - Native Species Global: G5 State: S2 USFS: Sensitive - Known in Forests (BRT, KOOT, LOLO) Plant Threat Score: Medium - Low CCVI: Moderately Vulnerable</p> <p>Predicted Models: 20% Moderate (inductive), 40% Low (inductive)</p>

[Species of Concern - Native Species](#) Global: **G5** State: **S1S3** USFS: **Species of Conservation Concern in Forests (HLC)** Plant Threat Score: **No Known Threats**
Predicted Models: 20% Moderate (inductive), 40% Low (inductive)

B - Black-crowned Night-Heron (Nycticorax nycticorax) SOC

[View in Field Guide](#) [View Predicted Models](#) [View Range Maps](#)
[Species of Concern - Native Species](#) Global: **G5** State: **S3B** USFWS: **MBTA** FWP SWAP: **SGCN3** PIF: **3**
Predicted Models: 20% Moderate (inductive), 40% Low (inductive)

V - Mimulus ampliatus (Stalk-leaved Monkeyflower) SOC

[View in Field Guide](#) [View Predicted Models](#) [View Range Maps](#)
[Species of Concern - Native Species](#) Global: **G3** State: **S3** USFS: **Sensitive - Known in Forests (KOOT)** Plant Threat Score: **No Known Threats**
CCVI: **Highly Vulnerable**
Predicted Models: 20% Moderate (inductive)

M - Silver-haired Bat (Lasiorycteris noctivagans) PSOC

[View in Field Guide](#) [View Predicted Models](#) [View Range Maps](#)
[Potential Species of Concern - Native Species](#) Global: **G3G4** State: **S4**
Predicted Models: 100% Low (inductive)

R - Northern Alligator Lizard (Elgaria coerulea) SOC

[View in Field Guide](#) [View Predicted Models](#) [View Range Maps](#)
[Species of Concern - Native Species](#) Global: **G5** State: **S3** FWP SWAP: **SGCN3, SGIN**
Predicted Models: 100% Low (inductive)

B - Black-necked Stilt (Himantopus mexicanus) SOC

[View in Field Guide](#) [View Predicted Models](#) [View Range Maps](#)
[Species of Concern - Native Species](#) Global: **G5** State: **S3B** USFWS: **MBTA** FWP SWAP: **SGCN3** PIF: **3**
Predicted Models: 100% Low (inductive)

B - Long-billed Curlew (Numenius americanus) SOC

[View in Field Guide](#) [View Predicted Models](#) [View Range Maps](#)
[Species of Concern - Native Species](#) Global: **G5** State: **S3B** USFWS: **MBTA; BCC11** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **2**
Predicted Models: 100% Low (inductive)

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

[View in Field Guide](#) [View Predicted Models](#) [View Range Maps](#)
[Potential Species of Concern - Native Species](#) Global: **G5** State: **S3S4** USFS: **Sensitive - Known in Forests (KOOT, LOLO)**
Sensitive - Suspected in Forests (BRT)
Species of Conservation Concern in Forests (CG, HLC)
Predicted Models: 80% Low (inductive)

V - Idahoa scapigera (Scalepod) SOC

[View in Field Guide](#) [View Predicted Models](#) [View Range Maps](#)
[Species of Concern - Native Species](#) Global: **G5** State: **S1S2** USFS: **Sensitive - Known in Forests (BRT)**
Sensitive - Suspected in Forests (LOLO)
Species of Conservation Concern in Forests (FLAT) Plant Threat Score: **High - Medium**
CCVI: **Moderately Vulnerable**
Predicted Models: 80% Low (inductive)

B - American White Pelican (Pelecanus erythrorhynchos) SOC

[View in Field Guide](#) [View Predicted Models](#) [View Range Maps](#)
[Species of Concern - Native Species](#) Global: **G4** State: **S3B** USFWS: **MBTA** FWP SWAP: **SGCN3** PIF: **3**
Predicted Models: 80% Low (inductive)

B - Harlequin Duck (Histrionicus histrionicus) SOC

[View in Field Guide](#) [View Predicted Models](#) [View Range Maps](#)
[Species of Concern - Native Species](#) Global: **G4** State: **S2B** USFWS: **MBTA** USFS: **Sensitive - Known in Forests (BD, KOOT, LOLO)** FWP SWAP: **SGCN2** PIF: **1**
Predicted Models: 80% 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: 60% Low (inductive)

B - American Bittern (Botaurus lentiginosus) 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: 60% Low (inductive)

B - Black-backed Woodpecker (Picoides arcticus) SOC

[View in Field Guide](#) [View Predicted Models](#) [View Range Maps](#)
[Species of Concern - Native Species](#) Global: **G5** State: **S3** USFWS: **MBTA** USFS: **Sensitive - Known in Forests (BD, BRT, KOOT, LOLO)** BLM: **SENSITIVE**
FWP SWAP: **SGCN3** PIF: **1**
Predicted Models: 40% Low (inductive)

V - Isoetes echinospora (Spiny-spore Quillwort) 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: 40% Low (inductive)

V - Orobancha corymbosa (Flat-topped Broomrape) PSOC

[View in Field Guide](#) [View Predicted Models](#) [View Range Maps](#)
[Potential Species of Concern - Native Species](#) Global: **G4** State: **S3S4**
Predicted Models: 40% Low (inductive)

Species of Concern - Native Species

Global: **G4G5** State: **S3B** USFWS: **MBTA; BCC10; BCC11; BCC17** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **2**

Predicted Models: 40% Low (inductive)



NATURAL HERITAGE PROGRAM

A program of the Montana State Library's
Natural Resource Information System

Latitude	Longitude
46.39256	-114.12128
46.43958	-114.17718

Structured Surveys

Summarized by: **Victor Sewer System** (*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.

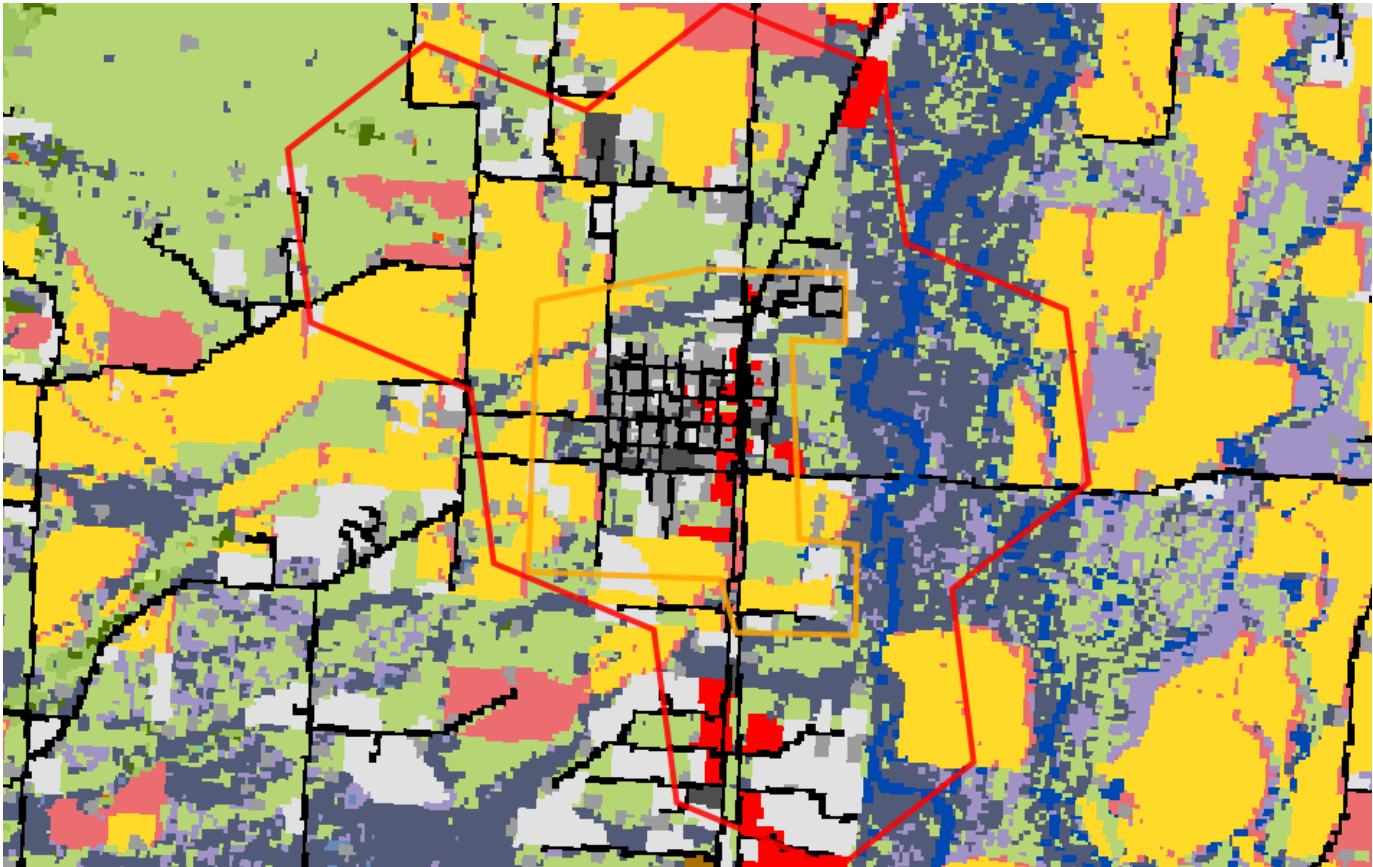
Within the report area you have requested, structured surveys are summarized by the number of each type of structured survey protocol that has been conducted, the number of species detections/observations resulting from these surveys, and the most recent year a survey has been conducted.

AR-Amphibian/Reptile Lentic (<i>Lentic Amphibian/Reptile Surveys</i>)	Survey Count: 7	Obs Count: 10	Recent Survey: 2016
B-Bald Eagle Nest (<i>Bald Eagle Nest Survey</i>)	Survey Count: 1	Obs Count: 1	Recent Survey: 2004
B-Grid-based Point Count (<i>RMBO Generalized Random-tesselation Stratification</i>)	Survey Count: 25	Obs Count: 139	Recent Survey: 2015
B-Hummingbird Trapping (<i>Hummingbird Trapping Survey</i>)	Survey Count: 3	Obs Count: 6	Recent Survey: 2007
E-Kicknet (<i>Kicknet Collection Survey for Invasive Mussels and Snails</i>)	Survey Count: 2	Obs Count: 1	Recent Survey: 2022
E-Noxious Weed, Road-based (<i>Noxious Weed Road-based Visual Surveys</i>)	Survey Count: 4	Obs Count: 20	Recent Survey: 2003
E-Visual Aquatic Invasives (<i>Visual Encounter Surveys for Aquatic Invasives on Shorelines or Underwater</i>)	Survey Count: 6	Obs Count: 2	Recent Survey: 2022
F-Fish Electrofishing (<i>Fish Electrofishing Surveys</i>)	Survey Count: 2	Obs Count: 4	Recent Survey: 1990
F-Fish Other Survey (<i>Fish Other Survey (FWP Survey Type)</i>)	Survey Count: 50	Obs Count: 98	Recent Survey: 1994
M-Bat Roost (Active Season) (<i>Bat Roost (Active Season) Survey</i>)	Survey Count: 3	Obs Count: 2	Recent Survey: 2014
P-Algal scraping (<i>Algal Scraping</i>)	Survey Count: 2	Obs Count: 113	Recent Survey: 2005



Land Cover

Summarized by: **Victor Sewer System** (Custom Area of Interest)



22% (715
Acres)

Grassland Systems Montane Grassland

Rocky Mountain Lower Montane, Foothill, and Valley Grassland

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



22% (711
Acres)

Human Land Use Agriculture

Cultivated Crops

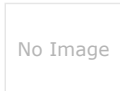
These areas used for the production of crops, such as corn, soybeans, small grains, sunflowers, vegetables, and cotton, typically on an annual cycle. Agricultural plant cover is variable depending on season and type of farming. Other areas include more stable land cover of orchards and vineyards.

**18% (576 Acres)****Northern Rocky Mountain Lower Montane Riparian Woodland and Shrubland**

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

**8% (268 Acres)****Human Land Use
Developed****Developed, Open Space**

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



No Image

8% (244 Acres)**Human Land Use
Developed****Other Roads**

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

**7% (216 Acres)****Human Land Use
Developed****Low Intensity Residential**

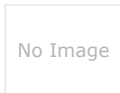
Includes areas with a mixture of constructed materials and vegetation. Impervious surfaces account for 20-50% of total cover. These areas most commonly include single-family housing units in rural and suburban areas. Paved roadways may be classified into this category.

**4% (127 Acres)****Recently Disturbed or Modified
Introduced Vegetation****Introduced Upland Vegetation - Annual and Biennial Forbland**

Land cover is significantly altered/disturbed by introduced annual and biennial forbs. Natural vegetation types are no longer recognizable. Typical species that dominate these areas are knapweed, oxeye daisy, Canada thistle, leafy spurge, pepperweed, and yellow sweetclover.

**3% (109 Acres)****Wetland and Riparian Systems
Open Water****Open Water**

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



No Image

3% (80 Acres)**Human Land Use
Developed****Commercial / Industrial**

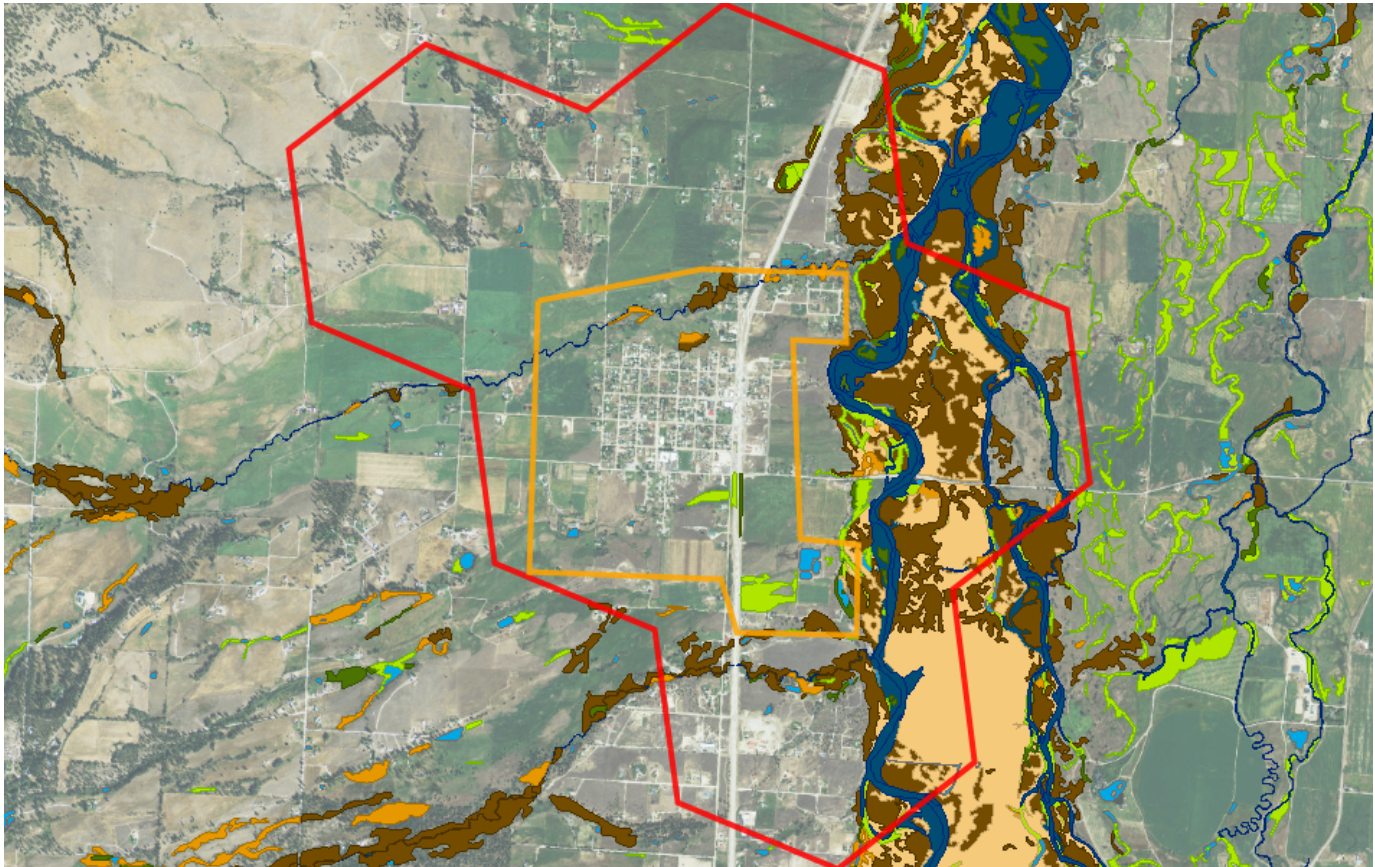
Businesses, industrial parks, hospitals, airports; utilities in commercial/industrial areas.

**2% (65 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.

Additional Limited Land Cover1% (37 Acres) **Major Roads**1% (37 Acres) **High Intensity Residential**<1% (5 Acres) **Rocky Mountain Dry-Mesic Montane Mixed Conifer Forest**<1% (4 Acres) **Rocky Mountain Ponderosa Pine Woodland and Savanna**<1% (1 Acres) **Insect-Killed Forest**<1% (0 Acres) **Rocky Mountain Subalpine-Montane Mesic Meadow**

Wetland and Riparian

 Summarized by: **Victor Sewer System** (Custom Area of Interest)


Wetland and Riparian Mapping

[Explain](#)

P - Palustrine

UB - Unconsolidated Bottom

F - Semipermanently Flooded 5 Acres
 x - Excavated **5 Acres PUBFx**

P - Palustrine, UB - Unconsolidated Bottom

Wetlands where mud, silt or similar fine particles cover at least 25% of the bottom, and where vegetation cover is less than 30%.

AB - Aquatic Bed

F - Semipermanently Flooded 13 Acres
 (no modifier) **11 Acres PABF**
 h - Diked/Impounded **2 Acres PABFh**
 x - Excavated **<1 Acres PABFx**

P - Palustrine, AB - Aquatic Bed

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

EM - Emergent

A - Temporarily Flooded 42 Acres
 (no modifier) **42 Acres PEMA**
 B - Saturated 11 Acres
 (no modifier) **11 Acres PEMB**
 C - Seasonally Flooded 2 Acres
 (no modifier) **2 Acres PEMC**
 F - Semipermanently Flooded 3 Acres
 (no modifier) **3 Acres PEMF**

P - Palustrine, EM - Emergent

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

SS - Scrub-Shrub

A - Temporarily Flooded 15 Acres
 (no modifier) **15 Acres PSSA**
 C - Seasonally Flooded 1 Acres
 (no modifier) **1 Acres PSSC**

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.

R - Riverine (Rivers)

2 - Lower Perennial

UB - Unconsolidated Bottom

F - Semipermanently Flooded 5 Acres

R - Riverine (Rivers), 2 - Lower Perennial, UB - Unconsolidated Bottom

Stream channels where the substrate is at least 25% mud, silt or other fine particles.

(no modifier) **56 Acres R2UBH**

US - Unconsolidated Shore			R - Riverine (Rivers), 2 - Lower Perennial, US - Unconsolidated Shore
A - Temporarily Flooded	76 Acres		<i>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.</i>
(no modifier)	76 Acres R2USA		
C - Seasonally Flooded	<1 Acres		
(no modifier)	<1 Acres R2USC		

Rp - Riparian

1 - Lotic

SS - Scrub-Shrub (no modifier)	19 Acres Rp1SS	Rp - Riparian, 1 - Lotic, SS - Scrub-Shrub <i>This type of riparian area is dominated by woody vegetation that is less than 6 meters (20 feet) tall. Woody vegetation includes tree saplings and trees that are stunted due to environmental conditions.</i>
FO - Forested (no modifier)	305 Acres Rp1FO	Rp - Riparian, 1 - Lotic, FO - Forested <i>This riparian class has woody vegetation that is greater than 6 meters (20 feet) tall.</i>
EM - Emergent (no modifier)	208 Acres Rp1EM	Rp - Riparian, 1 - Lotic, EM - Emergent <i>Riparian areas that have erect, rooted herbaceous vegetation during most of the growing season.</i>

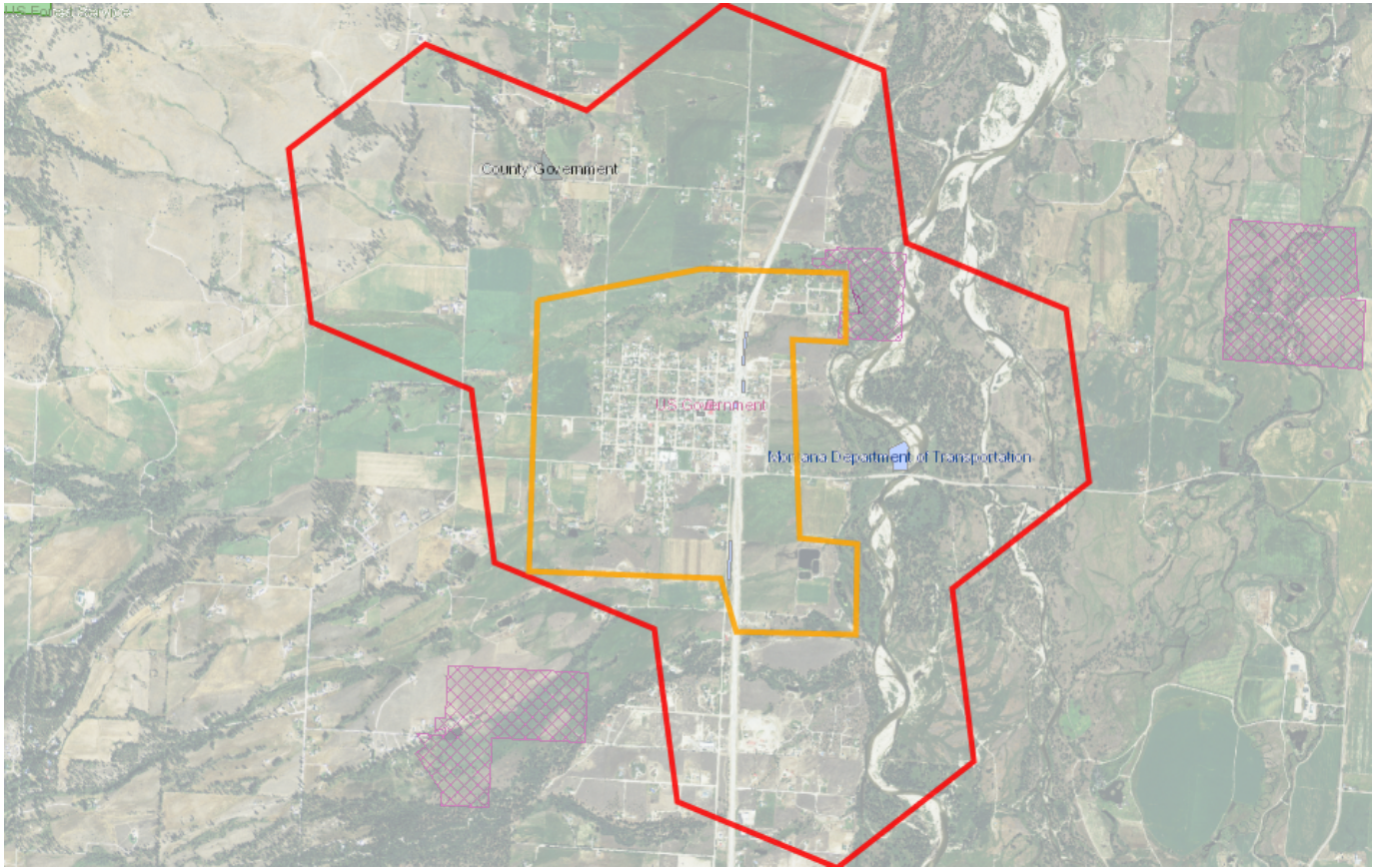
2 - Lentic

FO - Forested (no modifier)	3 Acres Rp2FO	Rp - Riparian, 2 - Lentic, FO - Forested <i>This riparian class has woody vegetation that is greater than 6 meters (20 feet) tall.</i>
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Land Management

Summarized by: **Victor Sewer System** (Custom Area of Interest)



Land Management Summary

[Explain](#)

	Ownership	Tribal	Easements	Other Boundaries (possible overlap)
Public Lands	10 Acres (<1%)			
Federal				
US Government				
US Government Owned				
State	6 Acres (<1%)			
Montana Department of Transportation	6 Acres (<1%)			
MTDOT Owned	6 Acres (<1%)			
Local	4 Acres (<1%)			
Local Government	4 Acres (<1%)			
Local Government Owned	4 Acres (<1%)			
Conservation Easements			44 Acres (1%)	
Private			44 Acres (1%)	
Bitter Root Land Trust			44 Acres (1%)	
Private Lands or Unknown Ownership	3,142 Acres (98%)			



NATURAL HERITAGE PROGRAM

A program of the Montana State Library's
Natural Resource Information System





Latitude	Longitude
46.39256	-114.12128
46.43958	-114.17718

Biological Reports

Summarized by: **Victor Sewer System** (*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

-  Black, J.H. 1970d. Some aspects of the distribution, natural history and zoogeography of the toad genus **Bufo** in Montana. M.S. thesis. University of Montana, Missoula, MT. 70 p.
-  Confluence Consulting, Inc. 2017. **North Fork Bear Creek, Ravalli County, Montana: Montana Department of Transportation Stream Mitigation Monitoring Report; Year 2017**. Bozeman, MT: Confluence Consulting, Inc. 9 p plus appendices.
-  Confluence Consulting, Inc. 2017. **Sweathouse Creek, Ravalli County, Montana: Montana Department of Transportation Stream Mitigation Monitoring Report; Year 2017**. Bozeman, MT: Confluence Consulting, Inc. 10 p plus appendices.
-  Hendricks, P. and J.D. Reichel. 1996a. **Amphibian and reptile survey of the Bitterroot National Forest: 1995**. Montana Natural Heritage Program. Helena, MT. 95 p.



A program of the Montana State Library's
Natural Resource Information System

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



Latitude 46.39256
Longitude -114.12128
46.43958 -114.17718

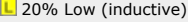

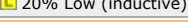
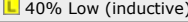
Invasive and Pest Species

Summarized by: **Victor Sewer System** (*Custom Area of Interest*)

	# Obs	Predicted Model	Range
Aquatic Invasive Species			
<input type="checkbox"/> V - Iris pseudacorus (<i>Yellowflag Iris</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: 80% Optimal (inductive), 20% Moderate (inductive)			
<input type="checkbox"/> A - American Bullfrog (<i>Lithobates catesbeianus</i>) AIS	1 +		
View in Field Guide View Predicted Models View Range Maps Aquatic Invasive Species - Non-native Species Global: G5 State: SNA Predicted Models: 40% Optimal (inductive), 20% Moderate (inductive), 40% Low (inductive)			
<input type="checkbox"/> 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: 20% Moderate (inductive), 80% Low (inductive)			
<input type="checkbox"/> 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: 80% Low (inductive)			
<input type="checkbox"/> V - Butomus umbellatus (<i>Flowering-rush</i>) N2A/AIS			
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 2A - Aquatic Invasive Species - Non-native Species Global: G5 State: SNA Predicted Models: 60% Low (inductive)			
<input type="checkbox"/> 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: 100% Suitable (introduced range) (deductive)			
Noxious Weeds: Priority 1A			
<input type="checkbox"/> 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: 80% Optimal (inductive), 20% Moderate (inductive)			
<input type="checkbox"/> 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: 40% Optimal (inductive), 60% Moderate (inductive)			
<input type="checkbox"/> V - Taeniatherum caput-medusae (<i>Medusahead</i>) N1A			
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 1A - Non-native Species Global: G4G5 State: SNA Predicted Models: 100% Low (inductive)			
<input type="checkbox"/> V - Phragmites australis ssp. australis (<i>European Common Reed</i>) N1A			
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 1A - Non-native Species Global: G5T5 State: SNA Predicted Models: 60% Low (inductive)			
Noxious Weeds: Priority 1B			
<input type="checkbox"/> V - Echium vulgare (<i>Blueweed</i>) N1B	2		
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 1B - Non-native Species Global: GNR State: SNA Predicted Models: 100% Optimal (inductive)			
<input type="checkbox"/> V - Lythrum salicaria (<i>Purple Loosestrife</i>) N1B			
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 1B - Non-native Species Global: G5 State: SNA Predicted Models: 100% Optimal (inductive)			
<input type="checkbox"/> V - Chondrilla juncea (<i>Rush Skeletonweed</i>) N1B	2		
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 1B - Non-native Species Global: GNR State: SNA Predicted Models: 80% Optimal (inductive), 20% Low (inductive)			
<input type="checkbox"/> 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: 40% Optimal (inductive), 20% Moderate (inductive), 40% Low (inductive)			

<p>V - Polygonum cuspidatum (<i>Japanese Knotweed</i>) N1B</p> <p>View in Field Guide View Predicted Models View Range Maps</p> <p>Noxious Weed: Priority 1B - Non-native Species Global: GNR State: SNA</p> <p>Predicted Models: 40% Moderate (inductive), 60% Low (inductive)</p>	<p>1</p>
<p>V - Polygonum x bohemicum (<i>Bohemian Knotweed</i>) N1B</p> <p>View in Field Guide View Predicted Models View Range Maps</p> <p>Noxious Weed: Priority 1B - Non-native Species Global: GNA State: SNA</p> <p>Predicted Models: 80% Low (inductive)</p>	
<p>Noxious Weeds: Priority 2A</p>	
<p>V - Iris pseudacorus (<i>Yellowflag Iris</i>) N2A/AIS</p> <p>View in Field Guide View Predicted Models View Range Maps</p> <p>Noxious Weed: Priority 2A - Aquatic Invasive Species - Non-native Species Global: GNR State: SNA</p> <p>Predicted Models: 80% Optimal (inductive), 20% Moderate (inductive)</p>	
<p>V - Ranunculus acris (<i>Tall Buttercup</i>) N2A</p> <p>View in Field Guide View Predicted Models View Range Maps</p> <p>Noxious Weed: Priority 2A - Non-native Species Global: G5 State: SNA</p> <p>Predicted Models: 80% Optimal (inductive), 20% Low (inductive)</p>	<p>1</p>
<p>V - Rhamnus cathartica (<i>Common Buckthorn</i>) N2A</p> <p>View in Field Guide View Predicted Models View Range Maps</p> <p>Noxious Weed: Priority 2A - Non-native Species Global: GNR State: SNA</p> <p>Predicted Models: 80% Optimal (inductive), 20% Moderate (inductive)</p>	
<p>V - Ventenata dubia (<i>Ventenata</i>) N2A</p> <p>View in Field Guide View Predicted Models View Range Maps</p> <p>Noxious Weed: Priority 2A - Non-native Species Global: GNR State: SNA</p> <p>Predicted Models: 100% Moderate (inductive)</p>	
<p>V - Hieracium praealtum (<i>Kingdevil Hawkweed</i>) N2A</p> <p>View in Field Guide View Predicted Models View Range Maps</p> <p>Noxious Weed: Priority 2A - Non-native Species Global: GNR State: SNA</p> <p>Predicted Models: 40% Moderate (inductive), 60% Low (inductive)</p>	
<p>V - Hieracium aurantiacum (<i>Orange Hawkweed</i>) N2A</p> <p>View in Field Guide View Predicted Models View Range Maps</p> <p>Noxious Weed: Priority 2A - Non-native Species Global: GNR State: SNA</p> <p>Predicted Models: 20% Moderate (inductive), 80% Low (inductive)</p>	
<p>V - Hieracium caespitosum (<i>Meadow Hawkweed</i>) N2A</p> <p>View in Field Guide View Predicted Models View Range Maps</p> <p>Noxious Weed: Priority 2A - Non-native Species Global: GNR State: SNA</p> <p>Predicted Models: 100% Low (inductive)</p>	
<p>V - Myriophyllum spicatum (<i>Eurasian Water-milfoil</i>) N2A/AIS</p> <p>View in Field Guide View Predicted Models View Range Maps</p> <p>Noxious Weed: Priority 2A - Aquatic Invasive Species - Non-native Species Global: GNR State: SNA</p> <p>Predicted Models: 80% Low (inductive)</p>	
<p>V - Butomus umbellatus (<i>Flowering-rush</i>) N2A/AIS</p> <p>View in Field Guide View Predicted Models View Range Maps</p> <p>Noxious Weed: Priority 2A - Aquatic Invasive Species - Non-native Species Global: G5 State: SNA</p> <p>Predicted Models: 60% Low (inductive)</p>	
<p>Noxious Weeds: Priority 2B</p>	
<p>V - Tanacetum vulgare (<i>Common Tansy</i>) N2B</p> <p>View in Field Guide View Predicted Models View Range Maps</p> <p>Noxious Weed: Priority 2B - Non-native Species Global: GNR State: SNA</p> <p>Predicted Models: 80% Optimal (inductive), 20% Moderate (inductive)</p>	<p>6</p>
<p>V - Hypericum perforatum (<i>Common St. John's-wort</i>) N2B</p> <p>View in Field Guide View Predicted Models View Range Maps</p> <p>Noxious Weed: Priority 2B - Non-native Species Global: GNR State: SNA</p> <p>Predicted Models: 20% Optimal (inductive), 80% Moderate (inductive)</p>	<p>4</p>
<p>V - Linaria vulgaris (<i>Yellow Toadflax</i>) N2B</p> <p>View in Field Guide View Predicted Models View Range Maps</p> <p>Noxious Weed: Priority 2B - Non-native Species Global: GNR State: SNA</p> <p>Predicted Models: 20% Optimal (inductive), 60% Moderate (inductive), 20% Low (inductive)</p>	<p>14</p>
<p>V - Cynoglossum officinale (<i>Common Hound's-tongue</i>) N2B</p> <p>View in Field Guide View Predicted Models View Range Maps</p> <p>Noxious Weed: Priority 2B - Non-native Species Global: GNR State: SNA</p> <p>Predicted Models: 100% Moderate (inductive)</p>	<p>4</p>
<p>V - Leucanthemum vulgare (<i>Oxeye Daisy</i>) N2B</p> <p>View in Field Guide View Predicted Models View Range Maps</p> <p>Noxious Weed: Priority 2B - Non-native Species Global: GNR State: SNA</p> <p>Predicted Models: 100% Moderate (inductive)</p>	<p>3</p>
<p>V - Linaria dalmatica (<i>Dalmatian Toadflax</i>) N2B</p> <p>View in Field Guide View Predicted Models View Range Maps</p> <p>Noxious Weed: Priority 2B - Non-native Species Global: G5 State: SNA</p> <p>Predicted Models: 100% Moderate (inductive)</p>	<p>5</p>

<p>V - Pontillia recta (<i>Sulphur Cinquefoil</i>) N2B</p> <p>Noxious Weed: Priority 2B - Non-native Species Global: GNR State: SNA</p> <p>Predicted Models: 100% Moderate (inductive)</p>	<p>2</p>
<p>V - Centaurea stoebe (<i>Spotted Knapweed</i>) N2B</p> <p>View in Field Guide View Predicted Models View Range Maps</p> <p>Noxious Weed: Priority 2B - Non-native Species Global: GNR State: SNA</p> <p>Predicted Models: 80% Moderate (inductive), 20% Low (inductive)</p>	<p>6</p>
<p>V - Acroptilon repens (<i>Russian Knapweed</i>) N2B</p> <p>View in Field Guide View Predicted Models View Range Maps</p> <p>Noxious Weed: Priority 2B - Non-native Species Global: GNR State: SNA</p> <p>Predicted Models: 40% Moderate (inductive), 60% Low (inductive)</p>	
<p>V - Berteroa incana (<i>Hoary False-allysum</i>) N2B</p> <p>View in Field Guide View Predicted Models View Range Maps</p> <p>Noxious Weed: Priority 2B - Non-native Species Global: GNR State: SNA</p> <p>Predicted Models: 40% Moderate (inductive), 60% Low (inductive)</p>	<p>1</p>
<p>V - Euphorbia virgata (<i>Leafy Spurge</i>) N2B</p> <p>View in Field Guide View Predicted Models View Range Maps</p> <p>Noxious Weed: Priority 2B - Non-native Species Global: GNR State: SNA</p> <p>Predicted Models: 40% Moderate (inductive), 60% Low (inductive)</p>	<p>1</p>
<p>V - Tamarix ramosissima (<i>Salt Cedar</i>) N2B</p> <p>View in Field Guide View Predicted Models View Range Maps</p> <p>Noxious Weed: Priority 2B - Non-native Species Global: GNR State: SNA</p> <p>Predicted Models: 40% Moderate (inductive), 60% Low (inductive)</p>	
<p>V - Centaurea diffusa (<i>Diffuse Knapweed</i>) N2B</p> <p>View in Field Guide View Predicted Models View Range Maps</p> <p>Noxious Weed: Priority 2B - Non-native Species Global: GNR State: SNA</p> <p>Predicted Models: 20% Moderate (inductive), 80% Low (inductive)</p>	
<p>V - Cirsium arvense (<i>Canada Thistle</i>) N2B</p> <p>View in Field Guide View Predicted Models View Range Maps</p> <p>Noxious Weed: Priority 2B - Non-native Species Global: G5 State: SNA</p> <p>Predicted Models: 20% Moderate (inductive), 80% Low (inductive)</p>	<p>6</p>
<p>V - Lepidium draba (<i>Whiteweed</i>) N2B</p> <p>View in Field Guide View Predicted Models View Range Maps</p> <p>Noxious Weed: Priority 2B - Non-native Species Global: GNR State: SNA</p> <p>Predicted Models: 20% Moderate (inductive), 80% Low (inductive)</p>	
<p>V - Potamogeton crispus (<i>Curly-leaf Pondweed</i>) N2B/AIS</p> <p>View in Field Guide View Predicted Models View Range Maps</p> <p>Noxious Weed: Priority 2B - Aquatic Invasive Species - Non-native Species Global: G5 State: SNA</p> <p>Predicted Models: 20% Moderate (inductive), 80% Low (inductive)</p>	
<p>V - Convolvulus arvensis (<i>Field Bindweed</i>) N2B</p> <p>View in Field Guide View Predicted Models View Range Maps</p> <p>Noxious Weed: Priority 2B - Non-native Species Global: GNR State: SNA</p> <p>Predicted Models: 60% Low (inductive)</p>	<p>1</p>
<p>Regulated Weeds: Priority 3</p>	
<p>V - Bromus tectorum (<i>Cheatgrass</i>) R3</p> <p>View in Field Guide View Predicted Models View Range Maps</p> <p>Regulated Weed: Priority 3 - Non-native Species Global: GNR State: SNA</p> <p>Predicted Models: 40% Moderate (inductive), 60% Low (inductive)</p>	<p>2</p>
<p>V - Elaeagnus angustifolia (<i>Russian Olive</i>) R3</p> <p>View in Field Guide View Predicted Models View Range Maps</p> <p>Regulated Weed: Priority 3 - Non-native Species Global: GNR State: SNA</p> <p>Predicted Models: 100% Low (inductive)</p>	
<p>Agricultural Pests</p>	
<p>I - Deroceras reticulatum (<i>Gray Fieldslug</i>) PESTA</p> <p>View in Field Guide View Range Maps</p> <p>Agricultural Pest - Non-native Species Global: G5 State: SNA</p>	<p>1</p> <p>Not Assessed</p>
<p>Biocontrol Species</p>	
<p>I - Mecinus janthinus (<i>Yellow Toadflax Stem-boring Weevil</i>) BIOCNTL</p> <p>View in Field Guide View Predicted Models View Range Maps</p> <p>Biocontrol Species - Non-native Species Global: GNR State: SNA</p> <p>Predicted Models: 100% Optimal (inductive)</p>	
<p>I - Cyphocleonus achates (<i>Knapweed Root Weevil</i>) BIOCNTL</p> <p>View in Field Guide View Predicted Models View Range Maps</p> <p>Biocontrol Species - Non-native Species Global: GNR State: SNA</p> <p>Predicted Models: 80% Optimal (inductive), 20% Moderate (inductive)</p>	
<p>I - Mecinus janthiniformis (<i>Dalmatian Toadflax Stem-boring Weevil</i>) BIOCNTL</p> <p>View in Field Guide View Predicted Models View Range Maps</p> <p>Biocontrol Species - Non-native Species Global: GNR State: SNA</p> <p>Predicted Models: 100% Moderate (inductive)</p>	

<p>I - Apthona lacertosa (<i>Brown-legged Leafy Spurge Flea Beetle</i>) BIOCNTL</p> <p>Biocontrol Species - Non-native Species Global: GNR State: SNA</p> <p>Predicted Models:  80% Moderate (inductive),  20% Low (inductive)</p>
<p>I - Oberea erythrocephala (<i>Red-headed Leafy Spurge Stem Borer</i>) BIOCNTL</p> <p>View in Field Guide View Predicted Models View Range Maps</p> <p>Biocontrol Species - Non-native Species Global: GNR State: SNA</p> <p>Predicted Models:  80% Moderate (inductive),  20% Low (inductive)</p>
<p>I - Apthona nigriscutis (<i>Black Dot Leafy Spurge Flea Beetle</i>) BIOCNTL</p> <p>View in Field Guide View Predicted Models View Range Maps</p> <p>Biocontrol Species - Non-native Species Global: GNR State: SNA</p> <p>Predicted Models:  40% Low (inductive)</p>

Introduction to Montana Natural Heritage Program



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

INTRODUCTION

The Montana Natural Heritage Program (MTNHP) is Montana's source for reliable and objective information on Montana's native species and habitats, emphasizing those of conservation concern. MTNHP was created by the Montana legislature in 1983 as part of the Natural Resource Information System (NRIS) at the Montana State Library (MSL). MTNHP is "a program of information acquisition, storage, and retrieval for data relating to the flora, fauna, and biological community types of Montana" (MCA 90-15-102). MTNHP's activities are guided by statute 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	Kristian Smucker KSmucker@mt.gov (406) 444-5209
Grizzly Bear Greater Sage Grouse Trumpeter Swan Big Game Upland Game Birds Furbearers	Brian Wakeling brian.wakeling@mt.gov (406) 444-3940
Managed Terrestrial Game Data	Cara Whalen– MFWP Data Analyst cara.whalen@mt.gov (406) 444-3759
Fisheries Data and Nongame Animal Data	Ryan Alger – MFWP Data Analyst ryan.alger@mt.gov (406) 444-5365
Wildlife and Fisheries Scientific Collector's Permits	https://fwp.mt.gov/buyandapply/commercialwildlifeandscientificpermits/scientific 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	Charlie Sperry csperry@mt.gov (406) 444-3888 See https://fwp.mt.gov/conservation/living-with-wildlife/subdivision-recommendations
Regional Contacts 	Region 1 (Kalispell) (406) 752-5501 fwprg12@mt.gov Region 2 (Missoula) (406) 542-5500 fwprg22@mt.gov Region 3 (Bozeman) (406) 577-7900 fwprg3@mt.gov Region 4 (Great Falls) (406) 454-5840 fwprg42@mt.gov Region 5 (Billings) (406) 247-2940 fwprg52@mt.gov Region 6 (Glasgow) (406) 228-3700 fwprg62@mt.gov Region 7 (Miles City) (406) 234-0900 fwprg72@mt.gov

Montana Department of Agriculture

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

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

Montana Department of Environmental Quality

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

Montana Department of Natural Resources and Conservation

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

<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>

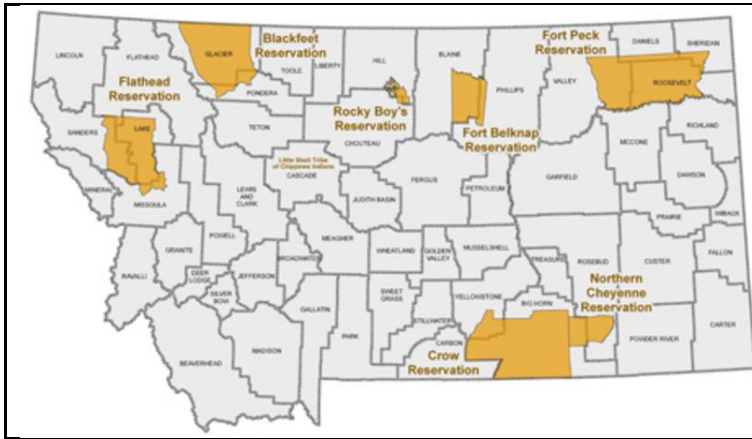
United States Fish and Wildlife Service

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
Wildlife Ecologist	Cara Staab	cara.staab@usda.gov	(406) 329-3677
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 \(MISC\)](#)
- [Upper Columbia Conservation Commission \(UC3\)](#)

Noxious Weeds

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

Introduction to Native Species

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

If you are aware of observation datasets that the MTNHP is missing, please report them to the Program Botanist apipp@mt.gov or Senior Zoologist dbachen@mt.gov. If you have animal 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

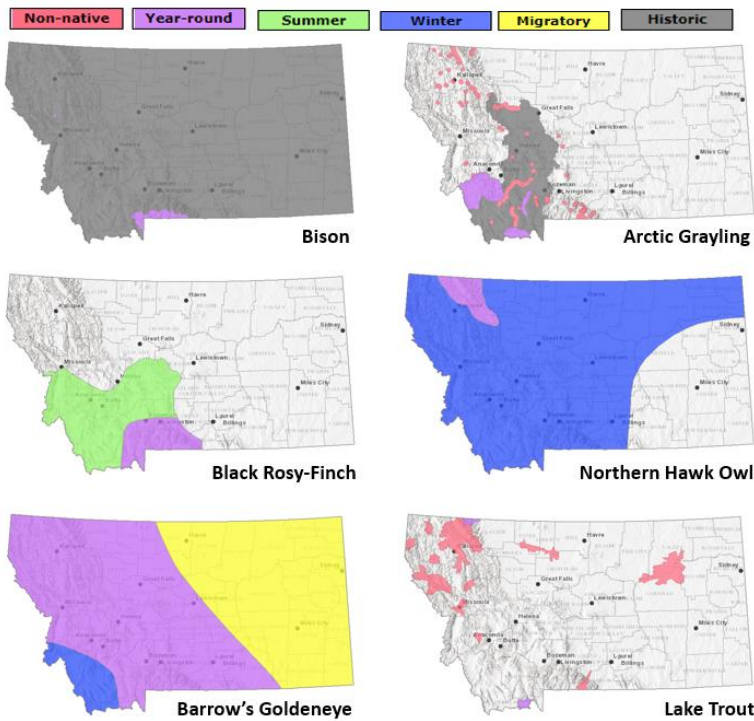
The location of a verified observation or specimen record typically known or assumed to represent a breeding population or a portion of a breeding population. Animal SO's are generally: (1) buffers of terrestrial point observations based on documented species' home range sizes; (2) buffers of stream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

[MTNHP Staff Contact Information](#)

[Montana Field Guide](#)

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

[MTNHP Species Status Codes - Explanation](#)

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

[MTNHP Request Information page](#)

[Montana Cadastral](#)

[Montana Code Annotated](#)

[Montana Fisheries Information System](#)

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

[Montana GIS Data Layers](#)

[Montana GIS Data Bundler](#)

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

[Montana Ground Water Information Center](#)

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

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

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

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

[Montana Spatial Data Infrastructure Layers](#)

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

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

[Montana Water Information System](#)

[Montana Web Map Services](#)

[National Environmental Policy Act](#)

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

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

[Web Soil Survey Tool](#)