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DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION

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FINAL ENVIRONMENTAL ASSESSMENT

Project Name:	Miles City Internal Drainage & Stormwater Safety Improvements
Proposed Implementation Date:	Construction starts April 2023
Proponent:	City of Miles City
Location:	Miles City, Montana
County:	Custer

I. TYPE AND PURPOSE OF ACTION

The existing Miles City storm water collection system conveys water to various discharge points along the old Tongue River channel, which locally is known as "the slough." The slough has some existing culverts which help route storm water, but due to undersized or non-existent culverts, the capacity is not adequate to remove water in all areas. At road crossings without culverts, when there is a significant storm or over-topping of the Tongue River, water infiltrates or over-tops the roadway creating small "rivers", sometimes carrying debris on public roads, sidewalks, and trails, or stagnant pools of water (of unknown depth), creating safety concerns. Stagnant water creates additional health risks as it becomes a breeding ground for parasites, mold and bacteria and can harbor and grow dangerous waterborne pathogens. There are also multiple high points along the slough alignment, leading to additional standing water just upstream from these locations.

In addition to an insufficient number of culverts and the need to place culverts more strategically at roadway locations, the typical storm drain system within Miles City has been designated for smaller more frequent storms typical of a 2-year storm event. The system is not designed for a larger storm or flood event (such as a 100-year storm/flood event). During larger storms (the most recent of which was 2011) when the rivers run high, the slough collects most of the water, but is unable to drain efficiently. In these events, the majority of storm runoff bypasses the storm drain system and results in overflow onto surrounding properties and public transportation avenues. This creates an immediate safety hazard to people and property due to flooding and areas of swiftly running water, but also creates a longer-term health and safety issue from standing water which sometimes takes weeks to evaporate/dissipate.

The proposed internal drainage and storm water safety improvement project is an independent project. However, the project is integral to the Custer County Miles City (CCMC) Flood Protection Project. The majority (75 percent) of businesses and residences in Miles City are located within the 100-year floodplain or floodway at the confluence of the Yellowstone and Tongue Rivers. This is significant as the levee that surrounds Miles City does not meet USACE or FEMA standards. The City and County are working cooperatively to finalize a Section 205 Study and construct a new certified levee that will protect the community from flood risk and support the economy by reducing the number of homeowners paying costly flood insurance policies.

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One of the requirements for levee certification is the development of a Master Stormwater Plan (MSP) to provide guidance for management of storm water runoff captured behind the levee (dry side). The city completed the MSP in early 2021 to identify existing deficiencies and propose solutions. The MSP will aid in preparation for the new levee construction and eventual certification. Problems identified are impacting community health and safety.

Miles City proposes to address the health and safety issues outlined above and in the MSP through development of an effective interior drainage and storm water system to manage storm water now and into the future. Effective interior drainage systems must demonstrate that storm water from a 100-year storm/flood event can effectively be managed through adequate storage areas, gravity outlets, pumping stations, culverts, storm drains or a combination of these structures.

Miles City is proposing: 1) installation of two additional culverts in strategic location under identified high-risk roadways to address the current culvert deficiencies and alleviate over-topping of the roadways during storm events, 2) construction of a storage pond sufficient to detain storm water from the 100-year storm/flood, 24-hour event alleviating over-topping of the slough and related water infiltration in neighboring properties, 3) installation of a lift station to drain the proposed storage pond during significant storm events, 4) replacement of existing culverts to meet increased water flow capacity needs, ensuring that updated infrastructure addresses the 100-year storm event and also the added risk of floods or river over-topping due to the community's location between the Tongue and Yellowstone Rivers, and 5) regrading of the slough to improve storm water conveyance and capacity.

The above outlined improvements will result in a storm water and internal drainage system that will safely collect, convey, temporarily store, and discharge storm water into the Yellowstone River.

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.

A review of the Agendas for the City Council Meetings details Resolution No. 4467 – A Resolution of the City of Miles City Approving a Task Order with Kadrmas, Lee & Jackson, Inc. Related to the Tongue River Slough Project, passed and adopted on July 26, 2022. The Task Order is for preparation of the final design and preparation of Construction Contract Documents. The above resolution was properly noticed and there was opportunity for public comment.

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.

Infrastructure improvements proposed in the Master Stormwater Plan will likely require the submission of a Joint Application for proposed work in Montana's Streams, Wetlands, Floodplains, and Other Water Bodies. This application includes:

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- 310 Permit,
- SPA 124 Permit,
- Floodplain Permit,
- Section 404 Permit,
- Section 10 Permit,
- 318 Authorization, 401 Certification, and
- Navigable Rivers Land Use, License or Easement

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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.

The following alternatives are detailed in the MSP, dated February 2021:

1) **Alternative 1 – No Action** – This alternative would rely on existing infrastructure to manage storm water runoff from a 100-year storm with no modifications or measures to mediate the current flooding potential. Landowners within the FEMA delineated flood zone would still be required to purchase and maintain flood insurance and owners within the floodway would not be eligible for flood insurance. This alternative would not satisfy the interior drainage plan requirements for levee certification; therefore, this alternative was not considered further.
2) **Alternative 2 – Provide Storage and Pumping for the 100-Year Storm Event –** This project would include reconstructing the road to the treatment plant to act as a weir from the Slough east to a proposed detention pond, and outlet and pump system for the detention pond. The additional storage provided for the 100-year storm event will reduce the base flood elevation in some areas. An Operation Plan will need to be prepared in conjunction with the construction of a water storage area and pumping station. This will require additional operation and maintenance in comparison to existing conditions. The estimated cost is $1,730,000.
3) **Alternative 3 – Complete Alternative 2 AND Upgrade Crossings for 50-Year Event at Exit Routes** – This project would include everything as described in Alternative 2 with the addition of improvements at crossing locations to convey the 50-year storm event for Highway 59 and the 25-year storm event for Milwaukee St. Without storm water runoff overtopping either road. This project will also include installing culverts at the two crossings without openings, N 4th St. and 7th St. In addition to the benefits of Alternative 2, this Alternative will ensure the emergency exit routes, Highway 59 and Milwaukee Street, are not overtopped during the design storms. The estimated cost is $2,280,000.
4) **Alternative 4 – Complete Alternative 1 and 2 AND upgrade Remaining Crossings and Regrade the Slough** – This project will include everything as described in Alternatives 1 and 2 with the addition of improvements to prevent overtopping at all crossings, with the exception of the two gravel crossings and Robinson St., during the 10-year storm event. This includes general regrading of the Slough profile to eliminate high and low areas along the alignment. During the regrading of the Slough, the cross sections should be uniform, with additional excavation as needed to minimize backwater conditions and increase storage capacity within the Slough. The improvements to the crossings as listed in this alternative provide larger openings which may reduce the amount of plugged debris. The larger

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culverts improve the backwater conditions, which may reduce maintenance after storm events. The estimated cost is $3,950,000.

Proposed Alternative – The decision matrix found Alternative #4 to provide the best cost/benefit for the City of Miles City. The completion of the proposed improvements identified will meet the main goal to address management of internal stormwater drainage. The project improvements will minimize damage from flood events and reduce the total area inundated during a flood event.

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 Tongue River Slough runs through Miles City, Montana. There are 11 soil types or complexes within the greater Miles City area. The dominant soils within and adjacent to the project area and throughout Miles City consist primarily of 4 soils groups: Yamacall loam (33.8% of the area, 0 to 2 percent slopes), Ryell very find sandy loam (29.6% of the area, 0 to 2 percent slopes, rarely flooded), Glendive-Havre complex (11.2% of the area, 0 to 2 percent slopes, nonflooded), and Marvan silty clay (10.9% of the area, 0 to 2 percent slopes). These soil types are classified as nonsaline to very slightly saline, well-drained alluvium with moderately fine textures to moderately coarse textures, and moderate rate of water transmission (NRCS Web Soil Survey database).

Proposed Alternative – Proposed project work is anticipated to have an overall beneficial impact. The Tongue River Slough has negative drainage and missing culverts, and the Slough backs up due to high water in the Yellowstone River during storm events. The proposed alternative will create positive grading throughout the Slough, create a storage pond for when the Yellowstone is at higher levels preventing discharge of runoff and install a pump station to evacuate the stored water as the water levels drop in the Yellowstone River.

No Action – The No Action alternative will allow for continued soil erosion and damage during flood events and inundation of surrounding areas.

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.

The project area is located adjacent to the Yellowstone River within the Lower Yellowstone HUC, which has a mean annual flow ranging from approximately 6,141 ft3 s-1 to 19,780 ft3 s-1 (Source:

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USGS NWIS website, USGS 06309000 Yellowstone River at Miles City). The Yellowstone River, located within the Upper Missouri River Basin, is listed on the Montana DEQ 303d as fully supporting agricultural beneficial uses, but not fully supporting aquatic life due to fish passage barriers associated with dam construction. Specifically, the Yellowstone River is considered a warm water fishery, but an intake dam partially restricts fish passage.

The Yellowstone River is listed as Water Quality Code, 4C, which has been identified as having threats or impairments resulting from pollution categories such as dewatering or habitat modification and, thus, a TMDL has not been required. TDS and salinity concentrations in this reach are relatively low. TSS concentrations tend to be high but are lower than historical levels due construction of Yellowtail Dam (Source: Montana DEQ Search Tools – 2020 Water Quality Information).

Proposed Alternative – Proposed project work is anticipated to have an overall beneficial impact. Groundwater is known to be shallow in the area. Current surface water in the Slough backs up and causes lowland flooding due to lack of grade and culverts. Overall groundwater elevations should remain the same. To minimize impacts, the new retention pond is designed to not interface with the groundwater. The stormwater runoff will now have a positive grade to evacuate stormwater out of the slough. This will allow the runoff to reach the Yellowstone River as it historically has and will have a settling detention pond when the Yellowstone is high to reduce sediment discharge to the river.

No Action - The No Action alternative will continue to have adverse effects on water quality, and continue to impact water quality with increased sediment, nutrients, and potentially pesticide loads in surface water.

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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.

The proposed project is not located in an air quality Attainment Area, as set by the U.S. Environmental Protection Agency's National Ambient Air Quality Standards. The project area is not listed as impaired in air quality particulates per the Montana DEQ Air Quality Nonattainment Status list (Montana DEQ Air Quality website).

Proposed Alternative – Potentially adverse direct, short-term impacts to air quality from dust associated with construction activities. If excessive dust is generated, the contractor will be responsible for dust abatement through water application and other dust control mitigation measures. No long-term negative impact is anticipated as a result of this project.

No Action – No impact to current air quality.

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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.

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The project area is surrounded by approximately 77% private land (estimated using the Montana Natural Heritage Program website), with the remaining 23% on various types of federal and state public lands (Bureau of Land Management; US Bureau of Reclamation; US Department of Agriculture; US Government; Montana Fish, Wildlife and Parks; Montana Department of Transportation; Montana Department of Corrections; and Local Government). The project area is primarily within Human Land Use categories (64%), with Wetland and Riparian Systems (17%), and Grassland Systems (11%; see Montana Natural Heritage Program report at the end of this document to view other land cover types, or the MTNHP website). There are nine plant Species of Concern listed for Park County that may potentially occur within the project area (Montana Natural Heritage Program website).

Proposed Alternative – The project construction is anticipated to have a short-term adverse impact on existing vegetation within the slough channel. The Slough regrading and culverts will remove overgrowth in the slough allowing for effective transmission of water. The proposed project will have no long-term impacts on vegetation. Revegetation with native species will occur during construction.

No Action – The No Action alternative will have little impact on the existing vegetation.

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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.

Project location is in an area identified as a priority area for terrestrial conservation efforts of two focal areas within the Montana State Wildlife Action Plan (SWAP; Yellowstone River Terrestrial Focal Area, Pumpkin Creek Terrestrial Focal Area; Montana Fish, Wildlife, and Parks web map GIS data), as well as for aquatic conservation efforts. The Yellowstone River is considered Level 3 Priority with the SWAP for aquatic focal areas (Yellowstone Focal Area). The project area does not fall within an Executive Order – General/Priority habitat area for sage grouse, but does have general habitat adjacent to the city to the north and the south (see attached map; Montana Sage Grouse Habitat Conservation Plan web mapping tool). Though the project area does not appear to be impacting crucial and/or critical habitat areas, there are 134 Species of Concern (70 observed, 64 potential) listed for Park County that may occur in the project area in a broad range of taxa, including bats, birds, reptiles, amphibians, fish, insects, and plants. There are also 19 invasive species potentially present within the planning boundary.

Proposed Alternative – The project area has existing terrestrial and avian habitat within the Slough area. Ponding within the slough may restrict animal movement through the Slough. No fish are known to exist in the Slough within the project area. Regrading of the Slough and the addition of the new culverts may create a more consistent habitat for terrestrial and avian species. The Slough may be more readily utilized as a corridor for wildlife migration through the city after construction activites.

No Action - The long-term impacts will be continued overtopping of the Slough and flooding that impacts terrestrial and avian habitat.

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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.

The National Wetlands Inventory (NWI) website was used to determine whether any wetlands were present within the lands adjacent to the project location (map included at the end of this EA). This search indicated that 14 types of wetlands are present within and adjacent to the project area. There are three types of freshwater emergent wetland, one type of freshwater forested/shrub wetland, three types of freshwater pond habitats, and seven riverine habitats. The Freshwater Emergent wetlands are seasonally flooded, contain vegetation for most of the year, and contain hydrophytic plants. The Freshwater Forested/Shrub Wetlands include all nontidal wetlands dominated by trees, shrubs, persistent emergents, or emergent mosses or lichens. The Freshwater Ponds include deepwater habitats where vegetation grows principally on or below the surface of the water. The Riverine habitats are generally deepwater habitats contained within a channel, permanently flooded, with intermittent and seasonally flooded channels. In addition, the canal itself is labeled as an excavated Freshwater Emergent wetlands area.

As mentioned in the previous section, there are 134 species of concern listed as potentially using the Yellowstone River area as viable habitat. The lower Yellowstone likely provides critical spawning and rearing habitat for multiple native migratory and resident fishes, including sensitive/Species of Concern paddlefish, sauger, blue sucker, sturgeon chub, pearl dace, and endangered pallid sturgeon (Source: Montana Fish, Wildlife, and Parks FishMT). DNRC also used the U.S. Fish and Wildlife Service IPaC tool to generate a resource list summarizing any endangered or threatened species that are known or expected to be near the project area. The IPaC list generated three (3) Federally listed species as potentially occurring in the greater project area: northern long-eared bat (*Myotis septentrionalis*), pallid sturgeon (*Scaphirhynchus albus*), and monarch butterfly (*Danaus plexippus*). It also listed 12 migratory birds of concern: Bald Eagle (*Haliaeetus leucocephalus*), Franklin's Gull (*Leucophaeus pipixcan*), Western Grebe (*Aechomophorus occidentalis*), Willet (*Tringa semipalmata*), Baird's Sparrow (*Ammodramus bairdii*), Black-billed Cuckoo (*Coccyzus erythropthalmus*), Ferruginous Hawk (*Buteo regalis*), Lark Bunting (*Calamospiza melanocorys*), Lesser Yellowlegs *(Tringa flavipes*), Mountain Plover (*Charadrius montanus*), Prairie Falcon (*Falco mexicanus*), and Red-headed Woodpecker (*Melanerpes erthrocephalus*; USFWS IPaC report. Date accessed: 04/11/2023). The 12 bird species are protected under the Migratory Bird Treaty Act, and the Bald and Eagle is also protected under the Montana Bald Eagle Management Plan, Bald and Golden Eagle Protection Act, and Lacey Act.

Proposed Alternative - The proposed project will have no impact on unique, endangered, fragile or limited resources, including endangered species.

No Action - No endangered species will be affected.

10. HISTORICAL AND ARCHAEOLOGICAL SITES:

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

There are no historic properties or archaeological resources that have been identified in the project area.

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Proposed Alternative - There are no historic properties or archaeological resources that have been identified in the project area. If previously unknown cultural or paleontological materials are identified during project related activities, all work will cease until a professional assessment of such resources can be made.

No Action - No action will probably not affect historic properties or archaeological resources.

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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 Tongue River Slough has backed up during high flow events and overtopped, flooding areas with undersized or missing culverts at road crossings. This is a negative aesthetic in these areas.

Proposed Alternative – The proposed project may have direct, short-term adverse impacts on the aesthetics immediately around the project area during construction. Some nuisance noise and visual impairment will be expected during construction activities, and traffic flow may be disrupted and rerouted. Dust related to construction activities is expected. The contractors will be required to follow any local regulations or ordinances pertaining to the operation of machinery and perform all construction activities during daylight hours to minimize nuisances.

Severity: Noise will be consistent with a small construction project and will only take place during business hours.

Duration: Construction noise will last between 2 and 4 weeks.

Extent: Increased noise will be present in the construction area and immediate surroundings. There are no homes within the construction area that could be impacted.

Frequency: Noise related to the proposed project will be present during construction only.

No Action – No increase in noise or visual aesthetics will occur, except for periods of high flow with over-topping of the Slough and adjacent flooding.

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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.

Currently, the management of the Slough does not require any environmental resources of land, water, air, or energy.

Proposed Alternative – A small amount of electricity will be required to operate the pump station to evacuate the detention pond when the Yellowstone River flows are high and water flows into the Slough and detention pond.

No Action - No impacts to the demands on limited environmental resources.

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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.

Master Stormwater Plan, Miles City, KLJ Engineering, February 2021.

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.

Currently there is backed up water and lowland flooding in areas throughout the Slough. During larger storms (the most recent of which was 2011) when the rivers run high, the slough collects most of the water, but is unable to drain efficiently. In these events, the majority of storm runoff bypasses the storm drain system and results in overflow onto surrounding properties and public transportation avenues. This creates an immediate safety hazard to people and property due to flooding and areas of swiftly running water, but also creates a longer-term health and safety issue from standing water which sometimes takes weeks to evaporate/dissipate. At road crossings without culverts, when there is a significant storm or over-topping of the Tongue River, water infiltrates or over-tops the roadway creating small "rivers", sometimes carrying debris on public roads, sidewalks, and trails, or stagnant pools of water (of unknown depth), creating safety concerns. Stagnant water creates additional health risks as it becomes a breeding ground for parasites, mold and bacteria and can harbor and grow dangerous waterborne pathogens. There are also multiple high points along the slough alignment, leading to additional standing water just upstream from these locations.

Proposed Alternative – The proposed project will remove the backed-up water, install culverts and create positive flow through the Slough, which is an anticipated beneficial impact. This will minimize overtopping of the Slough and surrounding flooding, as well as eliminate an environment for stagnant water to accumulate.

No Action - The long-term impacts will be continued overtopping of the Slough and flooding that creates health and safety hazards. This alternative would rely on existing infrastructure to manage stormwater runoff from a 100-year storm event with no modifications or measures to mitigate the current flooding potential. Landowners within the FEMA delineated flood zone would still be required to purchase and maintain flood insurance and owners within the floodway would not be eligible for flood insurance. The alternative would not satisfy the interior drainage plan requirement for levee certification.

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15. INDUSTRIAL, COMMERCIAL AND AGRICULTURE ACTIVITIES AND PRODUCTION:
Identify how the project would add to or alter these activities.

Construction activity will occur within the City of Miles City, in Custer County, Montana. There are currently no industrial, commercial or agricultural activities within the proposed project area.

Proposed Alternative - The proposed project will result in a storm water and internal drainage system that will safely collect, convey, temporarily store, and discharge storm water into the Yellowstone River. The project improvements will minimize damage from flood events, reduce the total area inundated during a flood event, and may reduce flood insurance requirements.

No Action - The long-term impacts will be continued overtopping of the Slough and flooding that creates property damage to surrounding industrial, commercial and agricultural activities.

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.

The project is located within the city limits of Miles City, the largest city of Custer County, Montana. The population for Custer County was 11,916 in 2021, with 8,397 people residing in Miles City (Montana Department of Commerce: Census and Economic Information Center). The project focuses on replacing storm water drainages along the slough, which runs through the city.

Proposed Alternative - Potential short-term construction jobs will be created with this project. Construction crews will likely support local businesses during the construction of necessary infrastructure. The increased demand for food, lodging, equipment, and supplies resulting from the project will have a positive impact on the local economy.

No Action - No impact to quantity and distribution of employment.

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.

No tax base or revenues will be impacted from the project.

Proposed Alternative & No Action – No impact to local and state tax base and tax 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 Slough is approximately 2.7 miles long with ten (10) road crossings. However, two road crossings do not have culverts. At crossings without culverts, water infiltrates and/or overtops the road. In addition to the lack of culverts, there are multiple high points along the Slough alignment,

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leading to standing water just upstream of these locations. Large debris is also evident within the Slough. Current conditions require the city to manage flooding of roadways when the slough overtops, repair damage to roadways, manage pest control and protect public health and safety.

Proposed Alternative – The proposed alternative will minimize flooding and standing bodies of water by installing culverts and regrading the slough, a potential short and long-term beneficial impact to traffic.. Short-term adverse impacts can be expected due to restricted traffic access during construction. Localized impacts may include emergency medical access but can be mitigated by construction practices inducing a health and safety plan and efficient detours for traffic flow. No impact is anticipated to fire protection, police, or schools.

No Action - The city will continue to manage flooding of roadways when the slough overtops, repair damage to roadways, manage pest control and protect public health and safety.

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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.

The project area does not have locally adopted environmental plans and goals.

Proposed Alternative – There are no locally adopted environmental plans and goals that would impact the proposed alternative.

No Action – Will not impact locally adopted plans and goals.

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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 Yellowstone River provides diverse recreational opportunities for the public. The project area is located adjacent to the main recreational corridor of the Yellowstone River, primarily on private land. There are multiple public fishing access sites upstream and downstream of the project area. There are also recreational access points at county/city bridge crossings.

Proposed Alternative – Adjacent land use will benefit from the consistent management of stormwater and minimization of stagnant water ponding.

No Action – Limited recreational access due to flooding and stagnant water ponding.

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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.

There are residential and commercial structures adjacent to the Slough area and behind the existing levee system.

Proposed Alternative – With the stormwater upgrades allowing for future levee upgrades to occur,

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the project areas and associated floodplains can be better mapped, which is expected to reduce the flood insurance premiums of residential and commercial properties – an overall beneficial impact to population and housing.

No Action – The long-term impacts will be continued overtopping of the Slough and flooding that creates health and safety hazards. This alternative would rely on existing infrastructure to manage stormwater runoff from a 100-year storm event with no modifications or measures to mitigate the current flooding potential. Landowners within the FEMA delineated flood zone would still be required to purchase and maintain flood insurance and owners within the floodway would not be eligible for flood insurance. The alternative would not satisfy the interior drainage plan requirement for levee certification.

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22. SOCIAL STRUCTURES AND MORES:
Identify potential disruption of native or traditional lifestyles or communities.

No societal structures and mores will be impacted from the project.

Proposed Alternative – No impact.

No Action – There would be no changes to social structures or mores.

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23. CULTURAL UNIQUENESS AND DIVERSITY:
How would the action affect any unique quality of the area?

The Yellowstone River and agricultural lands sustain the way of life for Custer County and the greater Miles City area, providing fishing and boating recreational activities and local and regional food supply for the overall area.

Proposed Alternative – The proposed project will have no impact on cultural facilities, cultural uniqueness and diversity.

No Action – No impact to cultural uniqueness or diversity resources.

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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 project area is located within the 100-year floodplain or floodway at the confluence of the Yellowstone and Tongue Rivers. Currently, a levee surrounds Miles City providing a degree of flood protection from water overflowing the banks of the Yellowstone River and the Tongue River. It is composed of mostly native soils found adjacent to both rivers. As constructed, the levee does not meet USACE standards and is not certified by USACE. As a consequence, FEMA floodplain maps do not recognize the levee and show a majority of the City within the 100-yuear floodplain with portions within the floodway. Therefore, homeowners and businesses with mortgages from government-backed lenders within high-risk flood areas are required to carry flood insurance. To eliminate the financial burden of flood insurance, the City wants to construct a new levee that is certified by the USACE and FEMA provide accreditation to a new Flood Insurance Rate Map (FIRM)

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that includes Miles City. One requirement for levee certification is the development of a Master Stormwater Plan (MSP) that provides guidance for management of stormwater runoff captured behind the levee (dry side) protecting Miles City and surrounding properties. The MSP provides an evaluation of the Tongue River Slough watershed and the internal drainage behind the levee, resulting in a large planning level overview.

Proposed Alternative – The proposed project is integral to the Custer County Miles City (CCMC) Flood Protection Project, with the effects of implementing this project having a short and long-term beneficial impact to flood protection.

No Action - The long-term impacts will be continued overtopping of the Slough and flooding that creates health and safety hazards and economic impacts on commercial and residential properties.

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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.

Sewer/Sanitation/Storm Water

The City of Miles City would install two new culverts thar are currently missing under road crossings with the Tongue River Slough, construct a storage pond to detain stormwater, install a lift station to drain the proposed storage pond, and replace existing culverts and regrade the Slough to improve conveyance capacity. All these activities would directly impact stormwater, groundwater, and surface water quality in the area. The project areas are within City road Right-of-Ways and on private property. No changes to sewer or sanitation are anticipated with the proposed project work.

Drinking Water/Fire Protection

The project area is within the City of Miles City and has direct impact to drinking water. Ground water and surface water are at risk of contamination from the flooding and ponding slough, impacting those drinking water sources. Fire Protection is already established across the city and connected to the water main system. The recommended alternative for stormwater management was chosen to minimize the effects of flooding and stagnant water ponding on the environment.

Proposed Alternative - The proposed project will have no effect on solid waste, community water supply or wastewater treatment/sewage systems. Stormwater system upgrades will be better able to minimize community flooding and stagnant water bodies – an overall beneficial impact.

No Action - No action will have no effect on solid waste, community water supply or wastewater treatment/sewage systems.

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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.

Disproportionate adverse human health or environmental impacts relative to minority and low-

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income populations is not expected, and short-term increased employment opportunity should result in direct or indirect positive impact to these residents, The proposed project is not related to placing lower income households in areas where environmental degradation had occurred.

Proposed Alternative - Potentially no impact as the proposed project will not result in disproportionately high or adverse human health or environmental effects on minority or low-income populations. The economic impact will not have a disproportionate effect among any portion of the community.

No Action – No impact to environmental justice.

EA Prepared By:	**Name:**	Samantha Treu	**Date:**	4/11/2023
	Title:	MEPA Coordinator	**Email:**	Samantha.treu@mt.gov

V. FINDING

27. ALTERNATIVE SELECTED:

Alternative 4 – Complete Alternative 1 and 2 AND upgrade Remaining Crossings and Regrade the Slough – This project will include everything as described in Alternatives 1 and 2 (rely on existing infrastructure to manage storm water runoff, as well as provide storage and pumping for the 100-year storm event) with the addition of improvements to prevent overtopping at all crossings, except for the two gravel crossings and Robinson St., during the 10-year storm event. This includes general regrading of the Slough profile to eliminate high and low areas along the alignment. During the regrading of the Slough, the cross sections should be uniform, with additional excavation as needed to minimize backwater conditions and increase storage capacity within the Slough. The improvements to the crossings listed in this alternative provide larger openings which may reduce the amount of plugged debris. The larger culverts improve the backwater conditions, which may reduce maintenance after storm events.

28. SIGNIFICANCE OF POTENTIAL IMPACTS:

Minor, short-term, local environmental and social impacts will be mitigated with carefully planned construction best management practices. The project will likely have long-term beneficial impacts to water quality, health and safety, and storm water runoff.

Air Quality

Potentially adverse direct, short-term impacts to air quality from dust associated with construction activities. If excessive dust is generated, the contractor will be responsible for dust abatement through water application and other dust control mitigation measures. No long-term negative impact is anticipated as a result of this project.

Vegetation Cover, Quantity, and Quality

The project construction is anticipated to have a short-term adverse impact on existing vegetation within the slough channel. The Slough regrading and culverts will remove overgrowth in the slough

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allowing for effective transmission of water. The proposed project will have no long-term impacts on vegetation. Revegetation with native species will occur during construction.

Aesthetics/Noise

The proposed project may have direct, short-term adverse impacts on the aesthetics immediately around the project area during construction. Some nuisance noise and visual impairment will be expected during construction activities, and traffic flow may be disrupted and rerouted. Dust related to construction activities is expected. The contractors will be required to follow any local regulations or ordinances pertaining to the operation of machinery and perform all construction activities during daylight hours to minimize nuisances.

Severity: Noise will be consistent with a small construction project and will only take place during business hours.

Duration: Construction noise will last between 2 and 4 weeks.

Extent: Increased noise will be present in the construction area and immediate surroundings. There are no homes within the construction area that could be impacted.

Frequency: Noise related to the proposed project will be present during construction only.

Demand for Government Services

Short-term adverse impacts can be expected due to restricted traffic access during construction. Localized impacts may include emergency medical access, but can be mitigated by construction practices inducing a health and safety plan and efficient detours for traffic flow. No impact is anticipated to fire protection, police, or schools.

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29. NEED FOR FURTHER ENVIRONMENTAL ANALYSIS:

THIS IS THE FINAL DECISION NOTICE.

[ ] EIS [ ] More Detailed EA [X] No Further Analysis

EA Approved By:	**Name:** Mark W Bostrom **Title:** Division Administrator
Signature: DocuSigned by: Mark W Bostrom BF7A1C50B2AF4DE...	**Date:** 5/22/2023 | 8:15:25 AM MDT

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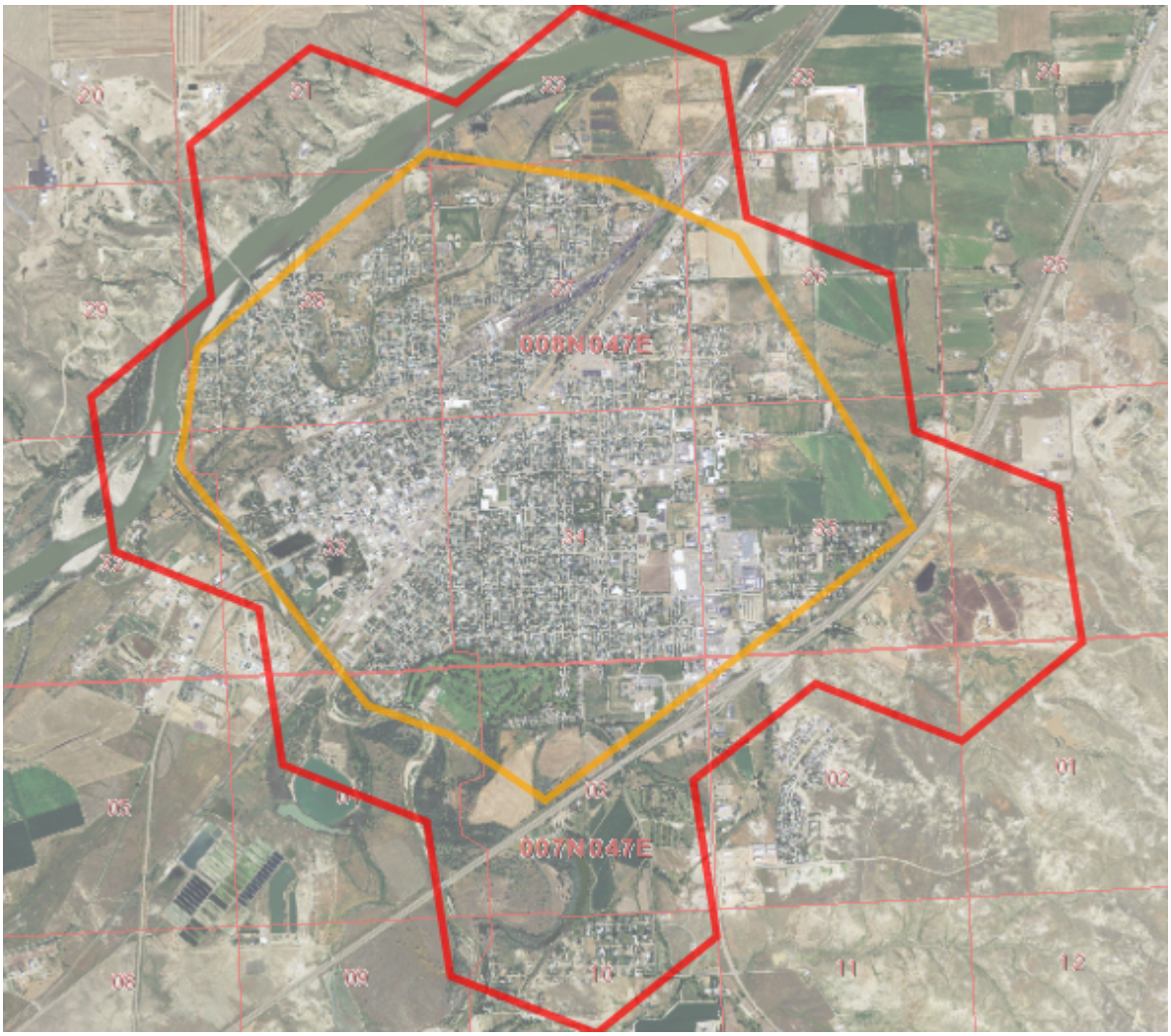
Environmental Summary

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

Latitude	Longitude
46.37747	-105.78883
46.43378	-105.87521

Summarized by:
Miles City Internal Drainage
(Custom Area of Interest)



Suggested Citation
Montana Natural Heritage Program. Environmental Summary Report.
for Latitude 46.37747 to 46.43378 and Longitude -105.78883 to -105.87521. Retrieved on 4/5/2023.

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 NatureServe, a network of over 80 similar programs in states, provinces, and nations throughout the Western Hemisphere, working to provide current and comprehensive distribution and status information on species and biological communities.

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Table of Contents

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

Introduction to Environmental Summary Report

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

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

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

Model Icons
- N Suitable (native range)
- O Optimal Suitability
- M Moderate Suitability
- L Low Suitability
- I Suitable (introduced range)

Habitat Icons
- C Common
- O Occasional

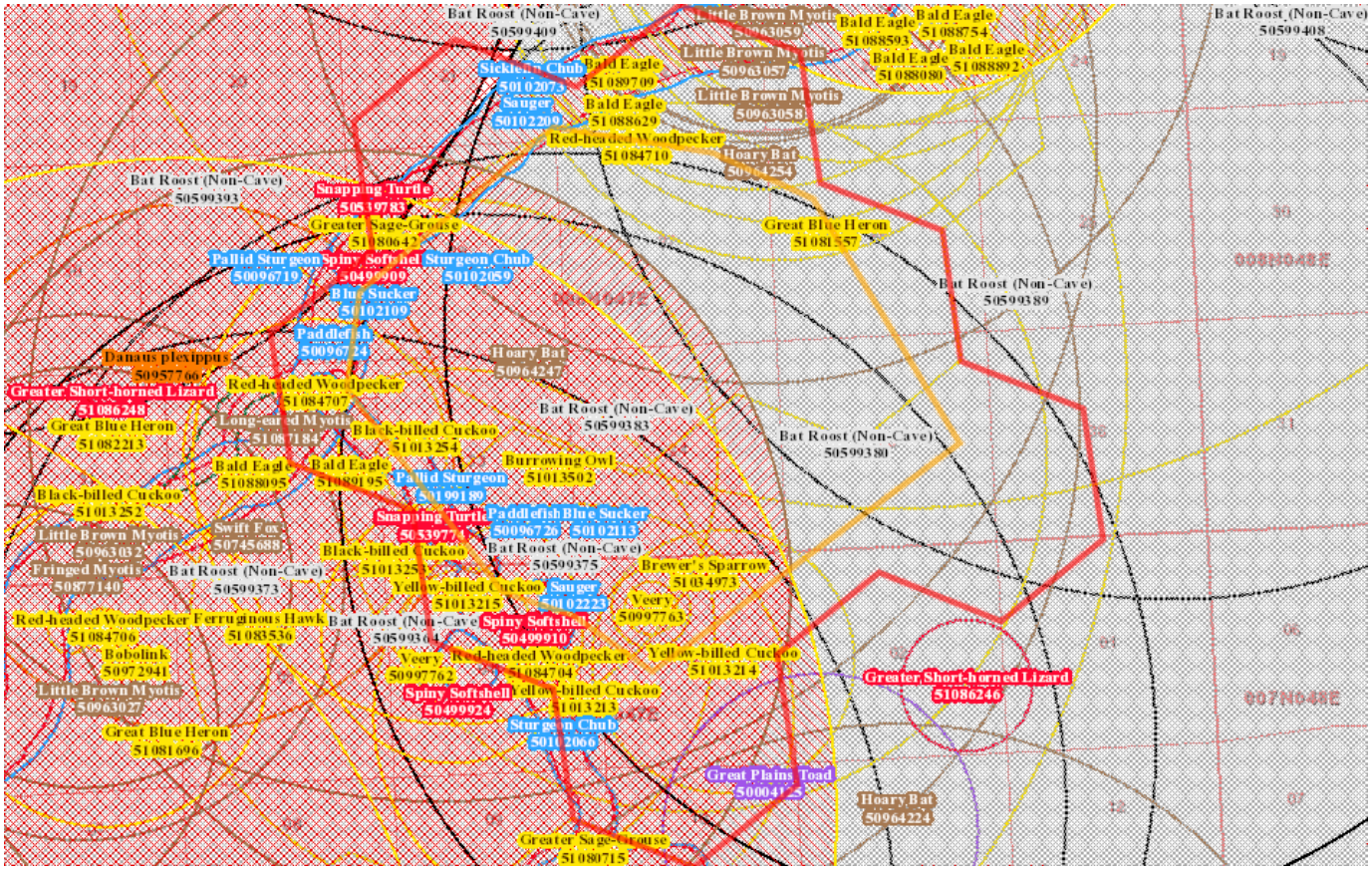
Range Icons
- Y Native / Year-round
- S Summer
- W Winter
- M Migratory
- N Non-native
- H Historical

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

Latitude	Longitude
46.37747	-105.78883
46.43378	-105.87521

Native Species

Summarized by: **Miles City Internal Drainage** *(Custom Area of Interest)*
Filtered by:
Native Species reports are filtered for Species with MT Status = Species of Concern, Special Status, Important Animal Habitat, Potential SOC



Species Occurrences

	USFWS Sec7	# SO	# Obs	Predicted Model	Range
F - Blue Sucker *(Cycleptus elongatus)* SOC		2	+		Y
F - Paddlefish *(Polyodon spathula)* SOC		2			Y
F - Pallid Sturgeon *(Scaphirhynchus albus)* SOC	7	2			Y
F - Sauger *(Sander canadensis)* SOC		3	6 +		Y

View in Field Guide **View Predicted Models** **View Range Maps**
Species of Concern - Native Species Global: **G3G4** State: **S2S3** FWP SWAP: **SGCN2-3**

Delineation Criteria Stream reaches 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 into the terrestrial habitat based on PACFISH/INFISH Riparian Conservation Area standards. (Last Updated: Jul 18, 2022)

Predicted Models: N 56% Suitable (native range) (deductive)

View in Field Guide **View Predicted Models** **View Range Maps**
Species of Concern - Native Species Global: **G4** State: **S2** BLM: **SENSITIVE** FWP SWAP: **SGCN2**

Delineation Criteria Stream reaches 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 into the terrestrial habitat based on PACFISH/INFISH Riparian Conservation Area standards. (Last Updated: Jul 25, 2022)

Predicted Models: N 56% Suitable (native range) (deductive)

View in Field Guide **View Predicted Models** **View Range Maps**
Species of Concern - Native Species Global: **G2** State: **S1** USFWS: **LE** BLM: **ENDANGERED** FWP SWAP: **SGCN1**

Delineation Criteria Stream reaches 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 into the terrestrial habitat based on PACFISH/INFISH Riparian Conservation Area standards. (Last Updated: Jul 18, 2022)

Predicted Models: N 56% Suitable (native range) (deductive)

View in Field Guide **View Predicted Models** **View Range Maps**
Species of Concern - Native Species Global: **G5** State: **S2** BLM: **SENSITIVE** FWP SWAP: **SGCN2**

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

Predicted Models: N 56% Suitable (native range) (deductive)

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F - Sturgeon Chub *(Macrhybopsis gelida)* SOC — 2 — 1 + — Y — H

Species of Concern - Native Species Global: **G3** State: **S2S3** BLM: **SENSITIVE** FWP SWAP: **SGCN2-3**

Delineation Criteria Stream reaches 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 into the terrestrial habitat based on PACFISH/INFISH Riparian Conservation Area standards. (Last Updated: Jul 18, 2022)

Predicted Models: N 56% Suitable (native range) (deductive)

F - Sicklefin Chub *(Macrhybopsis meeki)* SOC — 1 — + — Y — H

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

Species of Concern - Native Species Global: **G3** State: **S1** FWP SWAP: **SGCN1**

Delineation Criteria Stream reaches 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 into the terrestrial habitat based on PACFISH/INFISH Riparian Conservation Area standards. (Last Updated: Jul 18, 2022)

Predicted Models: N 33% Suitable (native range) (deductive)

F - Shortnose Gar *(Lepisosteus platostomus)* SOC — 1 — 2 + — Y

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

Species of Concern - Native Species Global: **G5** State: **S3** FWP SWAP: **SGCN1**

Delineation Criteria Stream reaches 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 into the terrestrial habitat based on PACFISH/INFISH Riparian Conservation Area standards. (Last Updated: Jul 18, 2022)

Predicted Models: N 11% Suitable (native range) (deductive)

B - Black-billed Cuckoo *(Coccyzus erythropthalmus)* SOC — 2 — 2 — S — M

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

Species of Concern - Native Species Global: **G5** State: **S3B** USFWS: **MBTA; BCC11; BCC17** BLM: **SENSITIVE** FWP SWAP: **SGCN3, SGIN** 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 30, 2022)

Predicted Models: O 89% Optimal (inductive), M 11% Moderate (inductive)

B - Yellow-billed Cuckoo *(Coccyzus americanus)* SOC — 3 — 4 — S — M

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**

Delineation Criteria Observations with evidence of breeding activity buffered by a minimum distance of 300 meters in order to encompass the maximum foraging area 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 30, 2022)

Predicted Models: O 89% Optimal (inductive), M 11% Moderate (inductive)

R - Snapping Turtle *(Chelydra serpentina)* SOC — 2 — Y

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

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

Delineation Criteria Stream reaches and standing water bodies within the species native range where their presence has been confirmed through direct capture or observation or where they are believed to be present based on the professional judgement of a biologist due to confirmed presence in adjacent areas. Occupied stream reaches are buffered up and downstream and into adjoining streams by 6,000 meters to encompass maximum reported annual travel distance. In order to reflect the importance of adjacent terrestrial habitats to survival, stream reaches and standing water bodies are buffered 100 meters into the terrestrial habitat based on PACFISH/INFISH Riparian Conservation Area standards. (Last Updated: Dec 22, 2022)

Predicted Models: O 56% Optimal (inductive), M 33% Moderate (inductive), L 11% Low (inductive)

B - Great Blue Heron *(Ardea herodias)* SOC — 2 — 27 — S — M

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

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

Delineation Criteria Confirmed nesting area buffered by a minimum distance of 6,500 meters in order to be conservative about encompassing the areas commonly used for foraging near the breeding colony and otherwise buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. (Last Updated: Mar 22, 2023)

Predicted Models: O 44% Optimal (inductive), M 44% Moderate (inductive), L 11% Low (inductive)

M - Hoary Bat *(Lasiurus cinereus)* SOC — 3 — S — M

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

Species of Concern - Native Species Global: **G3G4** State: **S3B** BLM: **SENSITIVE** FWP SWAP: **SGCN3**

Delineation Criteria Confirmed area of occupancy based on the documented presence (mistnet captures, definitively identified acoustic recordings, and definitively identified roosting individuals) of adults or juveniles during the active season. Point observation location is buffered by a minimum distance of 3,500 meters in order to be conservative about encompassing the maximum reported foraging distance for the congeneric Lasiurus borealis and otherwise buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. (Last Updated: Dec 23, 2022)

Predicted Models: M 67% Moderate (inductive), L 33% Low (inductive)

B - Veery *(Catharus fuscescens)* SOC — 2 — 4 — S — M

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

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

Delineation Criteria Observations with evidence of breeding activity buffered by a minimum distance of 300 meters in order to be conservative about encompassing home ranges and otherwise buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. (Last Updated: Dec 29, 2022)

Predicted Models: M 67% Moderate (inductive), L 33% Low (inductive)

M - Little Brown Myotis *(Myotis lucifugus)* SOC — 3 — Y

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

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

Delineation Criteria Confirmed area of occupancy based on the documented presence (mistnet captures, definitively identified acoustic recordings, or definitively identified roosting individuals) of adults or juveniles. Point observation location is buffered by a distance of 1,600 meters in order to encompass the greater than 1,500 meters foraging distance reported for the species in New Brunswick, Canada and otherwise buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. When cave locations are involved, point observations are mapped in the center of a one-square mile hexagon to protect the exact location of the cave entrance as per the Federal Cave Resource Protection Act and associated regulations (U.S. Code Title 16 Chapter 63, Code of Federal Regulations Title 43 Subtitle A Part 37). The outer edges of the hexagon are then buffered by a distance of 1,600 meters and otherwise by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. All of the one-square mile hexagons intersecting this buffered area are presented as the Species Occurrence record. (Last Updated: Dec 22, 2022)

Predicted Models: M 56% Moderate (inductive), L 44% Low (inductive)

B - Bald Eagle *(Haliaeetus leucocephalus)* SSS — 8 — 58 + — Y

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

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

Delineation Criteria Confirmed nesting area buffered by a minimum distance of 2,000 meters in order to be conservative about encompassing the breeding territory and area commonly used for renesting. 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: M 56% Moderate (inductive), L 33% Low (inductive)

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

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: M 33% Moderate (inductive), L 67% Low (inductive)

R - Spiny Softshell *(Apalone spinifera)* SOC — 3 | 9 | Y | H

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

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

Delineation Criteria Stream reaches and impounded streams within the species' native range where the species naturally occurs and their presence has been confirmed through direct capture or where they are believed to be present based on the professional judgement of a 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 and impounded streams 50 meters into the terrestrial habitat based on PACFISH/INFISH Riparian Conservation Area standards. (Last Updated: Sep 22, 2022)

Predicted Models: M 33% Moderate (inductive), L 22% Low (inductive)

R - Greater Short-horned Lizard *(Phrynosoma hernandesi)* SOC — 1 | + | Y

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

Species of Concern - Native Species Global: **G5** State: **S3** BLM: **SENSITIVE** 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 300 meters in order to encompass habitats supporting other individuals and documented distances moved betweeen summer and winter habitats. 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: Mar 22, 2023)

Predicted Models: M 22% Moderate (inductive), L 56% Low (inductive)

V - Cyperus schweinitzii *(Schweinitz's Flatsedge)* SOC — 1 | 1 | Y

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

Species of Concern - Native Species Global: **G5** State: **S2** Plant Threat Score: **Low**

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: Dec 08, 2022)

Predicted Models: M 22% Moderate (inductive), L 33% Low (inductive)

B - Red-headed Woodpecker *(Melanerpes erythrocephalus)* SOC — 3 | 16 | S | M

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

Species of Concern - Native Species Global: **G5** State: **S3B** USFWS: **MBTA; BCC11; BCC17** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **2**

Delineation Criteria Confirmed breeding area based on the presence of a nest, chicks, or territorial adults during the breeding season. Point observation location is buffered by a minimum distance of 165 meters in order to encompass the maximum breeding territory size reported for the species and otherwise is buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. (Last Updated: Mar 22, 2023)

Predicted Models: M 11% Moderate (inductive), L 78% Low (inductive)

A - Great Plains Toad *(Anaxyrus cognatus)* SOC — 1 | + | Y

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

Species of Concern - Native Species Global: **G5** State: **S2** BLM: **SENSITIVE** FWP SWAP: **SGCN2**

Delineation Criteria Standing 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. When specific water bodies are not able to be identified due to the difficulties of estimating distances to breeding choruses during calling surveys for this species and its tendency to breed in ephemeral waters, the species occurrence consists of the best estimate of the breeding location buffered by the locational uncertainty of the observation to a maximum distance of 10,000 meters. (Last Updated: Jul 14, 2022)

Predicted Models: L 67% Low (inductive)

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

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

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

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

Predicted Models: L 33% Low (inductive)

M - Swift Fox *(Vulpes velox)* SOC — 1 | Y

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

Species of Concern - Native Species Global: **G3** State: **S3** BLM: **SENSITIVE** FWP SWAP: **SGCN3**

Delineation Criteria Confirmed breeding or continued presence on a home range (e.g., active den site, pairs, or consistent observations over several years). Point observation location is buffered by a minimum distance of 3,300 meters in order to encompass the maximum home range 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: Oct 06, 2021)

Predicted Models: L 33% Low (inductive)

B - Ferruginous Hawk *(Buteo regalis)* SOC — 1 | 4 + | Not Assessed | S | M

View in Field Guide | View Range Maps

Species of Concern - Native Species Global: **G4** State: **S3B** USFWS: **MBTA; BCC17** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **2**

Delineation Criteria Confirmed nesting area buffered by a minimum distance of 2,000 meters in order to encompass the average home range size reported for the species and otherwise buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. (Last Updated: Mar 22, 2023)

B - Burrowing Owl *(Athene cunicularia)* SOC — 1 | 1 | Not Assessed | S | M

View in Field Guide | View Range Maps

Species of Concern - Native Species Global: **G4** State: **S3B** USFWS: **MBTA; BCC17** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **1**

Delineation Criteria Confirmed breeding area based on the presence of a nest, chicks, or territorial adults during the breeding season. Direct observation of a bird or birds at/on a prairie dog town is indirect but sufficient evidence of breeding (b). Point observation location is buffered by a minimum distance of 2,700 meters in order to encompass the maximum foraging distance reported for breeding adults and otherwise is buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. (Last Updated: Jan 03, 2023)

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B - Greater Sage-Grouse *(Centrocercus urophasianus)* SOC | 2 | 1 + | Not Assessed | Y

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

Species of Concern - Native Species Global: **G3G4** State: **S2** **Species of Conservation Concern in Forests (CG)** BLM: **SENSITIVE** FWP SWAP: **SGCN2** PIF: **1**

Delineation Criteria Confirmed breeding area based on the presence of a nest, chicks, juveniles, or adults on a lek. Point observations are mapped in the center of a one-square mile hexagon to protect the exact locations of leks. The outer edges of this hexagon are then buffered by a distance of 6,400 meters in order to encompass a body of research indicating that females typically nest within this distance of a lek and that lek numbers are negatively impacted by fossil fuel drilling activities within this distance of a lek. If the locational uncertainty associated with the observation is greater than this distance, it is buffered by the locational up to a maximum distance of 10,000 meters. All of the one-square mile hexagons intersecting this buffered area are presented as the Species Occurrence record. (Last Updated: Jan 25, 2023)

B - Brewer's Sparrow *(Spizella breweri)* SOC | 1 | 9 | Not Assessed | S | M

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**

Delineation Criteria Confirmed breeding area based on the presence of a nest, chicks, or territorial adults during the breeding season. Point observation location is buffered by a minimum distance of 100 meters in order to encompass the maximum 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: Jan 04, 2023)

I - Leucrocuta petersi *(A Mayfly)* SSS | 1 | 1 | Not Assessed | Y

View in Field Guide **View Range Maps**

Special Status Species - Native Species Global: **G2G3** State: **SNR**

Delineation Criteria Stream reaches where the species recent presence has been confirmed through detection of live individuals or recent shells. Detection locations are buffered up and downstream by 500 meters to encompass potential adjacent populations and occupied stream reaches separated by less than 2000 meters are combined into a single species occurrence. In order to reflect the importance of adjacent terrestrial habitats to survival, stream reaches are buffered 100 meters into the terrestrial habitat based on PACFISH/INFISH Riparian Conservation Area standards. (Last Updated: Jun 17, 2022)

I - Danaus plexippus *(Monarch)* SOC | 1 | Not Assessed | S

View in Field Guide **View Range Maps**

Species of Concern - Native Species Global: **G4** State: **S2S3** USFWS: **C**

Delineation Criteria Confirmed breeding area based on the presence of a resident animal of any age/stage. Point observation location is buffered by a minimum distance of 2,000 meters in order to encompass documented travel distances of some butterfly species as well as adjacent habitat likely to support other individuals and otherwise is buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. (Last Updated: Dec 21, 2022)

O - Bat Roost (Non-Cave) *(Bat Roost (Non-Cave))* IAH | 8 | Not Assessed

View in Field Guide

Important Animal Habitat - Native Species Global: **GNR** State: **SNR**

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

Montana Natural Heritage Program
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Model Icons
- N Suitable (native range)
- O Optimal Suitability
- M Moderate Suitability
- L Low Suitability
- I Suitable (introduced range)

Habitat Icons
- C Common
- O Occasional

Range Icons
- Y Native / Year-round
- S Summer
- W Winter
- M Migratory
- N Non-native
- H Historical

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

Latitude	Longitude
46.37747	-105.78883
46.43378	-105.87521

Native Species

Summarized by: **Miles City Internal Drainage** *(Custom Area of Interest)*
Filtered by:
Native Species reports are filtered for Species with MT Status = Species of Concern, Special Status, Important Animal Habitat, Potential SOC

Other Observed Species

	USFWS Sec7	# Obs	Predicted Model	Range
F - Burbot *(Lota lota)* PSOC		2 +		Y
F - Plains Minnow *(Hybognathus placitus)* PSOC		+		Y
B - Eastern Screech-Owl *(Megascops asio)* PSOC		11 +		Y
B - Chimney Swift *(Chaetura pelagica)* PSOC		64		S M
B - Ovenbird *(Seiurus aurocapilla)* PSOC		6		S M
B - American White Pelican *(Pelecanus erythrorhynchos)* SOC		19		S M
B - Black-and-white Warbler *(Mniotilta varia)* PSOC		3 +		S M
B - Eastern Bluebird *(Sialia sialis)* PSOC		1 +		S M
A - Northern Leopard Frog *(Lithobates pipiens)* SOC		3 +		Y
B - Sharp-tailed Grouse *(Tympanuchus phasianellus)* SOC		6		Y
B - Loggerhead Shrike *(Lanius ludovicianus)* SOC		1		S M
B - Common Poorwill *(Phalaenoptilus nuttallii)* PSOC		1		S M
B - Cassin's Kingbird *(Tyrannus vociferans)* PSOC		2 +		S M

F - Burbot *(Lota lota)* PSOC
View in Field Guide | View Predicted Models | View Range Maps
Potential Species of Concern - Native Species Global: **G5** State: **S4**
Predicted Models: N 56% Suitable (native range) (deductive)

F - Plains Minnow *(Hybognathus placitus)* PSOC
View in Field Guide | View Predicted Models | View Range Maps
Potential Species of Concern - Native Species Global: **G4** State: **S4**
Predicted Models: N 56% Suitable (native range) (deductive)

B - Eastern Screech-Owl *(Megascops asio)* PSOC
View in Field Guide | View Predicted Models | View Range Maps
Potential Species of Concern - Native Species Global: **G5** State: **S3S4** USFWS: **MBTA** PIF: **3**
Predicted Models: O 100% Optimal (inductive)

B - Chimney Swift *(Chaetura pelagica)* PSOC
View in Field Guide | View Predicted Models | View Range Maps
Potential Species of Concern - Native Species Global: **G4G5** State: **S3S4B** USFWS: **MBTA; BCC11** FWP SWAP: **SGIN** PIF: **3**
Predicted Models: O 56% Optimal (inductive), M 33% Moderate (inductive), L 11% Low (inductive)

B - Ovenbird *(Seiurus aurocapilla)* PSOC
View in Field Guide | View Predicted Models | View Range Maps
Potential Species of Concern - Native Species Global: **G5** State: **S4B** USFWS: **MBTA** PIF: **3**
Predicted Models: O 44% Optimal (inductive), M 56% Moderate (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: O 22% Optimal (inductive), M 78% Moderate (inductive)

B - Black-and-white Warbler *(Mniotilta varia)* PSOC
View in Field Guide | View Predicted Models | View Range Maps
Potential Species of Concern - Native Species Global: **G5** State: **S4B** USFWS: **MBTA**
Predicted Models: O 22% Optimal (inductive), M 44% Moderate (inductive), L 33% Low (inductive)

B - Eastern Bluebird *(Sialia sialis)* PSOC
View in Field Guide | View Predicted Models | View Range Maps
Potential Species of Concern - Native Species Global: **G5** State: **S4B** USFWS: **MBTA**
Predicted Models: M 89% Moderate (inductive), L 11% Low (inductive)

A - Northern Leopard Frog *(Lithobates pipiens)* SOC
View in Field Guide | View Predicted Models | View Range Maps
Species of Concern - Native Species Global: **G5** State: **S1,S4** USFS: **Sensitive - Known in Forests (KOOT)** **Sensitive - Suspected in Forests (BRT, LOLO)** BLM: **SENSITIVE** FWP SWAP: **SGCN1**
Predicted Models: M 67% Moderate (inductive), L 33% Low (inductive)

B - Sharp-tailed Grouse *(Tympanuchus phasianellus)* SOC
View in Field Guide | View Predicted Models | View Range Maps
Species of Concern - Native Species Global: **G5** State: **SX,S4** FWP SWAP: **SGCN1** PIF: **2**
Predicted Models: M 44% Moderate (inductive), L 56% Low (inductive)

B - Loggerhead Shrike *(Lanius ludovicianus)* SOC
View in Field Guide | View Predicted Models | View Range Maps
Species of Concern - Native Species Global: **G4** State: **S3B** USFWS: **MBTA** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **2**
Predicted Models: M 11% Moderate (inductive), L 89% Low (inductive)

B - Common Poorwill *(Phalaenoptilus nuttallii)* PSOC
View in Field Guide | View Predicted Models | View Range Maps
Potential Species of Concern - Native Species Global: **G5** State: **S4B** USFWS: **MBTA** FWP SWAP: **SGIN** PIF: **3**
Predicted Models: M 11% Moderate (inductive), L 78% Low (inductive)

B - Cassin's Kingbird *(Tyrannus vociferans)* PSOC
View in Field Guide | View Predicted Models | View Range Maps
Potential Species of Concern - Native Species Global: **G5** State: **S4B** USFWS: **MBTA**
Predicted Models: L 100% Low (inductive)

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

Species of Concern - Native Species Global: **G5** State: **S3B** USFWS: **MBTA; BCC11** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **2**

Predicted Models: L 100% Low (inductive)

M - Black-tailed Prairie Dog *(Cynomys ludovicianus)* SOC

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

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

Predicted Models: L 89% Low (inductive)

B - Sage Thrasher *(Oreoscoptes montanus)* SOC

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

Species of Concern - Native Species Global: **G4** State: **S3B** USFWS: **MBTA** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **3**

Predicted Models: L 22% Low (inductive)

B - Golden Eagle *(Aquila chrysaetos)* SOC

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 - Rufous Hummingbird *(Selasphorus rufus)* PSOC

View in Field Guide

Potential Species of Concern - Native Species Global: **G4** State: **S4B** USFWS: **MBTA; BCC10** PIF: **3**

B - Evening Grosbeak *(Coccothraustes vespertinus)* SOC

View in Field Guide | View Range Maps

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

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

View in Field Guide | View Range Maps

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

B - White-faced Ibis *(Plegadis chihi)* SOC

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**

B - Franklin's Gull *(Leucophaeus pipixcan)* SOC

View in Field Guide | View Range Maps

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

B - Hooded Merganser *(Lophodytes cucullatus)* PSOC

View in Field Guide | View Range Maps

Potential Species of Concern - Native Species Global: **G5** State: **S4** USFWS: **MBTA** FWP SWAP: **SGIN** PIF: **2**

B - Barrow's Goldeneye *(Bucephala islandica)* PSOC

View in Field Guide | View Range Maps

Potential Species of Concern - Native Species Global: **G5** State: **S4** USFWS: **MBTA** FWP SWAP: **SGIN** PIF: **2**

B - Mountain Plover *(Charadrius montanus)* SOC

View in Field Guide | View Range Maps

Species of Concern - Native Species Global: **G3** State: **S2B** USFWS: **MBTA; BCC10; BCC11; BCC17** BLM: **SENSITIVE** FWP SWAP: **SGCN2** PIF: **1**

B - American Bittern *(Botaurus lentiginosus)* SOC

View in Field Guide | View Range Maps

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

B - Alder Flycatcher *(Empidonax alnorum)* SOC

View in Field Guide | View Range Maps

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

B - Sprague's Pipit *(Anthus spragueii)* SOC

View in Field Guide | View Range Maps

Species of Concern - Native Species Global: **G3G4** State: **S3B** USFWS: **MBTA; BCC11; BCC17** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **1**

I - Enallagma civile *(Familiar Bluet)* PSOC

View in Field Guide | View Range Maps

Potential Species of Concern - Native Species Global: **G5** State: **S2S4**

I - Rhionaeschna multicolor *(Blue-eyed Darner)* PSOC

View in Field Guide | View Range Maps

Potential Species of Concern - Native Species Global: **G5** State: **S2S4**

B - Forster's Tern *(Sterna forsteri)* SOC

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**

B - Horned Grebe *(Podiceps auritus)* SOC

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**

I - Argia emma *(Emma's Dancer)* PSOC

View in Field Guide | View Range Maps

Potential Species of Concern - Native Species Global: **G5** State: **S3S5**

B - Clark's Grebe *(Aechmophorus clarkii)* SOC

View in Field Guide | View Range Maps

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

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B - Common Loon *(Gavia immer)* SOC | 4 | Not Assessed | M

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

B - Trumpeter Swan *(Cygnus buccinator)* SOC | 1 | Not Assessed | M

View in Field Guide 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**

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

View in Field Guide View Range Maps

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

B - Gray-crowned Rosy-Finch *(Leucosticte tephrocotis)* SOC | 1 | Not Assessed | W M

View in Field Guide View Range Maps

Species of Concern - Native Species Global: **G5** State: **S2** USFWS: **MBTA** FWP SWAP: **SGCN2, SGIN**

B - Tennessee Warbler *(Leiothlypis peregrina)* PSOC | 10 | Not Assessed | M

View in Field Guide View Range Maps

Potential Species of Concern - Native Species Global: **G5** State: **S3S4B** USFWS: **MBTA**

F - Yellowstone Cutthroat Trout *(Oncorhynchus clarkii bouvieri)* SOC | + | Not Assessed | H

View in Field Guide View Range Maps

Species of Concern - Native/Non-native Species - (depends on location or taxa) Global: **G5T4** State: **S2** BLM: **SENSITIVE** FWP SWAP: **SGCN2**

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

Latitude	Longitude
46.37747	-105.78883
46.43378	-105.87521

Native Species

Summarized by: **Miles City Internal Drainage** *(Custom Area of Interest)*
Filtered by:
Native Species reports are filtered for Species with MT Status = Species of Concern, Special Status, Important Animal Habitat, Potential SOC

Other Potential Species

	USFWS Sec7	Predicted Model	Range
F - Brassy Minnow *(Hybognathus hankinsoni)* PSOC			Y
F - Creek Chub *(Semotilus atromaculatus)* PSOC			Y
R - Western Milksnake *(Lampropeltis gentilis)* SOC			Y
R - Plains Hog-nosed Snake *(Heterodon nasicus)* SOC			Y
B - Least Tern *(Sternula antillarum)* SOC			S M
V - Dalea enneandra *(Nine-anther prairie clover)* SOC			Y
B - Dickcissel *(Spiza americana)* PSOC			S M
B - Whooping Crane *(Grus americana)* SOC	7		M
M - Eastern Red Bat *(Lasiurus borealis)* SOC			S M
M - North American Porcupine *(Erethizon dorsatum)* PSOC			Y
M - Merriam's Shrew *(Sorex merriami)* SOC			Y
M - Dwarf Shrew *(Sorex nanus)* SOC			Y
V - Psilocarphus brevissimus *(Dwarf woolly-heads)* SOC			Y

F - Brassy Minnow *(Hybognathus hankinsoni)* PSOC
View in Field Guide | View Predicted Models | View Range Maps
Potential Species of Concern - Native Species Global: **G5** State: **S4**
Predicted Models: N 56% Suitable (native range) (deductive)

F - Creek Chub *(Semotilus atromaculatus)* PSOC
View in Field Guide | View Predicted Models | View Range Maps
Potential Species of Concern - Native/Non-native Species - (depends on location or taxa) Global: **G5** State: **S4**
Predicted Models: N 33% Suitable (native range) (deductive)

R - Western Milksnake *(Lampropeltis gentilis)* SOC
View in Field Guide | View Predicted Models | View Range Maps
Species of Concern - Native Species Global: **G5** State: **S2** BLM: **SENSITIVE** FWP SWAP: **SGCN2**
Predicted Models: O 67% Optimal (inductive), M 33% Moderate (inductive)

R - Plains Hog-nosed Snake *(Heterodon nasicus)* SOC
View in Field Guide | View Predicted Models | View Range Maps
Species of Concern - Native Species Global: **G5** State: **S2** BLM: **SENSITIVE** FWP SWAP: **SGCN2, SGIN**
Predicted Models: O 56% Optimal (inductive), M 44% Moderate (inductive)

B - Least Tern *(Sternula antillarum)* SOC
View in Field Guide | View Predicted Models | View Range Maps
Species of Concern - Native Species Global: **G4** State: **S1B** USFWS: **DM; MBTA** BLM: **ENDANGERED** FWP SWAP: **SGCN1, SGIN** PIF: **1**
Predicted Models: O 56% Optimal (inductive), L 44% Low (inductive)

V - Dalea enneandra *(Nine-anther prairie clover)* 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: O 33% Optimal (inductive), M 56% Moderate (inductive), L 11% Low (inductive)

B - Dickcissel *(Spiza americana)* PSOC
View in Field Guide | View Predicted Models | View Range Maps
Potential Species of Concern - Native Species Global: **G5** State: **S4B** USFWS: **MBTA**
Predicted Models: O 22% Optimal (inductive), M 67% Moderate (inductive), L 11% Low (inductive)

B - Whooping Crane *(Grus americana)* SOC
View in Field Guide | View Predicted Models | View Range Maps
Species of Concern - Native Species Global: **G1** State: **S1M** USFWS: **LE; MBTA** BLM: **ENDANGERED** FWP SWAP: **SGCN1**
Predicted Models: O 22% Optimal (inductive), M 44% Moderate (inductive), L 33% Low (inductive)

M - Eastern Red Bat *(Lasiurus borealis)* SOC
View in Field Guide | View Predicted Models | View Range Maps
Species of Concern - Native Species Global: **G3G4** State: **S3B** BLM: **SENSITIVE**
Predicted Models: O 11% Optimal (inductive), M 89% Moderate (inductive)

M - North American Porcupine *(Erethizon dorsatum)* PSOC
View in Field Guide | View Predicted Models | View Range Maps
Potential Species of Concern - Native Species Global: **G5** State: **S3S4** FWP SWAP: **SGIN**
Predicted Models: M 100% Moderate (inductive)

M - Merriam's Shrew *(Sorex merriami)* SOC
View in Field Guide | View Predicted Models | View Range Maps
Species of Concern - Native Species Global: **G4** State: **S3** FWP SWAP: **SGCN3**
Predicted Models: M 100% Moderate (inductive)

M - Dwarf Shrew *(Sorex nanus)* SOC
View in Field Guide | View Predicted Models | View Range Maps
Species of Concern - Native Species Global: **G4** State: **S2S3** FWP SWAP: **SGCN2-3**
Predicted Models: M 89% Moderate (inductive), L 11% Low (inductive)

V - Psilocarphus brevissimus *(Dwarf woolly-heads)* SOC
View in Field Guide | View Predicted Models | View Range Maps
Species of Concern - Native Species Global: **G4** State: **S2S3** USFS: **Sensitive - Known in Forests (KOOT)** Plant Threat Score: **No Known Threats**
Predicted Models: M 89% Moderate (inductive), L 11% Low (inductive)

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M - Spotted Bat *(Euderma maculatum)* SOC

Species of Concern - Native Species Global: **G4** State: **S3** USFS: **Sensitive - Known in Forests (BD)** BLM: **SENSITIVE** FWP SWAP: **SGCN3, SGIN**
Predicted Models: M 67% Moderate (inductive), L 33% Low (inductive)

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

View in Field Guide View Predicted Models View Range Maps
Species of Concern - Native Species Global: **G2G3** State: **S1**
Predicted Models: M 44% Moderate (inductive), L 56% Low (inductive)

V - Potentilla plattensis *(Platte Cinquefoil)* SOC

View in Field Guide View Predicted Models View Range Maps
Species of Concern - Native Species Global: **G4** State: **S3** Plant Threat Score: **No Known Threats** CCVI: **Highly Vulnerable**
Predicted Models: M 44% Moderate (inductive), L 22% Low (inductive)

B - Plumbeous Vireo *(Vireo plumbeus)* PSOC

View in Field Guide View Predicted Models View Range Maps
Potential Species of Concern - Native Species Global: **G5** State: **S3S4B** USFWS: **MBTA** PIF: **3**
Predicted Models: M 33% Moderate (inductive), L 67% Low (inductive)

V - Chenopodium subglabrum *(Smooth Goosefoot)* SOC

View in Field Guide View Predicted Models View Range Maps
Species of Concern - Native Species Global: **G3G4** State: **S2** Plant Threat Score: **Unknown** CCVI: **Highly Vulnerable**
Predicted Models: M 22% Moderate (inductive), L 78% Low (inductive)

V - Physaria brassicoides *(Double Bladderpod)* 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**
Predicted Models: M 22% Moderate (inductive), L 56% Low (inductive)

V - Astragalus geyeri *(Geyer's Milkvetch)* SOC

View in Field Guide View Predicted Models View Range Maps
Species of Concern - Native Species Global: **G4** State: **S2** Plant Threat Score: **No Known Threats** CCVI: **Highly Vulnerable**
Predicted Models: M 22% Moderate (inductive), L 56% Low (inductive)

M - Townsend's Big-eared Bat *(Corynorhinus townsendii)* SOC

View in Field Guide View Predicted Models View Range Maps
Species of Concern - Native Species Global: **G4** State: **S3** USFS: **Sensitive - Known in Forests (BD, BRT, KOOT, LOLO)** BLM: **SENSITIVE** FWP SWAP: **SGCN3**
Predicted Models: M 22% Moderate (inductive), L 11% Low (inductive)

V - Ipomoea leptophylla *(Bush morning-glory)* SOC

View in Field Guide View Predicted Models View Range Maps
Species of Concern - Native Species Global: **G3G5** State: **S1S2** Plant Threat Score: **No Known Threats**
Predicted Models: M 11% Moderate (inductive), L 67% Low (inductive)

M - Hayden's Shrew *(Sorex haydeni)* PSOC

View in Field Guide View Predicted Models View Range Maps
Potential Species of Concern - Native Species Global: **G5** State: **S3S4**
Predicted Models: L 100% Low (inductive)

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

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

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

View in Field Guide View Predicted Models View Range Maps
Species of Concern - Native Species Global: **G4G5** State: **S3**
Predicted Models: L 100% Low (inductive)

B - Bobolink *(Dolichonyx oryzivorus)* SOC

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**
Predicted Models: L 67% Low (inductive)

M - Meadow Jumping Mouse *(Zapus hudsonius)* PSOC

View in Field Guide View Predicted Models View Range Maps
Potential Species of Concern - Native Species Global: **G5** State: **S3S4** FWP SWAP: **SGIN**
Predicted Models: L 56% Low (inductive)

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

View in Field Guide View Predicted Models View Range Maps
Species of Concern - Native Species Global: **G4G5** State: **S2?** Plant Threat Score: **No Known Threats**
Predicted Models: L 56% Low (inductive)

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

View in Field Guide View Predicted Models View Range Maps
Potential Species of Concern - Native Species Global: **G5** State: **S4** USFWS: **MBTA; BCC11; BCC17** PIF: **3**
Predicted Models: L 22% Low (inductive)

B - Black Tern *(Chlidonias niger)* SOC

View in Field Guide View Predicted Models View Range Maps
Species of Concern - Native Species Global: **G4G5** State: **S3B** USFWS: **MBTA; BCC10; BCC11; BCC17** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **2**
Predicted Models: L 22% Low (inductive)

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M - Preble's Shrew *(Sorex preblei)* SOC — Not Assessed Y

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

I - Gomphurus externus *(Plains Clubtail)* PSOC — Not Assessed Y

View in Field Guide View Range Maps

Potential Species of Concern - Native Species Global: **G5** State: **S2S4**

B - Common Tern *(Sterna hirundo)* SOC — Not Assessed M

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**

I - Arigomphus cornutus *(Horned Clubtail)* PSOC — Not Assessed Y

View in Field Guide View Range Maps

Potential Species of Concern - Native Species Global: **G4** State: **S2S4**

B - Piping Plover *(Charadrius melodus)* SOC — Not Assessed M

View in Field Guide View Range Maps

Species of Concern - Native Species Global: **G3** State: **S2B** USFWS: **LT; CH; MBTA** BLM: **THREATENED** FWP SWAP: **SGCN2** PIF: **1**

M - Northern Myotis *(Myotis septentrionalis)* SOC — 7 Not Assessed

View in Field Guide

Species of Concern - Native Species Global: **G2G3** State: **S2** USFWS: **LE** BLM: **ENDANGERED**

M - Black-footed Ferret *(Mustela nigripes)* SOC — Not Assessed H

View in Field Guide View Range Maps

Species of Concern - Native Species Global: **G1** State: **S1** USFWS: **LE; XN** BLM: **ENDANGERED** FWP SWAP: **SGCN1**

B - Chestnut-collared Longspur *(Calcarius ornatus)* SOC — Not Assessed S M

View in Field Guide View Range Maps

Species of Concern - Native Species Global: **G5** State: **S2B** USFWS: **MBTA; BCC11; BCC17** BLM: **SENSITIVE** FWP SWAP: **SGCN2** PIF: **2**

V - Pediomelum hypogaeum var. hypogaeum *(Little Indian Breadroot)* PSOC — Not Assessed Y

View in Field Guide View Range Maps

Potential Species of Concern - Native Species Global: **G5T4** State: **S3S4**

M - Grizzly Bear *(Ursus arctos)* SOC — Not Assessed H

View in Field Guide View Range Maps

Species of Concern - Native Species Global: **G4** State: **S2S3** USFWS: **LT** BLM: **THREATENED** FWP SWAP: **SGCN2-3**

I - Polygonia progne *(Gray Comma)* SOC — Not Assessed Y

View in Field Guide View Range Maps

Species of Concern - Native Species Global: **G5** State: **S2**

V - Asclepias ovalifolia *(Ovalleaf Milkweed)* SOC — Not Assessed Y

View in Field Guide View Range Maps

Species of Concern - Native Species Global: **G5?** State: **S1S2** USFS: **Species of Conservation Concern in Forests (CG)** Plant Threat Score: **No Known Threats** CCVI: **Moderately Vulnerable**

V - Senecio integerrimus var. scribneri *(Scribner's Ragwort)* SOC — Not Assessed Y

View in Field Guide View Range Maps

Species of Concern - Native Species Global: **G5T2T3** State: **S2S3** Plant Threat Score: **No Known Threats** CCVI: **Less Vulnerable**

V - Rorippa calycina *(Persistent-sepal Yellow-cress)* SOC — Not Assessed H

View in Field Guide View Range Maps

Species of Concern - Native Species Global: **G3** State: **SH** Plant Threat Score: **No Known Threats** CCVI: **Highly Vulnerable**

B - Thick-billed Longspur *(Rhynchophanes mccownii)* SOC — Not Assessed S M

View in Field Guide View Range Maps

Species of Concern - Native Species Global: **G4** State: **S3B** USFWS: **MBTA; BCC10; BCC11; BCC17** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **2**

V - Amorpha canescens *(Lead Plant)* SOC — Not Assessed Y

View in Field Guide View Range Maps

Species of Concern - Native Species Global: **G5** State: **S3** Plant Threat Score: **No Known Threats** CCVI: **Moderately Vulnerable**

I - Phanogomphus graslinellus *(Pronghorn Clubtail)* PSOC — Not Assessed Y

View in Field Guide View Range Maps

Potential Species of Concern - Native Species Global: **G5** State: **S3S5**

B - Caspian Tern *(Hydroprogne caspia)* SOC — Not Assessed M

View in Field Guide View Range Maps

Species of Concern - Native Species Global: **G5** State: **S2B** USFWS: **MBTA** BLM: **SENSITIVE** FWP SWAP: **SGCN2** PIF: **2**

I - Stylurus intricatus *(Brimstone Clubtail)* SOC — Not Assessed Y

View in Field Guide View Range Maps

Species of Concern - Native Species Global: **G4** State: **S1**

I - Coenagrion angulatum *(Prairie Bluet)* PSOC — Not Assessed Y

View in Field Guide View Range Maps

Potential Species of Concern - Native Species Global: **G5** State: **S1S3**

B - Black-necked Stilt *(Himantopus mexicanus)* SOC — Not Assessed M

View in Field Guide View Range Maps

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

I - Aeshna constricta *(Lance-tipped Darner)* PSOC — Not Assessed Y

View in Field Guide View Range Maps

Potential Species of Concern - Native Species Global: **G5** State: **S1S3**

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I - Enallagma praevarum *(Arroyo Bluet)* PSOC — Not Assessed Y

Potential Species of Concern - Native Species Global: **G5** State: **S3S5**

M - Bison *(Bos bison)* SOC — Not Assessed H

View in Field Guide View Range Maps

Species of Concern - Native Species Global: **G4** State: **S2** FWP SWAP: **SGCN2**

V - Phlox andicola *(Plains Phlox)* PSOC — Not Assessed Y

View in Field Guide View Range Maps

Potential Species of Concern - Native Species Global: **G4** State: **S3S4**

V - Astragalus barrii *(Barr's Milkvetch)* SOC — Not Assessed Y

View in Field Guide View Range Maps

Species of Concern - Native Species Global: **G3G4** State: **S3** Plant Threat Score: **Medium - Low** CCVI: **Highly Vulnerable**

I - Argia vivida *(Vivid Dancer)* PSOC — Not Assessed Y

View in Field Guide View Range Maps

Potential Species of Concern - Native Species Global: **G5** State: **S3S5**

I - Enallagma clausum *(Alkali Bluet)* PSOC — Not Assessed Y

View in Field Guide View Range Maps

Potential Species of Concern - Native Species Global: **G5** State: **S2S4**

I - Rhionaeschna californica *(California Darner)* PSOC — Not Assessed Y

View in Field Guide View Range Maps

Potential Species of Concern - Native Species Global: **G5** State: **S3S5**

V - Bacopa rotundifolia *(Roundleaf Water-hyssop)* SOC — Not Assessed Y

View in Field Guide View Range Maps

Species of Concern - Native Species Global: **G5** State: **S3?** Plant Threat Score: **No Known Threats** CCVI: **Moderately Vulnerable**

I - Sympetrum madidum *(Red-veined Meadowhawk)* PSOC — Not Assessed Y

View in Field Guide View Range Maps

Potential Species of Concern - Native Species Global: **G5** State: **S2S3**

V - Ammannia robusta *(Scarlet Ammannia)* SOC — Not Assessed Y

View in Field Guide View Range Maps

Species of Concern - Native Species Global: **G5** State: **S2** Plant Threat Score: **Medium** CCVI: **Moderately Vulnerable**

V - Carex gravida *(Heavy Sedge)* SOC — Not Assessed Y

View in Field Guide View Range Maps

Species of Concern - Native Species Global: **G5** State: **S3** Plant Threat Score: **High - Medium** CCVI: **Moderately Vulnerable**

V - Penstemon grandiflorus *(Large Flowered Beardtongue)* SOC — Not Assessed Y

View in Field Guide View Range Maps

Species of Concern - Native Species Global: **G5?** State: **S1** Plant Threat Score: **No Known Threats**

V - Physaria ludoviciana *(Silver Bladderpod)* SOC — Not Assessed Y

View in Field Guide View Range Maps

Species of Concern - Native Species Global: **G5** State: **S2S3** Plant Threat Score: **No Known Threats**

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

Latitude	Longitude
46.37747	-105.78883
46.43378	-105.87521

Structured Surveys

Summarized by: **Miles City Internal Drainage** *(Custom Area of Interest)*

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

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

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

A-Nocturnal Calling Amphibian *(Nocturnal Breeding Amphibian Calling Survey)*	**Survey Count**: 4	**Obs Count**: 4	**Recent Survey**: 2013
AR-Amphibian/Reptile Lentic *(Lentic Amphibian/Reptile Surveys)*	**Survey Count**: 8	**Obs Count**: 5	**Recent Survey**: 2008
B-Bald Eagle Nest *(Bald Eagle Nest Survey)*	**Survey Count**: 9	**Obs Count**: 9	**Recent Survey**: 2015
B-Colonial-nesting Waterbirds *(Colonial-nesting Waterbird Surveys)*	**Survey Count**: 1	**Obs Count**: 1	**Recent Survey**: 2010
B-Cuckoo Playback Survey *(Riparian Playback Surveys for Cuckoos)*	**Survey Count**: 1	**Obs Count**:	**Recent Survey**: 2012
B-Nocturnal Calling Bird *(Spring Nocturnal Bird Calling Survey)*	**Survey Count**: 2	**Obs Count**:	**Recent Survey**: 2013
B-Piping Plover/Least Tern VES *(Piping Plover and Least Tern Surveys)*	**Survey Count**: 1	**Obs Count**:	**Recent Survey**: 2012
B-Point Count *(Bird Point Count)*	**Survey Count**: 8	**Obs Count**: 43	**Recent Survey**: 2013
B-Raptor nest *(Raptor Nest Survey)*	**Survey Count**: 1	**Obs Count**:	**Recent Survey**: 2015
B-Sage Grouse Lek *(Greater Sage Grouse Lek Survey)*	**Survey Count**: 2	**Obs Count**:	**Recent Survey**: 2011
E-Eastern Heath Snail *(Eastern Heath Snail Survey)*	**Survey Count**: 2	**Obs Count**:	**Recent Survey**: 2012
E-Eurasian Water-milfoil Rake *(Rake tows/pulls for Eurasian Water-milfoil)*	**Survey Count**: 19	**Obs Count**: 5	**Recent Survey**: 2022
E-Invasive Mussel Plankton Tow *(Plankton tows for veligers of Invasive Mussels)*	**Survey Count**: 23	**Obs Count**:	**Recent Survey**: 2022
E-Kicknet *(Kicknet Collection Survey for Invasive Mussels and Snails)*	**Survey Count**: 25	**Obs Count**: 4	**Recent Survey**: 2022
E-Noxious Weed, Road-based *(Noxious Weed Road-based Visual Surveys)*	**Survey Count**: 18	**Obs Count**: 22	**Recent Survey**: 2003
E-Noxious Weed, Visual *(Noxious Weed Visual Surveys)*	**Survey Count**: 1	**Obs Count**: 3	**Recent Survey**: 2006
E-Visual Aquatic Invasives *(Visual Encounter Surveys for Aquatic Invasives on Shorelines or Underwater)*	**Survey Count**: 36	**Obs Count**: 6	**Recent Survey**: 2022
F-Fish Electrofishing *(Fish Electrofishing Surveys)*	**Survey Count**: 11	**Obs Count**: 94	**Recent Survey**: 2014
F-Fish Other Survey *(Fish Other Survey (FWP Survey Type))*	**Survey Count**: 7	**Obs Count**: 36	**Recent Survey**: 2015
F-Fish Trapping/Netting *(Fish Trapping or Netting Surveys)*	**Survey Count**: 25	**Obs Count**: 271	**Recent Survey**: 2015
F-Fish Visual *(Fish Visual Survey)*	**Survey Count**: 4	**Obs Count**: 5	**Recent Survey**: 2001
I-Aquatic Invert Lotic Dipnet *(Invertebrate Lotic Site Dipnet and Visual Encounter Survey)*	**Survey Count**: 3	**Obs Count**: 10	**Recent Survey**: 2001
I-Bumble Bee *(Bumble Bee Collection Surveys)*	**Survey Count**: 2	**Obs Count**: 4	**Recent Survey**: 2015
I-Mussel *(Stream Mussel Survey)*	**Survey Count**: 5	**Obs Count**: 32	**Recent Survey**: 2009
I-Odonates/Butterfly VES *(Visual Encounter Survey for Damselfly/Dragonfly/Butterfly)*	**Survey Count**: 2	**Obs Count**: 2	**Recent Survey**: 2015
M-Bat Roost (Active Season) *(Bat Roost (Active Season) Survey)*	**Survey Count**: 3	**Obs Count**: 2	**Recent Survey**: 2017
M-Prairie Dog Flight *(Prairie Dog Town Flight Survey)*	**Survey Count**: 1	**Obs Count**:	**Recent Survey**: 2011
P-Algal scraping *(Algal Scraping)*	**Survey Count**: 4	**Obs Count**: 242	**Recent Survey**: 2003

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

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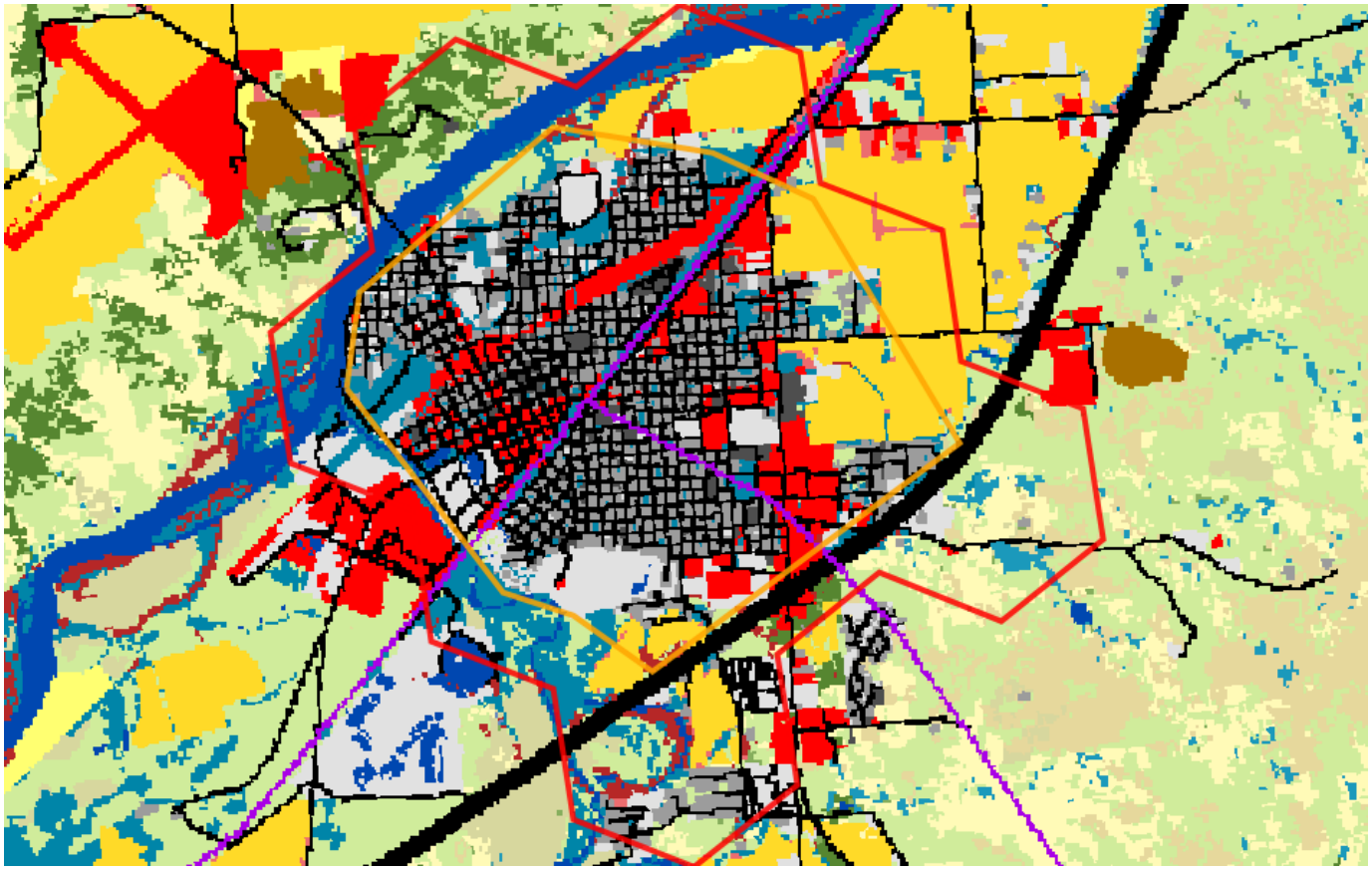
Land Cover

Summarized by: **Miles City Internal Drainage** *(Custom Area of Interest)*



No Image

18% (*1,042 Acres*)

Human Land Use
Developed

Other Roads

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

12% (*685 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.

11% (*634 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.

10% (*594 Acres*)

Wetland and Riparian Systems
Floodplain and Riparian

Great Plains Floodplain

This system occurs along the Missouri and Yellowstone Rivers and their larger tributaries, including parts of the Little Missouri, Clarkâ€™s Fork Yellowstone, Powder, Tongue, Bighorn, Milk, and Musselshell rivers. These are the big perennial rivers of the region, with hydrologic dynamics largely driven by snowmelt and rainfall originating in their headwater watersheds, rather than local precipitation events. In the absence of disturbance, periodic flooding of fluvial and alluvial soils and channel migration will create depressions and backwaters that support a mosaic of wetland and riparian vegetation, whose composition and structure is sustained, altered and redistributed by hydrology. Dominant communities within this system range from floodplain forests to wet meadows to gravel/sand flats, linked by underlying soils and flooding regimes. In the western part of the systemâ€™s range in Montana, the overstory dominant species is black cottonwood (*Populus balsamifera ssp. trichocarpa*) with narrowleaf cottonwood *(Populus angustifolia)* and eastern cottonwood (*Populus deltoides)* occurring as co-dominants in the riparian/floodplain interface near the mountains. Further east, narrowleaf cottonwood and Plains cottonwood become dominant. In relatively undisturbed stands, willow (*Salix* species), redosier dogwood (*Cornus sericea*) and common chokecherry (*Prunus virginiana*) form a thick, multi-layered shrub understory, with a mixture of cool and warm season graminoid species below.

In Montana, many occurrences are now degraded to the point where the cottonwood overstory is the only remaining natural component. The hydrology of these floodplain systems has been affected by dams, highways, railroads and agricultural ditches, and as a result, they have lost their characteristic wetland /riparian mosaic structure. This has resulted in a highly altered community consisting of relict cottonwood stands with little regeneration. The understory vegetation is dominated by non-native pasture grasses, legumes and other introduced forbs, or by the disclimax western snowberry (*Symphoricarpos occidentalis*) and rose (*Rosa* species) shrub community.

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10% (*566 Acres*)

Great Plains Mixedgrass Prairie

The system covers much of the eastern two-thirds of Montana, occurring continuously for hundreds of square kilometers, interrupted only by wetland/riparian areas or sand prairies. Soils are primarily fine and medium-textured. The growing season averages 115 days, ranging from 100 days on the Canadian border to 130 days on the Wyoming border. Climate is typical of mid-continental regions with long severe winters and hot summers. Grasses typically comprise the greatest canopy cover, and western wheatgrass (*Pascopyrum smithii*) is usually dominant. Other species include thickspike wheatgrass (*Elymus lanceolatus*), green needlegrass (*Nassella viridula*), blue grama (*Bouteloua gracilis*), and needle and thread (*Hesperostipa comata*). Near the Canadian border in north-central Montana, this system grades into rough fescue (*Festuca campestris)* and Idaho fescue (*Festuca idahoensis*) grasslands. Remnants of shortbristle needle and thread *(Hesperostipa curtiseta)* dominated vegetation are found in northernmost Montana and North Dakota, and are associated with productive sites, now mostly converted to farmland. Forb diversity is typically high. In areas of southeastern and central Montana where sagebrush steppe borders the mixed grass prairie, common plant associations include Wyoming big sagebrush-western wheatgrass (*Artemisia tridentata* ssp. *wyomingensis/ Pascopyrum smithii*). Fire and grazing are the primary drivers of this system. Drought can also impact it, in general favoring the shortgrass component at the expense of the mid-height grasses. With intensive grazing, cool season exotics such as Kentucky bluegrass (*Poa pratensis*), smooth brome (*Bromus inermis*), and Japanese brome (*Bromus japonicus*) increase in dominance; both of these rhizomatous species have been shown to markedly decrease species diversity. Previously cultivated acres that have been re-vegetated with non-native plants have been transformed into associations such as Kentucky bluegrass (*Poa pratensis*)/western wheatgrass *(Pascopyrum smithii)* or into pure crested wheatgrass (*Agropyron cristatum)* stands.

8% (*456 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% (*450 Acres*)

Human Land Use
Developed

Commercial / Industrial

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

6% (*329 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% (*163 Acres*)

Human Land Use
Developed

Interstate

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

2% (*141 Acres*)

Shrubland, Steppe and Savanna Systems
Sagebrush Steppe

Big Sagebrush Steppe

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

2% (*131 Acres*)

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

Great Plains Ponderosa Pine Woodland and Savanna

These ponderosa pine (*Pinus ponderosa*) occurrences differ from the Rocky Mountain Ponderosa Pine Woodland and Savanna systems in that they are typically found within the matrix of the Great Plains grassland systems. They are often surrounded by mixed-grass prairie, in places where available soil moisture is higher or soils are more coarse and rocky. Elevation ranges from 1,189 meters (3,900 feet) in southeastern Montana to 1,646 m (5,400 feet) in north-central Montana. Occurrences are usually on east- and north-facing aspects. These woodlands can be physiognomically variable, ranging from very sparse patches of trees on drier sites, to nearly closed-canopy forest stands on north slopes or in draws where available soil moisture is higher.

2% (*109 Acres*)

Sparse and Barren Systems
Bluff, Badland and Dune

Great Plains Badlands

The Western Great Plains Badlands ecological system occurs within the mixed grass and sand prairie regions of eastern and southeastern Montana, where the land lies well above or below its local base level, shaped by the carving action of streams, erosion, and erosible parent material. It is easily recognized by its rugged, eroded, and often colorful land formations, and the relative absence of vegetative cover. In those areas with vegetation, species can include scattered individuals of many dryland shrubs or herbaceous taxa, including curlycup gumweed (*Grindelia squarrosa*), threadleaf snakeweed (*Gutierrezia sarothrae*) (especially with overuse and grazing), greasewood (*Sarcobatus vermiculatus*), Gardnerâ€™s saltbush (*Atriplex gardneri*), buckwheat (*Eriogonum* species), plains muhly (*Muhlenbergia cuspidata*), bluebunch wheatgrass (*Pseudoroegneria spicata*), and Hookerâ€™s sandwort (*Arenaria hookeri*). Patches of sagebrush (*Artemisia* spp.) can also occur. Climate is typical of mid continental regions with long severe winters and warm summers. Precipitation ranges from 7 to 14 inches per year, with two-thirds of the precipitation falling during the summer, and a third falling in the spring. The sedimentary parent material of exposed rocks and the resultant eroded clay soils are derived from Cretaceous sea beds and are often fossil-rich. Dominant soil types are in the order Entisols. These mineral soils are found primarily on uplands, slopes, and creek bottoms and are easily erodible. The growing season is short, averaging 115 days, with a range from 100 days on the Canadian border to 130 days on the Wyoming border. Land use is limited, except for off-highway vehicle recreation and incidental grazing.

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Recently Disturbed or Modified

Introduced Vegetation

2% (*102 Acres*)

Introduced Riparian and Wetland Vegetation

Areas where non-native vegetation dominates lands immediately adjacent to rivers and streams (riparian) or occupies 75% of more of a wetland. Typically this class describes Russian Olive along large rivers east of the Rocky Mountains.

2% (*99 Acres*)

Human Land Use

Developed

High Intensity Residential

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

Additional Limited Land Cover

- 1% (*74 Acres*) Railroad
- 1% (*62 Acres*) Major Roads
- 1% (*40 Acres*) Great Plains Sand Prairie
- 1% (*37 Acres*) Great Plains Riparian
- <1% (*27 Acres*) Introduced Upland Vegetation - Annual and Biennial Forbland
- <1% (*7 Acres*) Pasture/Hay
- <1% (*6 Acres*) Great Plains Wooded Draw and Ravine
- <1% (*0 Acres*) Emergent Marsh

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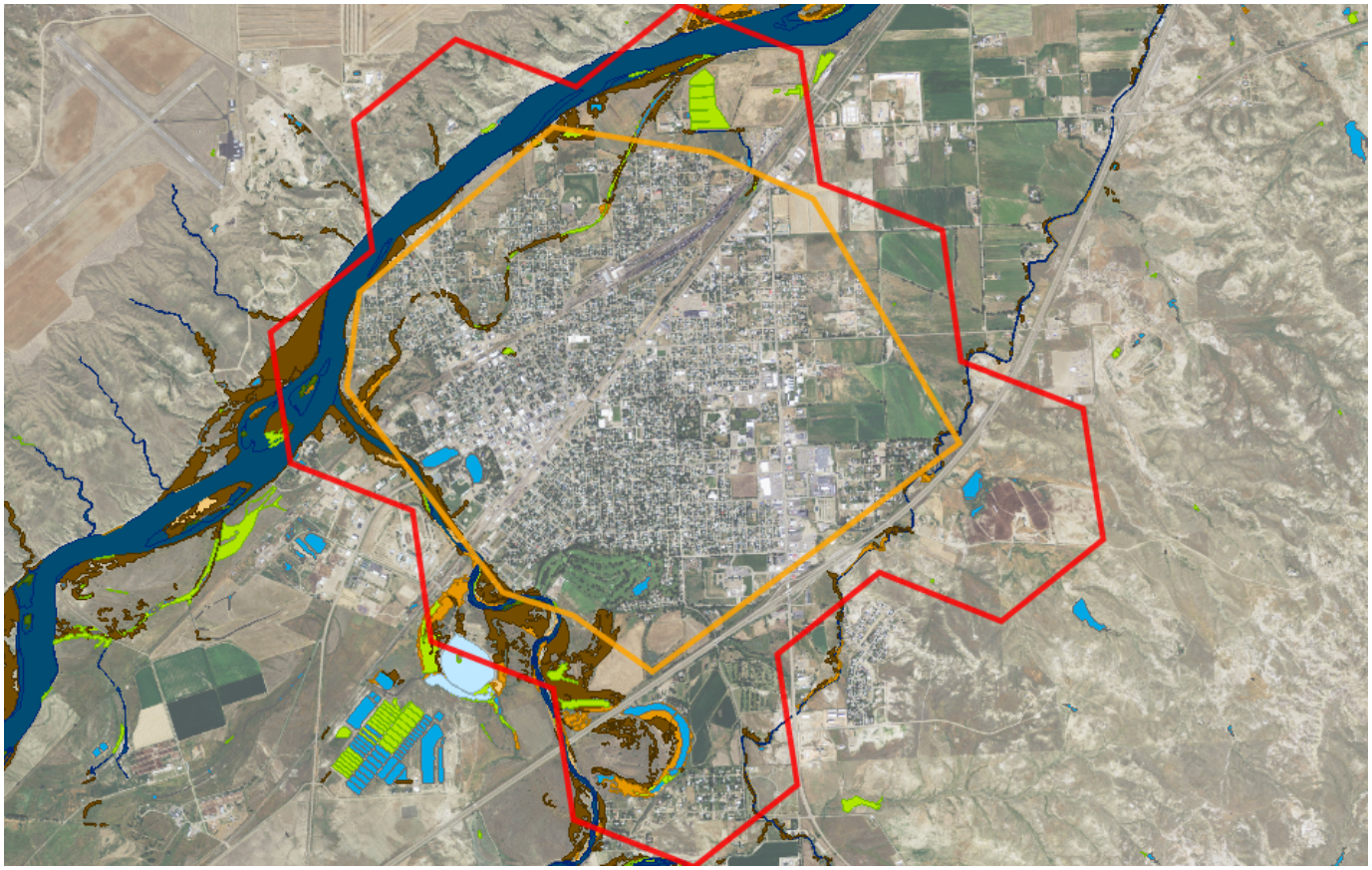
46.37747	-105.78883
46.43378	-105.87521

Wetland and Riparian

Summarized by: **Miles City Internal Drainage** *(Custom Area of Interest)*



Wetland and Riparian Mapping

Explain

P - Palustrine

AB - Aquatic Bed

F - Semipermanently Flooded		37 Acres
(no modifier)	**3 Acres**	**PABF**
h - Diked/Impounded	**19 Acres**	**PABFh**
x - Excavated	**15 Acres**	**PABFx**
K - Artificially Flooded		1 Acres
x - Excavated	**1 Acres**	**PABKx**

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

US - Unconsolidated Shore

A - Temporarily Flooded		<1 Acres
x - Excavated	**<1 Acres**	**PUSAx**
C - Seasonally Flooded		2 Acres
(no modifier)	**1 Acres**	**PUSC**
h - Diked/Impounded	**1 Acres**	**PUSCh**

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

EM - Emergent

A - Temporarily Flooded		31 Acres
(no modifier)	**11 Acres**	**PEMA**
h - Diked/Impounded	**2 Acres**	**PEMAh**
x - Excavated	**18 Acres**	**PEMAx**
C - Seasonally Flooded		18 Acres
(no modifier)	**9 Acres**	**PEMC**
h - Diked/Impounded	**1 Acres**	**PEMCh**
x - Excavated	**8 Acres**	**PEMCx**

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

SS - Scrub-Shrub

A - Temporarily Flooded		4 Acres
(no modifier)	**4 Acres**	**PSSA**

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

L - Lacustrine (Lakes)

1 - Limnetic

UB - Unconsolidated Bottom

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

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H - Permanently Flooded 7 Acres
Deep waterbodies with mud or silt covering at least 25% of the bottom
H - Diked/Impounded 7 Acres L1UBHh

R - Riverine (Rivers)

2 - Lower Perennial

UB - Unconsolidated Bottom

F - Semipermanently Flooded 1 Acres
(no modifier) **1 Acres** **R2UBF**

G - Intermittently Exposed 31 Acres
(no modifier) **31 Acres** **R2UBG**

H - Permanently Flooded 239 Acres
(no modifier) **239 Acres** **R2UBH**

R - Riverine (Rivers), 2 - Lower Perennial, UB - Unconsolidated Bottom
Stream channels where the substrate is at least 25% mud, silt or other fine particles.

US - Unconsolidated Shore

A - Temporarily Flooded 9 Acres
(no modifier) **9 Acres** **R2USA**

C - Seasonally Flooded 26 Acres
(no modifier) **26 Acres** **R2USC**

R - Riverine (Rivers), 2 - Lower Perennial, US - Unconsolidated Shore
Shorelines with less than 75% areal cover of stones, boulders, or bedrock and less than 30% vegetation cover. The area is also irregularly exposed due to seasonal or irregular flooding and subsequent drying.

4 - Intermittent

SB - Stream Bed

C - Seasonally Flooded 6 Acres
x - Excavated **6 Acres** **R4SBCx**

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

Rp - Riparian

1 - Lotic

SS - Scrub-Shrub
(no modifier) **45 Acres** **Rp1SS**

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

FO - Forested
(no modifier) **265 Acres** **Rp1FO**

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

EM - Emergent
(no modifier) **5 Acres** **Rp1EM**

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

2 - Lentic

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

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

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Biological Reports

Summarized by: **Miles City Internal Drainage** *(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

- Faanes, Craig A. 1982. ***Northern Great Plains Region***. American Birds. 36(6): 991.
- Moulton, G.E. editor. 1983. The Journals of the Lewis and Clark Expedition. University of Nebraska Press, Lincoln & London.
- Saunders, A.A. 1921. ***A distributional list of the birds of Montana***: With notes on the migration and nesting of the better known species. Pacific Coast Avifauna No. 14. pp. 38-39, 118-119.
- Tobalske, Claudine and Linda Vance. 2017.***Predicting the distribution of Russian Olive stands in eastern Montana valley bottoms using NAIP imagery***. Report to the US EPA. Montana Natural Heritage Program. Helena, MT. 40pp.
- U.S. Fish and Wildlife Service. 1993. ***Status report on sturgeon chub (Macrhybopsis gelida) a candidate endangered species***. Bismark, ND: U.S. fish and Wildlife Service, Ecological Services. 58 p.

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Model Icons
- N Suitable (native range)
- O Optimal Suitability
- M Moderate Suitability
- L Low Suitability
- I Suitable (introduced range)

Habitat Icons
- C Common
- O Occasional

Range Icons
- N Non-native

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

Latitude	Longitude
46.37747	-105.78883
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Invasive and Pest Species

Summarized by: **Miles City Internal Drainage** *(Custom Area of Interest)*

	# Obs	Predicted Model	Range
Aquatic Invasive Species			
A - American Bullfrog *(Lithobates catesbeianus)* AIS	1		
V - Myriophyllum spicatum *(Eurasian Water-milfoil)* N2A/AIS			N
V - Butomus umbellatus *(Flowering-rush)* N2A/AIS			N
V - Nymphaea odorata *(American Water-lily)* AIS			N
F - Common Carp *(Cyprinus carpio)* AIS	26 +		N
Noxious Weeds: Priority 1A			
V - Isatis tinctoria *(Dyer's Woad)* N1A			N
V - Centaurea solstitialis *(Yellow Starthistle)* N1A			N
V - Phragmites australis ssp. australis *(European Common Reed)* N1A			N
Noxious Weeds: Priority 1B			
V - Lythrum salicaria *(Purple Loosestrife)* N1B			N
V - Polygonum x bohemicum *(Bohemian Knotweed)* N1B			N
V - Polygonum cuspidatum *(Japanese Knotweed)* N1B			N
V - Cytisus scoparius *(Scotch Broom)* N1B			N
Noxious Weeds: Priority 2A			
V - Rhamnus cathartica *(Common Buckthorn)* N2A			N
V - Myriophyllum spicatum *(Eurasian Water-milfoil)* N2A/AIS			N

A - American Bullfrog *(Lithobates catesbeianus)* AIS
View in Field Guide | View Predicted Models
Aquatic Invasive Species - Non-native Species Global: **G5** State: **SNA**
Predicted Models: O 56% Optimal (inductive), M 11% Moderate (inductive), L 33% Low (inductive)

V - Myriophyllum spicatum *(Eurasian Water-milfoil)* 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: O 33% Optimal (inductive), M 33% Moderate (inductive), L 11% Low (inductive)

V - Butomus umbellatus *(Flowering-rush)* 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: L 33% Low (inductive)

V - Nymphaea odorata *(American Water-lily)* AIS
View in Field Guide | View Predicted Models | View Range Maps
Aquatic Invasive Species - Non-native Species Global: **G5** State: **SNA**
Predicted Models: I 89% Suitable (introduced range) (deductive)

F - Common Carp *(Cyprinus carpio)* AIS
View in Field Guide | View Predicted Models | View Range Maps
Aquatic Invasive Species - Non-native Species Global: **G5** State: **SNA**
Predicted Models: I 56% Suitable (introduced range) (deductive)

V - Isatis tinctoria *(Dyer's Woad)* N1A
View in Field Guide | View Predicted Models | View Range Maps
Noxious Weed: Priority 1A - Non-native Species Global: **GNR** State: **SNA**
Predicted Models: O 89% Optimal (inductive), M 11% Moderate (inductive)

V - Centaurea solstitialis *(Yellow Starthistle)* N1A
View in Field Guide | View Predicted Models | View Range Maps
Noxious Weed: Priority 1A - Non-native Species Global: **GNR** State: **SNA**
Predicted Models: O 78% Optimal (inductive), M 11% Moderate (inductive), L 11% Low (inductive)

V - Phragmites australis ssp. australis *(European Common Reed)* N1A
View in Field Guide | View Predicted Models | View Range Maps
Noxious Weed: Priority 1A - Non-native Species Global: **G5T5** State: **SNA**
Predicted Models: O 44% Optimal (inductive), M 33% Moderate (inductive), L 22% Low (inductive)

V - Lythrum salicaria *(Purple Loosestrife)* N1B
View in Field Guide | View Predicted Models | View Range Maps
Noxious Weed: Priority 1B - Non-native Species Global: **G5** State: **SNA**
Predicted Models: O 89% Optimal (inductive), M 11% Moderate (inductive)

V - Polygonum x bohemicum *(Bohemian Knotweed)* N1B
View in Field Guide | View Predicted Models | View Range Maps
Noxious Weed: Priority 1B - Non-native Species Global: **GNA** State: **SNA**
Predicted Models: O 33% Optimal (inductive), M 11% Moderate (inductive), L 11% Low (inductive)

V - Polygonum cuspidatum *(Japanese Knotweed)* N1B
View in Field Guide | View Predicted Models | View Range Maps
Noxious Weed: Priority 1B - Non-native Species Global: **GNRTNR** State: **SNA**
Predicted Models: M 33% Moderate (inductive), L 67% Low (inductive)

V - Cytisus scoparius *(Scotch Broom)* N1B
View in Field Guide | View Predicted Models | View Range Maps
Noxious Weed: Priority 1B - Non-native Species Global: **GNR** State: **SNA**
Predicted Models: L 78% Low (inductive)

V - Rhamnus cathartica *(Common Buckthorn)* N2A
View in Field Guide | View Predicted Models | View Range Maps
Noxious Weed: Priority 2A - Non-native Species Global: **GNR** State: **SNA**
Predicted Models: O 67% Optimal (inductive), M 33% Moderate (inductive)

V - Myriophyllum spicatum *(Eurasian Water-milfoil)* 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: O 33% Optimal (inductive), M 33% Moderate (inductive), L 11% Low (inductive)

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V - Hieracium praealtum *(Kingdevil Hawkweed)* N2A

Noxious Weed: Priority 2A - Non-native Species Global: **GNR** State: **SNA**

Predicted Models: M 11% Moderate (inductive), L 56% Low (inductive)

V - Lepidium latifolium *(Perennial Pepperweed)* N2A

View in Field Guide View Predicted Models View Range Maps

Noxious Weed: Priority 2A - Non-native Species Global: **GNR** State: **SNA**

Predicted Models: L 78% Low (inductive)

V - Butomus umbellatus *(Flowering-rush)* 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: L 33% Low (inductive)

Noxious Weeds: Priority 2B

V - Tamarix ramosissima *(Salt Cedar)* N2B 7

View in Field Guide View Predicted Models View Range Maps

Noxious Weed: Priority 2B - Non-native Species Global: **GNR** State: **SNA**

Predicted Models: O 78% Optimal (inductive), M 22% Moderate (inductive)

V - Centaurea diffusa *(Diffuse Knapweed)* N2B

View in Field Guide View Predicted Models View Range Maps

Noxious Weed: Priority 2B - Non-native Species Global: **GNR** State: **SNA**

Predicted Models: O 33% Optimal (inductive), M 56% Moderate (inductive), L 11% Low (inductive)

V - Convolvulus arvensis *(Field Bindweed)* N2B 17

View in Field Guide View Predicted Models View Range Maps

Noxious Weed: Priority 2B - Non-native Species Global: **GNR** State: **SNA**

Predicted Models: O 22% Optimal (inductive), M 78% Moderate (inductive)

V - Cirsium arvense *(Canada Thistle)* N2B 10

View in Field Guide View Predicted Models View Range Maps

Noxious Weed: Priority 2B - Non-native Species Global: **G5** State: **SNA**

Predicted Models: M 100% Moderate (inductive)

V - Euphorbia virgata *(Leafy Spurge)* N2B 2

View in Field Guide View Predicted Models View Range Maps

Noxious Weed: Priority 2B - Non-native Species Global: **GNR** State: **SNA**

Predicted Models: M 100% Moderate (inductive)

V - Linaria dalmatica *(Dalmatian Toadflax)* N2B

View in Field Guide View Predicted Models View Range Maps

Noxious Weed: Priority 2B - Non-native Species Global: **G5** State: **SNA**

Predicted Models: M 100% Moderate (inductive)

V - Centaurea stoebe *(Spotted Knapweed)* N2B

View in Field Guide View Predicted Models View Range Maps

Noxious Weed: Priority 2B - Non-native Species Global: **GNR** State: **SNA**

Predicted Models: M 89% Moderate (inductive), L 11% Low (inductive)

V - Acroptilon repens *(Russian Knapweed)* N2B

View in Field Guide View Predicted Models View Range Maps

Noxious Weed: Priority 2B - Non-native Species Global: **GNR** State: **SNA**

Predicted Models: M 78% Moderate (inductive), L 22% Low (inductive)

V - Tanacetum vulgare *(Common Tansy)* N2B

View in Field Guide View Predicted Models View Range Maps

Noxious Weed: Priority 2B - Non-native Species Global: **GNR** State: **SNA**

Predicted Models: M 78% Moderate (inductive), L 22% Low (inductive)

V - Lepidium draba *(Whitetop)* N2B

View in Field Guide View Predicted Models View Range Maps

Noxious Weed: Priority 2B - Non-native Species Global: **GNR** State: **SNA**

Predicted Models: M 67% Moderate (inductive), L 33% Low (inductive)

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

View in Field Guide View Predicted Models View Range Maps

Noxious Weed: Priority 2B - Non-native Species Global: **GNR** State: **SNA**

Predicted Models: M 44% Moderate (inductive), L 56% Low (inductive)

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

View in Field Guide View Predicted Models View Range Maps

Noxious Weed: Priority 2B - Non-native Species Global: **GNR** State: **SNA**

Predicted Models: L 67% Low (inductive)

V - Leucanthemum vulgare *(Oxeye Daisy)* N2B

View in Field Guide View Predicted Models View Range Maps

Noxious Weed: Priority 2B - Non-native Species Global: **GNR** State: **SNA**

Predicted Models: L 44% Low (inductive)

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

View in Field Guide View Predicted Models View Range Maps

Noxious Weed: Priority 2B - Non-native Species Global: **GNR** State: **SNA**

Predicted Models: L 22% Low (inductive)

Regulated Weeds: Priority 3

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V - Elaeagnus angustifolia *(Russian Olive)* R3 17 N

Regulated Weed: Priority 3 - Non-native Species Global: **GNR** State: **SNA**

Predicted Models: O 78% Optimal (inductive), M 22% Moderate (inductive)

V - Bromus tectorum *(Cheatgrass)* R3 N

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

Regulated Weed: Priority 3 - Non-native Species Global: **GNR** State: **SNA**

Predicted Models: M 44% Moderate (inductive), L 56% Low (inductive)

Biocontrol Species

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

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

Biocontrol Species - Non-native Species Global: **GNR** State: **SNA**

Predicted Models: O 44% Optimal (inductive), M 56% Moderate (inductive)

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

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

Biocontrol Species - Non-native Species Global: **GNR** State: **SNA**

Predicted Models: O 11% Optimal (inductive), M 78% Moderate (inductive), L 11% Low (inductive)

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

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

Biocontrol Species - Non-native Species Global: **GNR** State: **SNA**

Predicted Models: M 100% Moderate (inductive)

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

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

Biocontrol Species - Non-native Species Global: **GNR** State: **SNA**

Predicted Models: M 89% Moderate (inductive), L 11% Low (inductive)

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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 80 natural heritage programs throughout the Western Hemisphere.

Vision

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

Core Values

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

Confidentiality

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

Information Managed

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

Data Use Terms and Conditions

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

Suggested Contacts for Natural Resource Management Agencies

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

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

Montana Fish, Wildlife, and Parks

Fish Species	Zachary Shattuck zshattuck@mt.gov (406) 444-1231 or Eric Roberts eroberts@mt.gov (406) 444-5334
American Bison Black-footed Ferret Black-tailed Prairie Dog Bald Eagle Golden Eagle Common Loon Least Tern Piping Plover Whooping Crane	Kristian Smucker KSmucker@mt.gov (406) 444-5209
Grizzly Bear Greater Sage Grouse Trumpeter Swan Big Game Upland Game Birds Furbearers	Brian Wakeling Brian.Wakeling@mt.gov (406) 444-3940
Managed Terrestrial Game and Nongame Animal Data	Smith Wells – MFWP Data Analyst smith.wells@mt.gov (406) 444-3759
Fisheries Data	Ryan Alger – MFWP Data Analyst ryan.alger@mt.gov (406) 444-5365
Wildlife and Fisheries Scientific Collector's Permits	https://fwp.mt.gov/buyandapply/commercialwildlifeandscientificpermits/scientific Kammi McClain for Wildlife Kammi.McClain@mt.gov (406) 444-2612 Kim Wedde for Fisheries kim.wedde@mt.gov (406) 444-5594
Fish and Wildlife Recommendations for Subdivision Development	Charlie Sperry CSperry@mt.gov (406) 444-3888 See https://fwp.mt.gov/conservation/living-with-wildlife/subdivision-recommendations
Regional Contacts 	Region 1 (Kalispell) (406) 752-5501 fwprg12@mt.gov Region 2 (Missoula) (406) 542-5500 fwprg22@mt.gov Region 3 (Bozeman) (406) 577-7900 fwprg3@mt.gov Region 4 (Great Falls) (406) 454-5840 fwprg42@mt.gov Region 5 (Billings) (406) 247-2940 fwprg52@mt.gov Region 6 (Glasgow) (406) 228-3700 fwprg62@mt.gov Region 7 (Miles City) (406) 234-0900 fwprg72@mt.gov

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

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

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

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

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

Bureau of Land Management

Montana Field Office Contacts:

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

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

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

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

United States Forest Service

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

Tribal Nations

Assiniboine & Gros Ventre Tribes – Fort Belknap Reservation

Assiniboine & Sioux Tribes – Fort Peck Reservation

Blackfeet Tribe - Blackfeet Reservation

Chippewa Creek Tribe - Rocky Boy's Reservation

Crow Tribe – Crow Reservation

Little Shell Chippewa Tribe

Northern Cheyenne Tribe – Northern Cheyenne Reservation

Salish & Kootenai Tribes - Flathead Reservation

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

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

Invasive Species Management Contacts and Information

Aquatic Invasive Species

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

Noxious Weeds

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

Introduction to Native Species

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

If you are aware of observation datasets that the MTNHP is missing, please report them to the Program Botanist apipp@mt.gov or Senior Zoologist dbachen@mt.gov. If you have animal observations that you would like to contribute, you can submit them to our Animal Observation Entry Tool You can also submit plant and animal observations via Excel spreadsheets posted at https://mtnhp.org/observations.asp or via the Montana Natural Heritage Observations project in iNaturalist

Observations

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

Species Occurrences

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

Plant Species Occurrences

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

Animal Species Occurrences

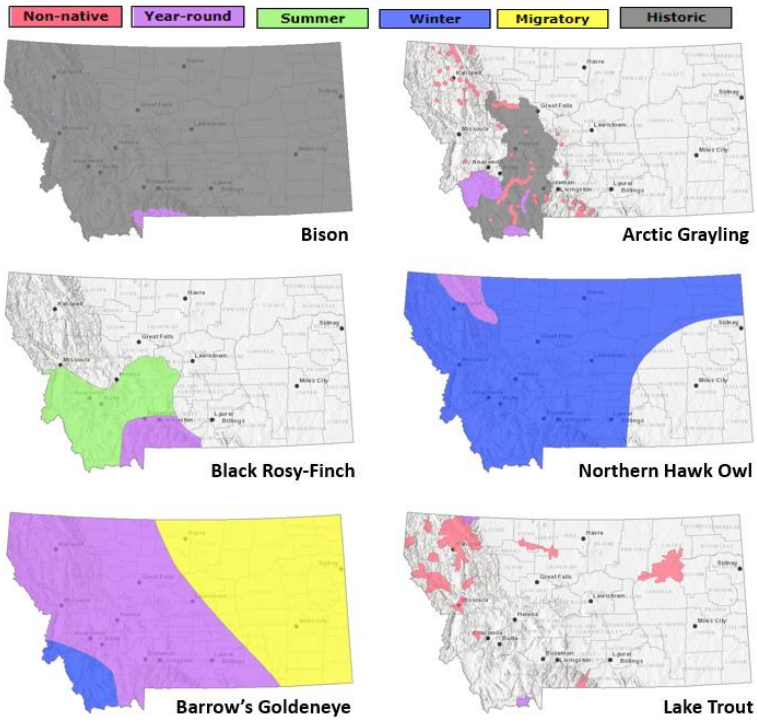
The location of a verified observation or specimen record typically known or assumed to represent a breeding population or a portion of a breeding population. Animal SO's are generally: (1) buffers of terrestrial point observations based on documented species' home range sizes; (2) buffers of stream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

Other Occurrence Polygons

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

Geographic Range Polygons

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



Predicted Suitable Habitat Models

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

Associated Habitats

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

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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).

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Introduction to Land Cover

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

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

Literature Cited

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

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

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Introduction to Wetland and Riparian

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

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

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

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

Literature Cited

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

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

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

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Introduction to Land Management

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

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

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

Public Lands
Conservation Easements
Private Conservation Lands
Managed Areas

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

Introduction to Invasive and Pest Species

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

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

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

Additional Information Resources

MTNHP Staff Contact Information

Montana Field Guide

MTNHP Species of Concern Report - Animals and Plants

MTNHP Species Status Codes - Explanation

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

MTNHP Request Information page

Montana Cadastral

Montana Code Annotated

Montana Fisheries Information System

Montana Fish, Wildlife, and Parks Subdivision Recommendations

Montana GIS Data Layers

Montana GIS Data Bundler

Montana Greater Sage-Grouse Project Submittal Site

Montana Ground Water Information Center

Montana Index of Environmental Permits, 21st Edition (2018)

Montana Environmental Policy Act (MEPA)

Montana Environmental Policy Act Analysis Resource List

Laws, Treaties, Regulations, and Agreements on Animals and Plants

Montana Spatial Data Infrastructure Layers

Montana State Historic Preservation Office Review and Compliance

Montana Stream Permitting: a guide for conservation district supervisors and others

Montana Water Information System

Montana Web Map Services

National Environmental Policy Act

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

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

Web Soil Survey Tool

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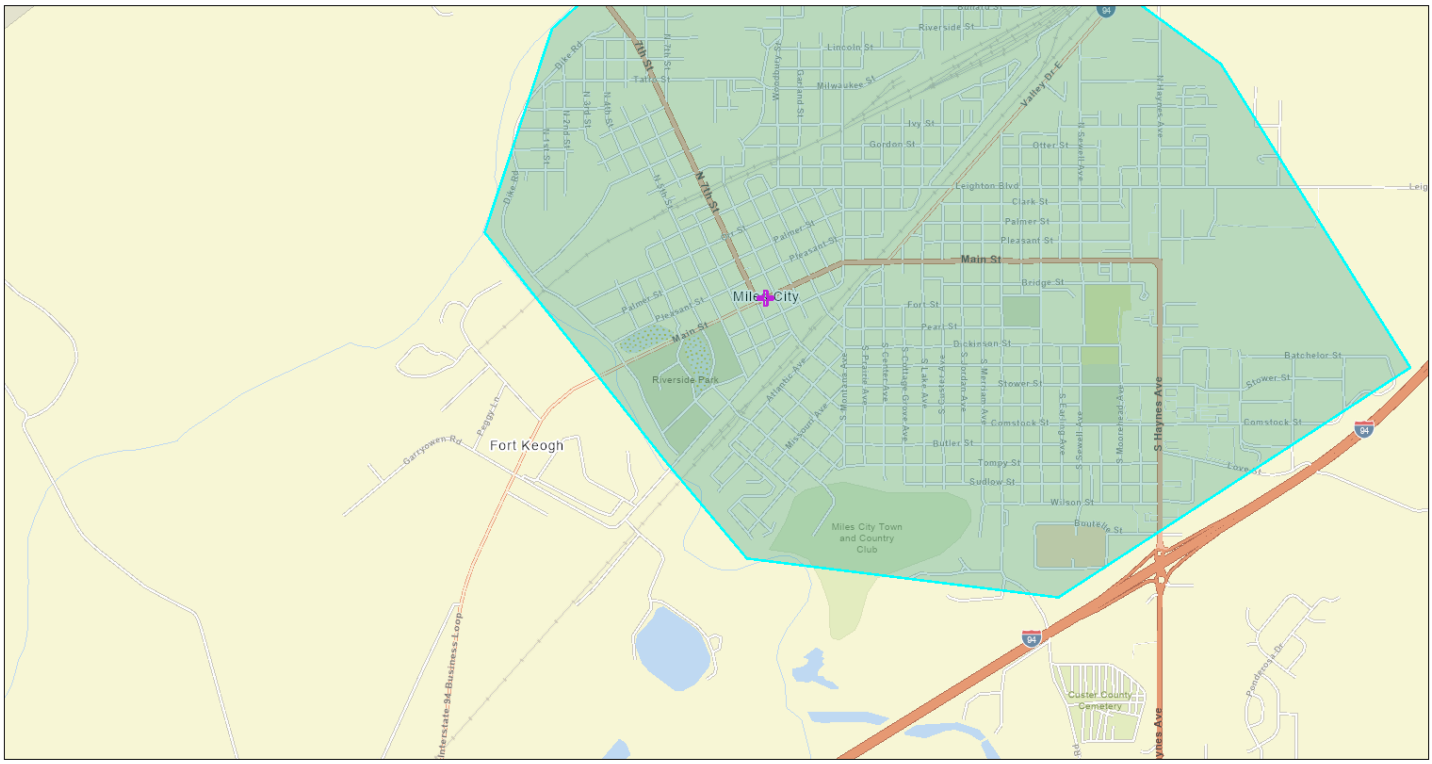
NEPAssist Report

Miles City Drainage



April 10, 2023

Miles City Drainage

Search Result (point)

1:26,201

0 0.23 0.45 0.9 mi

0 0.35 0.7 1.4 km

Montana State Library, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, US Census Bureau, USDA

Input Coordinates: 46.399229,-105.855266,46.409704,-105.867282,46.418995,-105.862819,46.423432,-105.855695,46.424734,-105.852176,46.425621,-105.849687,46.426036,-105.848485,46.426095,-105.847885,46.426331,-105.847198,46.426450,-105.846597,46.426686,-105.846082,46.426805,-105.845825,46.426805,-105.845396,46.426864,-105.844623,46.426864,-105.843851,46.426923,-105.842992,46.427041,-105.842477,46.427101,-105.841962,46.427278,-105.841533,46.427396,-105.841361,46.427396,-105.841276,46.427396,-105.841190,46.427396,-105.841104,46.427337,-105.841104,46.427337,-105.841018,46.427337,-105.840932,46.427337,-105.840761,46.427337,-105.840589,46.427219,-105.840074,46.427219,-105.839731,46.427219,-105.839473,46.427219,-105.839130,46.427219,-105.838529,46.427219,-105.838272,46.427219,-105.838186,46.427219,-105.838100,46.427219,-105.838014,46.417397,-105.818616,46.403549,-105.806085,46.393072,-105.829345,46.394848,-105.849945,46.399229,-105.855266

Project Area	4.50 sq mi
Within an Ozone 8-hr (1997 standard) Non-Attainment/Maintenance Area?	no
Within an Ozone 8-hr (2008 standard) Non-Attainment/Maintenance Area?	no
Within a Lead (2008 standard) Non-Attainment/Maintenance Area?	no
Within a SO2 1-hr (2010 standard) Non-Attainment/Maintenance Area?	no
Within a PM2.5 24hr (2006 standard) Non-Attainment/Maintenance Area?	no
Within a PM2.5 Annual (1997 standard) Non-Attainment/Maintenance Area?	no
Within a PM2.5 Annual (2012 standard) Non-Attainment/Maintenance Area?	no
Within a PM10 (1987 standard) Non-Attainment/Maintenance Area?	no
Within a Federal Land?	yes
Within an impaired stream?	yes
Within an impaired waterbody?	no
Within a waterbody?	yes

Within a stream?	yes
Within an NWI wetland?	Available Online
Within a Brownfields site?	yes
Within a Superfund site?	no
Within a Toxic Release Inventory (TRI) site?	no
Within a water discharger (NPDES)?	yes
Within a hazardous waste (RCRA) facility?	yes
Within an air emission facility?	yes
Within a school?	yes
Within an airport?	no
Within a hospital?	yes
Within a designated sole source aquifer?	no
Within a historic property on the National Register of Historic Places?	yes
Within a Toxic Substances Control Act (TSCA) site?	no
Within a Land Cession Boundary?	yes
Within a tribal area (lower 48 states)?	no
Within the service area of a mitigation or conservation bank?	yes
Within the service area of an In-Lieu-Fee Program?	yes
Within a Public Property Boundary of the Formerly Used Defense Sites?	no
Within a Munitions Response Site?	no
Within an Essential Fish Habitat (EFH)?	no
Within a Habitat Area of Particular Concern (HAPC)?	no
Within an EFH Area Protected from Fishing (EFHA)?	no
Within a Bureau of Land Management Area of Critical Environmental Concern?	no
Within an ESA-designated Critical Habitat Area per U.S. Fish & Wildlife Service?	no
Within an ESA-designated Critical Habitat river, stream or water feature per U.S. Fish & Wildlife Service?	no

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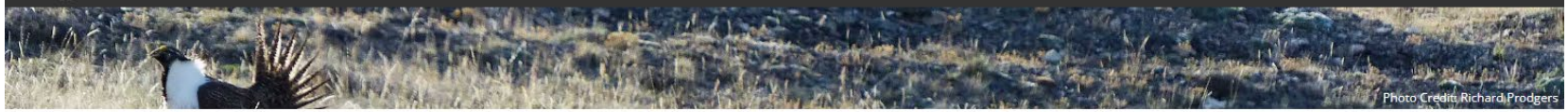
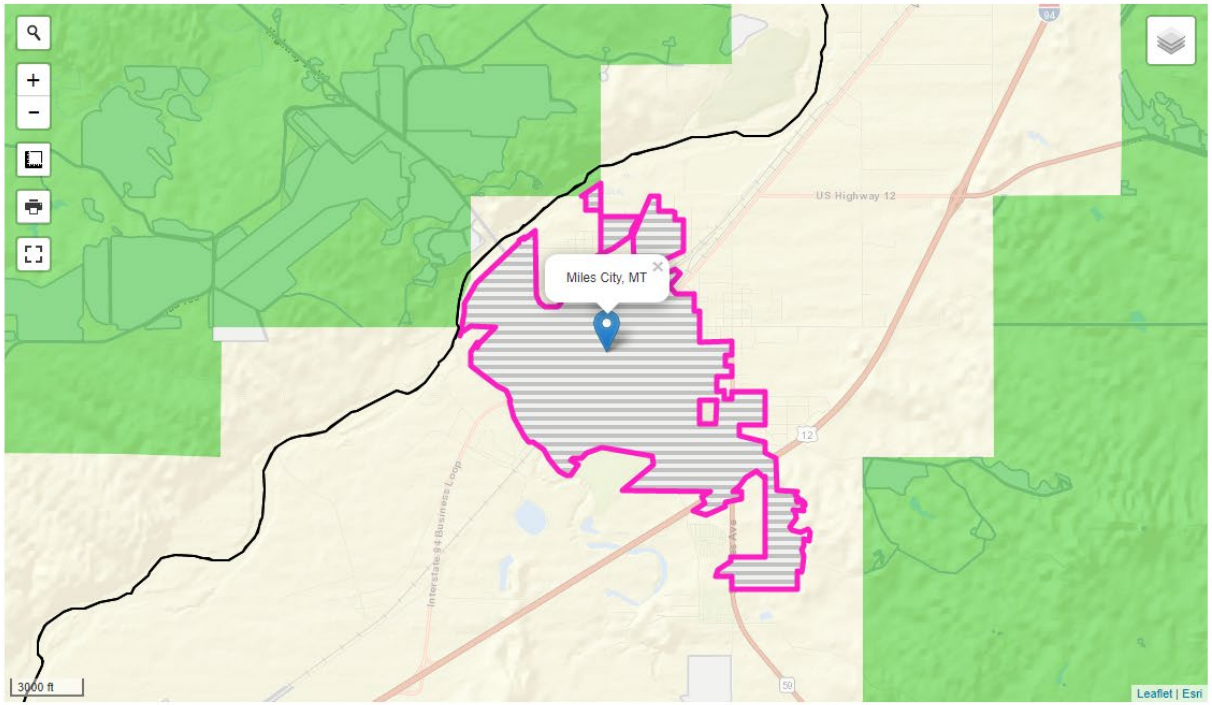


Montana Sage Grouse Habitat Conservation Map

Use this map to view and explore types of sage grouse habitat designated as core (blue), general (green), connectivity (light-blue) habitats or BLM priority areas. To zoom into an area, hold the Shift key and draw a rectangle. Anyone proposing new development activities in sage grouse habitat must submit a development project application for consultation.

If your project is close to designated sage grouse habitat or BLM Priority area, or if you are unsure your project is within designated sage grouse habitat or BLM Priority area, please submit your project for review as permitting agencies will be checking to see if your project is located within these designated sage grouse habitats. If your permitting agency requires evidence that your project is outside of designated sage grouse habitat, we recommend that you log in and start a project application and take a screenshot of your project's location.



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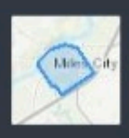
Explore location

LOCAL OFFICE **MT ESFO**



LOCATION
Custer County, Montana
CHANGE LOCATION

Resources

- ENDANGERED SPECIES 3
- MIGRATORY BIRDS 12
- FACILITIES
- WETLANDS ✔

PRINT RESOURCE LIST

What's next?

Define a project at this location to evaluate potential impacts, get an official species list, and make species determinations.

DEFINE PROJECT

Wetlands in the National Wetlands Inventory (NWI)

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

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site. Other limitations, exclusions, and precautions are listed below.

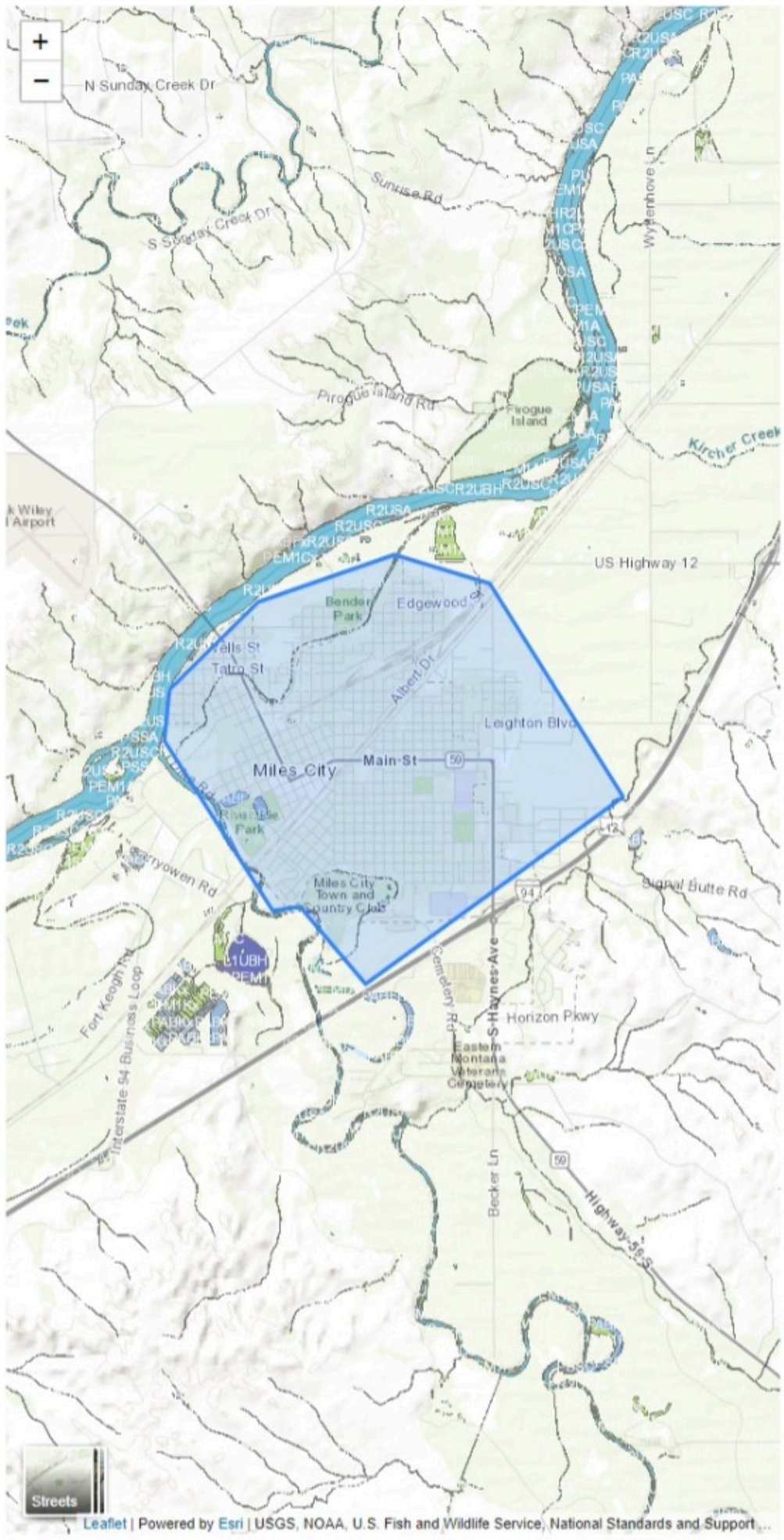
This location overlaps the following wetlands:

FRESHWATER EMERGENT WETLAND
- PEM1C
- PEM1A
- PEM1Ah

FRESHWATER FORESTED/SHRUB WETLAND
- PSSA

FRESHWATER POND
- PABFx
- PABF
- PUSC

RIVERINE
- R2UBH
- R2UBG
- R4SBC
- R4SBCx
- R2USC
- R2USA
- R5UBH



NOTE: This initial screening does **not** replace an on-site delineation to determine whether wetlands occur. Additional information on the NWI data is provided below.

- Data limitations
- Data exclusions
- Data precautions