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## STATE OF MONTANA

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ENVIRONMENTAL ASSESSMENT

<b>Project Name:</b>	Lockwood Irrigation District – Intake Canal Flood Repairs
<b>Proposed Implementation Date:</b>	December 2022
<b>Proponent:</b>	Lockwood Irrigation District
<b>Location:</b>	45.79599, -108.46906
<b>County:</b>	Yellowstone

## I. TYPE AND PURPOSE OF ACTION

The Lockwood Irrigation District (LID) irrigation system is fed by a 3,500-foot-long intake canal located along the eastern bank of the Yellowstone River between Billings and Lockwood, Montana. The intake canal starts under the U.S. Highway 87 bridge and runs south under the I-90 Interstate bridge to a point directly across from Coulson Park. The LID irrigates 2,100 acres in total with 240 acres being directly irrigated agricultural land. Figures showing the project location and site features are attached.

During the June 2022 Yellowstone River flood, the intake canal was fully engulfed and submerged by floodwaters which eroded the canal in numerous locations. Flood damage resulted in numerous breaches in the canal and washouts in the embankment which limit the ability of the LID to provide sufficient water during periods of low water. The access road along the canal was also washed out limiting the LID's ability to access the canal for operation and maintenance purposes.

The purpose of this project is to repair 3,500 linear feet of intake canal to its preflood condition and reinstall the access road located along the canal embankment. The goals of the project are to ensure the volume of diverted water is sufficient to meet the demand of the LID system, allow for continued access to the canal and pump house for operation and maintenance purposes, and have a fully functional and stable canal with properly sized riprap material that can withstand a 100-year flood event.

Project objectives include hauling and placing riprap material in eroded areas along the embankment and resloping these areas for stability. The access road will be reestablished along the top of the embankment as work progresses from the pump station to the end of the embankment. Where possible, the embankment will be revegetated along riparian areas to recreate wildlife habitat.

A segment of the canal was fully rebuilt from 2011 through 2012 using similar work as proposed for this project after it sustained damage from the 2011 flooding of the Yellowstone River. The 2011/2012 work was permitted and constructed to U.S. Army Corp of Engineer (USACE) standards and riprap sizing methodology. Final as-built drawings were completed in 2014. The USACE and Yellowstone Conservation District concur that if the proposed project is completed to the design

and specifications as shown in the 2014 as-built drawings, this project can be performed under a maintenance permit to the original 2011/2012 permits. Submittal of maintenance permits and construction contractor procurement are expected upon Department of Natural Resource and Conservation (DNRC) approval of American Rescue Plan Act (ARPA) grant funding for the project. The project was projected to begin construction in December 2022 with project closeout completed by May 2023.

## 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.*

This project restores the condition of the irrigation canal, embankment, and access road to pre-2022 flood conditions (i.e., 2014 as-built drawings).

In 2011, the LID canal sustained damage from flooding and was repaired using similar means and methods as proposed for this project. Repair work completed from 2011 through 2012 was permitted and approved by the USACE and Yellowstone County Conservation District with final as-built drawings produced in 2014. Both the USACE and Yellowstone County Conservation District have reviewed this project and consider it maintenance to prior repair work given the repairs associated with this project are completed to the design and specifications as shown in the 2014 as-built drawings and do not differ.

There are no known issues or concerns from the public, however this project has not been presented at public meetings nor have public notices been posted.

### **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.*

In addition to the requested DNRC ARPA grant funds, the LID has committed an additional \$44,500 of funding for the project.

Given the repairs proposed for this project are consistent with the USACE and Yellowstone County Conservation District permitted repair actions completed from 2011 through 2012, full permitting for this project is not required. USACE and Yellowstone County Conservation District maintenance permits are required.

### **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.*

No known alternatives were considered. This project proposes to repair the canal, embankment, and access road to pre-2002 flood conditions as shown in 2014, post-2011 flood repair as-built

drawings.

### 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 Natural Resource Conservation Service (NRCS) Web Soil Survey mapping application shows that soils within the project area consist of the following:

- Alluvial land, mixed (not prime farmland)
- Clapper gravelly loam, 7 to 15 percent slopes (not prime farmland)
- Haverson loam, 0 to 1 percent slopes (farmland of statewide importance)
- Rock land (not prime farmland)
- Water (not prime farmland)

Washed out areas of the embankment are susceptible to continued erosion. No unusual geologic features have been identified. No special reclamation considerations have been identified.

*Proposed Alternative:* Temporary and short-term, direct adverse impacts to soil stability may occur since the canal, embankment, and work areas are located adjacent to the Yellowstone River. Completion of work during low water and drier seasons, diversion of stormwater away from construction areas, installation of Best Management Practices (BMPs), and minimizing disturbed areas to the extent practicable are planned to reduce impacts to existing soils and embankment materials.

*No Action Alternative:* Direct adverse impact to soil quality and stability. Existing embankment soils and materials will continue to be susceptible to washout and erosion into the river.

#### 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 is located on a segment of the Yellowstone River that is 303(d) listed as an impaired waterbody and is within a Montana Department of Environmental Quality (DEQ) pre-TMDL assessment area (Discover DEQ Throughout Montana).

The United States Environmental Protection Agency (EPA), NEPAAssist web mapping application identifies the following impairments:

- Aquatic life: algae, benthic macroinvertebrates, dissolved oxygen, eutrophication, oil and grease, periphyton (aufwuchs) indicator bioassessments, and sediment.
- Drinking water: arsenic.
- Primary contact recreation: algae and oil and grease.

The Montana Bureau of Mine and Geology Ground Water Information Center (GWIC) web mapping application identifies the Lockwood Water Users Association public water supply well and various irrigation wells and monitoring wells located within the larger project area.

*Proposed Alternative:* Potential direct adverse impact to water quality during construction of the project. Construction activities have the potential to cause temporary violations of surface water quality standards for turbidity. These effects are temporary, short-term and will not have long-term adverse impacts to water quality. In addition to any potential maintenance permit requirements, BMPs are expected to be installed during construction to reduce erosion and the potential for release of sediments to surface water.

Long-term, water quality will have a direct, indirect, and cumulative beneficial impact due to decreased erosion of embankment materials into the Yellowstone River. Filling in holes and washout locations along the embankments will create a stable structure and will also reduce erosion of materials into the river.

*No Action Alternative:* Continued direct impacts to water quality from potential erosion of embankment materials into the river.

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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 project is located within a non-attainment/maintenance area for sulfur dioxide (SO<sub>2</sub>), 1-hour (2010 standard) and carbon monoxide (CO, 1971 standard). The project is also located within an area subject to open burning restrictions (Discover DEQ Throughout Montana; NEPAAssist).

*Proposed Alternative:* Temporary and short-term direct adverse impacts to air quality (i.e., dust) may occur during construction due to ground disturbance caused by construction activities. Any air quality impacts are expected to affect the immediate area surrounding the construction site. Recreationists utilizing the Yellowstone River (ex: anglers and boaters) may be directly impacted by any dust generated by the project; however, the impact would be short-term as they pass by the project site. Common construction dust suppression measures such as water application are expected during construction. No long-term adverse impacts to air quality are expected. Project activities are not expected to effect non-attainment/maintenance areas. If any open burning was planned, Yellowstone County would need to be contacted prior to any burning.

*No Action:* No impact to air quality is expected.

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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.*

The Montana Natural Heritage Program identifies primary land cover ( $\geq 6\%$ ) in and around the project area to include commercial/industrial, other roads, Big Sagebrush Steppe, Great Plains Mixedgrass Prairie, low intensity residential, developed open space, and Great Plains Floodplain. No rare plants or cover types within a 1-mile radius of the project site have been identified.

Various grasses, forbs, shrubs, deciduous trees, and evergreen trees are located along the riverbank within the immediate project area. Dominant vegetation communities within the larger project area include perennial grasses, forbs, and shrubs. Western wheatgrass (*Pascopyrum smithii*) is usually dominant. Other species that may be present include thickspike wheatgrass (*Elymus lanceolatus*), green needlegrass (*Nassella viridula*), blue grama (*Bouteloua gracilis*), and needle and thread (*Hesperostipa comata*). Dominant shrub species present may include Wyoming big sagebrush-western wheatgrass (*Artemisia tridentata* ssp. *wyomingensis*/*Pascopyrum smithii*) with western wheatgrass (*Pascopyrum smithii*). Japanese brome (*Bromus japonicus*) and cheatgrass (*Bromus tectorum*) are commonly found in disturbed areas. Ponderosa pine (*Pinus ponderosa*) may also occur surrounded by mixed-grass prairie in places (Montana Natural Heritage Program). Commercial crops produced in the larger area include corn, alfalfa, and wheat.

*Proposed Alternative:* Minor direct adverse impact to vegetation along the existing embankment and within the immediate vicinity of the pumphouse. Vegetation within these areas will be disturbed due to the nature of construction activities and associated ground disturbances. Existing vegetation on the embankment may be destroyed by reconstruction of the access road from the pump station up the intake canal. Where possible, riparian areas are planned to be revegetated to recreate wildlife habitat along the river. Since rock riprap will be imported from an offsite source, there is potential for importation of weeds and weed growth due to ground disturbances. It is recommended that all equipment and work vehicles be cleaned and power washed prior to accessing work areas to reduce the spread of weeds. It is also recommended that all sources of imported materials be inspected for the presence of weeds prior to importation of these materials to the work area.

Long term adverse impacts to vegetation cover, quantity, and quality are not expected since the project is repairing and reconstruction an existing canal embankment. Natural reestablishment of prior vegetative communities is expected since the postconstruction environment will be similar to preconstruction conditions.

*No Action:* No impact to vegetation cover, quantity, and quality is expected. Potential minor adverse impacts to vegetative cover along the embankment may occur due to continued erosion of washout areas; however, these impacts are expected to be negligible when compared to the larger surrounding area. Current conditions will remain as is and change along with natural changes in the river and river ecosystem.

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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.*

The project is not located within any critical habitat areas (U.S. Environmental Protection Agency NEPAassist web mapping application). Per Montana Fish, Wildlife and Parks and the U.S. Fish and Wildlife Service, the project is not located within a wildlife habitat protection area or critical habitat for threatened and endangered species (FWP Wildlife Habitat Protection Area and USFWS Critical Habitat for Threatened and Endangered Species web mapping applications). According to the Montana Sage Grouse Habitat Conservation Map mapping application, no critical sage grouse habitat is present within the project area.

Animal habitat associated with rivers and riparian areas is present within the immediate project area. The larger project area provides habitat for a variety of birds, fish, mammals, and reptiles. The Montana Natural Heritage program also identifies bat roost (non-cave) important animal habitat as confirmed as occurring or observed within a 1-mile radius of the project area. The National Wetlands Inventory web mapping application shows forested/shrub and herbaceous riparian habitat present within the project area. No wetlands are identified with the immediate project area.

According to the Montana Natural Heritage Program, there are no threatened or endangered species present within the immediate or greater project area. One Montana special status species, Bald Eagle (*Haliaeetus leucocephalus*) has been confirmed as occurring or observed within a 1-mile radius of the project area. Red Knot (*Calidris canutus*), which is also a Montana special status species, may potentially be present in the area.

Several Montana fish and reptile species of concern, that are found in habitat similar to that found within the immediate project area, are confirmed as occurring or observed within a 1-mile radius of the project area and include the following:

- Sauger (*Sander canadensis*)
- Yellowstone Cutthroat Trout (*Oncorhynchus clarkii bouvieri*)
- Western Milksnake (*Lampropeltis gentilis*)
- Plains Hog-nosed Snake (*Heterodon nasicus*)
- Snapping Turtle (*Chelydra serpentina*)
- Spiny Softshell (*Apalone spinifera*)
- Greater Short-horned Lizard (*Phrynosoma hernandesi*).

A variety of other Montana bird and mammal (primarily bat species) species of concern are also confirmed as occurring or observed within a 1-mile radius of the project area. Many of these species are also classified as United State Forest Service (USFS) and/or United States Bureau of Land Management (BLM) sensitive species (Montana Natural Heritage Program).

*Proposed Alternative:* No direct, indirect, or cumulative adverse impact to terrestrial, avian, aquatic life and habitats are expected. The embankment was completely submerged during the 2022 flood event which damaged the embankment and any pre-flood existing habitat. The project is expected to have direct beneficial impacts to animals and associated riparian habitats since the repairs will create a more stable and permanent embankment that will not be as susceptible to erosion and corresponding effect to habitats along the canal and embankment. Properly installed rock riprap along the intake canal is expected to create stable underwater habitat for fisheries. Revegetating the embankment along riparian areas, where feasible, is expected to create wildlife habitat. Since the project is expected to restore the area to pre-flood conditions, post-project fish and reptile species and their habitat is expected to be similar to pre-flood conditions. No impacts to bird and mammal species or habitat are expected.

*No Action:* Potential adverse impact to fish and other aquatic life and habitats due to continued erosion of washout locations and associated sediment load to the river.

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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.*

*USFWS, Threatened and Endangered Species*

According to the Montana Natural Heritage Program, there are no threatened or endangered species present within the immediate or greater project area.

*Montana Special Status Species*

One Montana special status species, Bald Eagle, has been confirmed as occurring or observed within a 1-mile radius of the project area. Red Knot, which is also a Montana special status species, may potentially be present in the area.

*Montana Species of Concern*

The following bird, fish, mammal, and reptile Montana species of concern have been confirmed as occurring or observed within a 1-mile radius of the project area: Pinyon Jay (*Gymnorhinus cyanocephalus*), Cassin's Finch (*Haemorhous cassinii*), Loggerhead Shrike (*Lanius ludovicianus*), Burrowing Owl (*Athene cunicularia*), Sprague's Pipit (*Anthus spragueii*), Sauger (*Sander canadensis*), Yellowstone Cutthroat Trout (*Oncorhynchus clarkii bouvieri*), Spotted Bat (*Euderma maculatum*), Little Brown Myotis (*Myotis lucifugus*), Hoary Bat (*Lasiurus cinereus*), Long-eared Myotis (*Myotis evotis*), Western Milksnake (*Lampropeltis gentilis*), Plains Hog-nosed Snake (*Heterodon nasicus*), Snapping Turtle (*Chelydra serpentina*), Spiny Softshell (*Apalone spinifera*), and Greater Short-horned Lizard (*Phrynosoma hernandesi*).

*Critical Habitat*

Per Montana Fish, Wildlife and Parks and the U.S. Fish and Wildlife Service, the project is not located within wildlife habitat protection area or critical habitat for threatened and endangered species. According to the Montana Sage Grouse Habitat Conservation Map mapping application, no critical sage grouse habitat is present within the project area. The Montana Natural Heritage program does identify bat roost (non-cave) important animal habitat as confirmed as occurring or observed within a 1-mile radius of the project area. The project is also located adjacent to a conservation easement along the eastern bank with the landholder being BLM and the easeholder Montana Land Reliance (Montana Sage Grouse Habitat Conservation Web Mapping application). The Four Dances Special Recreation Management Area (SMRA) that consists of two trailhead and multiple trails is present on this conservation easement land.

*Wetlands and Riparian Zones*

The National Wetlands Inventory web mapping application shows forested/shrub and herbaceous riparian habitat present with the project area. No wetlands are identified with the immediate project area.

*Proposed Alternative:*

*Species Resources*

No impact on threatened and endangered species or sage grouse habitats since none are present within the project area. No direct, indirect, or cumulative adverse impacts to Montana special status species or species of concern are expected. The embankment was completely submerged during 2022 flood event which damaged the embankment and any pre-flood existing habitat. During construction, similar type aquatic, fish, reptile, and riverain habitat is readily available both upstream and downstream of the project area. No impacts to bird and mammal species or habitat are expected.

#### Habitat Resources

The project is not expected to have any adverse effect on bat roost (non-cave) important animal habitat since the canal embankment is not expected to be bat habitat. Construction activities are not expected to have any adverse impact to the conservation easement land along the eastern bank since the project is primarily located along the canal embankment. The project is expected to have direct, long-term beneficial impact to animals and associated riparian habitats since the repairs will create a more stable and permanent embankment that will not be as susceptible to erosion and corresponding effect to habitats along the canal and embankment.

*No Action:* No impact is expected to unique, endangered, fragile, or limited environmental resources.

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### **10. HISTORICAL AND ARCHAEOLOGICAL SITES:**

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

No historical, archaeological, or paleontological resources that would be associated with the National Register of Historic Places have been identified (U.S. Environmental Protection Agency NEPAAssist web mapping application). None of these types of resources are expected to be encountered since the project involves maintenance and repairs to an existing man-made structure.

*Proposed Alternative:* No historical and archaeological impacts are anticipated. However, 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 impact to historical or archaeological sites.

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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 Yellowstone River is used by recreationists for floating, fishing, and other water related activities. Four Dances SMRA is located on land managed by the Bureau of Land Management (BLM) bordering the eastern side of river. This land is located above river level where a steep and tall bank drop down from the bluff to the river. The intake canal, river, and scenic view to the west are visible from the bluff. Coulson Park is also located on the opposite bank of the river from the canal intake.

*Proposed Alternative:* Potential temporary, short-term adverse impacts on aesthetics to users of the Yellowstone River, Coulson Park, nearby industrial properties, and users of the BLM easement land

along the eastern bank during construction of the project. River recreationists and other area users may see construction equipment, dust, and hear noise associated with general construction activities during the duration of the project. Dust suppression activities associated with general construction activities is expected. Construction of the project is expected to occur during daylight hours, so no light impacts expected.

No long-term adverse or beneficial impact to aesthetics. The project is expected to be short-term (~6 months) and is planned to occur during low water when fewer river recreationists may be on the river. The project is returning an existing man-made feature to 2022 pre-flood conditions, so post-construction aesthetics will be very similar to or the same as pre-flood aesthetics.

*No Action:* No impact to aesthetics.

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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.*

The project is expected to be short-term and performed by local contractors and project personnel living and working within Yellowstone County and the local area. Material supplies (ex. rock riprap) necessary to construct the project are expected to be locally and readily available and not in limited supply.

*Proposed Alternative:* No impact to demands on limited environmental resources of land, water, air, or energy beyond the expected fuel consumption associated with operation of heavy construction equipment are expected. Acquiring rock riprap material would put a demand on land but these materials are not expected to be a limited resource and are expected to be readily available from local quarry and material suppliers. Recreational activities along this stretch of the Yellowstone River may have a direct, temporary adverse aesthetic impact due to the project being visible to users of the Yellowstone River as they float by the project site. No other activities nearby that the project would have a long-term adverse impact on have been identified.

*No action:* Potential continued direct adverse impact to water resources due to continued erosion of washout areas and the corresponding effect on sediment load to the river and water quality.

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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.*

No other current studies, plans, or projects within the general project area have been identified. No other current private, state, or federal actions within the general project area have been identified. No future proposed state actions within the general project area that are under Montana Environmental Policy Act (MEPA) review or permitting have been identified.

According to the Montana Natural Heritage Program, there have been a few structured surveys within the project area that include lentic amphibian/reptile surveys (2013); bird point count (2004); raptor nest survey (2020); various amphibian, reptile, aquatic life, and insect surveys (2005-2021), noxious weed and aquatic invasive species surveys (2005-2021); fish surveys (2006-2020); bat roost survey (2010); small mammal trapping surveys (2010-2019); BLM AIM terrestrial survey plot (2022); and algal scraping (2012).

The USACE and Yellowstone Conservation District concur that if the proposed project is completed to the design and specifications as shown in the 2014 as-build drawings, this project can be performed under a maintenance permit to the original 2011/2012 permits. Submittal of maintenance permits

The project is located on a segment of the Yellowstone River that is 303(d) listed as an impaired waterbody and within a Montana Department of Environmental Quality (DEQ) pre-TMDL assessment area (Discover DEQ Throughout Montana web mapping application).

The United States Environmental Protection Agency (EPA), NEPAAssist web mapping application identifies the following impairments:

- Aquatic life: algae, benthic macroinvertebrates, dissolved oxygen, eutrophication, oil and grease, periphyton (aufwuchs) indicator bioassessments, and sediment.
- Drinking water: arsenic.
- Primary contact recreation: algae and oil and grease.

*Proposed Alternative:* No direct, indirect, or cumulative adverse impact on other environmental documents pertinent to the area are expected. Repairing the embankment and eliminating continued erosion of washout areas and corresponding sediment load to the river may have a direct benefit to DEQ pre-TMDL assessment of the Yellowstone River and resulting environmental documents.

*No Action:* No impact to other environmental documents pertinent to the area.

<b>IV. IMPACTS ON THE HUMAN POPULATION</b>
<ul style="list-style-type: none"><li>• <i>RESOURCES potentially impacted are listed on the form, followed by common issues that would be considered.</i></li><li>• <i>Explain POTENTIAL IMPACTS AND MITIGATIONS following each resource heading.</i></li><li>• <i>Enter "NONE" if no impacts are identified or the resource is not present.</i></li></ul>



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**14. HUMAN HEALTH AND SAFETY:**

*Identify any health and safety risks posed by the project.*

The Discover DEQ Throughout Montana web mapping application identifies several hazardous waste handlers located within industrial areas located north and west of the project area. These facilities do not pose a health and safety risk to the project given the distance from the project site, nature or work associated with the project, and regulation by DEQ.

The U.S. Environmental Protection Agency NEPAAssist web mapping application identifies several National Pollutant Discharge Elimination System (NPDES) permitted facilities and Brownfield sites within the larger area surrounding the project. These facilities do not pose a human health and safety risk to the project given the distance from the project site, nature of work associated with the project, and regulation/oversight by DEQ and the U.S. Environmental Protection Agency.

*Proposed Alternative:* Potentially direct adverse impact to safety associated with the operation of heavy construction equipment and work on construction sites. It is expected that any construction contractor would develop a health and safety plan that identifies risks associated with the project and mitigation measures prior to starting construction. No human health risks have been identified.

*No Action:* Potential direct adverse impact to the safety of LID personnel working and maintaining the canal and embankment. Breaches and washout areas in the embankment and washout of the access road located along the canal provide a potentially unsafe working environment for personnel and equipment and limit the ability to access and maintain portions of the canal.

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## **15. INDUSTRIAL, COMMERCIAL AND AGRICULTURE ACTIVITIES AND PRODUCTION:**

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

The LID services the community of Lockwood, Montana through two main canals. The LID irrigates 2,100 acres in total with 240 acres being directly irrigated agricultural land. Primary agricultural crops produced on these lands include corn, alfalfa, and wheat. Current damage to the intake canal is causing the canal to lose a significant volume of water before the diverted water reaches the pump house. These losses may result in an early shutdown of the system during low water since the water volume reaching the pump house may not be sufficient to operate the system. An early shutdown would cause decreased production of late season rounds of corn and hay and an estimated loss of 10-20% of production value.

*Proposed Alternative:* Direct, indirect, and cumulative beneficial impact to users of the LID district irrigation water. Delivery of irrigation water through late season low water conditions may result in increased late season crop production and associated producer, supplier, and vendor revenues.

*No Action:* Direct, indirect, and cumulative adverse impacts to LID irrigation water users. The inability to supply irrigation water during low-water conditions may result in less crop production and decreased revenues for crop producers, suppliers, and vendors.

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**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 population of Yellowstone County in 2020 was 164,731. The population of Lockwood in 2020 was estimated at 7,195 individuals and Billings 117,116 individuals (United States Census Bureau). Implementation of the project is expected to use standard construction equipment that is expected to be locally available. Construction of the project is expected to be performed by existing local contractors and project personnel living and working within Yellowstone County and the local area.

*Proposed Alternative:* Potentially short-term, direct and indirect beneficial impacts to the local employment market by creating a job opportunity for local contractors and material suppliers. It is not expected that the project would create, move, or eliminate jobs.

*No Action* – No impact to quantity or distribution of employment.

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**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.*

The project is located along the banks of the Yellowstone River where state tax revenues are received from agricultural production from land serviced by the LID and from recreation associated with the Yellowstone River itself (ex: lodging taxes, etc.).

Per Montana Cadastral, the LID pump house is located on land owned by Montana Rail Link and leased by the LID. To the east, the canal borders land owned by the LID and land managed by BLM. Per the Montana Department of Revenue, the 2023 market value for pump house parcel is \$15,728, and the taxable value is \$0.00. The 2023 market value for the parcel owned by the LID located between the pump house and land managed by the BLM is \$653,997, and the taxable value is \$0.00.

According to Montana State University, over 95% of land in Yellowstone County is classified as farmland. As a whole, farmland in Yellowstone County produced \$5,615,000 of government paid revenue (i.e., state taxes). The LID services 2,100 acres of this land and taxes on this land contribute to overall Yellowstone County agricultural tax revenues. The Yellowstone River, and the recreational opportunities supported by the river, contribute to Montana tax revenues through taxes on lodging, businesses (ex: guides, outfitters, sporting goods, restaurants), etc.

*Proposed Alternative:* Potentially direct, indirect, and cumulative beneficial impacts to the local and state tax base and tax revenues. Ensuring that the intake canal can hold and deliver sufficient water to operate the pump house and canal systems through low-water conditions may result in increased late season crop production and associated revenues for crop producers, suppliers, and vendors. The taxable value of properties near the project are not expected to be affected.

*No Action:* Potentially direct, indirect, and cumulative adverse impacts. The inability to supply irrigation water during low-water conditions may result in less crop production, decreased revenues for crop producers, suppliers, and vendors, and decreased tax revenue from agricultural products produced on land irrigated by the LID.

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**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 project is generally located within an industrial area between Billings and Lockwood, Montana with BLM managed land to the east. Per GoogleEarth imagery, the pump station is located within an industrial area and is accessed through existing roadways. Pre-2022 flood, the canal was accessed from the pump house via a road leading under the railroad tracks and continuing along the top of the canal embankment.

*Proposed Alternative:* No adverse impact to traffic patterns, fire protection, police, schools, etc. is expected. Rock riprap will be hauled to the project from an offsite source. Equipment and other materials necessary for construction of the project are expected to be able to be hauled on existing roadways to the project site with special consideration given to height limits associated with crossing under the Interstate 90 and railroad bridges. Limited traffic control within the immediate project area may be necessary to maintain a safe working environment.

*No Action:* No impact to demand for government services.

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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.*

There are no known zoning or management plans for the immediate project area (Environmental Protection Agency NEPAAssist and Montana DEQ Discover DEQ Throughout Montanan web mapping applications).

The project is located adjacent to a conservation easement along the eastern bank of the Yellowstone River with the landholder being BLM and the easeholder Montana Land Reliance (Montana Sage Grouse Habitat Conservation Web Mapping application). The Four Dances Special Recreation Management Area (SMRA) that consists of two trailhead and multiple trails is present on this conservation easement land.

*Proposed Alternative:* No impact to locally adopted environmental plans and goals.

*No Action:* No impact to locally adopted environmental plans and goals.

---

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

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

The Yellowstone River is used by recreationists for floating, fishing, and other water related activities. Per the Montana Fish, Wildlife, and Parks waterbody search web mapping application, the nearest fishing access site for the Yellowstone River is East Bridge located immediately downriver of the pump house and intake canal.

Four Dances Special Recreation Management Area (SMRA) is located on the BLM land bordering the eastern side of river. This land is located above river level where a steep and tall bank drops down from the bluff to the river. This recreation area consists of two trail heads and numerous trails including a trail that accesses the river.

No wilderness areas are located proximal to the project area.

*Proposed Alternative:* No impact to access of recreational activities. The project will not impact access to the Yellowstone River or the Four Dances SMRA. The East Bridger river access site is located downriver from the pump house and intake canal, and project activities will not impact access to this site. The Four Dances SMRA is accessed via Coburn Road, which is located on top of the bluff on the eastern side of the river and is accessed via a different road network than that used to access the pump house and canal.

Potential minor, temporary, and short-term adverse impact to the quality of river recreational activities. River recreationists may see construction equipment, dust, and hear noise associated with general construction activities while floating by the project site which may affect their “river experience” along the short stretch of river affected by the project. The project is short term (~ 6 months) and planned to be completed during low water and the drier season when recreation use may be lower, so there are no long-term adverse impacts to the quality of recreation along the river.

*No Action:* No impact to access to quality of recreational and wilderness activities.

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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.*

The project is located between Billings and Lockwood, Montana. According to the United States Census Bureau, the population of Yellowstone County in 2020 was 164,731 with 71,804 housing units total. The population of Billings, Montana was 117,116 individual; however, the United States Census Bureau does not report the number of housing units. The population of Lockwood, Montana in 2020 was estimated at 7,195 individuals with 2,811 housing units.

*Proposed Alternative:* No impact to the density and distribution of the population within Billings, Lockwood, or Yellowstone County. Implementation of the project is expected to use standard construction equipment that is also expected to be locally available. Construction of the project is expected to be performed by existing local contractors and project personnel living and working within Yellowstone County and the local area; no additional housing is expected.

*No Action:* No impact to density and distribution of population and housing.

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## **22. SOCIAL STRUCTURES AND MORES:**

*Identify potential disruption of native or traditional lifestyles or communities.*

The larger project area primarily consists of commercial, industrial, and land managed by the BLM (Montana Natural Heritage Program). No federally recognized Tribal land is within the project area. The larger project area was traditionally inhabited or used by the Crow Tribe (Native Land Digital web mapping application).

*Proposed Alternative:* No impact to social structures and/or traditional lifestyles or communities are expected. The project is restoring an existing man-made structure to pre-2022 flood conditions. Current communities and lifestyles are expected to remain as is and not change as a result of the project.

Potential direct, indirect, and cumulative beneficial impacts to the existing agricultural community may result since the intake canal will be able to fully deliver water to the pump house and irrigation system during low water as designed. This may result in improved late season agricultural production and associated revenue.

*No Action:* Potential direct, indirect, and cumulative adverse impact to the agricultural community serviced by the LID if the canal is shut down early due to its inability to divert adequate water to the pump house during low water conditions.

---

### **23. CULTURAL UNIQUENESS AND DIVERSITY:**

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

No cultural uniqueness and diversity have been identified. The area surrounding the project is primarily industrial and commercial with land managed by the BLM bordering to the east.

*Proposed Alternative:* No impact to any unique quality of the project area or nearby communities is expected. The project is repairing an existing man-made structure to pre-2022 flood condition. The postconstruction project area is expected to be the same as pre-2022 flood conditions.

*No Action:* No impact to cultural uniqueness and diversity.

---

### **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 primary income drivers for Yellowstone County are crop and livestock production. Per the 2017 Census of Agriculture for Yellowstone County, 1,314 farms are present which encompass 1,602,794 acres of farmland. Of which, 19% is cropland and 641 farms (76,822 acres) are irrigated farmland. The total market value of agricultural products sold was \$135,287,000 of which \$43,078,000 was crops. The per farm average market value of products sold was \$102,958.

The 2,100 acres of land irrigated by the LID, of which 240 is irrigated agricultural land, contributes to the overall economics associated with agriculture in Yellowstone County. If the LID irrigation system has be shut down early due to the inability of the intake canal to divert sufficient water during periods of low water, users of the LID may experience a loss of 10-20% of production value which affects the overall economics associated with agriculture and crop production in Yellowstone County.

The future uses of land serviced by the LID are likely to remain the same as its current uses.

*Proposed Alternative:* Direct, indirect, and cumulative beneficial impact for users of the LID and associated agricultural related businesses. The project will allow the intake canal to divert water

during low water without losses through current washout areas and function as designed. This will result in irrigation water being available during periods of low water to support late season crop production which may result in increased economic revenues.

*No Action:* Potential direct, indirect, and cumulative adverse impacts to the agricultural community serviced by the LID if the canal is shut-down early due to its inability to divert adequate water to the pump house during low water conditions. The reduction in late season crops would have a direct negative economic impacts to users of the LID which would contribute to indirect and cumulative negative impacts to Yellowstone County's overall agricultural economics.

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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.*

No water and/or sewer infrastructure has been identified in the project area.

*Proposed Alternative:* No impact is expected to water and/or sewer infrastructure since none are present in the project area. However, the project may improve surface water quality in the Yellowstone River by reducing sediment loading from embankment washout areas, which would be a direct, long-term, cumulative beneficial impact to clean water.

*No Action:* No direct, indirect, or cumulative effects or impacts are expected to drinking water and/or clean water since no drinking water and/or sewer infrastructure is located within the project area. Surface water quality may continue to be adversely impacted by increased sediment load to the river from the erosion of embankment washout areas.

---

## **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.*

In 2021, the median household income in Yellowstone County was \$69,182 which is a 20.6% increase from 2016 to 2021. In 2021, people in poverty was 11.3% which is a 2.5% increase from 2016 to 2021(Montana Department of Commerce).

*Proposed Alternative:* No impact is expected as the project will not result in disproportionately high or adverse human health or environmental effects on minority or low-income populations. Project direct, indirect, and cumulative effects are expected to affect users of the LID proportionality. No disproportionate effects among any portion of the community or users of the irrigation system are expected.

*No Action:* No impact to environmental justice.

<b>EA Prepared By:</b>	<b>Name:</b> Samantha Treu	<b>Date:</b> 08/01/2023
	<b>Title:</b> MEPA/NEPA Coordinator	<b>Email:</b> samantha.treu@mt.gov

## V. FINDING

### 27. ALTERNATIVE SELECTED:

No known alternatives were considered. This project proposes to repair the canal, embankment, and access road to pre-2002 flood conditions as shown on the 2014, post-2011 flood repair as-built drawings. Postconstruction site conditions will be the same as pre-2022 flood site conditions.

### 28. SIGNIFICANCE OF POTENTIAL IMPACTS:

#### *Geology and Soil Quality, Stability, and Moisture*

Temporary, short-term, direct adverse impacts to soil stability may occur since the canal, embankment, and work areas are located adjacent to the Yellowstone River. Completion of work during low water and drier seasons, diversion of stormwater away from construction areas, installation of Best Management Practices (BMPs), and minimizing disturbed areas to the extent practicable are planned to reduce impacts to existing soils and embankment materials.

#### *Water Quality, Quantity, and Distribution*

Potential direct adverse impact to water quality during construction of the project. Construction activities have the potential to cause temporary violations of surface water quality standards for turbidity. These impacts are temporary, short-term and will not have long-term adverse impacts on water quality. In addition to any potential maintenance permit requirements, BMPs are expected to be installed during construction to reduce erosion and the potential for release of sediments to surface water. Long-term, water quality will have a direct, indirect, and cumulative beneficial impacts due to decreased erosion of embankment materials into the Yellowstone River. Filling in holes and washout locations along the embankments will create a stable structure and reduce erosion of materials into the river.

#### *Air Quality*

Temporary, short-term, direct adverse impacts to air quality (i.e., dust) may occur during construction due to ground disturbance caused by construction activities. Any air quality impacts are expected to affect the immediate area surrounding the construction site. Recreationists utilizing the Yellowstone River (ex: anglers and boaters) would be directly impacted by any dust generated by the project; however, the impact would be short-term as they pass by the project site. Common construction dust suppression measures such as water application are expected during construction. No long-term adverse impacts to air quality are expected. Project activities are not expected to effect non-attainment/maintenance areas. If any open burning was planned, Yellowstone County would need to be contacted prior to any burning.

#### *Vegetation Cover, Quantity, and Quality*

Minor direct adverse impact to vegetation along the existing embankment and within the immediate vicinity of the pumphouse. Vegetation within these areas will be disturbed due to the nature of construction activities and associated disturbances. Existing vegetation on the embankment may be destroyed by reconstruction of the access road from the pump station up the intake canal. Where possible, riparian areas are planned to be revegetated to recreate wildlife habitat along the river. Since rock riprap will be imported from an offsite source, there is potential for importation of weeds and weed growth due to ground disturbances. It is recommended that all equipment and work vehicles be cleaned and power washed prior to accessing work areas to reduce the spread of weeds. It is also recommended that all sources of imported materials be inspected for the presence of weeds prior to importation of these materials to the work area.

Long-term adverse impacts to vegetation cover, quantity, and quality are not expected since the project is repairing and reconstruction an existing canal embankment. Natural reestablishment of prior vegetative communities is expected since the postconstruction environment will be similar to preconstruction conditions.

### **Aesthetics**

Potential temporary, short-term adverse impacts to aesthetics for users of the Yellowstone River, Coulson Park, nearby industrial properties, and users of the BLM easement land along the eastern bank during construction of the project. River recreationists and other area users may see construction equipment, dust, and hear noise associated with general construction activities during the duration of the project. Dust suppression activities associated with general construction activities is expected. Construction of the project is expected to occur during daylight hours, so there are no light impacts expected.

### **Human Health and Safety**

Direct adverse impacts on safety associated with the operation of heavy construction equipment and work on construction sites. It is expected that any construction contractor would develop a health and safety plan that identifies risks associated with the project and mitigation measures prior to starting construction. No human health risks have been identified.

### **Access to and Quality of Recreational and Wilderness Activities**

Potential minor, temporary, and short-term adverse impact to the quality of river recreational activities. River recreationists may see construction equipment, dust, and hear noise associated with general construction activities while floating by the project site which may affect their "river experience" along the short stretch of river affected by the project. The project is estimated to take 6 months, so there are no long-term adverse impact to the quality of recreation along the river.

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## **29. NEED FOR FURTHER ENVIRONMENTAL ANALYSIS:**

This is the final environmental review.

EIS

More Detailed EA

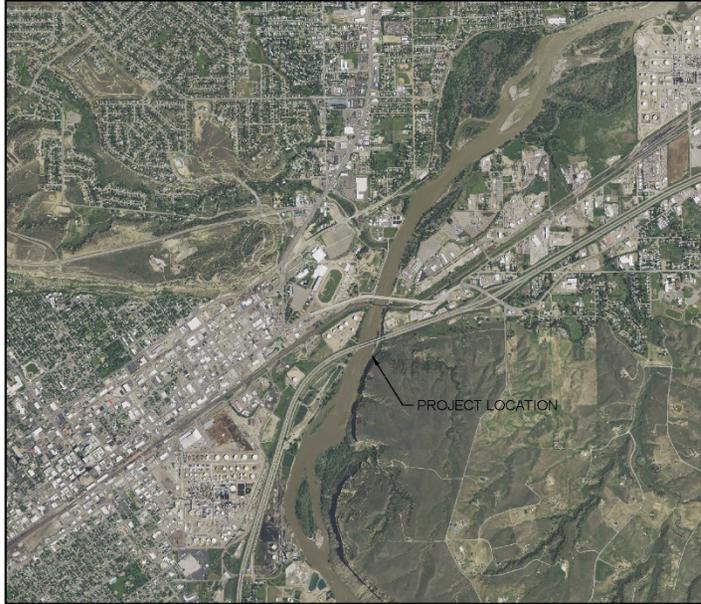
No Further Analysis

<b>EA Approved By:</b>	<b>Name:</b> Mark W Bostrom <b>Title:</b> Division Administrator
<b>Signature:</b>	<i>Mark W Bostrom</i> <b>Date:</b> 9/12/2023   3:11:04 PM MDT

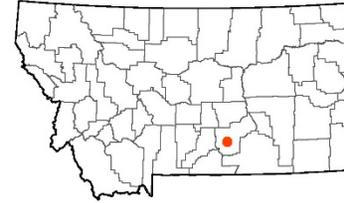
# Project Location Within Montana

## AS-BUILT DRAWINGS FOR THE LOCKWOOD IRRIGATION DISTRICT INTAKE CHANNEL LOCATED IN YELLOWSTONE COUNTY, MONTANA

May 2014



PROJECT AREA MAP  
SCALE: 1" = 3,000'



PROJECT LOCATION MAP  
NOT TO SCALE

PREPARED BY  
**PERFORMANCE**  
ENGINEERING & CONSULTING

2101 OVERLAND AVE. • BILLINGS, MT 59102 • (406) 461-8392



AS-BUILT DRAWING NOTE:  
THESE AS-BUILT DRAWINGS HAVE BEEN PREPARED, IN PART, USING INFORMATION PROVIDED BY OTHERS. THE ENGINEER HAS NOT VERIFIED THE ACCURACY AND/OR COMPLETENESS OF THIS INFORMATION IN ALL INSTANCES, AND SHALL NOT BE RESPONSIBLE FOR ANY ERRORS OR OMISSIONS THAT MAY BE INCORPORATED AS A RESULT OF INFORMATION PROVIDED BY OTHERS.

CLIENT	LOCKWOOD IRRIGATION DISTRICT P.O. BOX 3292 BILLINGS, MT 59103 (406) 671-4633
	PROJECT TITLE
PROJECT TITLE	LID INTAKE CHANNEL AS-BUILTS
	SHEET TITLE
SHEET TITLE	TITLE SHEET
SHEET	T-1

C:\Users\scott\Documents\Projects\Lockwood\As-Built\Lockwood\_LID\_Intake\_Channel\AS-BUILT\Lockwood\_LID\_Intake\_Channel\_SHEET\_T-1.dwg  
 5/14/14 10:12 AM  
 PLOT: 27/14/14.DWG.PLOT

### Site Features and Proposed Work Areas



PROJECT: 14-00001-R  
 DATE: 10/20/14  
 DRAWN BY: J. B. BROWN  
 CHECKED BY: J. B. BROWN  
 SCALE: AS SHOWN  
 SHEET: P-1

CLIENT	LOCKWOOD IRRIGATION DISTRICT P.O. BOX 3282 BILLINGS, MT 59103 (406) 671-4833
PROJECT TITLE	LID INTAKE CHANNEL AS-BUILTS
SHEET TITLE	PROJECT SITE MAP PLAN
SHEET	P-1



# MONTANA STATE LIBRARY

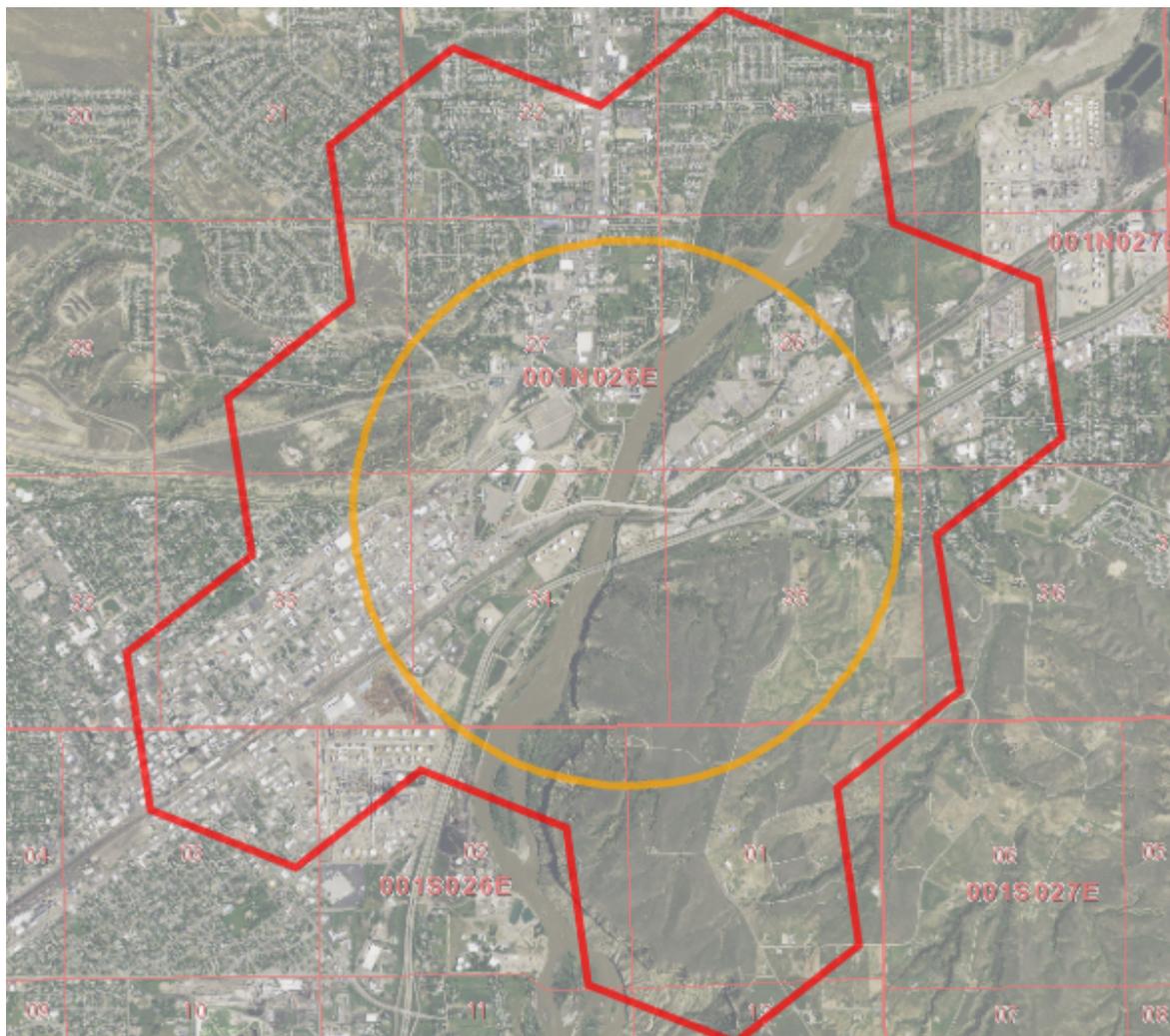
NATURAL HERITAGE PROGRAM [mtnhp.org](http://mtnhp.org)

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



Latitude Longitude  
45.76622 -108.43298  
45.82447 -108.51013

Summarized by:  
**24PRVT0020**  
*(Custom Area of Interest)*



### Suggested Citation

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for Latitude 45.76622 to 45.82447 and Longitude -108.43298 to -108.51013. Retrieved on 7/21/2023.

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



# Environmental Summary

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## Introduction to Environmental Summary Report

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

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

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



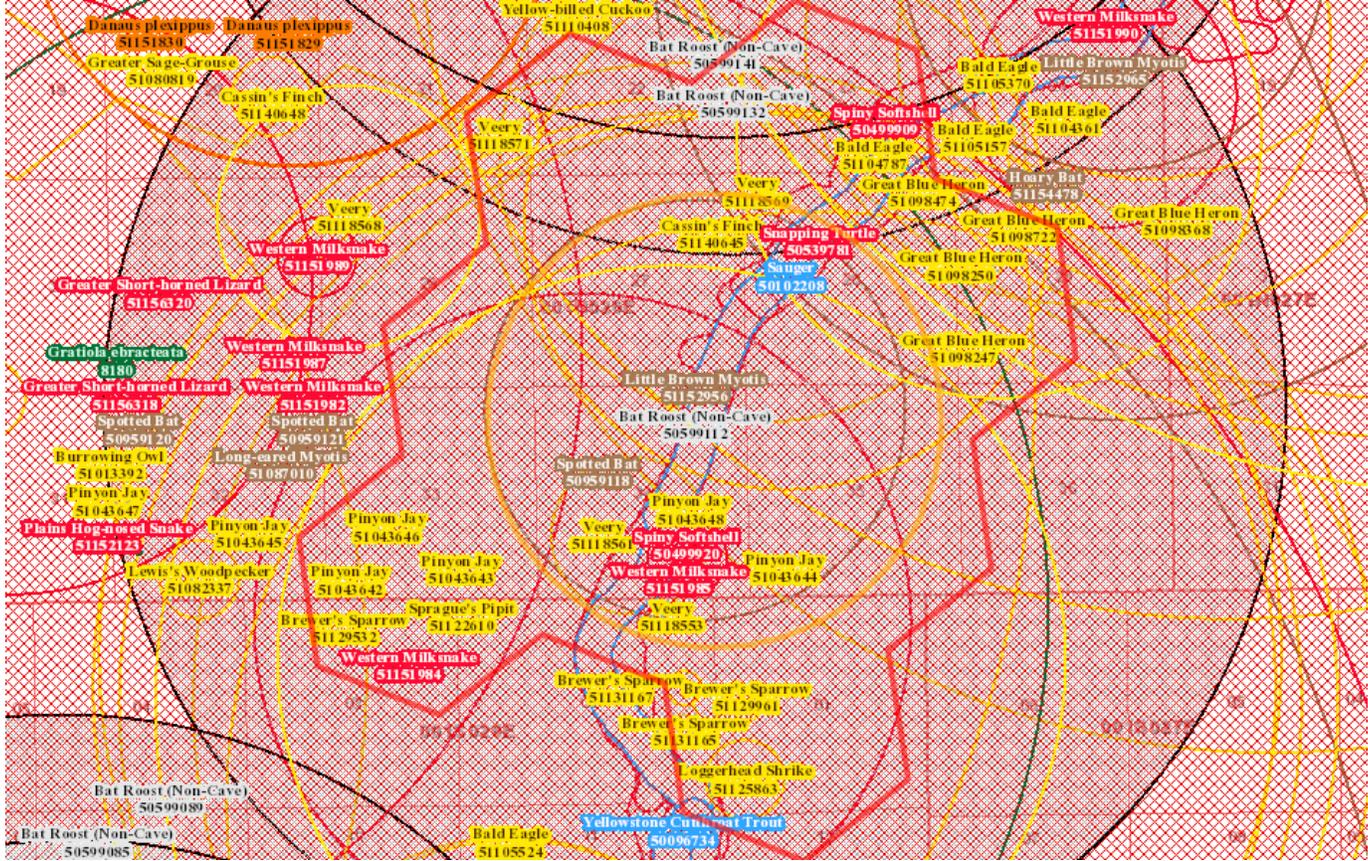
Latitude 45.76622  
Longitude -108.43298  
45.82447 -108.51013

## Native Species

Summarized by: **24PRVT0020** (*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
<b>F - Sauger</b> ( <i>Sander canadensis</i> ) <b>SOC</b>	1	+		
<a href="#">View in Field Guide</a> <a href="#">View Predicted Models</a> <a href="#">View Range Maps</a> <b>Species of Concern - Native Species</b> Global: <b>G5</b> State: <b>S2</b> BLM: <b>SENSITIVE</b> FWP SWAP: <b>SGCN2</b> <b>Delineation Criteria</b> 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) <b>Predicted Models:</b> 44% Suitable (native range) (deductive)				
<b>F - Yellowstone Cutthroat Trout</b> ( <i>Oncorhynchus clarkii bouvieri</i> ) <b>SOC</b>	1	+		
<a href="#">View in Field Guide</a> <a href="#">View Predicted Models</a> <a href="#">View Range Maps</a> <b>Species of Concern - Native/Non-native Species - (depends on location or taxa)</b> Global: <b>G5T4</b> State: <b>S2</b> BLM: <b>SENSITIVE</b> FWP SWAP: <b>SGCN2</b> <b>Delineation Criteria</b> Stream reaches and standing water bodies where the species presence has been confirmed through direct capture or where they are believed to be present based on the professional judgement of a fisheries biologist due to confirmed presence in adjacent areas. In order to reflect the importance of adjacent terrestrial habitats to survival, stream reaches are buffered 100 meters, standing water bodies greater than 1 acre are buffered 50 meters, and standing water bodies less than 1 acre are buffered 30 meters into the terrestrial habitat based on PACFISH/INFISH Riparian Conservation Area standards. (Last Updated: Jul 25, 2022) <b>Predicted Models:</b> 11% Suitable (native range) (deductive)				
<b>R - Western Milksnake</b> ( <i>Lampropeltis gentilis</i> ) <b>SOC</b>	4	1+		
<a href="#">View in Field Guide</a> <a href="#">View Predicted Models</a> <a href="#">View Range Maps</a> <b>Species of Concern - Native Species</b> Global: <b>G5</b> State: <b>S2</b> BLM: <b>SENSITIVE</b> FWP SWAP: <b>SGCN2</b> <b>Delineation Criteria</b> Confirmed breeding area based on the presence of a resident animal of any age. Point observation location is buffered by a minimum distance of 300 meters in order to encompass the maximum summer 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: Jul 06, 2023) <b>Predicted Models:</b> 100% Optimal (inductive)				

<b>M - Spotted Bat</b> ( <i>Euderma maculatum</i> ) <b>SOC</b>	3	1+			
<b>Species of Concern - Native Species</b> Global: <b>G4</b> State: <b>S3</b> USFS: <b>Sensitive - Known in Forests (BD)</b> BLM: <b>SENSITIVE</b> FWP SWAP: <b>SGCN3, SGIN</b>					
<b>Delineation Criteria</b> Confirmed area of occupancy based on the documented presence (mistnet captures, definitively identified acoustic recordings, and definitively identified roosting individuals) of adults or juveniles. Point observation location is buffered by a distance of 10,000 meters in order to encompass the reported maximum foraging distance for the species in British Columbia. If the locational uncertainty associated with the observation is greater than 10,000 meters, the observation is not valid for creation of a species occurrence. (Last Updated: Dec 22, 2022)					
<b>Predicted Models:</b> 56% Optimal (inductive),  33% Moderate (inductive),  11% Low (inductive)					
<b>R - Plains Hog-nosed Snake</b> ( <i>Heterodon nasicus</i> ) <b>SOC</b>	1				
<b>View in Field Guide</b> <b>View Predicted Models</b> <b>View Range Maps</b>					
<b>Species of Concern - Native Species</b> Global: <b>G5</b> State: <b>S2</b> BLM: <b>SENSITIVE</b> FWP SWAP: <b>SGCN2, SGIN</b>					
<b>Delineation Criteria</b> Confirmed breeding area based on the presence of a resident animal of any age. Point observation location is buffered by a minimum distance of 500 meters in order to encompass the maximum summer home range size reported for the congeneric Eastern Hog-nosed Snake and otherwise is buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. (Last Updated: Jul 06, 2023)					
<b>Predicted Models:</b> 56% Optimal (inductive),  22% Moderate (inductive),  22% Low (inductive)					
<b>R - Snapping Turtle</b> ( <i>Chelydra serpentina</i> ) <b>SOC</b>	1				
<b>View in Field Guide</b> <b>View Predicted Models</b> <b>View Range Maps</b>					
<b>Species of Concern - Native/Non-native Species - (depends on location or taxa)</b> Global: <b>G5</b> State: <b>S3</b> BLM: <b>SENSITIVE</b> FWP SWAP: <b>SGCN3, SGIN</b>					
<b>Delineation Criteria</b> 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: Jul 05, 2023)					
<b>Predicted Models:</b> 33% Optimal (inductive),  33% Moderate (inductive),  22% Low (inductive)					
<b>B - Bald Eagle</b> ( <i>Haliaeetus leucocephalus</i> ) <b>SSS</b>	3	46			
<b>View in Field Guide</b> <b>View Predicted Models</b> <b>View Range Maps</b>					
<b>Special Status Species - Native Species</b> Global: <b>G5</b> State: <b>S4</b> USFWS: <b>BGEPA; MBTA</b> USFS: <b>Sensitive - Known in Forests (BD, BRT, KOOT, LOLO)</b> BLM: <b>SENSITIVE</b> PIF: <b>2</b>					
<b>Delineation Criteria</b> Confirmed nesting area buffered by a minimum distance of 2,000 meters in order to be conservative about encompassing the breeding territory and area commonly used for re-nesting. Only nesting observations with a locational uncertainty of 1,000 meters or less will be used to delineate a nesting area. (Last Updated: Jun 28, 2023)					
<b>Predicted Models:</b> 11% Optimal (inductive),  44% Moderate (inductive),  44% Low (inductive)					
<b>B - Great Blue Heron</b> ( <i>Ardea herodias</i> ) <b>SOC</b>	5	44			
<b>View in Field Guide</b> <b>View Predicted Models</b> <b>View Range Maps</b>					
<b>Species of Concern - Native Species</b> Global: <b>G5</b> State: <b>S3</b> USFWS: <b>MBTA</b> FWP SWAP: <b>SGCN3</b>					
<b>Delineation Criteria</b> 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: Jun 27, 2023)					
<b>Predicted Models:</b> 11% Optimal (inductive),  44% Moderate (inductive),  22% Low (inductive)					
<b>B - Veery</b> ( <i>Catharus fuscescens</i> ) <b>SOC</b>	5	4+			
<b>View in Field Guide</b> <b>View Predicted Models</b> <b>View Range Maps</b>					
<b>Species of Concern - Native Species</b> Global: <b>G5</b> State: <b>S3B</b> USFWS: <b>MBTA</b> BLM: <b>SENSITIVE</b> FWP SWAP: <b>SGCN3</b> PIF: <b>2</b>					
<b>Delineation Criteria</b> 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: Jun 29, 2023)					
<b>Predicted Models:</b> 11% Optimal (inductive),  33% Moderate (inductive),  56% Low (inductive)					
<b>M - Little Brown Myotis</b> ( <i>Myotis lucifugus</i> ) <b>SOC</b>	1	2			
<b>View in Field Guide</b> <b>View Predicted Models</b> <b>View Range Maps</b>					
<b>Species of Concern - Native Species</b> Global: <b>G3G4</b> State: <b>S3</b> FWP SWAP: <b>SGCN3</b>					
<b>Delineation Criteria</b> Confirmed area of occupancy based on the documented presence (mistnet captures, definitively identified acoustic recordings, or definitively identified roosting individuals) of adults or juveniles. Point observation location is buffered by a distance of 1,600 meters in order to encompass the greater than 1,500 meters foraging distance reported for the species in New Brunswick, Canada and otherwise buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. When cave locations are involved, point observations are mapped in the center of a one-square mile hexagon to protect the exact location of the cave entrance as per the Federal Cave Resource Protection Act and associated regulations (U.S. Code Title 16 Chapter 63, Code of Federal Regulations Title 43 Subtitle A Part 37). The outer edges of the hexagon are then buffered by a distance of 1,600 meters and otherwise by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. All of the one-square mile hexagons intersecting this buffered area are presented as the Species Occurrence record. (Last Updated: Jul 06, 2023)					
<b>Predicted Models:</b> 33% Moderate (inductive),  56% Low (inductive)					
<b>M - Hoary Bat</b> ( <i>Lasiurus cinereus</i> ) <b>SOC</b>	1				
<b>View in Field Guide</b> <b>View Predicted Models</b> <b>View Range Maps</b>					
<b>Species of Concern - Native Species</b> Global: <b>G3G4</b> State: <b>S3B</b> BLM: <b>SENSITIVE</b> FWP SWAP: <b>SGCN3</b>					
<b>Delineation Criteria</b> 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 <i>Lasiurus borealis</i> and otherwise buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. (Last Updated: Jul 06, 2023)					
<b>Predicted Models:</b> 33% Moderate (inductive),  56% Low (inductive)					
<b>R - Spiny Softshell</b> ( <i>Apalone spinifera</i> ) <b>SOC</b>	2	1			
<b>View in Field Guide</b> <b>View Predicted Models</b> <b>View Range Maps</b>					
<b>Species of Concern - Native Species</b> Global: <b>G5</b> State: <b>S3</b> BLM: <b>SENSITIVE</b> FWP SWAP: <b>SGCN3</b>					
<b>Delineation Criteria</b> 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: Jul 06, 2023)					
<b>Predicted Models:</b> 33% Moderate (inductive),  44% Low (inductive)					
<b>R - Greater Short-horned Lizard</b> ( <i>Phrynosoma hernandesii</i> ) <b>SOC</b>	1	+			
<b>View in Field Guide</b> <b>View Predicted Models</b> <b>View Range Maps</b>					
<b>Species of Concern - Native Species</b> Global: <b>G5</b> State: <b>S3</b> BLM: <b>SENSITIVE</b> FWP SWAP: <b>SGCN3, SGIN</b>					
<b>Delineation Criteria</b> 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 between 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: Jul 06, 2023)					
<b>Predicted Models:</b> 33% Moderate (inductive),  33% Low (inductive)					

**M - Long-eared Myotis** (*Myotis evotis*) **SOC** 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:** 11% Moderate (inductive), 56% Low (inductive)

**B - Pinyon Jay** (*Gymnorhinus cyanocephalus*) **SOC** Global: **G3** State: **S3** USFWS: **MBTA; BCC10; BCC17** FWP SWAP: **SGCN3**

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

**Species of Concern - Native Species** Global: **G3** State: **S3** USFWS: **MBTA; BCC10; BCC17** FWP SWAP: **SGCN3**

**Delineation Criteria** Observations with evidence of breeding activity buffered by a minimum distance of 4,500 meters in order to be conservative about encompassing the home ranges reported for flocks and otherwise buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. (Last Updated: Jan 04, 2023)

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

**B - Cassin's Finch** (*Haemorhous cassinii*) **SOC** Global: **G5** State: **S3** USFWS: **MBTA; BCC10** FWP SWAP: **SGCN3** PIF: **3**

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

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

**Delineation Criteria** Observations with evidence of breeding activity buffered by a minimum distance of 300 meters in order to be conservative about encompassing the courtship and foraging distance from nesting areas and otherwise buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. (Last Updated: Jun 30, 2023)

**Predicted Models:** 89% Low (inductive)

**B - Loggerhead Shrike** (*Lanius ludovicianus*) **SOC** Global: **G4** State: **S3B** USFWS: **MBTA** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **2**

**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**

**Delineation Criteria** Confirmed breeding area based on the presence of a nest, chicks, or territorial adults during the breeding season. Point observation location is buffered by a minimum distance of 300 meters in order to encompass the maximum breeding territory size reported for the species in Alberta and Idaho and otherwise is buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. (Last Updated: Jun 29, 2023)

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

**B - Burrowing Owl** (*Athene cucularia*) **SOC** Global: **G4** State: **S3B** USFWS: **MBTA; BCC17** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **1**

**View in Field Guide** **View Range Maps**

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

**B - Sprague's Pipit** (*Anthus spragueii*) **SOC** Global: **G3G4** State: **S3B** USFWS: **MBTA; BCC11; BCC17** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **1**

**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**

**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 115 meters in order to encompass the maximum breeding territory sizes reported for the species in Montana and otherwise is buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. (Last Updated: Jun 29, 2023)

**O - Bat Roost (Non-Cave)** (*Bat Roost (Non-Cave)*) **IAH** Global: **GNR** State: **SNR**

**View in Field Guide**

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

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



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



Latitude 45.76622  
Longitude -108.43298  
45.82447 -108.51013

## Native Species

Summarized by: **24PRVT0020** (*Custom Area of Interest*)

Filtered by:

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

## Other Observed Species

Species	USFWS Sec7	# Obs	Predicted Model	Range
<b>F - Burbot</b> ( <i>Lota lota</i> ) <b>PSOC</b>		+		
<a href="#">View in Field Guide</a> <a href="#">View Predicted Models</a> <a href="#">View Range Maps</a> Potential Species of Concern - Native Species Global: <b>G5</b> State: <b>S4</b> Predicted Models:  44% Suitable (native range) (deductive)				
<b>B - Yellow-billed Cuckoo</b> ( <i>Coccyzus americanus</i> ) <b>SOC</b>		+		
<a href="#">View in Field Guide</a> <a href="#">View Predicted Models</a> <a href="#">View Range Maps</a> Species of Concern - Native Species Global: <b>G5</b> State: <b>S3B</b> USFWS: <b>PS: LT; MBTA</b> BLM: <b>THREATENED</b> FWP SWAP: <b>SGCN3, SGIN</b> PIF: <b>2</b> Predicted Models:  78% Optimal (inductive),  22% Moderate (inductive)				
<b>B - Eastern Screech-Owl</b> ( <i>Megascops asio</i> ) <b>PSOC</b>		6+		
<a href="#">View in Field Guide</a> <a href="#">View Predicted Models</a> <a href="#">View Range Maps</a> Potential Species of Concern - Native Species Global: <b>G5</b> State: <b>S3S4</b> USFWS: <b>MBTA</b> PIF: <b>3</b> Predicted Models:  78% Optimal (inductive),  11% Moderate (inductive),  11% Low (inductive)				
<b>B - Broad-tailed Hummingbird</b> ( <i>Selasphorus platycercus</i> ) <b>PSOC</b>		1		
<a href="#">View in Field Guide</a> <a href="#">View Predicted Models</a> <a href="#">View Range Maps</a> Potential Species of Concern - Native Species Global: <b>G5</b> State: <b>S4B</b> USFWS: <b>MBTA; BCC10</b> FWP SWAP: <b>SGIN</b> Predicted Models:  67% Optimal (inductive),  33% Moderate (inductive)				
<b>B - Chimney Swift</b> ( <i>Chaetura pelagica</i> ) <b>PSOC</b>		15		
<a href="#">View in Field Guide</a> <a href="#">View Predicted Models</a> <a href="#">View Range Maps</a> Potential Species of Concern - Native Species Global: <b>G4G5</b> State: <b>S3S4B</b> USFWS: <b>MBTA; BCC11</b> FWP SWAP: <b>SGIN</b> PIF: <b>3</b> Predicted Models:  56% Optimal (inductive),  22% Moderate (inductive),  22% Low (inductive)				
<b>B - American White Pelican</b> ( <i>Pelecanus erythrorhynchos</i> ) <b>SOC</b>		16+		
<a href="#">View in Field Guide</a> <a href="#">View Predicted Models</a> <a href="#">View Range Maps</a> Species of Concern - Native Species Global: <b>G4</b> State: <b>S3B</b> USFWS: <b>MBTA</b> FWP SWAP: <b>SGCN3</b> PIF: <b>3</b> Predicted Models:  11% Optimal (inductive),  67% Moderate (inductive),  22% Low (inductive)				
<b>B - Plumbeous Vireo</b> ( <i>Vireo plumbeus</i> ) <b>PSOC</b>		3		
<a href="#">View in Field Guide</a> <a href="#">View Predicted Models</a> <a href="#">View Range Maps</a> Potential Species of Concern - Native Species Global: <b>G5</b> State: <b>S3S4B</b> USFWS: <b>MBTA</b> PIF: <b>3</b> Predicted Models:  78% Moderate (inductive),  22% Low (inductive)				
<b>M - North American Porcupine</b> ( <i>Erethizon dorsatum</i> ) <b>PSOC</b>		1		
<a href="#">View in Field Guide</a> <a href="#">View Predicted Models</a> <a href="#">View Range Maps</a> Potential Species of Concern - Native Species Global: <b>G5</b> State: <b>S3S4</b> FWP SWAP: <b>SGIN</b> Predicted Models:  67% Moderate (inductive),  33% Low (inductive)				
<b>B - Common Poorwill</b> ( <i>Phalaenoptilus nuttallii</i> ) <b>PSOC</b>		1		
<a href="#">View in Field Guide</a> <a href="#">View Predicted Models</a> <a href="#">View Range Maps</a> Potential Species of Concern - Native Species Global: <b>G5</b> State: <b>S4B</b> USFWS: <b>MBTA</b> FWP SWAP: <b>SGIN</b> PIF: <b>3</b> Predicted Models:  56% Moderate (inductive),  44% Low (inductive)				
<b>B - Rufous Hummingbird</b> ( <i>Selasphorus rufus</i> ) <b>PSOC</b>		2		
<a href="#">View in Field Guide</a> <a href="#">View Predicted Models</a> <a href="#">View Range Maps</a> Potential Species of Concern - Native Species Global: <b>G4</b> State: <b>S4B</b> USFWS: <b>MBTA; BCC10</b> PIF: <b>3</b> Predicted Models:  56% Moderate (inductive),  44% Low (inductive)				
<b>B - Ovenbird</b> ( <i>Seiurus aurocapilla</i> ) <b>PSOC</b>		19+		
<a href="#">View in Field Guide</a> <a href="#">View Predicted Models</a> <a href="#">View Range Maps</a> Potential Species of Concern - Native Species Global: <b>G5</b> State: <b>S4B</b> USFWS: <b>MBTA</b> PIF: <b>3</b> Predicted Models:  33% Moderate (inductive),  67% Low (inductive)				
<b>B - Evening Grosbeak</b> ( <i>Coccothraustes vespertinus</i> ) <b>SOC</b>		1+		
<a href="#">View in Field Guide</a> <a href="#">View Predicted Models</a> <a href="#">View Range Maps</a> Species of Concern - Native Species Global: <b>G5</b> State: <b>S3</b> USFWS: <b>MBTA; BCC10</b> FWP SWAP: <b>SGCN3</b> Predicted Models:  33% Moderate (inductive),  56% Low (inductive)				
<b>M - Black-tailed Prairie Dog</b> ( <i>Cynomys ludovicianus</i> ) <b>SOC</b>		+		
<a href="#">View in Field Guide</a> <a href="#">View Predicted Models</a> <a href="#">View Range Maps</a> Species of Concern - Native Species Global: <b>G4</b> State: <b>S3</b> BLM: <b>SENSITIVE</b> FWP SWAP: <b>SGCN3</b> Predicted Models:  11% Moderate (inductive),  78% Low (inductive)				

USFS: Sensitive - Known in Forests (KOOT)  
Global: G5 State: S1,S4 Sensitive - Suspected in Forests (BRT, LOLO) BLM: SENSITIVE FWP SWAP: SGCN1  
Predicted Models: M 11% Moderate (inductive), L 67% Low (inductive)

B - Sharp-tailed Grouse (*Tympanuchus phasianellus*) SOC 3+ [Progress Bar] [Y]

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: L 100% Low (inductive)

B - Black-and-white Warbler (*Mniotilta varia*) PSOC + [Progress Bar] [S] [M]

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 89% Low (inductive)

M - Silver-haired Bat (*Lasionycteris noctivagans*) PSOC 1 [Progress Bar] [Y]

View in Field Guide View Predicted Models View Range Maps  
Potential Species of Concern - Native Species Global: G3G4 State: S4  
Predicted Models: L 67% Low (inductive)

A - Great Plains Toad (*Anaxyrus cognatus*) SOC + [Progress Bar] [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  
Predicted Models: L 33% Low (inductive)

B - Golden Eagle (*Aquila chrysaetos*) SOC 1+ [Progress Bar] [Y]

View in Field Guide View Predicted Models View Range Maps  
Species of Concern - Native Species Global: G5 State: S3 USFWS: BGEPA; MBTA BLM: SENSITIVE FWP SWAP: SGCN3  
Predicted Models: L 22% Low (inductive)

F - Brook Stickleback (*Culaea inconstans*) PSOC 4+ [Progress Bar] [N]

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: R 44% Suitable (introduced range) (deductive)

B - Brown Creeper (*Certhia americana*) SOC 10 Not Assessed [Y]

View in Field Guide View Range Maps  
Species of Concern - Native Species Global: G5 State: S3 USFWS: MBTA FWP SWAP: SGCN3 PIF: 1

B - Clark's Nutcracker (*Nucifraga columbiana*) SOC 1 Not Assessed [Y]

View in Field Guide View Range Maps  
Species of Concern - Native Species Global: G5 State: S3 USFWS: MBTA USFS: Species of Conservation Concern in Forests (FLAT) FWP SWAP: SGCN3 PIF: 3

B - Northern Goshawk (*Accipiter gentilis*) SOC 2 Not Assessed [Y] [W] [M]

View in Field Guide View Range Maps  
Species of Concern - Native Species Global: G5 State: S3 USFWS: MBTA FWP SWAP: SGCN3 PIF: 2

B - Bobolink (*Dolichonyx oryzivorus*) SOC 1 Not Assessed [S] [M]

View in Field Guide View Range Maps  
Species of Concern - Native Species Global: G5 State: S3B USFWS: MBTA; BCC10; BCC11; BCC17 FWP SWAP: SGCN3 PIF: 3

B - Franklin's Gull (*Leucophaeus pipixcan*) SOC 1 Not Assessed [S] [M]

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 - Thick-billed Longspur (*Rhynchophanes mccownii*) SOC 1 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

B - Northern Hawk Owl (*Surnia ulula*) SOC + 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, SGIN

B - Caspian Tern (*Hydroprogne caspia*) SOC 3 Not Assessed [M]

View in Field Guide View Range Maps  
Species of Concern - Native Species Global: G5 State: S2B USFWS: MBTA BLM: SENSITIVE FWP SWAP: SGCN2 PIF: 2

B - Common Loon (*Gavia immer*) SOC 2 Not Assessed [M]

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

B - Hooded Merganser (*Lophodytes cucullatus*) PSOC 11 Not Assessed [M]

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 - Tennessee Warbler (*Leiothlypis peregrina*) PSOC + Not Assessed [M]

View in Field Guide View Range Maps  
Potential Species of Concern - Native Species Global: G5 State: S3S4B USFWS: MBTA

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

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

<input type="checkbox"/> <b>M - Canada Lynx</b> ( <i>Lynx canadensis</i> ) <b>SOC</b>		+ Not Assessed
DocuSign Envelope ID: 8B53AC7C-49FD-415B-B907-AB9E3A63A7F7		
<a href="#">Species of Concern - Native Species</a> Global: <b>G5</b> State: <b>S3</b> USFWS: <b>LT; CH</b> BLM: <b>THREATENED</b> FWP SWAP: <b>SGCN3</b>		
<input type="checkbox"/> <b>B - Great Gray Owl</b> ( <i>Strix nebulosa</i> ) <b>SOC</b>		+ Not Assessed
<a href="#">View in Field Guide</a> <a href="#">Species of Concern - Native Species</a> Global: <b>G5</b> State: <b>S3</b> USFWS: <b>MBTA</b> BLM: <b>SENSITIVE</b> FWP SWAP: <b>SGCN3, SGIN</b> PIF: <b>3</b>		
<input type="checkbox"/> <b>B - LeConte's Sparrow</b> ( <i>Ammodramus leconteii</i> ) <b>SOC</b>		1 Not Assessed
<a href="#">View in Field Guide</a> <a href="#">Species of Concern - Native Species</a> Global: <b>G5</b> State: <b>S3B</b> USFWS: <b>MBTA; BCC11</b> FWP SWAP: <b>SGCN3</b> PIF: <b>3</b>		
<input type="checkbox"/> <b>F - Arctic Grayling</b> ( <i>Thymallus arcticus</i> ) <b>SOC</b>		+ Not Assessed
<a href="#">View in Field Guide</a> <a href="#">Species of Concern - Native/Non-native Species - (depends on location or taxa)</a> Global: <b>G5</b> State: <b>S1</b> USFS: <b>Sensitive - Known in Forests (BD)</b> BLM: <b>SENSITIVE</b> FWP SWAP: <b>SGCN1</b>		



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Natural Resource Information System

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



Latitude 45.76622  
Longitude -108.43298  
45.82447 -108.51013

## Native Species

Summarized by: **24PRVT0020** (*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
<p><b>I - Danaus plexippus</b> (<i>Monarch</i>) <b>SOC</b></p> <p><a href="#">View in Field Guide</a> <a href="#">View Predicted Models</a> <a href="#">View Range Maps</a></p> <p><b>Species of Concern - Native Species</b> Global: <b>G4</b> State: <b>S2S3</b> USFWS: <b>C</b></p> <p><b>Predicted Models:</b>  67% Optimal (inductive),  33% Moderate (inductive)</p>			
<p><b>M - Western Spotted Skunk</b> (<i>Spilogale gracilis</i>) <b>PSOC</b></p> <p><a href="#">View in Field Guide</a> <a href="#">View Predicted Models</a> <a href="#">View Range Maps</a></p> <p><b>Potential Species of Concern - Native Species</b> Global: <b>G5</b> State: <b>SU</b> FWP SWAP: <b>SGIN</b></p> <p><b>Predicted Models:</b>  22% Optimal (inductive),  78% Moderate (inductive)</p>			
<p><b>M - Merriam's Shrew</b> (<i>Sorex merriami</i>) <b>SOC</b></p> <p><a href="#">View in Field Guide</a> <a href="#">View Predicted Models</a> <a href="#">View Range Maps</a></p> <p><b>Species of Concern - Native Species</b> Global: <b>G4</b> State: <b>S3</b> FWP SWAP: <b>SGCN3</b></p> <p><b>Predicted Models:</b>  11% Optimal (inductive),  89% Moderate (inductive)</p>			
<p><b>B - Black-billed Cuckoo</b> (<i>Coccyzus erythrophthalmus</i>) <b>SOC</b></p> <p><a href="#">View in Field Guide</a> <a href="#">View Predicted Models</a> <a href="#">View Range Maps</a></p> <p><b>Species of Concern - Native Species</b> Global: <b>G5</b> State: <b>S3B</b> USFWS: <b>MBTA; BCC11; BCC17</b> BLM: <b>SENSITIVE</b> FWP SWAP: <b>SGCN3, SGIN</b> PIF: <b>2</b></p> <p><b>Predicted Models:</b>  11% Optimal (inductive),  67% Moderate (inductive),  22% Low (inductive)</p>			
<p><b>B - Lewis's Woodpecker</b> (<i>Melanerpes lewis</i>) <b>SOC</b></p> <p><a href="#">View in Field Guide</a> <a href="#">View Predicted Models</a> <a href="#">View Range Maps</a></p> <p><b>Species of Concern - Native Species</b> Global: <b>G4</b> State: <b>S2B</b> USFWS: <b>MBTA; BCC10; BCC17</b> USFS: <b>Species of Conservation Concern in Forests (HLC)</b> BLM: <b>SENSITIVE</b> FWP SWAP: <b>SGCN2</b> PIF: <b>2</b></p> <p><b>Predicted Models:</b>  11% Optimal (inductive),  44% Moderate (inductive),  33% Low (inductive)</p>			
<p><b>I - Oreohelix strigosa berryi</b> (<i>Berry's Mountainsnail</i>) <b>SOC</b></p> <p><a href="#">View in Field Guide</a> <a href="#">View Predicted Models</a> <a href="#">View Range Maps</a></p> <p><b>Species of Concern - Native Species</b> Global: <b>G5T2</b> State: <b>S1S2</b></p> <p><b>Predicted Models:</b>  89% Moderate (inductive),  11% Low (inductive)</p>			
<p><b>I - Bombus suckleyi</b> (<i>Suckley Cuckoo Bumble Bee</i>) <b>SOC</b></p> <p><a href="#">View in Field Guide</a> <a href="#">View Predicted Models</a> <a href="#">View Range Maps</a></p> <p><b>Species of Concern - Native Species</b> Global: <b>G2G3</b> State: <b>S1</b></p> <p><b>Predicted Models:</b>  78% Moderate (inductive),  22% Low (inductive)</p>			
<p><b>B - White-faced Ibis</b> (<i>Plegadis chihi</i>) <b>SOC</b></p> <p><a href="#">View in Field Guide</a> <a href="#">View Predicted Models</a> <a href="#">View Range Maps</a></p> <p><b>Species of Concern - Native Species</b> Global: <b>G5</b> State: <b>S3B</b> USFWS: <b>MBTA</b> BLM: <b>SENSITIVE</b> FWP SWAP: <b>SGCN3</b> PIF: <b>2</b></p> <p><b>Predicted Models:</b>  78% Moderate (inductive)</p>			
<p><b>M - Long-legged Myotis</b> (<i>Myotis volans</i>) <b>SOC</b></p> <p><a href="#">View in Field Guide</a> <a href="#">View Predicted Models</a> <a href="#">View Range Maps</a></p> <p><b>Species of Concern - Native Species</b> Global: <b>G4G5</b> State: <b>S3</b></p> <p><b>Predicted Models:</b>  67% Moderate (inductive),  33% Low (inductive)</p>			
<p><b>M - Pallid Bat</b> (<i>Antrozous pallidus</i>) <b>SOC</b></p> <p><a href="#">View in Field Guide</a> <a href="#">View Predicted Models</a> <a href="#">View Range Maps</a></p> <p><b>Species of Concern - Native Species</b> Global: <b>G4</b> State: <b>S3</b> BLM: <b>SENSITIVE</b> FWP SWAP: <b>SGCN3</b></p> <p><b>Predicted Models:</b>  67% Moderate (inductive),  33% Low (inductive)</p>			
<p><b>B - Dickcissel</b> (<i>Spiza americana</i>) <b>PSOC</b></p> <p><a href="#">View in Field Guide</a> <a href="#">View Predicted Models</a> <a href="#">View Range Maps</a></p> <p><b>Potential Species of Concern - Native Species</b> Global: <b>G5</b> State: <b>S4B</b> USFWS: <b>MBTA</b></p> <p><b>Predicted Models:</b>  56% Moderate (inductive),  44% Low (inductive)</p>			
<p><b>M - Dwarf Shrew</b> (<i>Sorex nanus</i>) <b>SOC</b></p> <p><a href="#">View in Field Guide</a> <a href="#">View Predicted Models</a> <a href="#">View Range Maps</a></p> <p><b>Species of Concern - Native Species</b> Global: <b>G4</b> State: <b>S2S3</b> FWP SWAP: <b>SGCN2-3</b></p> <p><b>Predicted Models:</b>  44% Moderate (inductive),  56% Low (inductive)</p>			
<p><b>M - Hayden's Shrew</b> (<i>Sorex haydeni</i>) <b>PSOC</b></p> <p><a href="#">View in Field Guide</a> <a href="#">View Predicted Models</a> <a href="#">View Range Maps</a></p> <p><b>Potential Species of Concern - Native Species</b> Global: <b>G5</b> State: <b>S3S4</b></p> <p><b>Predicted Models:</b>  33% Moderate (inductive),  44% Low (inductive)</p>			

**Potential Species of Concern - Native Species** Global: **G5** State: **S4** USFWS: **MBTA** FWP SWAP: **SGIN** PIF: **2**  
**Predicted Models:** 33% Moderate (inductive), 44% 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:** 22% Moderate (inductive), 56% 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:** 22% Moderate (inductive), 22% Low (inductive)

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

[View in Field Guide](#) [View Predicted Models](#) [View Range Maps](#)  
**Species of Concern - Native Species** Global: **G5** State: **S3B** USFWS: **MBTA** FWP SWAP: **SGCN3** PIF: **3**  
**Predicted Models:** 22% Moderate (inductive), 22% Low (inductive)

**V - *Eupatorium maculatum* (Spotted Joepy-weed) SOC**

[View in Field Guide](#) [View Predicted Models](#) [View Range Maps](#)  
**Species of Concern - Native Species** Global: **G5** State: **S1S2** Plant Threat Score: **No Known Threats** CCVI: **Moderately Vulnerable**  
**Predicted Models:** 11% Moderate (inductive), 89% 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:** 11% Moderate (inductive), 78% 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:** 11% Moderate (inductive), 22% Low (inductive)

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

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

**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:** 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:** 67% 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:** 67% Low (inductive)

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

[View in Field Guide](#) [View Predicted Models](#) [View Range Maps](#)  
**Potential Species of Concern - Native Species** Global: **G5** State: **S3S4** USFS: **Sensitive - Known in Forests (KOOT, LOLO)**  
**Sensitive - Suspected in Forests (BRT)**  
**Species of Conservation Concern in Forests (CG, HLC)**  
**Predicted Models:** 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:** 44% Low (inductive)

**V - *Stellaria crassifolia* (Fleshy Stitchwort) SOC**

[View in Field Guide](#) [View Predicted Models](#) [View Range Maps](#)  
**Species of Concern - Native Species** Global: **G5** State: **S2** Plant Threat Score: **No Known Threats**  
**Predicted Models:** 44% Low (inductive)

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

[View in Field Guide](#) [View Predicted Models](#) [View Range Maps](#)  
**Species of Concern - Native Species** Global: **G5** State: **S3B** USFWS: **MBTA** FWP SWAP: **SGCN3** PIF: **3**  
**Predicted Models:** 44% Low (inductive)

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

[View in Field Guide](#) [View Predicted Models](#) [View Range Maps](#)  
**Species of Concern - Native Species** Global: **G5** State: **S2S3** Plant Threat Score: **Low**  
**Predicted Models:** 33% Low (inductive)

**B - Green-tailed Towhee (*Pipilo chlorurus*) SOC**

[View in Field Guide](#) [View Predicted Models](#) [View Range Maps](#)  
**Species of Concern - Native Species** Global: **G5** State: **S3B** USFWS: **MBTA** FWP SWAP: **SGCN3** PIF: **3**  
**Predicted Models:** 33% Low (inductive)

**M - Fringed Myotis** (*Myotis thysanodes*) **SOC** Global: **G4** State: **S3** BLM: **SENSITIVE** FWP SWAP: **SGCN3**  
Predicted Models: **22%** 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: **22%** 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: **22%** Low (inductive)

**B - Red Knot** (*Calidris canutus*) **SSS** **7** Not Assessed  
[View in Field Guide](#)

**Special Status Species - Native Species** Global: **G4** State: **SNA** USFWS: **LT; MBTA** BLM: **THREATENED**



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



Latitude Longitude  
45.76622 -108.43298  
45.82447 -108.51013

## Structured Surveys

Summarized by: **24PRVT0020** (*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.

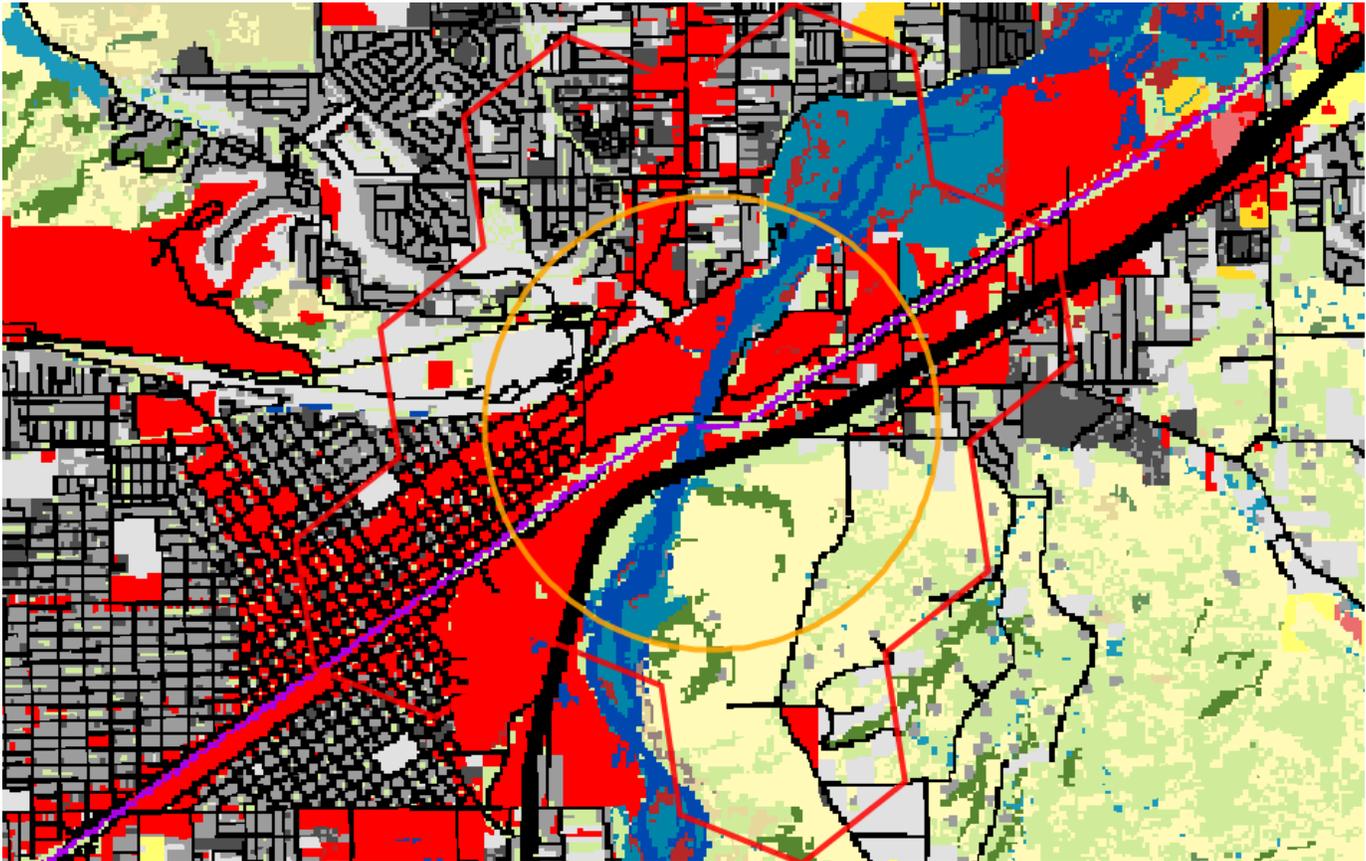
Within the report area you have requested, structured surveys are summarized by the number of each type of structured survey protocol that has been conducted, the number of species detections/observations resulting from these surveys, and the most recent year a survey has been conducted.

<b>AR-Amphibian/Reptile Lentic</b> ( <i>Lentic Amphibian/Reptile Surveys</i> )	Survey Count: 11	Obs Count: 9	Recent Survey: 2013
<b>B-Point Count</b> ( <i>Bird Point Count</i> )	Survey Count: 30	Obs Count: 209	Recent Survey: 2004
<b>B-Raptor nest</b> ( <i>Raptor Nest Survey</i> )	Survey Count: 35	Obs Count: 31	Recent Survey: 2020
<b>E-Bull Frog Surveillance</b> ( <i>American Bull Frog Audio/Visual Surveillance</i> )	Survey Count: 32	Obs Count: 24	Recent Survey: 2016
<b>E-Eastern Heath Snail</b> ( <i>Eastern Heath Snail Survey</i> )	Survey Count: 2	Obs Count:	Recent Survey: 2012
<b>E-Eurasian Water-milfoil Rake</b> ( <i>Rake tows/pulls for Eurasian Water-milfoil</i> )	Survey Count: 4	Obs Count:	Recent Survey: 2020
<b>E-Invasive Mussel Plankton Tow</b> ( <i>Plankton tows for veligers of Invasive Mussels</i> )	Survey Count: 5	Obs Count:	Recent Survey: 2021
<b>E-Japanese Beetle Trapping</b> ( <i>Japanese Beetle Trapping Surveys</i> )	Survey Count: 2	Obs Count: 1	Recent Survey: 2018
<b>E-Kicknet</b> ( <i>Kicknet Collection Survey for Invasive Mussels and Snails</i> )	Survey Count: 10	Obs Count:	Recent Survey: 2021
<b>E-Noxious Weed, Road-based</b> ( <i>Noxious Weed Road-based Visual Surveys</i> )	Survey Count: 31	Obs Count: 27	Recent Survey: 2005
<b>E-Noxious Weed, Visual</b> ( <i>Noxious Weed Visual Surveys</i> )	Survey Count: 6	Obs Count: 6	Recent Survey: 2007
<b>E-Visual Aquatic Invasives</b> ( <i>Visual Encounter Surveys for Aquatic Invasives on Shorelines or Underwater</i> )	Survey Count: 22	Obs Count: 3	Recent Survey: 2021
<b>F-Fish Electrofishing</b> ( <i>Fish Electrofishing Surveys</i> )	Survey Count: 2	Obs Count: 26	Recent Survey: 2020
<b>F-Fish Other Survey</b> ( <i>Fish Other Survey (FWP Survey Type)</i> )	Survey Count: 4	Obs Count: 11	Recent Survey: 2006
<b>F-Fish Trapping/Netting</b> ( <i>Fish Trapping or Netting Surveys</i> )	Survey Count: 5	Obs Count: 42	Recent Survey: 2009
<b>I-Aquatic Invert Lotic Dipnet</b> ( <i>Invertebrate Lotic Site Dipnet and Visual Encounter Survey</i> )	Survey Count: 3	Obs Count: 19	Recent Survey: 2001
<b>I-Mussel</b> ( <i>Stream Mussel Survey</i> )	Survey Count: 1	Obs Count:	Recent Survey: 2009
<b>I-Odonates/Butterfly VES</b> ( <i>Visual Encounter Survey for Damselfly/Dragonfly/Butterfly</i> )	Survey Count: 3	Obs Count: 3	Recent Survey: 1910
<b>M-Bat Roost (Active Season)</b> ( <i>Bat Roost (Active Season) Survey</i> )	Survey Count: 11	Obs Count: 11	Recent Survey: 2010
<b>M-SMammal Pitfall only</b> ( <i>Small Mammal Pitfall Trapping Survey</i> )	Survey Count: 8	Obs Count:	Recent Survey: 2018
<b>M-SMammal Sherman Trap</b> ( <i>Small Mammal Sherman Trap Survey</i> )	Survey Count: 8	Obs Count: 4	Recent Survey: 2018
<b>M-SMammal Snap only</b> ( <i>Small Mammal Snap Trap Survey</i> )	Survey Count: 16	Obs Count: 4	Recent Survey: 2018
<b>M-SMammal Snap/Sherman/Pitfall</b> ( <i>Small Mammal Snap, Sherman, and Pitfall Trap Survey</i> )	Survey Count: 9	Obs Count: 5	Recent Survey: 2019
<b>P-AIM Terrestrial Plot</b> ( <i>BLM AIM Terrestrial Survey Plot</i> )	Survey Count: 2	Obs Count: 76	Recent Survey: 2022
<b>P-Algal scraping</b> ( <i>Algal Scraping</i> )	Survey Count: 9	Obs Count: 349	Recent Survey: 2012
<b>R-Reptile VES</b> ( <i>Visual Encounter Surveys for Reptiles</i> )	Survey Count: 1	Obs Count: 2	Recent Survey: 2005
<b>R-Turtle Trapping</b> ( <i>Turtle Trapping Surveys</i> )	Survey Count: 10	Obs Count: 1	Recent Survey: 2019



## Land Cover

Summarized by: **24PRVT0020** (Custom Area of Interest)



No Image

### Human Land Use

#### Developed

#### Commercial / Industrial

20% (1,139  
Acres)

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

No Image

### Human Land Use

#### Developed

#### Other Roads

19% (1,081  
Acres)

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



14% (824  
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 cheatgrass is 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.



10% (567 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 curisetata*) 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.



9% (516 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.



8% (473 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.



6% (347 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, Clark'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 system'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.

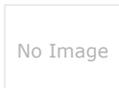
In Montana, many occurrences are now degraded to the point where the cottonwood overstory is the only remaining natural component. The hydrology of these floodplain systems has been affected by dams, highways, railroads and agricultural ditches, and as a result, they have lost their characteristic wetland /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.



4% (238 Acres)

**Wetland and Riparian Systems Open Water****Open Water**

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



3% (172 Acres)

**Human Land Use Developed****Interstate**

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



3% (158 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.



2% (95 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.

**Additional Limited Land Cover**1% (66 Acres) **Railroad**1% (46 Acres) **Introduced Riparian and Wetland Vegetation**

<1% (4 Acres)  [Cultivated Crops](#)

<1% (2 Acres)  [Major Roads](#)

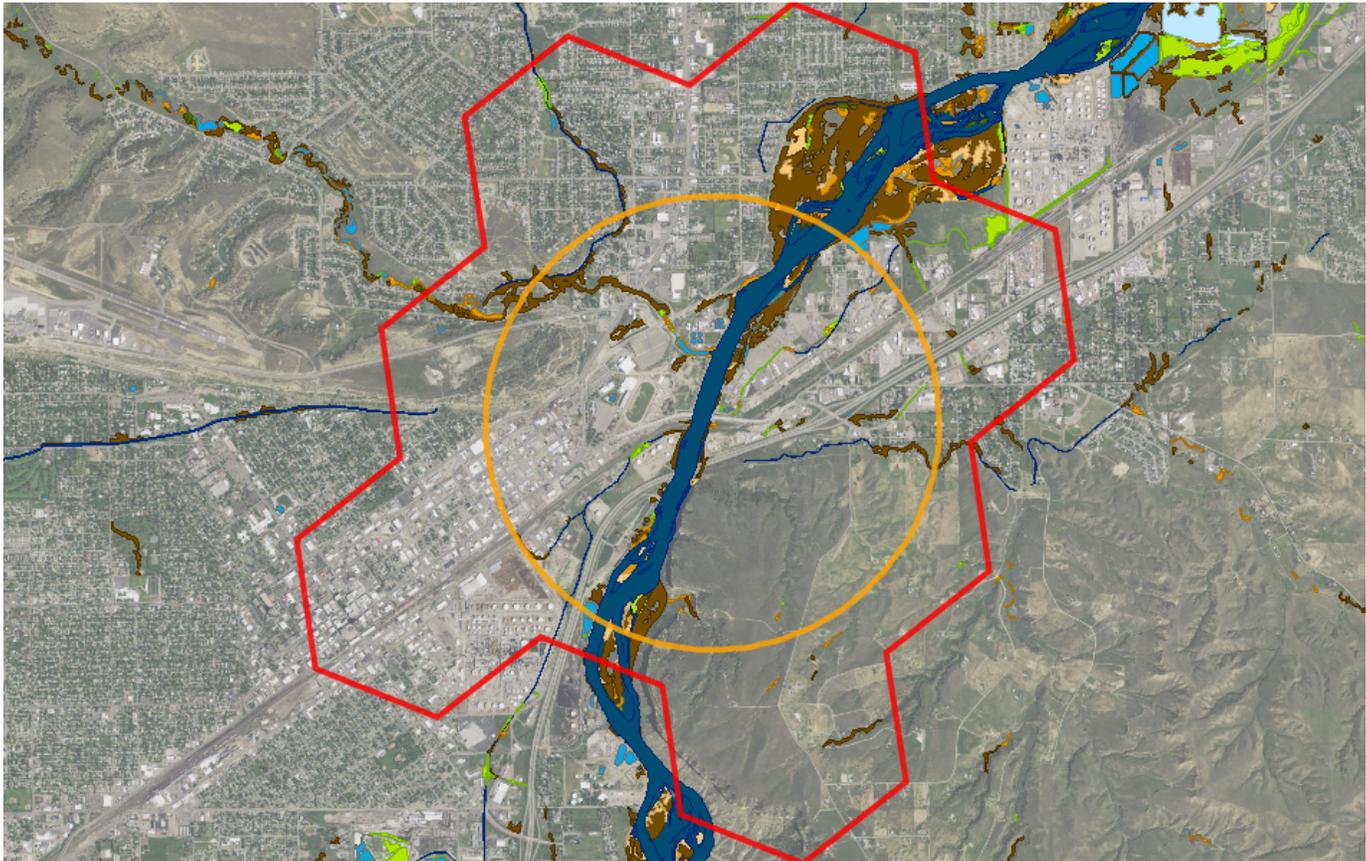
<1% (2 Acres)  [Great Plains Riparian](#)

<1% (1 Acres)  [Great Plains Wooded Draw and Ravine](#)



## Wetland and Riparian

Summarized by: **24PRVT0020** (Custom Area of Interest)



### Wetland and Riparian Mapping

[Explain](#)

#### P - Palustrine

##### AB - Aquatic Bed

F - Semipermanently Flooded	20 Acres
(no modifier)	<b>4 Acres PABF</b>
h - Diked/Impounded	<b>1 Acres PABFh</b>
x - Excavated	<b>15 Acres PABFx</b>

K - Artificially Flooded	2 Acres
x - Excavated	<b>2 Acres PABKx</b>

##### P - Palustrine, AB - Aquatic Bed

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

##### US - Unconsolidated Shore

C - Seasonally Flooded	<1 Acres
(no modifier)	<b>&lt;1 Acres PUSC</b>
h - Diked/Impounded	<b>&lt;1 Acres PUSCh</b>

##### 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	13 Acres
(no modifier)	<b>5 Acres PEMA</b>
h - Diked/Impounded	<b>&lt;1 Acres PEMAh</b>
x - Excavated	<b>8 Acres PEMAx</b>

##### P - Palustrine, EM - Emergent

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

C - Seasonally Flooded	8 Acres
(no modifier)	<b>2 Acres PEMC</b>
x - Excavated	<b>6 Acres PEMCx</b>

F - Semipermanently Flooded	1 Acres
(no modifier)	<b>1 Acres PEMF</b>

##### SS - Scrub-Shrub

A - Temporarily Flooded	3 Acres
(no modifier)	<b>3 Acres PSSA</b>

##### P - Palustrine, SS - Scrub-Shrub

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

#### R - Riverine (Rivers)

##### 2 - Lower Perennial

##### UB - Unconsolidated Bottom

F - Semipermanently Flooded	11 Acres
-----------------------------	----------

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

(no modifier) **5 Acres R2UBF**  
H - Permanently Flooded 210 Acres  
(no modifier) **210 Acres R2UBH**

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

**US - Unconsolidated Shore**  
A - Temporarily Flooded 42 Acres  
(no modifier) **42 Acres R2USA**  
C - Seasonally Flooded 7 Acres  
(no modifier) **7 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 5 Acres  
x - Excavated **5 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) **34 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) **249 Acres Rp1FO**

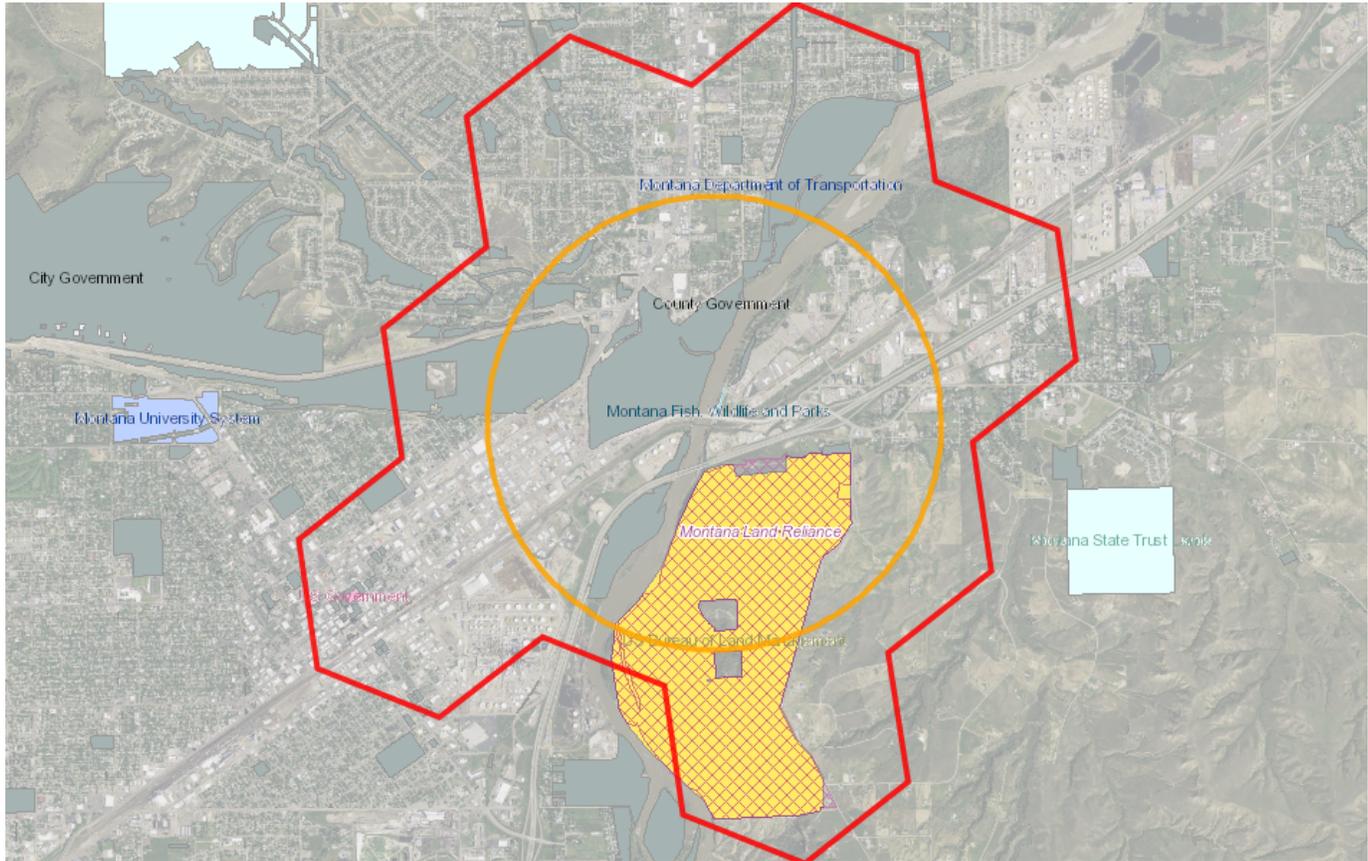
**Rp - Riparian, 1 - Lotic, FO - Forested**  
*This riparian class has woody vegetation that is greater than 6 meters (20 feet) tall.*

**EM - Emergent**  
(no modifier) **23 Acres Rp1EM**

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

## Land Management

Summarized by: **24PRVT0020** (Custom Area of Interest)



### Land Management Summary

[Explain](#)

	Ownership	Tribal	Easements	Other Boundaries (possible overlap)
<b>Public Lands</b>	<b>1,442 Acres (25%)</b>			
<b>Federal</b>	<b>744 Acres (13%)</b>			
US Bureau of Land Management	742 Acres (13%)			
BLM Owned	742 Acres (13%)			
US Government	2 Acres (<1%)			
US Government Owned	2 Acres (<1%)			
<b>State</b>	<b>1 Acres (&lt;1%)</b>			
Montana Fish, Wildlife and Parks				
MTFWP Owned				
MTFWP Fishing Access Sites				1 Acres
East Bridge Fishing Access Site				1 Acres
Montana Department of Transportation	1 Acres (<1%)			
MTDOT Owned	1 Acres (<1%)			
<b>Local</b>	<b>697 Acres (12%)</b>			
Local Government	697 Acres (12%)			
Local Government Owned	697 Acres (12%)			
<b>Conservation Easements</b>			<b>745 Acres (13%)</b>	
Private			745 Acres (13%)	
Montana Land Reliance			745 Acres (13%)	
<b>Private Lands or Unknown Ownership</b>	<b>3,569 Acres (62%)</b>			



## Biological Reports

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Summarized by: **24PRVT0020** (*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](mailto:mtnhp@mt.gov)

- Hinckley, Dan. 1985. **Blackbook of Montana Peregrine Falcon Eyries**. BLM Spec. Rep. 57 p.
  - Regele, Deb. 2020. **Email with tabular data detailing nesting records for osprey on the Yellowstone River**. 30 November 2020.
  - Rogers, Ralph and Jay Sumner. 2004. Montana Peregrine Falcon Survey. Centmont Bioconsultants. Winifred, Montana. 32 pp plus appendix.
  - Sumner, J. and R. Rogers. 1999. Montana Peregrine Falcon Survey. Prepared for Montana Fish, Wildlife & Parks. 27 p. (plus maps and photos).
  - Sumner, J. and R. Rogers. 2001. Montana Peregrine Falcon Survey. prepared for Montana Fish, Wildlife & Parks. 22 pp.
  - Sumner, J. and R. Rogers. 2002. Montana Peregrine Falcon Survey. Prepared for Montana Fish, Wildlife & Parks. 29 p. plus appendix.
  - Sumner, Jay and Ralph Rogers. 2006. Montana Peregrine Falcon Survey. Montana Peregrine Institute. Arlee, Montana. 36 pp plus appendix.
-  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.



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Natural Resource Information System

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



Latitude 45.76622  
Longitude -108.43298  
45.82447 -108.51013

# Invasive and Pest Species

Summarized by: **24PRVT0020** (*Custom Area of Interest*)

	# Obs	Predicted Model	Range
<b>Aquatic Invasive Species</b>			
<b>A - American Bullfrog</b> ( <i>Lithobates catesbeianus</i> ) <b>AIS</b>	42		
<a href="#">View in Field Guide</a> <a href="#">View Predicted Models</a> <a href="#">View Range Maps</a> Aquatic Invasive Species - Non-native Species   Global: <b>G5</b> State: <b>SNA</b> Predicted Models:  67% Optimal (inductive),  33% Moderate (inductive)			
<b>V - Butomus umbellatus</b> ( <i>Flowering-rush</i> ) <b>N2A/AIS</b>			
<a href="#">View in Field Guide</a> <a href="#">View Predicted Models</a> <a href="#">View Range Maps</a> Noxious Weed: Priority 2A - Aquatic Invasive Species - Non-native Species   Global: <b>G5</b> State: <b>SNA</b> Predicted Models:  33% Moderate (inductive),  33% Low (inductive)			
<b>V - Myriophyllum spicatum</b> ( <i>Eurasian Water-milfoil</i> ) <b>N2A/AIS</b>			
<a href="#">View in Field Guide</a> <a href="#">View Predicted Models</a> <a href="#">View Range Maps</a> Noxious Weed: Priority 2A - Aquatic Invasive Species - Non-native Species   Global: <b>GNR</b> State: <b>SNA</b> Predicted Models:  22% Moderate (inductive),  33% Low (inductive)			
<b>F - Common Carp</b> ( <i>Cyprinus carpio</i> ) <b>AIS</b>	13 +		
<a href="#">View in Field Guide</a> <a href="#">View Predicted Models</a> <a href="#">View Range Maps</a> Aquatic Invasive Species - Non-native Species   Global: <b>G5</b> State: <b>SNA</b> Predicted Models:  56% Suitable (introduced range) (deductive)			
<b>V - Nymphaea odorata</b> ( <i>American Water-lily</i> ) <b>AIS</b>			
<a href="#">View in Field Guide</a> <a href="#">View Predicted Models</a> <a href="#">View Range Maps</a> Aquatic Invasive Species - Non-native Species   Global: <b>G5</b> State: <b>SNA</b> Predicted Models:  56% Suitable (introduced range) (deductive)			
<b>Noxious Weeds: Priority 1A</b>			
<b>V - Centaurea solstitialis</b> ( <i>Yellow Starthistle</i> ) <b>N1A</b>			
<a href="#">View in Field Guide</a> <a href="#">View Predicted Models</a> <a href="#">View Range Maps</a> Noxious Weed: Priority 1A - Non-native Species   Global: <b>GNR</b> State: <b>SNA</b> Predicted Models:  78% Optimal (inductive),  22% Moderate (inductive)			
<b>V - Isatis tinctoria</b> ( <i>Dyer's Woad</i> ) <b>N1A</b>			
<a href="#">View in Field Guide</a> <a href="#">View Predicted Models</a> <a href="#">View Range Maps</a> Noxious Weed: Priority 1A - Non-native Species   Global: <b>GNR</b> State: <b>SNA</b> Predicted Models:  67% Optimal (inductive),  33% Moderate (inductive)			
<b>V - Taeniatherum caput-medusae</b> ( <i>Medusahead</i> ) <b>N1A</b>			
<a href="#">View in Field Guide</a> <a href="#">View Predicted Models</a> <a href="#">View Range Maps</a> Noxious Weed: Priority 1A - Non-native Species   Global: <b>G4G5</b> State: <b>SNA</b> Predicted Models:  100% Low (inductive)			
<b>V - Phragmites australis ssp. australis</b> ( <i>European Common Reed</i> ) <b>N1A</b>			
<a href="#">View in Field Guide</a> <a href="#">View Predicted Models</a> <a href="#">View Range Maps</a> Noxious Weed: Priority 1A - Non-native Species   Global: <b>G5T5</b> State: <b>SNA</b> Predicted Models:  78% Low (inductive)			
<b>Noxious Weeds: Priority 1B</b>			
<b>V - Lythrum salicaria</b> ( <i>Purple Loosestrife</i> ) <b>N1B</b>			
<a href="#">View in Field Guide</a> <a href="#">View Predicted Models</a> <a href="#">View Range Maps</a> Noxious Weed: Priority 1B - Non-native Species   Global: <b>G5</b> State: <b>SNA</b> Predicted Models:  78% Optimal (inductive),  11% Moderate (inductive),  11% Low (inductive)			
<b>V - Polygonum cuspidatum</b> ( <i>Japanese Knotweed</i> ) <b>N1B</b>			
<a href="#">View in Field Guide</a> <a href="#">View Predicted Models</a> <a href="#">View Range Maps</a> Noxious Weed: Priority 1B - Non-native Species   Global: <b>GNR</b> State: <b>SNA</b> Predicted Models:  56% Optimal (inductive),  33% Moderate (inductive),  11% Low (inductive)			
<b>V - Echium vulgare</b> ( <i>Blueweed</i> ) <b>N1B</b>			
<a href="#">View in Field Guide</a> <a href="#">View Predicted Models</a> <a href="#">View Range Maps</a> Noxious Weed: Priority 1B - Non-native Species   Global: <b>GNR</b> State: <b>SNA</b> Predicted Models:  11% Optimal (inductive),  33% Moderate (inductive),  56% Low (inductive)			
<b>V - Polygonum x bohemicum</b> ( <i>Bohemian Knotweed</i> ) <b>N1B</b>			
<a href="#">View in Field Guide</a> <a href="#">View Predicted Models</a> <a href="#">View Range Maps</a> Noxious Weed: Priority 1B - Non-native Species   Global: <b>GNA</b> State: <b>SNA</b> Predicted Models:  11% Optimal (inductive),  11% Moderate (inductive),  56% Low (inductive)			
<b>V - Cytisus scoparius</b> ( <i>Scotch Broom</i> ) <b>N1B</b>			
<a href="#">View in Field Guide</a> <a href="#">View Predicted Models</a> <a href="#">View Range Maps</a> Noxious Weed: Priority 1B - Non-native Species   Global: <b>GNR</b> State: <b>SNA</b> Predicted Models:  11% Moderate (inductive),  67% Low (inductive)			

Noxious Weeds: Priority 2A

<b>V - Rhamnus cathartica</b> ( <i>Common Buckthorn</i> ) <b>N2A</b>				
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<b>Noxious Weed: Priority 2A - Non-native Species</b> Global: <b>GNR</b> State: <b>SNA</b> <b>Predicted Models:</b> 78% Optimal (inductive),  11% Moderate (inductive),  11% Low (inductive)				
<b>V - Hieracium praealtum</b> ( <i>Kingdevil Hawkweed</i> ) <b>N2A</b>				
<b>View in Field Guide</b> <b>View Predicted Models</b> <b>View Range Maps</b> <b>Noxious Weed: Priority 2A - Non-native Species</b> Global: <b>GNR</b> State: <b>SNA</b> <b>Predicted Models:</b> 22% Optimal (inductive),  67% Moderate (inductive),  11% Low (inductive)				
<b>V - Ventenata dubia</b> ( <i>Ventenata</i> ) <b>N2A</b>				
<b>View in Field Guide</b> <b>View Predicted Models</b> <b>View Range Maps</b> <b>Noxious Weed: Priority 2A - Non-native Species</b> Global: <b>GNR</b> State: <b>SNA</b> <b>Predicted Models:</b> 44% Moderate (inductive),  56% Low (inductive)				
<b>V - Lepidium latifolium</b> ( <i>Perennial Pepperweed</i> ) <b>N2A</b>				
<b>View in Field Guide</b> <b>View Predicted Models</b> <b>View Range Maps</b> <b>Noxious Weed: Priority 2A - Non-native Species</b> Global: <b>GNR</b> State: <b>SNA</b> <b>Predicted Models:</b> 33% Moderate (inductive),  56% Low (inductive)				
<b>V - Butomus umbellatus</b> ( <i>Flowering-rush</i> ) <b>N2A/AIS</b>				
<b>View in Field Guide</b> <b>View Predicted Models</b> <b>View Range Maps</b> <b>Noxious Weed: Priority 2A - Aquatic Invasive Species - Non-native Species</b> Global: <b>G5</b> State: <b>SNA</b> <b>Predicted Models:</b> 33% Moderate (inductive),  33% Low (inductive)				
<b>V - Myriophyllum spicatum</b> ( <i>Eurasian Water-milfoil</i> ) <b>N2A/AIS</b>				
<b>View in Field Guide</b> <b>View Predicted Models</b> <b>View Range Maps</b> <b>Noxious Weed: Priority 2A - Aquatic Invasive Species - Non-native Species</b> Global: <b>GNR</b> State: <b>SNA</b> <b>Predicted Models:</b> 22% Moderate (inductive),  33% Low (inductive)				
<b>Noxious Weeds: Priority 2B</b>				
<b>V - Tamarix ramosissima</b> ( <i>Salt Cedar</i> ) <b>N2B</b>		13		
<b>View in Field Guide</b> <b>View Predicted Models</b> <b>View Range Maps</b> <b>Noxious Weed: Priority 2B - Non-native Species</b> Global: <b>GNR</b> State: <b>SNA</b> <b>Predicted Models:</b> 78% Optimal (inductive),  22% Moderate (inductive)				
<b>V - Linaria dalmatica</b> ( <i>Dalmatian Toadflax</i> ) <b>N2B</b>		1		
<b>View in Field Guide</b> <b>View Predicted Models</b> <b>View Range Maps</b> <b>Noxious Weed: Priority 2B - Non-native Species</b> Global: <b>G5</b> State: <b>SNA</b> <b>Predicted Models:</b> 44% Optimal (inductive),  56% Moderate (inductive)				
<b>V - Tanacetum vulgare</b> ( <i>Common Tansy</i> ) <b>N2B</b>				
<b>View in Field Guide</b> <b>View Predicted Models</b> <b>View Range Maps</b> <b>Noxious Weed: Priority 2B - Non-native Species</b> Global: <b>GNR</b> State: <b>SNA</b> <b>Predicted Models:</b> 33% Optimal (inductive),  44% Moderate (inductive),  22% Low (inductive)				
<b>V - Centaurea diffusa</b> ( <i>Diffuse Knapweed</i> ) <b>N2B</b>		1		
<b>View in Field Guide</b> <b>View Predicted Models</b> <b>View Range Maps</b> <b>Noxious Weed: Priority 2B - Non-native Species</b> Global: <b>GNR</b> State: <b>SNA</b> <b>Predicted Models:</b> 22% Optimal (inductive),  78% Moderate (inductive)				
<b>V - Lepidium draba</b> ( <i>Whitetop</i> ) <b>N2B</b>		5		
<b>View in Field Guide</b> <b>View Predicted Models</b> <b>View Range Maps</b> <b>Noxious Weed: Priority 2B - Non-native Species</b> Global: <b>GNR</b> State: <b>SNA</b> <b>Predicted Models:</b> 22% Optimal (inductive),  78% Moderate (inductive)				
<b>V - Acroptilon repens</b> ( <i>Russian Knapweed</i> ) <b>N2B</b>		7		
<b>View in Field Guide</b> <b>View Predicted Models</b> <b>View Range Maps</b> <b>Noxious Weed: Priority 2B - Non-native Species</b> Global: <b>GNR</b> State: <b>SNA</b> <b>Predicted Models:</b> 67% Moderate (inductive),  33% Low (inductive)				
<b>V - Convolvulus arvensis</b> ( <i>Field Bindweed</i> ) <b>N2B</b>		24		
<b>View in Field Guide</b> <b>View Predicted Models</b> <b>View Range Maps</b> <b>Noxious Weed: Priority 2B - Non-native Species</b> Global: <b>GNR</b> State: <b>SNA</b> <b>Predicted Models:</b> 56% Moderate (inductive),  44% Low (inductive)				
<b>V - Cynoglossum officinale</b> ( <i>Common Hound's-tongue</i> ) <b>N2B</b>		5		
<b>View in Field Guide</b> <b>View Predicted Models</b> <b>View Range Maps</b> <b>Noxious Weed: Priority 2B - Non-native Species</b> Global: <b>GNR</b> State: <b>SNA</b> <b>Predicted Models:</b> 56% Moderate (inductive),  44% Low (inductive)				
<b>V - Euphorbia virgata</b> ( <i>Leafy Spurge</i> ) <b>N2B</b>		20		
<b>View in Field Guide</b> <b>View Predicted Models</b> <b>View Range Maps</b> <b>Noxious Weed: Priority 2B - Non-native Species</b> Global: <b>GNR</b> State: <b>SNA</b> <b>Predicted Models:</b> 44% Moderate (inductive),  56% Low (inductive)				
<b>V - Centaurea stoebe</b> ( <i>Spotted Knapweed</i> ) <b>N2B</b>		24		
<b>View in Field Guide</b> <b>View Predicted Models</b> <b>View Range Maps</b> <b>Noxious Weed: Priority 2B - Non-native Species</b> Global: <b>GNR</b> State: <b>SNA</b> <b>Predicted Models:</b> 33% Moderate (inductive),  67% Low (inductive)				
<b>V - Cirsium arvense</b> ( <i>Canada Thistle</i> ) <b>N2B</b>		33		
<b>View in Field Guide</b> <b>View Predicted Models</b> <b>View Range Maps</b> <b>Noxious Weed: Priority 2B - Non-native Species</b> Global: <b>G5</b> State: <b>SNA</b> <b>Predicted Models:</b> 11% Moderate (inductive),  89% Low (inductive)				

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<input type="checkbox"/> V - <i>Potentilla recta</i> (Sulphur Cinquefoil) N2B	2		
<p><b>Noxious Weed: Priority 2B - Non-native Species</b> Global: <b>GNR</b> State: <b>SNA</b></p> <p><b>Predicted Models:</b>  11% Moderate (inductive),  89% Low (inductive)</p>			
<input type="checkbox"/> V - <i>Berteroa incana</i> (Hoary False-allyssum) N2B			
<p><a href="#">View in Field Guide</a> <a href="#">View Predicted Models</a> <a href="#">View Range Maps</a></p> <p><b>Noxious Weed: Priority 2B - Non-native Species</b> Global: <b>GNR</b> State: <b>SNA</b></p> <p><b>Predicted Models:</b>  11% Moderate (inductive),  67% Low (inductive)</p>			
<input type="checkbox"/> V - <i>Leucanthemum vulgare</i> (Oxeye Daisy) N2B	1		
<p><a href="#">View in Field Guide</a> <a href="#">View Predicted Models</a> <a href="#">View Range Maps</a></p> <p><b>Noxious Weed: Priority 2B - Non-native Species</b> Global: <b>GNR</b> State: <b>SNA</b></p> <p><b>Predicted Models:</b>  67% Low (inductive)</p>			
<input type="checkbox"/> V - <i>Hypericum perforatum</i> (Common St. John's-wort) N2B			
<p><a href="#">View in Field Guide</a> <a href="#">View Predicted Models</a> <a href="#">View Range Maps</a></p> <p><b>Noxious Weed: Priority 2B - Non-native Species</b> Global: <b>GNR</b> State: <b>SNA</b></p> <p><b>Predicted Models:</b>  44% Low (inductive)</p>			
<input type="checkbox"/> V - <i>Linaria vulgaris</i> (Yellow Toadflax) N2B			
<p><a href="#">View in Field Guide</a> <a href="#">View Predicted Models</a> <a href="#">View Range Maps</a></p> <p><b>Noxious Weed: Priority 2B - Non-native Species</b> Global: <b>GNR</b> State: <b>SNA</b></p> <p><b>Predicted Models:</b>  33% Low (inductive)</p>			

**Regulated Weeds: Priority 3**

<input type="checkbox"/> V - <i>Elaeagnus angustifolia</i> (Russian Olive) R3	22		
<p><a href="#">View in Field Guide</a> <a href="#">View Predicted Models</a> <a href="#">View Range Maps</a></p> <p><b>Regulated Weed: Priority 3 - Non-native Species</b> Global: <b>GNR</b> State: <b>SNA</b></p> <p><b>Predicted Models:</b>  44% Optimal (inductive),  44% Moderate (inductive),  11% Low (inductive)</p>			
<input type="checkbox"/> V - <i>Bromus tectorum</i> (Cheatgrass) R3	3		
<p><a href="#">View in Field Guide</a> <a href="#">View Predicted Models</a> <a href="#">View Range Maps</a></p> <p><b>Regulated Weed: Priority 3 - Non-native Species</b> Global: <b>GNR</b> State: <b>SNA</b></p> <p><b>Predicted Models:</b>  11% Optimal (inductive),  78% Moderate (inductive),  11% Low (inductive)</p>			

**Agricultural Pests**

<input type="checkbox"/> I - <i>Popillia japonica</i> (Japanese Beetle) PESTA	1		
<p><a href="#">View in Field Guide</a></p> <p><b>Agricultural Pest - Non-native Species</b> Global: <b>GNR</b> State: <b>SNA</b></p>			

**Biocontrol Species**

<input type="checkbox"/> I - <i>Oberea erythrocephala</i> (Red-headed Leafy Spurge Stem Borer) BIOCNTL			
<p><a href="#">View in Field Guide</a> <a href="#">View Predicted Models</a> <a href="#">View Range Maps</a></p> <p><b>Biocontrol Species - Non-native Species</b> Global: <b>GNR</b> State: <b>SNA</b></p> <p><b>Predicted Models:</b>  67% Optimal (inductive),  33% Moderate (inductive)</p>			
<input type="checkbox"/> I - <i>Mecinus janthiniformis</i> (Dalmatian Toadflax Stem-boring Weevil) BIOCNTL			
<p><a href="#">View in Field Guide</a> <a href="#">View Predicted Models</a> <a href="#">View Range Maps</a></p> <p><b>Biocontrol Species - Non-native Species</b> Global: <b>GNR</b> State: <b>SNA</b></p> <p><b>Predicted Models:</b>  100% Moderate (inductive)</p>			
<input type="checkbox"/> I - <i>Aphthona lacertosa</i> (Brown-legged Leafy Spurge Flea Beetle) BIOCNTL			
<p><a href="#">View in Field Guide</a> <a href="#">View Predicted Models</a> <a href="#">View Range Maps</a></p> <p><b>Biocontrol Species - Non-native Species</b> Global: <b>GNR</b> State: <b>SNA</b></p> <p><b>Predicted Models:</b>  44% Moderate (inductive),  56% Low (inductive)</p>			
<input type="checkbox"/> I - <i>Aphthona nigricutis</i> (Black Dot Leafy Spurge Flea Beetle) BIOCNTL			
<p><a href="#">View in Field Guide</a> <a href="#">View Predicted Models</a> <a href="#">View Range Maps</a></p> <p><b>Biocontrol Species - Non-native Species</b> Global: <b>GNR</b> State: <b>SNA</b></p> <p><b>Predicted Models:</b>  11% Moderate (inductive),  67% Low (inductive)</p>			
<input type="checkbox"/> I - <i>Mecinus janthinus</i> (Yellow Toadflax Stem-boring Weevil) BIOCNTL			
<p><a href="#">View in Field Guide</a> <a href="#">View Predicted Models</a> <a href="#">View Range Maps</a></p> <p><b>Biocontrol Species - Non-native Species</b> Global: <b>GNR</b> State: <b>SNA</b></p> <p><b>Predicted Models:</b>  78% Low (inductive)</p>			
<input type="checkbox"/> I - <i>Cyphocleonus achates</i> (Knapweed Root Weevil) BIOCNTL			
<p><a href="#">View in Field Guide</a> <a href="#">View Predicted Models</a> <a href="#">View Range Maps</a></p> <p><b>Biocontrol Species - Non-native Species</b> Global: <b>GNR</b> State: <b>SNA</b></p> <p><b>Predicted Models:</b>  56% Low (inductive)</p>			
<input type="checkbox"/> I - <i>Hyles euphorbiae</i> (Spurge Hawkmoth) BIOCNTL	4		
<p><a href="#">View in Field Guide</a></p> <p><b>Biocontrol Species - Non-native Species</b> Global: <b>G5</b> State: <b>SNA</b></p>			
<input type="checkbox"/> I - <i>Larinus minutus</i> (Knapweed Seedhead Weevil) BIOCNTL	1		
<p><a href="#">View in Field Guide</a></p> <p><b>Biocontrol Species - Non-native Species</b> Global: <b>GNR</b> State: <b>SNA</b></p>			

# Introduction to Montana Natural Heritage Program



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

## INTRODUCTION

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

## VISION

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

## CORE VALUES

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

## CONFIDENTIALITY

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

## INFORMATION MANAGED

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

# Data Use Terms and Conditions

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

## Suggested Contacts for Natural Resource Management Agencies

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

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

### Montana Fish, Wildlife, and Parks

Fish Species	Zachary Shattuck <a href="mailto:zshattuck@mt.gov">zshattuck@mt.gov</a> (406) 444-1231 or Eric Roberts <a href="mailto:eroberts@mt.gov">eroberts@mt.gov</a> (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 <a href="mailto:KSmucker@mt.gov">KSmucker@mt.gov</a> (406) 444-5209
Grizzly Bear Greater Sage Grouse Trumpeter Swan Big Game Upland Game Birds Furbearers	Brian Wakeling <a href="mailto:brian.wakeling@mt.gov">brian.wakeling@mt.gov</a> (406) 444-3940
Managed Terrestrial Game Data	Cara Whalen– MFWP Data Analyst <a href="mailto:cara.whalen@mt.gov">cara.whalen@mt.gov</a> (406) 444-3759
Fisheries Data and Nongame Animal Data	Ryan Alger – MFWP Data Analyst <a href="mailto:ryan.alger@mt.gov">ryan.alger@mt.gov</a> (406) 444-5365
Wildlife and Fisheries Scientific Collector's Permits	<a href="https://fwp.mt.gov/buyandapply/commercialwildlifeandscientificpermits/scientific">https://fwp.mt.gov/buyandapply/commercialwildlifeandscientificpermits/scientific</a> Kristina Smucker for Wildlife <a href="mailto:ksmucker@mt.gov">ksmucker@mt.gov</a> (406) 444-5209 Dave Schmetterling for Fisheries <a href="mailto:dschmetterling@mt.gov">dschmetterling@mt.gov</a> (406) 542-5514
Fish and Wildlife Recommendations for Subdivision Development	Charlie Sperry <a href="mailto:csperry@mt.gov">csperry@mt.gov</a> (406) 444-3888 See <a href="https://fwp.mt.gov/conservation/living-with-wildlife/subdivision-recommendations">https://fwp.mt.gov/conservation/living-with-wildlife/subdivision-recommendations</a>
Regional Contacts 	Region 1 (Kalispell) (406) 752-5501 <a href="mailto:fwprg12@mt.gov">fwprg12@mt.gov</a> Region 2 (Missoula) (406) 542-5500 <a href="mailto:fwprg22@mt.gov">fwprg22@mt.gov</a> Region 3 (Bozeman) (406) 577-7900 <a href="mailto:fwprg3@mt.gov">fwprg3@mt.gov</a> Region 4 (Great Falls) (406) 454-5840 <a href="mailto:fwprg42@mt.gov">fwprg42@mt.gov</a> Region 5 (Billings) (406) 247-2940 <a href="mailto:fwprg52@mt.gov">fwprg52@mt.gov</a> Region 6 (Glasgow) (406) 228-3700 <a href="mailto:fwprg62@mt.gov">fwprg62@mt.gov</a> Region 7 (Miles City) (406) 234-0900 <a href="mailto:fwprg72@mt.gov">fwprg72@mt.gov</a>

**Montana Department of Agriculture**

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

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

**Montana Department of Environmental Quality**

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

**Montana Department of Natural Resources and Conservation**

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

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

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

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

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

**Bureau of Land Management**

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

**United States Army Corps of Engineers**

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

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

**United States Environmental Protection Agency**

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

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

**United States Fish and Wildlife Service**

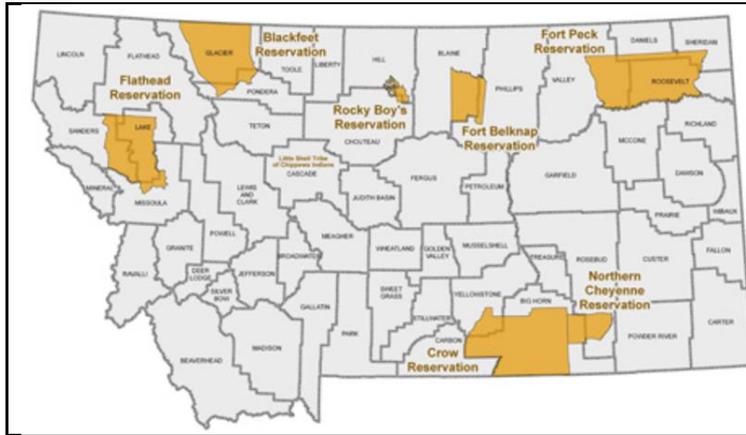
Information Planning and Conservation (IPAC) website: <https://ipac.ecosphere.fws.gov>

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

**United States Forest Service**

Regional Office – Missoula, Montana Contacts			
Wildlife Program Leader	Tammy Fletcher	<a href="mailto:tammy.fletcher2@usda.gov">tammy.fletcher2@usda.gov</a>	(406) 329-3086
Wildlife Ecologist	Cara Staab	<a href="mailto:cara.staab@usda.gov">cara.staab@usda.gov</a>	(406) 329-3677
Aquatic Ecologist	Justin Jimenez	<a href="mailto:justin.jimenez@usda.gov">justin.jimenez@usda.gov</a>	(435) 370-6830
TES Program	Lydia Allen	<a href="mailto:lydia.allen@usda.gov">lydia.allen@usda.gov</a>	(406) 329-3558
Interagency Grizzly Bear Coordinator	Scott Jackson	<a href="mailto:scott.jackson@usda.gov">scott.jackson@usda.gov</a>	(406) 329-3664
Regional Botanist	Amanda Hendrix	<a href="mailto:amanda.hendrix@usda.gov">amanda.hendrix@usda.gov</a>	(651) 447-3016
Regional Vegetation Ecologist	Mary Manning	<a href="mailto:marry.manning@usda.gov">marry.manning@usda.gov</a>	(406) 329-3304
Invasive Species Program Manager	Michelle Cox	<a href="mailto:michelle.cox2@usda.gov">michelle.cox2@usda.gov</a>	(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](mailto:apipp@mt.gov) or Senior Zoologist [dbachen@mt.gov](mailto:dbachen@mt.gov). If you have animal or plant observations that you would like to contribute, you can also submit them via Excel spreadsheets, geodatabases, iNaturalist, or a Survey123 form. Various methods of data submission are reviewed in this playlist of videos:

<https://www.youtube.com/playlist?list=PLRaydtZpHu2qOHPoSPq9cnM9uXGmEXACx>

### Observations

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

## **Species Occurrences**

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

### **Plant Species Occurrences**

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

### **Animal Species Occurrences**

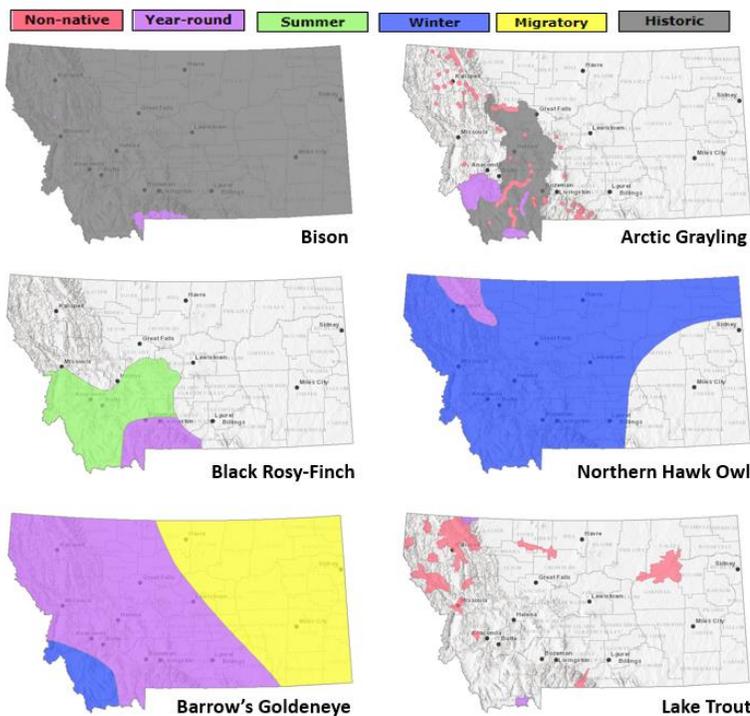
The location of a verified observation or specimen record typically known or assumed to represent a breeding population or a portion of a breeding population. Animal SO's are generally: (1) buffers of terrestrial point observations based on documented species' home range sizes; (2) buffers of stream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

### **Other Occurrence Polygons**

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

## Geographic Range Polygons

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



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

## Predicted Suitable Habitat Models

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

## Associated Habitats

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

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

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

# Introduction to Land Cover

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

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

## Literature Cited

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

# Introduction to Wetland and Riparian

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

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

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

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

## Literature Cited

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

# Introduction to Land Management

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

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

Public and private conservation land polygons are attributed with the name of the entity that owns it. The data are derived from the statewide [Montana Cadastral Parcel layer](#). Conservation easement data shows land parcels on which a public agency or qualified land trust has placed a conservation easement in cooperation with the landowner. The dataset contains no information about ownership or status of the mineral estate. For questions about the dataset or to report errors, please contact the Montana Natural Heritage Program at (406) 444-5363 or [mtnhp@mt.gov](mailto: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](mailto:bmaxell@mt.gov) Program Botanist [apipp@mt.gov](mailto:apipp@mt.gov) or Senior Zoologist [dbachen@mt.gov](mailto:dbachen@mt.gov) If you have animal or plant observations that you would like to contribute, you can also submit them via Excel spreadsheets, geodatabases, iNaturalist, or a Survey123 form. Various methods of data submission are reviewed in this playlist of videos:

<https://www.youtube.com/playlist?list=PLRaydtZpHu2qOHPoSPq9cnM9uXGmEXACx>

## Additional Information Resources

[MTNHP Staff Contact Information](#)

[Montana Field Guide](#)

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

[MTNHP Species Status Codes - Explanation](#)

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

[MTNHP Request Information page](#)

[Montana Cadastral](#)

[Montana Code Annotated](#)

[Montana Fisheries Information System](#)

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

[Montana GIS Data Layers](#)

[Montana GIS Data Bundler](#)

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

[Montana Ground Water Information Center](#)

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

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

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

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

[Montana Spatial Data Infrastructure Layers](#)

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

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

[Montana Water Information System](#)

[Montana Web Map Services](#)

[National Environmental Policy Act](#)

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

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

[Web Soil Survey Tool](#)



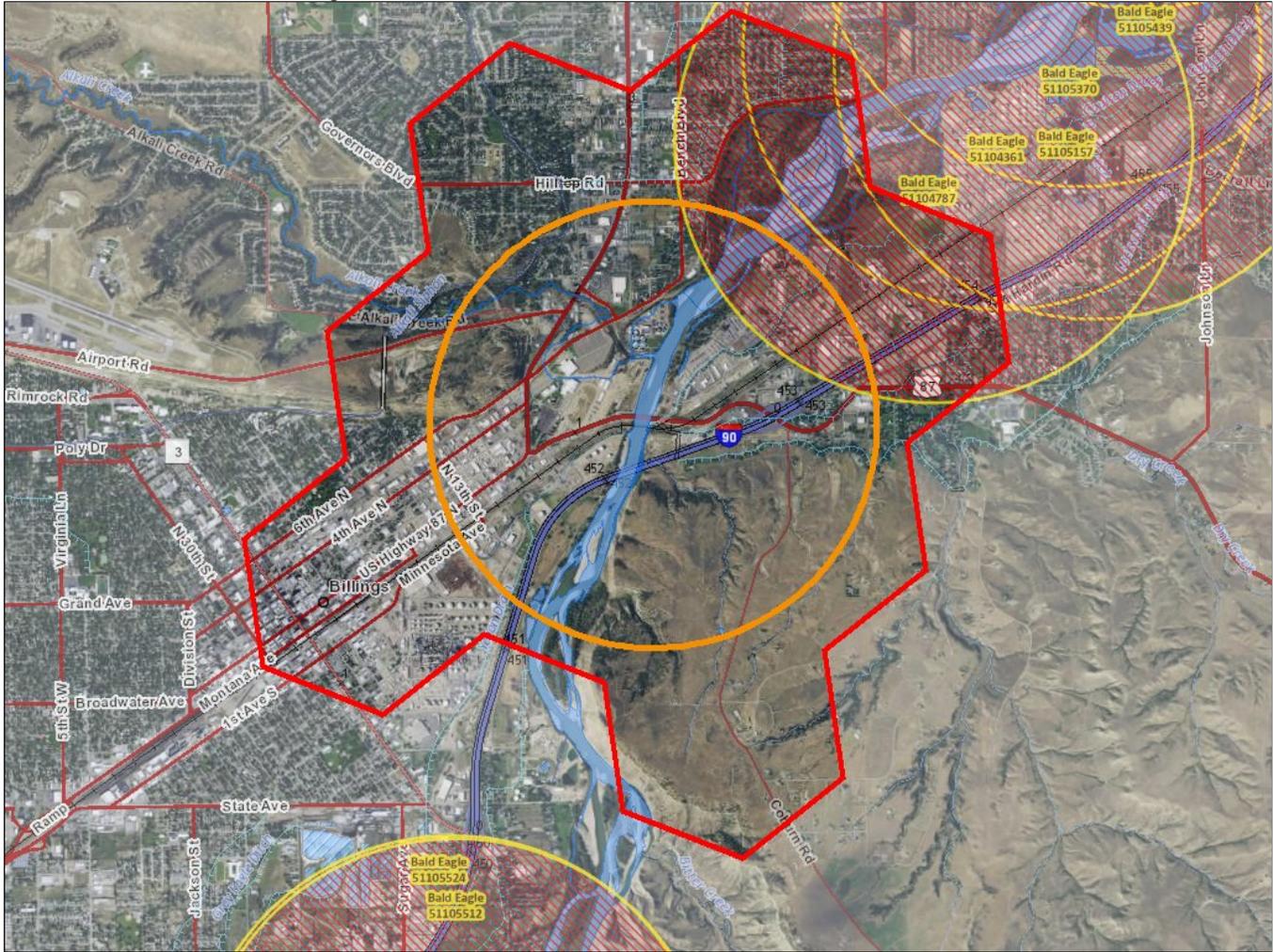
Latitude 45.76854  
Longitude -108.39936  
45.81617 -108.54139



**Montana SOC Occurrences Report**

**SOC Occurrences for Birds = Bald Eagle**

Report generated 7/21/2023 10:04:26 AM



**Birds - Bald Eagle (*Haliaeetus leucocephalus*)** SO Count: 4    Obs Count: 11    Earliest Obs: 2001    Recent Obs: 2019

<b>Special Status Species</b> Native Species Global Rank: G5 State Rank: S4	<b>Agency Status</b> USFWS: BGEPA, MBTA USFS: Sensitive - Known in Forests (BD, BRT, KOOT, LOLO) BLM: SENSITIVE FWP SWAP: PIF: 2	<b>Delineation Criteria</b> Confirmed nesting area buffered by a minimum distance of 2,000 meters in order to be conservative about encompassing the breeding territory and area commonly used for re-nesting. Only nesting observations with a locational uncertainty of 1,000 meters or less will be used to delineate a nesting area.	<b>Last Updated</b> Jun 28, 2023
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SO ID	Acres	Obs Count	Earliest Obs	Recent Obs
SO ID: 51104361	3,105	1	2001	2001
SO ID: 51104787	3,105	1	2003	2003
SO ID: 51105157	3,095	3	2005	2012
SO ID: 51105370	3,095	6	2007	2019

Citation for this report:  
Montana SOC Occurrences Report  
SOC Occurrences for Birds = Bald Eagle  
Within Lat/Long: (45.76854,-108.39936) to (45.81617,-108.54139)  
Natural Heritage Map Viewer. Montana Natural Heritage Program.  
Retrieved on July 21, 2023, from <https://mntnhp.org/MapViewer/SORReport.aspx>

# NEPAssist Report

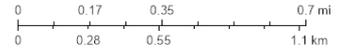
## Lockwood ID



July 20, 2023

1:20,065

- Lockwood ID
- Impaired Water Points
- Impaired Waterbodies
- + Search Result (point)
- Impaired Streams
- Wild and Scenic Rivers



Montana State Library, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METINASA, USGS, Bureau of Land Management, EPA, NPS, US Census Bureau, USDA, Maxar, U.S. EPA Office of Air and Radiation (OAR) - Office of Air Quality Planning and Standards (OAQPS)

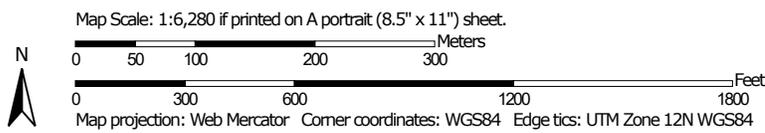
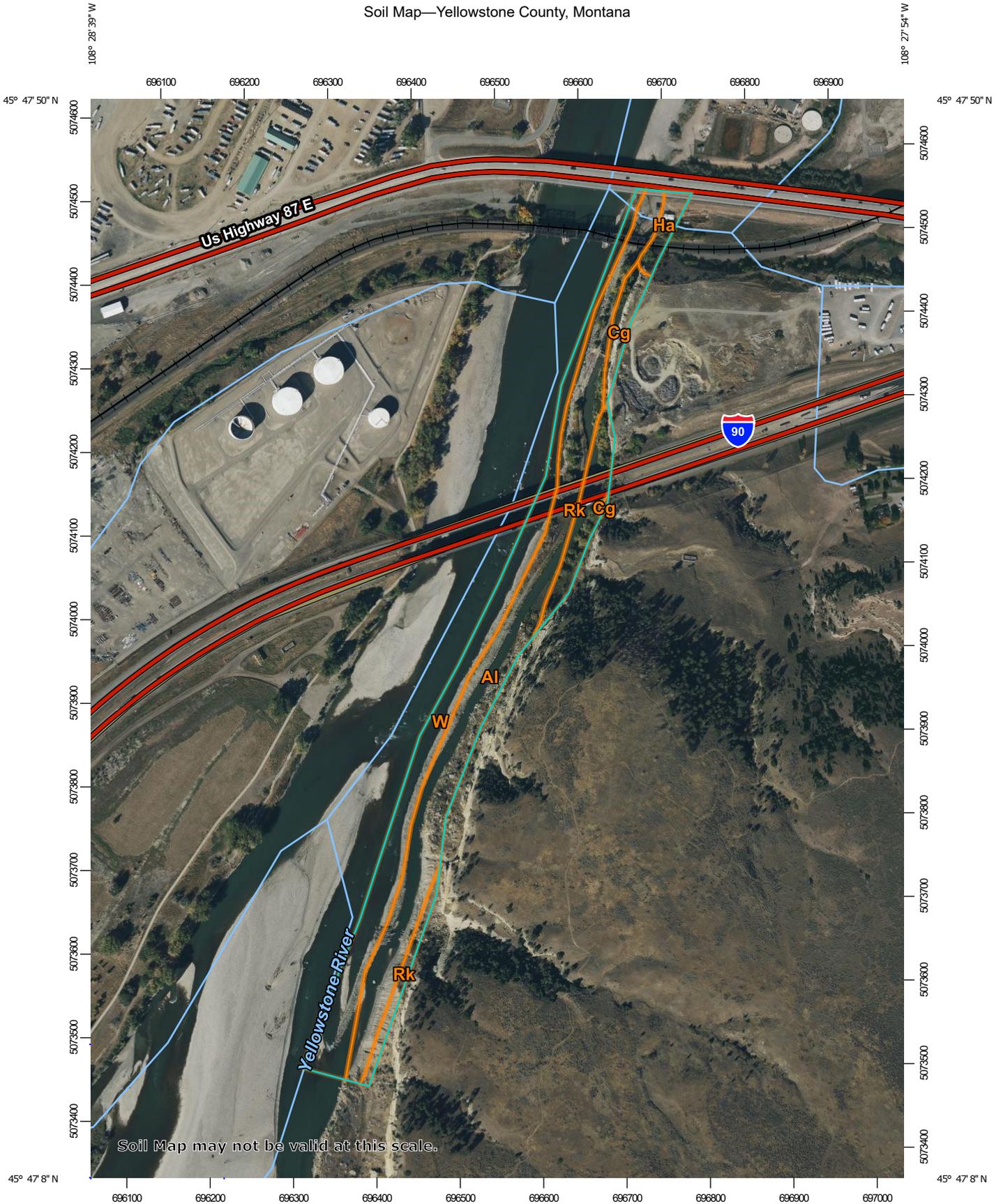
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Project Area	0.08 sq mi
Within an Ozone 8-hr (1997 standard) Non-Attainment/Maintenance Area?	no
Within an Ozone 8-hr (2008 standard) Non-Attainment/Maintenance Area?	no
Within a Lead (2008 standard) Non-Attainment/Maintenance Area?	no
Within a SO2 1-hr (2010 standard) Non-Attainment/Maintenance Area?	yes
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?	no
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?	no
Within an air emission facility?	no
Within a school?	no
Within an airport?	no
Within a hospital?	no
Within a designated sole source aquifer?	no
Within a historic property on the National Register of Historic Places?	no
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?	yes
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

Created on: 7/20/2023 6:47:32 PM

Soil Map—Yellowstone County, Montana



### MAP LEGEND

**Area of Interest (AOI)**

 Area of Interest (AOI)

**Soils**

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

**Special Point Features**

-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot

-  Spoil Area
-  Stony Spot
-  Very Stony Spot
-  Wet Spot
-  Other
-  Special Line Features

**Water Features**

 Streams and Canals

**Transportation**

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

**Background**

 Aerial Photography

### MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

**Warning:** Soil Map may not be valid at this scale.  
 Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
 Web Soil Survey URL:  
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Yellowstone County, Montana  
 Survey Area Data: Version 20, Aug 26, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 22, 2021—Oct 4, 2021

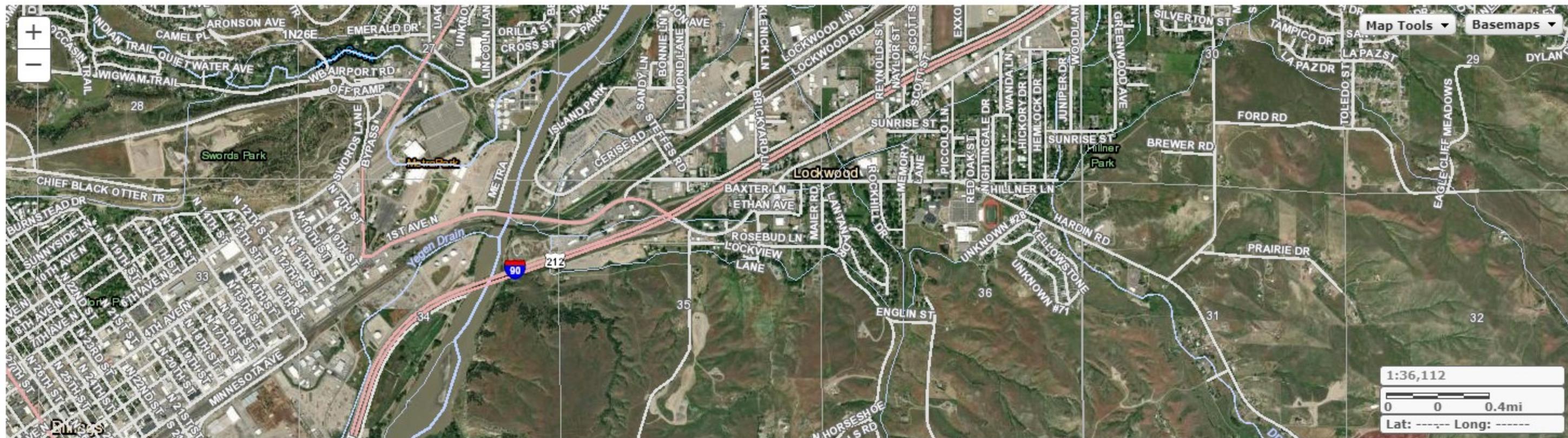
The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Al	Alluvial land, mixed	9.4	49.0%
Cg	Clapper gravelly loam, 7 to 15 percent slopes	0.8	4.2%
Ha	Haverson loam, 0 to 1 percent slopes	0.6	2.9%
Rk	Rock land	2.2	11.5%
W	Water	6.2	32.3%
<b>Totals for Area of Interest</b>		<b>19.2</b>	<b>100.0%</b>

# WILDLIFE HABITAT PROTECTION AREA SEARCH

Select a Wildlife Habitat Protection Area on the map to view information. Or search for a Wildlife Habitat Protection Area from the dropdown below.



Visit a Wildlife Habitat Protection Area

Select a Wildlife Habitat Protection Area



**BASEMAPS >**

**MAP LAYERS >**

- Wetlands
- Riparian
- Riparian Mapping Areas
- Data Source
  - Source Type
  - Image Scale
  - Image Year
- Areas of Interest
- FWS Managed Lands
- Historic Wetland Data



**LEGEND**

**Wetlands**

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

**Riparian**

- Forested/Shrub
- Herbaceous

1:9,028  
45.786 | -108.452

# 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.



Untitled map

Layers

Get started

You can explore maps, add layers, and more without signing in. To save your work, sign in before creating your map.

[Learn more about Map Viewer](#)

USFWS Critical Habitat

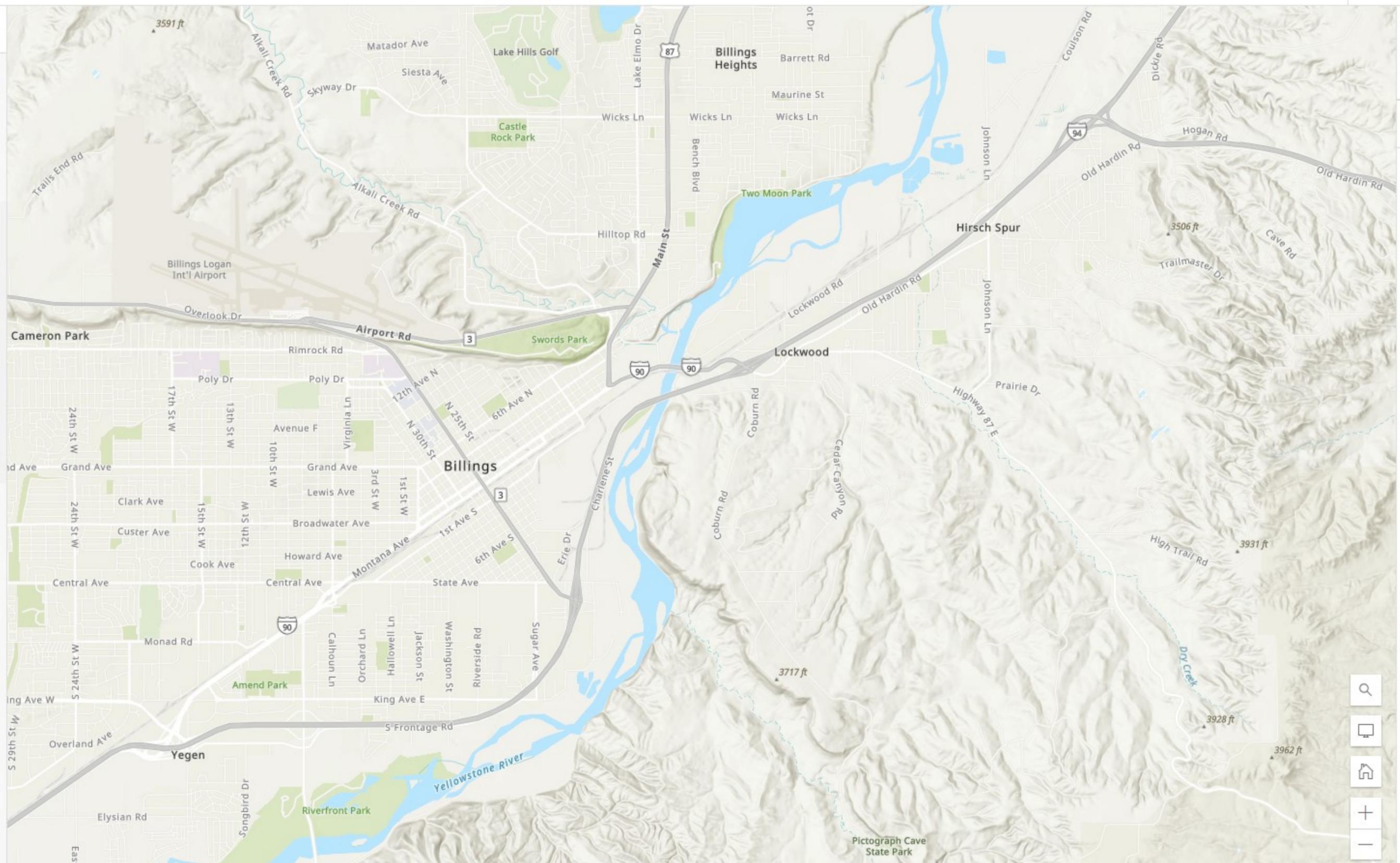
Critical Habitat - Polygon Features - Final

Critical Habitat - Linear Features - Final

Critical Habitat - Polygon Features - Proposed

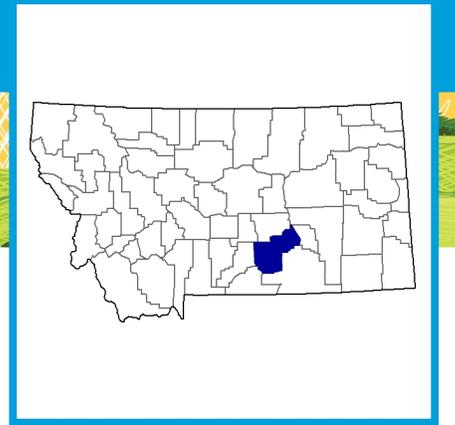
Critical Habitat - Linear Features - Proposed

Add



Map navigation controls including search, home, and zoom in/out buttons.

# 2017 CENSUS OF AGRICULTURE County Profile



## Yellowstone County Montana

### Total and Per Farm Overview, 2017 and change since 2012

	2017	% change since 2012
Number of farms	1,314	-1
Land in farms (acres)	1,602,794	-4
Average size of farm (acres)	1,220	-3
<b>Total</b>	<b>(\$)</b>	
Market value of products sold	135,287,000	-38
Government payments	5,615,000	+46
Farm-related income	8,851,000	+52
Total farm production expenses	127,316,000	-32
Net cash farm income	22,437,000	-45
<b>Per farm average</b>	<b>(\$)</b>	
Market value of products sold	102,958	-37
Government payments (average per farm receiving)	19,033	+99
Farm-related income	17,846	+47
Total farm production expenses	96,892	-31
Net cash farm income	17,076	-44

**4** Percent of state agriculture sales

#### Share of Sales by Type (%)

Crops	32
Livestock, poultry, and products	68

#### Land in Farms by Use (%) <sup>a</sup>

Cropland	19
Pastureland	76
Woodland	4
Other	1

**Acres irrigated: 76,822**

5% of land in farms

#### Land Use Practices (% of farms)

No till	6
Reduced till	4
Intensive till	9
Cover crop	2

### Farms by Value of Sales

	Number	Percent of Total <sup>a</sup>
Less than \$2,500	571	43
\$2,500 to \$4,999	98	7
\$5,000 to \$9,999	122	9
\$10,000 to \$24,999	149	11
\$25,000 to \$49,999	107	8
\$50,000 to \$99,999	66	5
\$100,000 or more	201	15

### Farms by Size

	Number	Percent of Total <sup>a</sup>
1 to 9 acres	201	15
10 to 49 acres	402	31
50 to 179 acres	262	20
180 to 499 acres	172	13
500 to 999 acres	86	7
1,000 + acres	191	15



### Market Value of Agricultural Products Sold

	Sales (\$1,000)	Rank in State <sup>b</sup>	Counties Producing Item	Rank in U.S. <sup>b</sup>	Counties Producing Item
<b>Total</b>	<b>135,287</b>	<b>2</b>	<b>56</b>	<b>857</b>	<b>3,077</b>
<b>Crops</b>	<b>43,078</b>	<b>14</b>	<b>56</b>	<b>1,192</b>	<b>3,073</b>
Grains, oilseeds, dry beans, dry peas	27,446	16	54	1,013	2,916
Tobacco	-	-	-	-	323
Cotton and cottonseed	-	-	-	-	647
Vegetables, melons, potatoes, sweet potatoes	305	10	42	1,123	2,821
Fruits, tree nuts, berries	19	14	27	1,736	2,748
Nursery, greenhouse, floriculture, sod	1,549	8	35	724	2,601
Cultivated Christmas trees, short rotation woody crops	-	-	9	-	1,384
Other crops and hay	13,759	6	56	182	3,040
<b>Livestock, poultry, and products</b>	<b>92,209</b>	<b>2</b>	<b>56</b>	<b>563</b>	<b>3,073</b>
Poultry and eggs	(D)	10	53	763	3,007
Cattle and calves	86,710	2	56	148	3,055
Milk from cows	(D)	14	25	(D)	1,892
Hogs and pigs	(D)	14	54	598	2,856
Sheep, goats, wool, mohair, milk	(D)	28	55	(D)	2,984
Horses, ponies, mules, burros, donkeys	723	6	56	280	2,970
Aquaculture	-	-	13	-	1,251
Other animals and animal products	1,873	8	52	98	2,878

<b>Total Producers <sup>c</sup></b>	<b>2,301</b>	<b>Percent of farms that:</b>	<b>Top Crops in Acres <sup>d</sup></b>
<b>Sex</b>		Have internet access	83
Male	1,330		
Female	971		
<b>Age</b>		Farm organically	(Z)
<35	132		
35 – 64	1,398		
65 and older	771		
<b>Race</b>		Sell directly to consumers	4
American Indian/Alaska Native	69		
Asian	4		
Black or African American	4		
Native Hawaiian/Pacific Islander	3		
White	2,207	Hire farm labor	16
More than one race	14		
<b>Other characteristics</b>		Are family farms	96
Hispanic, Latino, Spanish origin	42		
With military service	223		
New and beginning farmers	586		
			<b>Livestock Inventory (Dec 31, 2017)</b>
			Broilers and other meat-type chickens (D)
			Cattle and calves 110,710
			Goats 834
			Hogs and pigs (D)
			Horses and ponies 3,400
			Layers 20,552
			Pullets (D)
			Sheep and lambs 2,082
			Turkeys (D)

See 2017 Census of Agriculture, U.S. Summary and State Data, for complete footnotes, explanations, definitions, commodity descriptions, and methodology.

<sup>a</sup> May not add to 100% due to rounding. <sup>b</sup> Among counties whose rank can be displayed. <sup>c</sup> Data collected for a maximum of four producers per farm.

<sup>d</sup> Crop commodity names may be shortened; see full names at [www.nass.usda.gov/go/cropnames.pdf](http://www.nass.usda.gov/go/cropnames.pdf). <sup>e</sup> Position below the line does not indicate rank.

(D) Withheld to avoid disclosing data for individual operations. (NA) Not available. (Z) Less than half of the unit shown. (-) Represents zero.

Table 10. Irrigation: 2017 and 2012

[For meaning of abbreviations and symbols, see introductory text.]

Item	Montana	Beaverhead	Big Horn	Blaine	Broadwater
Farms ..... number, 2017	9,941	347	115	175	168
..... number, 2012	9,451	295	150	170	156
Land in irrigated farms ..... acres, 2017	21,249,069	1,139,059	782,782	829,013	347,469
..... acres, 2012	22,143,379	1,189,927	538,280	816,077	353,970
Harvested cropland ..... farms, 2017	8,172	265	102	172	149
..... farms, 2012	7,810	243	123	165	143
..... acres, 2017	3,126,650	135,695	78,135	108,482	43,280
..... acres, 2012	3,196,930	118,507	79,291	132,540	61,961
Other cropland, excluding cropland pastured ..... farms, 2017	2,435	41	39	84	47
..... farms, 2012	2,091	13	42	92	40
..... acres, 2017	1,136,316	5,786	31,985	67,915	19,788
..... acres, 2012	1,138,234	3,737	24,478	72,954	20,321
Pastureland, excluding woodland pastured ..... farms, 2017	7,306	270	89	138	134
..... farms, 2012	7,191	238	113	137	117
..... acres, 2017	15,967,387	984,150	657,626	640,898	269,911
..... acres, 2012	16,556,763	1,047,003	415,631	595,804	256,899
Irrigated land ..... acres, 2017	2,061,236	263,772	44,093	44,226	47,139
..... acres, 2012	1,903,019	238,454	46,292	50,472	39,566
Harvested cropland ..... farms, 2017	8,004	264	99	172	149
..... farms, 2012	7,676	240	123	161	141
..... acres, 2017	1,556,834	129,654	42,395	36,285	38,474
..... acres, 2012	1,482,359	112,745	43,670	42,086	34,915
Pastureland and other land ..... farms, 2017	4,168	200	36	35	71
..... farms, 2012	3,864	163	50	48	57
..... acres, 2017	504,402	134,118	1,698	7,941	8,665
..... acres, 2012	420,660	125,709	2,622	8,386	4,651
Land irrigated at least once in the past five years (see text) ..... farms, 2017	11,181	372	126	187	192
..... farms, 2012	(NA)	(NA)	(NA)	(NA)	(NA)
..... acres, 2017	2,372,496	282,186	48,072	51,123	52,807
..... acres, 2012	(NA)	(NA)	(NA)	(NA)	(NA)
2017 irrigated acres by size of farm:					
1 to 9 acres ..... farms	1,171	38	1	11	5
..... acres irrigated	4,247	116	(D)	(D)	(D)
10 to 49 acres ..... farms	2,679	88	19	8	32
..... acres irrigated	39,722	1,424	352	110	486
50 to 69 acres ..... farms	335	11	3	4	11
..... acres irrigated	11,217	405	88	180	484
70 to 99 acres ..... farms	423	10	5	9	7
..... acres irrigated	19,943	622	214	533	242
100 to 139 acres ..... farms	389	12	4	8	11
..... acres irrigated	25,685	827	341	696	611
140 to 179 acres ..... farms	398	16	1	4	12
..... acres irrigated	30,022	757	(D)	510	1,293
180 to 219 acres ..... farms	200	6	2	2	6
..... acres irrigated	21,255	695	(D)	(D)	416
220 to 259 acres ..... farms	182	5	1	4	1
..... acres irrigated	20,308	683	(D)	285	(D)
260 to 499 acres ..... farms	783	18	9	9	11
..... acres irrigated	132,896	4,783	1,522	1,792	2,262
500 to 999 acres ..... farms	671	13	8	28	6
..... acres irrigated	196,938	1,924	1,918	7,546	1,074
1,000 to 1,999 acres ..... farms	718	33	10	10	18
..... acres irrigated	306,320	26,626	7,324	1,867	10,300
2,000 acres or more ..... farms	1,992	97	52	78	48
..... acres irrigated	1,252,683	224,910	31,851	30,628	29,932
2012 irrigated acres by size of farm:					
1 to 9 acres ..... farms	832	23	2	7	3
..... acres irrigated	2,952	(D)	(D)	21	10
10 to 49 acres ..... farms	2,413	56	31	3	20
..... acres irrigated	36,634	867	598	29	406
50 to 69 acres ..... farms	391	7	3	3	11
..... acres irrigated	12,794	237	138	156	389
70 to 99 acres ..... farms	429	5	8	8	7
..... acres irrigated	21,238	306	474	471	174
100 to 139 acres ..... farms	384	12	7	8	4
..... acres irrigated	23,431	827	646	498	102
140 to 179 acres ..... farms	324	14	3	3	8
..... acres irrigated	25,219	1,290	(D)	261	728
180 to 219 acres ..... farms	247	11	5	5	7
..... acres irrigated	22,204	1,014	326	410	532
220 to 259 acres ..... farms	180	2	3	4	4
..... acres irrigated	22,644	(D)	283	355	603
260 to 499 acres ..... farms	747	24	9	13	10
..... acres irrigated	126,355	5,076	1,359	2,238	1,733
500 to 999 acres ..... farms	760	10	14	13	17
..... acres irrigated	203,449	2,971	4,622	3,204	5,374
1,000 to 1,999 acres ..... farms	736	27	17	25	17
..... acres irrigated	276,327	18,019	8,359	5,516	7,675
2,000 acres or more ..... farms	2,008	104	48	78	48
..... acres irrigated	1,129,772	207,520	29,366	37,313	21,840

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Table 10. Irrigation: 2017 and 2012 (continued)

[For meaning of abbreviations and symbols, see introductory text.]

Item	Carbon	Carter	Cascade	Chouteau	Custer
Farms ..... number, 2017	490	27	309	61	157
..... number, 2012	431	14	303	68	175
Land in irrigated farms ..... acres, 2017	549,673	164,615	518,391	430,423	822,101
..... acres, 2012	406,988	95,809	531,901	476,906	1,108,702
Harvested cropland ..... farms, 2017	420	19	273	61	148
..... farms, 2012	363	13	242	67	146
..... acres, 2017	93,977	14,485	106,254	91,434	31,206
..... acres, 2012	63,802	10,536	98,159	81,402	41,431
Other cropland, excluding cropland pastured ..... farms, 2017	72	18	87	42	39
..... farms, 2012	93	9	74	36	31
..... acres, 2017	8,448	19,135	44,196	80,117	10,665
..... acres, 2012	19,292	3,399	46,658	74,833	18,509
Pastureland, excluding woodland pastured ..... farms, 2017	397	26	222	48	116
..... farms, 2012	363	13	232	53	129
..... acres, 2017	417,332	130,094	346,615	237,261	748,398
..... acres, 2012	299,866	75,837	348,068	296,709	1,028,642
Irrigated land ..... acres, 2017	98,757	2,312	35,695	14,216	37,223
..... acres, 2012	72,781	1,390	33,414	10,379	30,315
Harvested cropland ..... farms, 2017	410	18	266	61	147
..... farms, 2012	356	12	241	65	146
..... acres, 2017	78,264	1,166	32,091	14,129	25,790
..... acres, 2012	53,062	(D)	26,715	(D)	29,068
Pastureland and other land ..... farms, 2017	239	9	91	3	49
..... farms, 2012	220	2	122	5	54
..... acres, 2017	20,493	1,146	3,604	87	11,433
..... acres, 2012	19,719	(D)	6,699	(D)	1,247
Land irrigated at least once in the past five years (see text) ..... farms, 2017	529	32	345	71	169
..... farms, 2012	(NA)	(NA)	(NA)	(NA)	(NA)
..... acres, 2017	124,136	4,335	40,292	19,375	39,017
..... acres, 2012	(NA)	(NA)	(NA)	(NA)	(NA)
2017 irrigated acres by size of farm:					
1 to 9 acres ..... farms	32	1	48	1	13
..... acres irrigated	102	(D)	(D)	(D)	81
10 to 49 acres ..... farms	112	-	69	2	29
..... acres irrigated	1,923	-	1,070	(D)	560
50 to 69 acres ..... farms	16	-	23	3	4
..... acres irrigated	640	-	558	55	133
70 to 99 acres ..... farms	27	-	11	2	6
..... acres irrigated	1,405	-	537	(D)	225
100 to 139 acres ..... farms	28	-	21	-	21
..... acres irrigated	2,037	-	1,297	-	1,453
140 to 179 acres ..... farms	38	-	11	-	4
..... acres irrigated	3,532	-	780	-	509
180 to 219 acres ..... farms	6	-	2	4	6
..... acres irrigated	754	-	(D)	601	1,049
220 to 259 acres ..... farms	5	-	11	-	-
..... acres irrigated	448	-	907	-	-
260 to 499 acres ..... farms	59	6	25	3	11
..... acres irrigated	9,960	120	3,542	24	2,235
500 to 999 acres ..... farms	50	1	17	3	14
..... acres irrigated	20,252	(D)	2,539	95	3,791
1,000 to 1,999 acres ..... farms	54	1	18	11	4
..... acres irrigated	29,988	(D)	4,776	2,144	747
2,000 acres or more ..... farms	63	18	53	32	45
..... acres irrigated	27,716	2,121	19,275	11,075	26,440
2012 irrigated acres by size of farm:					
1 to 9 acres ..... farms	14	1	36	3	13
..... acres irrigated	57	(D)	95	9	70
10 to 49 acres ..... farms	83	1	77	4	42
..... acres irrigated	1,557	(D)	1,154	42	706
50 to 69 acres ..... farms	11	-	16	1	7
..... acres irrigated	384	-	471	(D)	255
70 to 99 acres ..... farms	38	-	20	4	6
..... acres irrigated	1,869	-	957	334	255
100 to 139 acres ..... farms	22	-	13	2	10
..... acres irrigated	1,453	-	883	(D)	597
140 to 179 acres ..... farms	27	-	17	-	2
..... acres irrigated	2,779	-	1,458	-	(D)
180 to 219 acres ..... farms	11	-	6	-	6
..... acres irrigated	1,574	-	217	-	656
220 to 259 acres ..... farms	13	-	6	-	2
..... acres irrigated	1,579	-	573	-	(D)
260 to 499 acres ..... farms	68	-	33	1	19
..... acres irrigated	9,683	-	5,099	(D)	3,502
500 to 999 acres ..... farms	58	2	10	2	15
..... acres irrigated	18,666	(D)	2,595	(D)	4,502
1,000 to 1,999 acres ..... farms	39	3	24	7	9
..... acres irrigated	15,866	308	6,545	965	2,009
2,000 acres or more ..... farms	47	7	45	44	44
..... acres irrigated	17,314	(D)	13,367	8,459	17,433

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Table 10. Irrigation: 2017 and 2012 (continued)

[For meaning of abbreviations and symbols, see introductory text.]

Item	Daniels	Dawson	Deer Lodge	Fallon	Fergus
Farms ..... number, 2017	5	93	47	11	79
..... number, 2012	12	74	44	9	70
Land in irrigated farms ..... acres, 2017	(D)	200,466	68,542	92,692	449,110
..... acres, 2012	70,143	139,222	45,077	56,120	530,553
Harvested cropland ..... farms, 2017	4	89	41	11	79
..... farms, 2012	11	65	34	9	67
..... acres, 2017	(D)	43,667	7,809	5,390	71,466
..... acres, 2012	34,098	33,392	7,132	3,212	69,236
Other cropland, excluding cropland pastured ..... farms, 2017	3	51	5	7	36
..... farms, 2012	8	21	3	5	39
..... acres, 2017	(D)	13,820	504	2,937	18,693
..... acres, 2012	7,166	4,837	130	1,878	24,427
Pastureland, excluding woodland pastured ..... farms, 2017	5	76	32	10	69
..... farms, 2012	9	53	38	9	64
..... acres, 2017	(D)	134,562	53,410	84,063	349,904
..... acres, 2012	28,289	95,295	33,261	49,651	413,752
Irrigated land ..... acres, 2017	645	21,170	13,117	1,424	16,250
..... acres, 2012	4,053	17,151	10,760	877	12,352
Harvested cropland ..... farms, 2017	4	89	41	11	70
..... farms, 2012	11	65	34	9	64
..... acres, 2017	(D)	20,012	7,749	(D)	14,085
..... acres, 2012	(D)	16,463	7,107	877	11,231
Pastureland and other land ..... farms, 2017	1	16	16	1	19
..... farms, 2012	1	13	24	-	14
..... acres, 2017	(D)	1,158	5,368	(D)	2,165
..... acres, 2012	(D)	688	3,653	-	1,121
Land irrigated at least once in the past five years (see text) ..... farms, 2017	6	97	50	16	102
..... farms, 2012	(NA)	(NA)	(NA)	(NA)	(NA)
..... acres, 2017	903	35,059	14,451	2,195	19,626
..... acres, 2012	(NA)	(NA)	(NA)	(NA)	(NA)
2017 irrigated acres by size of farm:					
1 to 9 acres ..... farms	-	-	2	-	14
..... acres irrigated	-	-	(D)	-	20
10 to 49 acres ..... farms	1	7	8	-	-
..... acres irrigated	(D)	100	145	-	-
50 to 69 acres ..... farms	-	1	-	-	-
..... acres irrigated	-	(D)	-	-	-
70 to 99 acres ..... farms	-	9	6	-	-
..... acres irrigated	-	77	228	-	-
100 to 139 acres ..... farms	-	6	1	-	2
..... acres irrigated	-	380	(D)	-	(D)
140 to 179 acres ..... farms	1	4	4	-	1
..... acres irrigated	(D)	515	232	-	(D)
180 to 219 acres ..... farms	-	4	2	-	-
..... acres irrigated	-	292	(D)	-	-
220 to 259 acres ..... farms	-	3	-	-	-
..... acres irrigated	-	274	-	-	-
260 to 499 acres ..... farms	1	10	3	1	2
..... acres irrigated	(D)	1,172	216	(D)	(D)
500 to 999 acres ..... farms	-	15	4	4	3
..... acres irrigated	-	6,231	894	(D)	(D)
1,000 to 1,999 acres ..... farms	-	2	5	-	4
..... acres irrigated	-	(D)	1,200	-	186
2,000 acres or more ..... farms	2	32	12	6	53
..... acres irrigated	(D)	11,289	10,153	1,054	15,306
2012 irrigated acres by size of farm:					
1 to 9 acres ..... farms	-	1	2	-	5
..... acres irrigated	-	(D)	(D)	-	7
10 to 49 acres ..... farms	2	1	9	-	2
..... acres irrigated	(D)	(D)	113	-	(D)
50 to 69 acres ..... farms	-	4	5	-	-
..... acres irrigated	-	(D)	184	-	-
70 to 99 acres ..... farms	-	4	1	-	-
..... acres irrigated	-	232	(D)	-	-
100 to 139 acres ..... farms	-	7	-	-	-
..... acres irrigated	-	557	-	-	-
140 to 179 acres ..... farms	-	-	3	-	-
..... acres irrigated	-	-	210	-	-
180 to 219 acres ..... farms	-	3	1	-	1
..... acres irrigated	-	345	(D)	-	(D)
220 to 259 acres ..... farms	-	1	-	-	-
..... acres irrigated	-	(D)	-	-	-
260 to 499 acres ..... farms	-	8	5	-	2
..... acres irrigated	-	726	520	-	(D)
500 to 999 acres ..... farms	-	15	9	4	4
..... acres irrigated	-	5,682	2,077	80	225
1,000 to 1,999 acres ..... farms	2	11	1	-	5
..... acres irrigated	(D)	3,833	(D)	-	744
2,000 acres or more ..... farms	8	19	8	5	51
..... acres irrigated	3,650	5,646	6,914	797	11,056

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Table 10. Irrigation: 2017 and 2012 (continued)

[For meaning of abbreviations and symbols, see introductory text.]

Item	Flathead	Gallatin	Garfield	Glacier	Golden Valley	Granite
Farms ..... number, 2017	281	454	19	93	36	89
..... number, 2012	231	437	14	90	39	103
Land in irrigated farms ..... acres, 2017	85,125	416,067	208,367	377,378	342,390	237,566
..... acres, 2012	78,233	323,231	135,899	348,778	382,001	249,666
Harvested cropland ..... farms, 2017	250	361	19	92	36	79
..... farms, 2012	208	360	12	86	31	82
..... acres, 2017	51,377	116,985	14,004	146,718	16,712	23,718
..... acres, 2012	38,987	117,115	10,082	119,973	17,321	21,178
Other cropland, excluding cropland pastured ..... farms, 2017	72	110	13	29	24	15
..... farms, 2012	46	92	6	39	27	10
..... acres, 2017	8,341	27,395	12,122	46,570	12,303	1,365
..... acres, 2012	2,363	31,014	6,495	47,036	19,149	1,887
Pastureland, excluding woodland pastured ..... farms, 2017	117	304	17	71	33	74
..... farms, 2012	127	331	12	71	36	88
..... acres, 2017	10,549	242,540	179,961	176,659	302,362	170,502
..... acres, 2012	16,872	145,810	118,831	175,037	329,622	182,757
Irrigated land ..... acres, 2017	22,088	81,251	2,774	27,432	7,334	31,861
..... acres, 2012	18,193	79,100	1,536	34,064	7,043	28,520
Harvested cropland ..... farms, 2017	247	348	19	87	35	77
..... farms, 2012	199	350	12	85	31	82
..... acres, 2017	20,289	71,289	2,774	(D)	6,800	23,001
..... acres, 2012	16,564	69,172	(D)	30,371	6,007	19,707
Pastureland and other land ..... farms, 2017	74	182	-	9	6	43
..... farms, 2012	61	177	2	16	10	52
..... acres, 2017	1,799	9,962	-	(D)	534	8,860
..... acres, 2012	1,629	9,928	(D)	3,693	1,036	8,813
Land irrigated at least once in the past five years (see text) ..... farms, 2017	387	548	24	98	41	95
..... farms, 2012	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
..... acres, 2017	29,810	97,963	4,649	28,626	8,061	36,938
..... acres, 2012	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
2017 irrigated acres by size of farm:						
1 to 9 acres ..... farms	65	44	-	2	-	-
..... acres irrigated	(D)	83	-	(D)	-	-
10 to 49 acres ..... farms	97	153	-	16	7	4
..... acres irrigated	973	1,930	-	485	90	47
50 to 69 acres ..... farms	9	16	2	5	-	4
..... acres irrigated	176	470	(D)	65	-	204
70 to 99 acres ..... farms	12	20	-	2	-	1
..... acres irrigated	513	629	-	(D)	-	(D)
100 to 139 acres ..... farms	17	18	-	-	-	-
..... acres irrigated	1,227	1,204	-	-	-	-
140 to 179 acres ..... farms	2	12	-	1	1	1
..... acres irrigated	(D)	1,106	-	(D)	(D)	(D)
180 to 219 acres ..... farms	7	17	1	-	-	3
..... acres irrigated	713	1,816	(D)	-	-	(D)
220 to 259 acres ..... farms	4	6	-	6	-	2
..... acres irrigated	338	854	-	1,340	-	(D)
260 to 499 acres ..... farms	27	56	-	10	-	13
..... acres irrigated	2,875	11,072	-	1,560	-	2,856
500 to 999 acres ..... farms	8	31	-	10	2	12
..... acres irrigated	1,941	9,805	-	2,410	(D)	3,606
1,000 to 1,999 acres ..... farms	21	41	2	4	4	11
..... acres irrigated	6,663	20,266	(D)	(D)	620	5,374
2,000 acres or more ..... farms	12	40	14	37	22	38
..... acres irrigated	6,458	32,016	2,695	20,757	6,409	18,958
2012 irrigated acres by size of farm:						
1 to 9 acres ..... farms	38	47	-	-	1	1
..... acres irrigated	70	145	-	-	(D)	(D)
10 to 49 acres ..... farms	70	120	4	8	3	9
..... acres irrigated	722	1,344	(D)	238	18	145
50 to 69 acres ..... farms	16	23	-	-	2	4
..... acres irrigated	373	788	-	-	(D)	147
70 to 99 acres ..... farms	15	18	-	4	-	-
..... acres irrigated	541	669	-	310	-	-
100 to 139 acres ..... farms	10	17	-	2	-	8
..... acres irrigated	526	617	-	(D)	-	354
140 to 179 acres ..... farms	10	18	-	3	-	3
..... acres irrigated	454	1,367	-	206	-	(D)
180 to 219 acres ..... farms	12	21	1	1	-	1
..... acres irrigated	654	2,435	(D)	(D)	-	(D)
220 to 259 acres ..... farms	7	7	-	2	-	4
..... acres irrigated	440	1,317	-	(D)	-	854
260 to 499 acres ..... farms	19	44	-	9	1	8
..... acres irrigated	2,926	8,163	-	1,098	(D)	1,805
500 to 999 acres ..... farms	12	29	-	8	3	6
..... acres irrigated	3,287	9,518	-	1,760	118	1,084
1,000 to 1,999 acres ..... farms	15	47	-	6	5	16
..... acres irrigated	2,855	18,833	-	1,362	958	8,195
2,000 acres or more ..... farms	7	46	9	47	24	43
..... acres irrigated	5,345	33,904	1,504	28,510	5,923	15,713

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Table 10. Irrigation: 2017 and 2012 (continued)

[For meaning of abbreviations and symbols, see introductory text.]

Item	Hill	Jefferson	Judith Basin	Lake	Lewis and Clark	Liberty
Farms ..... number, 2017	35	186	59	803	410	20
..... number, 2012	48	169	54	762	369	19
Land in irrigated farms ..... acres, 2017	124,775	296,913	250,873	241,990	681,845	209,654
..... acres, 2012	218,586	309,935	362,313	256,094	629,627	234,208
Harvested cropland ..... farms, 2017	34	139	49	606	357	20
..... farms, 2012	46	127	49	597	321	16
..... acres, 2017	51,897	28,514	51,548	56,742	58,087	79,718
..... acres, 2012	56,316	24,356	65,171	59,354	57,087	56,852
Other cropland, excluding cropland pastured ..... farms, 2017	20	29	23	139	62	16
..... farms, 2012	22	26	29	48	48	13
..... acres, 2017	16,132	16,304	8,236	12,407	8,991	32,495
..... acres, 2012	40,326	14,544	11,879	2,287	16,123	29,295
Pastureland, excluding woodland pastured ..... farms, 2017	27	170	53	515	250	9
..... farms, 2012	44	147	49	517	234	18
..... acres, 2017	50,264	240,115	186,223	158,720	554,877	90,794
..... acres, 2012	114,759	244,458	273,279	158,687	475,690	146,951
Irrigated land ..... acres, 2017	4,127	33,458	13,702	100,398	48,209	7,017
..... acres, 2012	9,437	29,215	14,008	80,691	47,504	5,915
Harvested cropland ..... farms, 2017	29	134	45	590	354	20
..... farms, 2012	45	125	46	580	320	16
..... acres, 2017	(D)	22,707	10,168	50,884	43,049	(D)
..... acres, 2012	(D)	22,516	13,005	49,720	39,607	5,764
Pastureland and other land ..... farms, 2017	8	97	19	437	144	1
..... farms, 2012	3	75	12	396	123	3
..... acres, 2017	(D)	10,751	3,534	49,514	5,160	(D)
..... acres, 2012	(D)	6,699	1,003	30,971	7,897	151
Land irrigated at least once in the past five years (see text) ..... farms, 2017	41	210	71	893	461	30
..... farms, 2012	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
..... acres, 2017	4,709	36,629	18,847	119,151	53,447	9,026
..... acres, 2012	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
2017 irrigated acres by size of farm:						
1 to 9 acres ..... farms	-	12	-	173	65	-
..... acres irrigated	-	(D)	-	476	286	-
10 to 49 acres ..... farms	2	51	2	258	197	-
..... acres irrigated	(D)	641	(D)	4,099	3,124	-
50 to 69 acres ..... farms	-	13	3	28	15	-
..... acres irrigated	-	214	75	1,156	530	-
70 to 99 acres ..... farms	-	2	-	71	21	-
..... acres irrigated	-	(D)	-	3,863	1,402	-
100 to 139 acres ..... farms	-	7	-	40	12	-
..... acres irrigated	-	340	-	2,988	649	-
140 to 179 acres ..... farms	2	11	-	34	16	-
..... acres irrigated	(D)	250	-	3,103	890	-
180 to 219 acres ..... farms	-	7	-	16	7	-
..... acres irrigated	-	330	-	2,112	801	-
220 to 259 acres ..... farms	2	4	2	15	4	2
..... acres irrigated	(D)	240	(D)	1,759	210	(D)
260 to 499 acres ..... farms	8	17	1	60	7	-
..... acres irrigated	349	2,855	(D)	14,233	681	-
500 to 999 acres ..... farms	3	12	3	46	9	3
..... acres irrigated	378	3,395	240	18,853	3,020	(D)
1,000 to 1,999 acres ..... farms	6	21	15	33	12	-
..... acres irrigated	170	7,960	3,228	14,712	2,863	-
2,000 acres or more ..... farms	12	29	33	29	45	15
..... acres irrigated	2,873	17,134	10,057	33,044	33,753	6,427
2012 irrigated acres by size of farm:						
1 to 9 acres ..... farms	3	10	-	133	28	-
..... acres irrigated	6	36	-	398	113	-
10 to 49 acres ..... farms	3	45	3	260	188	-
..... acres irrigated	(D)	554	(D)	4,480	2,652	-
50 to 69 acres ..... farms	2	13	-	28	18	-
..... acres irrigated	(D)	226	-	1,067	762	-
70 to 99 acres ..... farms	-	6	-	80	15	-
..... acres irrigated	-	201	-	4,788	713	-
100 to 139 acres ..... farms	-	10	1	54	16	-
..... acres irrigated	-	329	(D)	4,182	865	-
140 to 179 acres ..... farms	-	9	-	30	12	-
..... acres irrigated	-	251	-	3,305	925	-
180 to 219 acres ..... farms	1	6	-	19	8	-
..... acres irrigated	(D)	390	-	2,418	576	-
220 to 259 acres ..... farms	3	-	-	16	6	-
..... acres irrigated	41	-	-	2,527	634	-
260 to 499 acres ..... farms	1	16	2	59	7	-
..... acres irrigated	(D)	2,226	(D)	13,269	739	-
500 to 999 acres ..... farms	3	13	4	31	22	3
..... acres irrigated	115	2,433	393	12,229	3,195	151
1,000 to 1,999 acres ..... farms	1	13	7	23	6	-
..... acres irrigated	(D)	3,515	912	10,840	1,080	-
2,000 acres or more ..... farms	31	28	37	29	43	16
..... acres irrigated	9,146	19,054	12,311	21,188	35,250	5,764

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Table 10. Irrigation: 2017 and 2012 (continued)

[For meaning of abbreviations and symbols, see introductory text.]

Item	Lincoln	McCone	Madison	Meagher	Mineral	Missoula
Farms ..... number, 2017	129	19	381	80	27	363
..... number, 2012	95	57	346	72	28	363
Land in irrigated farms ..... acres, 2017	24,922	112,367	757,604	797,072	(D)	65,801
..... acres, 2012	22,279	247,173	923,006	722,906	4,818	83,945
Harvested cropland ..... farms, 2017	105	18	311	78	23	231
..... farms, 2012	78	56	287	66	23	251
..... acres, 2017	4,469	17,491	97,480	60,629	(D)	11,378
..... acres, 2012	3,489	83,141	90,473	48,658	760	12,636
Other cropland, excluding cropland pastured ..... farms, 2017	22	14	45	25	8	54
..... farms, 2012	13	27	51	21	4	30
..... acres, 2017	301	8,325	8,156	12,819	193	2,749
..... acres, 2012	260	16,902	13,099	11,538	(D)	1,669
Pastureland, excluding woodland pastured ..... farms, 2017	78	16	331	73	21	234
..... farms, 2012	57	38	307	59	16	247
..... acres, 2017	10,603	85,574	625,514	665,114	(D)	29,636
..... acres, 2012	7,506	138,402	728,558	584,493	875	40,794
Irrigated land ..... acres, 2017	4,890	7,273	130,295	52,074	633	15,458
..... acres, 2012	3,512	14,172	111,891	36,075	862	16,798
Harvested cropland ..... farms, 2017	98	18	306	75	23	229
..... farms, 2012	78	56	286	65	23	241
..... acres, 2017	3,824	(D)	83,474	42,619	493	10,493
..... acres, 2012	2,236	(D)	80,622	34,443	678	10,249
Pastureland and other land ..... farms, 2017	46	2	187	19	10	190
..... farms, 2012	28	2	184	14	5	200
..... acres, 2017	1,066	(D)	46,821	9,455	140	4,965
..... acres, 2012	1,276	(D)	31,269	1,632	184	6,549
Land irrigated at least once in the past five years (see text) ..... farms, 2017	155	19	398	98	42	406
..... farms, 2012	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
..... acres, 2017	6,121	7,443	142,915	59,772	1,131	19,200
..... acres, 2012	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
2017 irrigated acres by size of farm:						
1 to 9 acres ..... farms	21	-	9	-	3	121
..... acres irrigated	(D)	-	23	-	5	384
10 to 49 acres ..... farms	50	-	88	10	13	130
..... acres irrigated	528	-	1,568	(D)	128	1,538
50 to 69 acres ..... farms	7	-	9	-	1	11
..... acres irrigated	143	-	314	-	(D)	216
70 to 99 acres ..... farms	10	-	9	-	-	10
..... acres irrigated	383	-	432	-	-	249
100 to 139 acres ..... farms	10	-	12	-	3	24
..... acres irrigated	391	-	848	-	36	1,237
140 to 179 acres ..... farms	7	-	19	2	2	13
..... acres irrigated	320	-	1,386	(D)	(D)	557
180 to 219 acres ..... farms	-	-	10	-	-	5
..... acres irrigated	4	-	1,118	-	-	380
220 to 259 acres ..... farms	-	-	8	-	-	7
..... acres irrigated	429	-	704	-	-	620
260 to 499 acres ..... farms	10	2	47	4	1	18
..... acres irrigated	415	(D)	5,876	1,170	(D)	2,566
500 to 999 acres ..... farms	3	1	22	-	4	12
..... acres irrigated	1,060	(D)	8,592	-	389	2,460
1,000 to 1,999 acres ..... farms	4	2	57	9	-	5
..... acres irrigated	560	(D)	22,049	1,914	-	1,564
2,000 acres or more ..... farms	3	14	91	55	-	7
..... acres irrigated	(D)	6,797	87,385	48,535	-	3,687
2012 irrigated acres by size of farm:						
1 to 9 acres ..... farms	8	-	9	-	3	84
..... acres irrigated	16	-	16	-	(D)	279
10 to 49 acres ..... farms	34	-	67	7	13	136
..... acres irrigated	524	-	1,085	220	111	1,666
50 to 69 acres ..... farms	8	-	16	1	2	20
..... acres irrigated	94	-	619	(D)	(D)	442
70 to 99 acres ..... farms	10	-	4	1	-	13
..... acres irrigated	416	-	200	(D)	-	449
100 to 139 acres ..... farms	5	-	17	1	-	20
..... acres irrigated	386	-	967	(D)	-	734
140 to 179 acres ..... farms	9	1	18	-	3	9
..... acres irrigated	383	(D)	1,784	-	102	265
180 to 219 acres ..... farms	4	-	10	-	-	11
..... acres irrigated	97	-	742	-	-	659
220 to 259 acres ..... farms	2	-	9	-	-	6
..... acres irrigated	(D)	-	1,324	-	-	121
260 to 499 acres ..... farms	4	7	39	2	4	19
..... acres irrigated	94	1,074	5,966	(D)	208	1,898
500 to 999 acres ..... farms	5	3	25	2	3	21
..... acres irrigated	382	(D)	5,646	(D)	384	4,277
1,000 to 1,999 acres ..... farms	4	12	38	9	-	14
..... acres irrigated	380	2,503	22,669	2,249	-	3,594
2,000 acres or more ..... farms	2	34	94	49	-	10
..... acres irrigated	(D)	10,362	70,873	32,927	-	2,414

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Table 10. Irrigation: 2017 and 2012 (continued)

[For meaning of abbreviations and symbols, see introductory text.]

Item	Musselshell	Park	Petroleum	Phillips	Pondera	Powder River
Farms ..... number, 2017	56	280	33	151	194	43
..... number, 2012	42	273	40	159	195	42
Land in irrigated farms ..... acres, 2017	443,328	460,480	281,359	751,377	444,589	420,102
..... acres, 2012	460,505	625,073	408,661	905,533	456,560	366,666
Harvested cropland ..... farms, 2017	49	221	33	138	180	43
..... farms, 2012	38	213	40	153	186	40
..... acres, 2017	21,059	56,602	18,261	89,386	187,832	27,084
..... acres, 2012	16,949	56,712	52,617	101,768	173,869	19,354
Other cropland, excluding cropland pastured ..... farms, 2017	22	58	16	89	125	20
..... farms, 2012	14	67	31	85	110	19
..... acres, 2017	19,162	23,572	7,866	65,222	90,789	8,838
..... acres, 2012	7,681	18,982	28,405	99,681	77,870	10,609
Pastureland, excluding woodland pastured ..... farms, 2017	39	242	31	123	147	42
..... farms, 2012	41	247	39	134	151	41
..... acres, 2017	374,622	335,656	254,697	590,653	157,969	380,433
..... acres, 2012	396,070	454,537	323,325	694,925	195,131	332,611
Irrigated land ..... acres, 2017	12,936	61,973	10,881	31,427	69,824	15,972
..... acres, 2012	11,429	57,112	11,177	33,213	65,774	9,861
Harvested cropland ..... farms, 2017	49	214	33	138	170	43
..... farms, 2012	38	204	40	153	180	40
..... acres, 2017	11,848	43,379	(D)	28,445	65,653	15,972
..... acres, 2012	9,703	41,818	10,900	30,651	63,017	9,837
Pastureland and other land ..... farms, 2017	8	156	2	33	62	-
..... farms, 2012	6	143	4	31	44	4
..... acres, 2017	1,088	18,594	(D)	2,982	4,171	-
..... acres, 2012	1,726	15,294	277	2,562	2,757	24
Land irrigated at least once in the past five years (see text) ..... farms, 2017	61	314	37	176	212	56
..... farms, 2012	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
..... acres, 2017	13,205	67,399	12,199	43,092	79,477	17,315
..... acres, 2012	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
2017 irrigated acres by size of farm:						
1 to 9 acres ..... farms	-	14	1	10	1	-
..... acres irrigated	-	50	(D)	(D)	(D)	-
10 to 49 acres ..... farms	-	67	-	15	18	-
..... acres irrigated	-	980	-	302	167	-
50 to 69 acres ..... farms	-	11	-	3	5	-
..... acres irrigated	-	510	-	116	(D)	-
70 to 99 acres ..... farms	3	13	-	3	9	3
..... acres irrigated	(D)	598	-	162	209	90
100 to 139 acres ..... farms	-	8	-	3	4	-
..... acres irrigated	-	591	-	263	387	-
140 to 179 acres ..... farms	8	9	-	10	8	-
..... acres irrigated	405	532	-	1,142	662	-
180 to 219 acres ..... farms	-	7	3	2	6	3
..... acres irrigated	-	770	420	(D)	724	45
220 to 259 acres ..... farms	-	7	-	3	4	-
..... acres irrigated	-	946	-	225	596	-
260 to 499 acres ..... farms	9	22	1	8	23	1
..... acres irrigated	1,416	3,917	(D)	1,389	2,743	(D)
500 to 999 acres ..... farms	5	31	1	8	20	2
..... acres irrigated	649	3,932	(D)	2,035	5,274	(D)
1,000 to 1,999 acres ..... farms	2	30	-	15	22	-
..... acres irrigated	(D)	12,856	-	4,320	6,541	-
2,000 acres or more ..... farms	29	61	27	71	74	34
..... acres irrigated	10,158	36,291	9,997	21,191	52,487	15,647
2012 irrigated acres by size of farm:						
1 to 9 acres ..... farms	-	11	-	3	5	-
..... acres irrigated	-	(D)	-	17	27	-
10 to 49 acres ..... farms	2	54	1	15	16	2
..... acres irrigated	(D)	863	(D)	258	262	(D)
50 to 69 acres ..... farms	-	5	-	3	4	-
..... acres irrigated	-	142	-	(D)	79	-
70 to 99 acres ..... farms	-	2	1	8	8	-
..... acres irrigated	-	(D)	(D)	415	333	-
100 to 139 acres ..... farms	3	4	-	9	3	-
..... acres irrigated	228	226	-	647	18	-
140 to 179 acres ..... farms	-	9	-	4	7	-
..... acres irrigated	-	381	-	349	306	-
180 to 219 acres ..... farms	1	8	1	5	3	-
..... acres irrigated	(D)	663	(D)	399	410	-
220 to 259 acres ..... farms	-	3	-	1	7	1
..... acres irrigated	-	505	-	(D)	888	(D)
260 to 499 acres ..... farms	-	36	-	20	14	1
..... acres irrigated	-	5,588	-	3,923	1,690	(D)
500 to 999 acres ..... farms	4	27	2	16	26	3
..... acres irrigated	595	2,461	(D)	4,392	5,917	180
1,000 to 1,999 acres ..... farms	2	38	2	7	33	5
..... acres irrigated	(D)	12,040	(D)	2,439	9,899	525
2,000 acres or more ..... farms	30	76	33	68	69	30
..... acres irrigated	9,677	34,076	10,616	20,158	45,945	9,074

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Table 10. Irrigation: 2017 and 2012 (continued)

[For meaning of abbreviations and symbols, see introductory text.]

Item	Powell	Prairie	Ravalli	Richland	Roosevelt	Rosebud
Farms ..... number, 2017	134	51	1,221	137	67	118
..... number, 2012	143	45	1,106	154	47	99
Land in irrigated farms ..... acres, 2017	528,619	251,017	179,556	411,803	252,685	1,252,050
..... acres, 2012	553,646	262,009	182,373	491,659	176,669	1,494,801
Harvested cropland ..... farms, 2017	109	49	881	133	61	113
..... farms, 2012	125	44	807	147	47	89
..... acres, 2017	43,551	22,219	37,433	101,619	101,761	38,285
..... acres, 2012	45,239	14,489	40,748	132,818	74,200	42,199
Other cropland, excluding cropland pastured ..... farms, 2017	19	28	124	64	35	42
..... farms, 2012	22	23	75	60	22	32
..... acres, 2017	4,032	5,040	3,265	34,448	40,839	17,023
..... acres, 2012	1,726	11,337	2,086	25,343	13,723	18,755
Pastureland, excluding woodland pastured ..... farms, 2017	121	45	864	97	49	83
..... farms, 2012	129	35	770	108	39	82
..... acres, 2017	333,658	222,877	86,813	270,030	103,740	1,182,042
..... acres, 2012	338,009	235,488	95,851	326,826	85,759	1,417,233
Irrigated land ..... acres, 2017	51,743	14,604	70,972	53,488	24,263	38,683
..... acres, 2012	53,316	9,240	61,574	62,730	16,611	35,894
Harvested cropland ..... farms, 2017	109	49	871	133	61	110
..... farms, 2012	123	44	792	147	46	89
..... acres, 2017	41,542	(D)	36,083	52,747	23,503	32,992
..... acres, 2012	40,553	9,100	37,837	62,220	16,198	31,354
Pastureland and other land ..... farms, 2017	66	2	737	21	8	32
..... farms, 2012	64	3	621	18	4	26
..... acres, 2017	10,201	(D)	34,889	741	760	5,691
..... acres, 2012	12,763	140	23,737	510	413	4,540
Land irrigated at least once in the past five years (see text) ..... farms, 2017	158	54	1,354	146	73	134
..... farms, 2012	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
..... acres, 2017	68,828	19,414	83,047	58,152	27,053	44,649
..... acres, 2012	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
2017 irrigated acres by size of farm:						
1 to 9 acres ..... farms	6	3	301	5	-	-
..... acres irrigated	(D)	14	1,538	(D)	-	-
10 to 49 acres ..... farms	13	-	600	14	-	3
..... acres irrigated	165	-	8,808	184	-	64
50 to 69 acres ..... farms	3	-	47	6	-	1
..... acres irrigated	(D)	-	1,903	244	-	(D)
70 to 99 acres ..... farms	5	5	56	6	-	6
..... acres irrigated	103	202	2,943	473	-	328
100 to 139 acres ..... farms	7	-	32	1	-	6
..... acres irrigated	274	-	2,407	(D)	-	644
140 to 179 acres ..... farms	9	2	25	7	2	5
..... acres irrigated	425	(D)	1,997	511	(D)	500
180 to 219 acres ..... farms	4	-	22	-	2	2
..... acres irrigated	230	-	2,324	-	(D)	(D)
220 to 259 acres ..... farms	-	2	15	-	1	3
..... acres irrigated	-	(D)	2,301	-	(D)	222
260 to 499 acres ..... farms	8	5	57	8	4	15
..... acres irrigated	1,194	575	14,618	649	80	2,387
500 to 999 acres ..... farms	13	3	27	18	5	21
..... acres irrigated	3,896	(D)	9,940	8,048	482	4,227
1,000 to 1,999 acres ..... farms	11	11	25	17	13	19
..... acres irrigated	3,240	4,203	12,617	11,976	6,320	10,094
2,000 acres or more ..... farms	55	20	14	55	40	37
..... acres irrigated	42,180	8,586	9,576	31,253	16,931	19,834
2012 irrigated acres by size of farm:						
1 to 9 acres ..... farms	5	2	208	4	-	1
..... acres irrigated	9	(D)	899	12	-	(D)
10 to 49 acres ..... farms	22	1	556	12	1	6
..... acres irrigated	303	(D)	8,330	201	(D)	68
50 to 69 acres ..... farms	4	-	57	5	1	3
..... acres irrigated	(D)	-	2,093	190	(D)	144
70 to 99 acres ..... farms	3	-	71	3	-	5
..... acres irrigated	90	-	3,547	138	-	79
100 to 139 acres ..... farms	4	1	35	6	-	2
..... acres irrigated	141	(D)	2,595	402	-	(D)
140 to 179 acres ..... farms	5	3	31	2	-	3
..... acres irrigated	171	(D)	2,673	(D)	-	254
180 to 219 acres ..... farms	5	-	18	1	2	1
..... acres irrigated	322	-	1,588	(D)	(D)	(D)
220 to 259 acres ..... farms	1	1	18	4	1	6
..... acres irrigated	(D)	(D)	2,938	257	(D)	711
260 to 499 acres ..... farms	9	5	37	11	4	9
..... acres irrigated	680	1,408	6,408	2,551	500	982
500 to 999 acres ..... farms	10	6	40	30	6	11
..... acres irrigated	2,316	412	12,003	13,509	902	3,529
1,000 to 1,999 acres ..... farms	22	6	26	14	7	9
..... acres irrigated	7,026	1,447	12,630	6,462	4,555	4,984
2,000 acres or more ..... farms	53	20	9	62	25	43
..... acres irrigated	41,956	5,266	5,870	38,645	10,249	24,902

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Table 10. Irrigation: 2017 and 2012 (continued)

[For meaning of abbreviations and symbols, see introductory text.]

Item	Sanders	Sheridan	Silver Bow	Stillwater	Sweet Grass	Teton
Farms ..... number, 2017	212	18	26	177	155	340
..... number, 2012	158	31	35	179	152	341
Land in irrigated farms ..... acres, 2017	164,457	86,224	28,428	224,830	676,512	445,386
..... acres, 2012	135,790	123,441	34,181	263,730	600,840	504,148
Harvested cropland ..... farms, 2017	171	18	22	143	127	276
..... farms, 2012	129	29	24	137	112	306
..... acres, 2017	18,891	38,010	2,018	31,476	30,416	137,537
..... acres, 2012	15,093	67,200	3,273	22,532	24,701	156,132
Other cropland, excluding cropland pastured ..... farms, 2017	56	12	2	52	27	108
..... farms, 2012	20	22	2	34	40	112
..... acres, 2017	4,434	10,536	(D)	11,772	6,477	41,395
..... acres, 2012	785	10,247	(D)	8,617	7,857	66,702
Pastureland, excluding woodland pastured ..... farms, 2017	152	15	22	136	148	244
..... farms, 2012	135	22	32	163	144	240
..... acres, 2017	107,278	36,176	18,885	159,065	619,083	253,524
..... acres, 2012	101,005	42,770	29,246	216,704	550,112	268,091
Irrigated land ..... acres, 2017	21,483	4,576	2,412	23,213	38,786	93,837
..... acres, 2012	17,485	9,180	4,590	21,557	35,770	114,794
Harvested cropland ..... farms, 2017	168	17	22	132	126	276
..... farms, 2012	124	29	24	134	111	303
..... acres, 2017	13,178	(D)	1,808	18,617	25,068	82,074
..... acres, 2012	12,684	(D)	3,213	15,418	21,184	93,054
Pastureland and other land ..... farms, 2017	93	3	8	80	80	138
..... farms, 2012	74	3	20	96	78	134
..... acres, 2017	8,305	(D)	604	4,596	13,718	11,763
..... acres, 2012	4,801	(D)	1,377	6,139	14,586	21,740
Land irrigated at least once in the past five years (see text) ..... farms, 2017	235	25	34	203	165	361
..... farms, 2012	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
..... acres, 2017	25,191	6,537	4,985	27,342	42,390	102,931
..... acres, 2012	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
2017 irrigated acres by size of farm:						
1 to 9 acres ..... farms	16	-	2	10	4	14
..... acres irrigated	24	-	(D)	(D)	24	48
10 to 49 acres ..... farms	58	-	2	49	19	79
..... acres irrigated	822	-	(D)	671	230	1,280
50 to 69 acres ..... farms	8	-	-	3	2	10
..... acres irrigated	104	-	-	190	(D)	180
70 to 99 acres ..... farms	12	-	1	2	6	5
..... acres irrigated	744	-	(D)	(D)	179	353
100 to 139 acres ..... farms	9	-	-	10	5	10
..... acres irrigated	550	-	-	576	145	629
140 to 179 acres ..... farms	24	-	3	4	14	17
..... acres irrigated	804	-	(D)	298	1,068	1,494
180 to 219 acres ..... farms	4	-	-	12	4	4
..... acres irrigated	396	-	-	888	591	533
220 to 259 acres ..... farms	8	-	1	4	2	14
..... acres irrigated	428	-	(D)	336	(D)	2,612
260 to 499 acres ..... farms	28	-	3	18	9	60
..... acres irrigated	3,474	-	90	1,696	1,111	12,381
500 to 999 acres ..... farms	22	1	4	15	10	47
..... acres irrigated	6,594	(D)	80	2,878	2,370	16,929
1,000 to 1,999 acres ..... farms	5	1	6	13	16	35
..... acres irrigated	1,784	(D)	1,445	4,681	2,885	22,512
2,000 acres or more ..... farms	18	16	4	37	64	45
..... acres irrigated	5,759	(D)	550	10,857	29,956	34,886
2012 irrigated acres by size of farm:						
1 to 9 acres ..... farms	4	-	2	6	2	11
..... acres irrigated	12	-	(D)	(D)	(D)	57
10 to 49 acres ..... farms	37	-	5	41	17	52
..... acres irrigated	626	-	(D)	687	190	1,044
50 to 69 acres ..... farms	10	-	-	7	3	16
..... acres irrigated	240	-	-	177	(D)	619
70 to 99 acres ..... farms	11	-	1	3	7	10
..... acres irrigated	575	-	(D)	205	207	554
100 to 139 acres ..... farms	12	-	-	6	11	12
..... acres irrigated	343	-	-	523	467	686
140 to 179 acres ..... farms	7	-	3	10	3	6
..... acres irrigated	600	-	409	889	151	399
180 to 219 acres ..... farms	11	-	-	6	3	11
..... acres irrigated	361	-	-	649	540	1,371
220 to 259 acres ..... farms	11	-	-	2	2	10
..... acres irrigated	811	-	-	(D)	(D)	1,553
260 to 499 acres ..... farms	14	2	5	26	11	56
..... acres irrigated	2,097	(D)	88	1,820	1,621	15,165
500 to 999 acres ..... farms	17	1	9	17	17	47
..... acres irrigated	3,877	(D)	1,160	3,913	2,344	17,937
1,000 to 1,999 acres ..... farms	6	9	3	26	19	48
..... acres irrigated	1,300	(D)	1,584	4,125	6,096	29,768
2,000 acres or more ..... farms	18	19	7	29	57	62
..... acres irrigated	6,643	5,715	1,242	8,105	23,875	45,641

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Table 10. Irrigation: 2017 and 2012 (continued)

[For meaning of abbreviations and symbols, see introductory text.]

Item	Toole	Treasure	Valley	Wheatland	Wibaux	Yellowstone
Farms ..... number, 2017	32	75	135	68	9	641
..... number, 2012	26	59	161	49	12	636
Land in irrigated farms ..... acres, 2017	179,194	308,081	582,835	679,111	98,787	452,721
..... acres, 2012	184,323	271,620	644,226	683,423	34,907	386,222
Harvested cropland ..... farms, 2017	32	71	128	67	8	458
..... farms, 2012	26	53	160	47	12	459
..... acres, 2017	47,257	37,441	148,317	63,276	5,641	97,216
..... acres, 2012	40,434	26,784	194,605	60,572	15,654	81,340
Other cropland, excluding cropland pastured ..... farms, 2017	25	25	68	29	4	94
..... farms, 2012	23	13	88	32	11	76
..... acres, 2017	21,533	6,174	76,771	37,072	2,662	32,999
..... acres, 2012	29,296	3,723	62,885	20,699	2,544	20,010
Pastureland, excluding woodland pastured ..... farms, 2017	25	47	95	65	7	442
..... farms, 2012	18	46	107	44	10	448
..... acres, 2017	108,497	262,981	347,248	552,907	88,373	277,816
..... acres, 2012	113,465	238,736	375,919	581,492	16,365	259,005
Irrigated land ..... acres, 2017	5,327	36,647	45,099	23,019	2,936	76,822
..... acres, 2012	6,275	21,907	40,442	21,671	1,464	73,161
Harvested cropland ..... farms, 2017	31	71	126	67	8	445
..... farms, 2012	26	50	160	47	12	452
..... acres, 2017	(D)	36,195	44,538	19,259	(D)	51,914
..... acres, 2012	6,275	21,272	38,873	21,332	1,464	57,542
Pastureland and other land ..... farms, 2017	3	14	12	8	1	341
..... farms, 2012	-	12	16	6	-	321
..... acres, 2017	(D)	452	561	3,760	(D)	24,908
..... acres, 2012	-	635	1,569	339	-	15,619
Land irrigated at least once in the past five years (see text) ..... farms, 2017	35	76	150	73	9	729
..... farms, 2012	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
..... acres, 2017	7,272	38,646	49,325	27,950	2,936	85,146
..... acres, 2012	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
2017 irrigated acres by size of farm:						
1 to 9 acres ..... farms	-	2	2	1	-	98
..... acres irrigated	-	(D)	(D)	(D)	-	418
10 to 49 acres ..... farms	-	10	12	-	1	266
..... acres irrigated	-	125	140	-	(D)	4,196
50 to 69 acres ..... farms	-	2	1	-	-	34
..... acres irrigated	-	(D)	(D)	-	-	1,452
70 to 99 acres ..... farms	-	3	3	3	-	29
..... acres irrigated	-	70	142	(D)	-	1,172
100 to 139 acres ..... farms	1	2	3	-	-	31
..... acres irrigated	(D)	(D)	123	-	-	2,042
140 to 179 acres ..... farms	2	6	2	-	-	22
..... acres irrigated	(D)	534	(D)	-	-	1,796
180 to 219 acres ..... farms	-	-	2	-	-	10
..... acres irrigated	-	-	(D)	-	-	1,249
220 to 259 acres ..... farms	1	-	6	4	-	11
..... acres irrigated	(D)	-	960	263	-	851
260 to 499 acres ..... farms	3	3	12	4	-	33
..... acres irrigated	(D)	547	1,939	459	-	7,409
500 to 999 acres ..... farms	-	8	16	4	3	40
..... acres irrigated	-	4,647	6,037	390	(D)	12,204
1,000 to 1,999 acres ..... farms	4	12	15	7	2	20
..... acres irrigated	567	12,475	3,400	502	(D)	8,607
2,000 acres or more ..... farms	21	27	61	45	3	47
..... acres irrigated	4,278	17,903	31,714	21,325	2,102	35,426
2012 irrigated acres by size of farm:						
1 to 9 acres ..... farms	-	-	-	1	-	92
..... acres irrigated	-	-	-	(D)	-	387
10 to 49 acres ..... farms	-	7	8	1	-	256
..... acres irrigated	-	135	99	(D)	-	4,000
50 to 69 acres ..... farms	-	2	2	-	-	48
..... acres irrigated	-	(D)	(D)	-	-	1,777
70 to 99 acres ..... farms	-	1	3	-	-	25
..... acres irrigated	-	(D)	129	-	-	1,263
100 to 139 acres ..... farms	-	3	4	-	-	23
..... acres irrigated	-	108	266	-	-	1,656
140 to 179 acres ..... farms	-	1	9	1	-	18
..... acres irrigated	-	(D)	692	(D)	-	1,211
180 to 219 acres ..... farms	-	-	4	-	-	16
..... acres irrigated	-	-	72	-	-	1,751
220 to 259 acres ..... farms	1	3	1	-	-	10
..... acres irrigated	(D)	576	(D)	-	-	1,037
260 to 499 acres ..... farms	1	3	12	2	-	36
..... acres irrigated	(D)	661	2,779	(D)	-	7,507
500 to 999 acres ..... farms	1	6	34	5	4	55
..... acres irrigated	(D)	2,859	8,264	961	349	19,075
1,000 to 1,999 acres ..... farms	-	3	19	2	4	23
..... acres irrigated	-	1,642	4,100	(D)	82	10,215
2,000 acres or more ..... farms	23	30	65	37	4	34
..... acres irrigated	5,736	15,811	23,927	20,148	1,033	23,282