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FINAL
ENVIRONMENTAL ASSESSMENT

Project Name:	Grizzly Gulch Placer Mine Reclamation
Proposed Implementation Date:	Summer 2023
Proponent:	Lewis and Clark County
Location:	46.550583, -112.101203
County:	Lewis and Clark

I. TYPE AND PURPOSE OF ACTION

The County Water Quality Protection District (WQPD) has sponsored the Grizzly Gulch Placer Mine Reclamation Project. The project will reclaim the Pretty Girl Placer Mine located in Grizzly Gulch, just south of Helena. The site has an extensive mining history dating back to the 1870s. Mining activities have obliterated Grizzly Creek and disturbed four acres of floodplain. Materials have been displaced and the site contains several deep open pits and unstable embankments that have disrupted the surface water and groundwater flows through Grizzly Gulch, as well as created unsafe conditions for the public along Grizzly Gulch Drive. The overarching goal of this project is to reclaim Grizzly Creek to a functional stream and floodplain and to improve the safety for the public that use Grizzly Gulch Drive.

Impacts to natural resources center on water quality and quantity associated with the disrupted hydrologic conditions. Water quality is impacted through erosion of steep, exposed soils and increased sedimentation, in addition to increased water temperature from the large surface area of standing waters. Water quality impacts include increased evaporative loss of water, as well as disruptions to the groundwater and surface water resources, where the two mix in the pit and outflows are inconsistent and unnatural. The project proposes to reclaim the mine by establishing a functional floodplain slope to restore natural surface and groundwater flows. The floodplain will include a constructed stream channel through diverse riparian vegetation to address water quality impacts.

Impacts to the public focus on the public safety hazards to vehicular and pedestrian traffic along Grizzly Gulch Drive. The project will address the steep slopes along the county road to improve safety for vehicular and pedestrian traffic. The project will allow public access to the reclaimed mine and restored stream corridor with a new trail. (Reclamation and Development Grants Program Application June 1, 2020)

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.

Letters of support for the project have been submitted by: Montana DEQ Small Miner Program, Montana DEQ Groundwater Discharge Permitting/Source Water Protection/ 401 Certification Program, Montana DEQ Watershed Protection Section, Montana FWP Helena Area Fisheries Biologist, Lewis and Clark Conservation District, Lake Helena Watershed Group, Montana Bicycle Guild, Prickly Pear Land Trust, Jacob Grandpre – Property Owner, and Scott and Heather Hill – Property neighbors.

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.

Project permitting will be led by Lewis and Clark County Water Quality Protection District (WQPD) staff with technical support from the consulting engineer. Permits required for the project include:

- Section 404 authorization through the US Army Corps of Engineers. Steps to gain authorization include wetland delineation, calculation, and narrative of impacts to Waters of the US to the Corps of Engineers, submittal of a Joint Permit Application and project plans, and follow up correspondence with the Corps of Engineers project manager.
- Stream Protection Act 124 through Montana Fish Wildlife and Parks (FWP). Steps to gain approval include submittal of a Joint Permit Application and project plans, attendance at a site visit, and correspondence with FWP Regional Fisheries Biologist.
- Lewis and Clark County Public Works Road Department Encroachment Agreement. A portion of the project occurs along Lewis and Clark County Right of Way. Specifically, new culvert installation through Grizzly Gulch Drive and guardrail installation will occur within the Right of Way. The project plan has been developed in coordination with the Public Works department.
- Other project permits potentially required through Montana Department of Environmental Quality include a Construction Stormwater Permit and a Construction Dewatering Permit. These two permits will be the responsibility of the construction contractor which will be required under the construction contract agreement.

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

The goal of the Grizzly Gulch Placer Mine Reclamation Project is to restore Grizzly Creek to a functioning stream with connection to a floodplain and riparian area; as well as to improve the safety of the public that uses Grizzly Gulch Drive. The following objectives will be accomplished to meet this goal.

OBJECTIVE 1 – RECLAIM NATURAL SURFACE AND GROUNDWATER INTERACTION
In its current state, the placer mine pit intercepts Grizzly Gulch, unnaturally storing streamflow

water from the upper reach of the creek. There is no conveyance structure at the downstream end of the project area, consequentially water from the upstream flow is stored throughout the project area. Improving floodplain and channel connectivity with the upstream and downstream reaches of Grizzly gulch surrounding the project area will stimulate wetland and riparian growth and provide water quality and quantity improvements downstream of the project area.

OBJECTIVE 2 – CREATE RIPARIAN AND WETLAND HABITAT
Riparian and wetland habitat currently on the site is either dysfunctional or nonexistent. Implementation of riparian and wetland habitat will provide refuge for wildlife, as well as improve streamside shading, increase the natural storage capacity of the floodplain, and establish a riparian buffer that will improve downstream water quality.

OBJECTIVE 3 – IMPROVE PUBLIC SAFETY AND PROVIDE PUBLIC ACCESS
Grizzly Gulch is a recreation corridor for cyclists, walkers, and joggers in the Helena valley. In its current state, the project area is a hazard and an eye sore for pedestrian and vehicular traffic. Reclaiming the mining-impacted area and establishing user access areas in the reclaimed area will benefit all users of the Grizzly Gulch corridor.

Alternative 1 – NO ACTION
The "no action "alternative involves allowing the existing entrenched project area and unnatural flow attenuation to continue. Under the "no action" alternative, the series of pits and embankments that are located where a stream channel and floodplain would otherwise be located will continue to disrupt surface water and groundwater interaction. Surface water inflows will continue to attenuate and infiltrate into the ground, rather than flowing into downstream reaches. Disrupted flows to downstream reaches impacts water quality and the lack of vegetation would continue to induce sediment laden runoff to downstream reaches, steep unstable slopes would continue to generate sediment, and the project area would remain a public eye sore and safety hazard. The site will continue to provide little to no habitat for wildlife and aquatic organisms. This alternative does not address the objectives.

Alternative 2 – LOW ACTION STABILIZATION IMPROVEMENTS
This alternative consists of creating a stable lake throughout the project area. This would be achieved by stabilizing perimeter slopes, leveling material in the bottom of the pit, and vegetating upland areas. Upstream flows would be directed from the existing culvert crossing through corrugated plastic pipe into the pit. The embankment at the north end of the project would be stabilized with an outlet control structure that connects the lake to the downstream channel. This alternative would focus on addressing Objective 3, improving public safety and access by stabilizing the mining site with less emphasis on the other two objectives.

Alternative 3 – FULL SITE RESTORATION
Over the mine history, substantial material was exported from the site, leaving a deficiency for this alternative to restore that natural floodplain profile. Importing material would be required to achieve the natural grade. This alternative involves importing approximately 20,000 cubic yards of fill to reconstruct the floodplain to the longitudinal profile of the pre-mine condition. In this alternative the existing culvert crossing Grizzly Gulch Drive would tie directly into a fully re-constructed channel at the natural slope. An arch culvert designed for passage of aquatic life would be installed through the driveway at the north end of the project area, connecting the constructed channel to the downstream floodplain. The channel would be fully reconstructed, with imported streambed material along its entire length. All reconstructed areas of the floodplain would be revegetated and covered with erosion control fabric. The revegetation for this alternative includes

various floodplain and wetland seeding, willow fascines, point bars, willow clumps and containerized wetland and upland plantings. This alternative represents the highest degree of earthwork, channel construction, and revegetation and targets the maximum restoration level possible at the site.

Alternative 4 – PARTIAL SITE RESTORATION (SELECTED ALTERNATIVE)
This alternative was designed to accomplish the goals and objectives under a reduced level of effort than the full site restoration alternative. This alternative reconstructs the floodplain profile using only material available on the site. The downstream floodplain grade was established at the natural valley profile. This allows flows to leave the site at the natural grade. The grade through the site is dependent upon the available material. Under the full site restoration alternative, material is imported to bring the floodplain surface to the natural valley slope, allowing a seamless tie-in to the upstream channel. The partial site restoration alternative establishes the floodplain surface as steep as the material on site allows.

Under this alternative, the upstream culvert through Grizzly Gulch Drive will be replaced. The new culvert will extend through Grizzly Gulch Drive to an outlet on the new floodplain surface. Because there is insufficient material to achieve the natural valley slope, the floodplain is flatter than in the natural condition and the culvert drops substantial elevation. The culvert outlet will require a stilling basin to dissipate energy before entering the constructed channel.

The constructed channel cross section was modeled from the reference condition and verified to accommodate the 2-year event under normal flow hydraulic conditions. The channel slope and sinuosity were established using targets from the reference reach. However, the constructed channel will be straighter than the reference condition to achieve the targeted reference condition stream gradient. The stream gradient reference condition was prioritized for successful flow capacity and sediment transport capabilities as the reference condition. In this stream type, most energy dissipation occurs at step pool drops, rather than at bends where sinuosity would be of greater importance. To dissipate energy along this relatively steep channel, log vanes and rock drops will be distributed along its length. Streambed material will be imported and placed to a 4” depth across the 1’ wide channel bottom for the length of the constructed channel. The channel banks will be constructed with 1’ diameter coir fabric logs. On top of the coir fabric logs, erosion control fabric will be installed keyed-in above the top of the coir log, backfilled with native material higher in organic material to the design floodplain elevation, and wrapped back from the channel and staked down. A customized streambank seed mix will be placed under the fabric to establish a vegetated bank with native species.

The floodplain surface was established to the maximum steepness possible given the material available on site. The floodplain is inset within a larger upland area to resemble the natural size and shape of the reference condition. The floodplain dimensions (width and depth) with the given slope, were sized to accommodate the 100-year flow, as determined using Streamstats under normal flow hydraulic conditions. A detailed revegetation plan was developed for the floodplain surface that includes specific seeding and planting areas. These areas include a variety of native trees, shrubs and forbs that are economical and have shown high success rates for establishment in variable conditions. An impermeable liner placed 4’ below the floodplain surface is proposed to create a shallow aquifer through the reclaimed pit. The liner is proposed to reduce the risk of inflowing surface waters from infiltrating into the deeper aquifer, leaving the channel and floodplain dry where revegetation efforts would likely fail.

This alternative includes construction of a pedestrian trail through the restored floodplain. The trail

will depart Grizzly Gulch Drive along the north and south extents of the project area. The trail is proposed to allow public access to the restored floodplain and provide separation of pedestrian traffic from the narrow corridor of Grizzly Gulch Drive. The singletrack trail will be constructed on compacted earthen material and have an overall primitive character. The trail will include a stream access site located on the south end of the project area. The intent with the pedestrian access site is to designate a location that is stabilized where the public can enjoy the stream flowing over a larger rock drop.

Side slopes are flattened compared to the existing conditions under this alternative, as well as guardrail installed to separate traffic from the site.

This alternative was selected because it accomplishes the objectives and achieves the project goal through creation of 1.16 acres of reclaimed floodplain, 916' of restored stream channel, 0.55 acres of restored upland area, 0.4 acres of restored wetland area, 1,100' of Mountain Bike and Pedestrian Trail, and 3.3 acres of overall revegetated area.

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.

Materials have been displaced and the site contains several deep open pits and unstable embankments. Land type descriptions are taken from soil survey on the Helena NF and MT NRCS (http://websoilsurvey.nrcs.usda.gov/) 2001. The landtypes primarily affected by the project activities are landtype 301B – Typic Ustifluvents with 0 to 4 percent slopes and 885F Whitecow – Warneke channery loams, 15 to 45 percent slopes. Properties and qualities of 301B is that depth to water table is more than 80 inches, frequency of flooding is none/occasional and frequency of ponding is none.

For 885F Whitecow the typical profile is 0 to 1 inches of slightly decomposed plant material, 1 to 3 inches are channery loam and 3 to 25 inches are very gravelly loam. The properties and qualities have a depth to restrictive feature of more than 80 inches and drainage class is well drained. The depth to water table is more than 80 inches and both the frequency of flooding and ponding are none. The Calcium carbonate maximum content is at 50 percent.

Description of Warneke has a typical profile of 0 to 4 inches of channery loam, 4 to 16 inches very gravelly loam and 16 to 60 inches unweathered bedrock. The Properties and qualities have a depth to restrictive feature of 10 to 20 inches to lithic bedrock. The drainage class is well drained and the capacity of the most limiting layer to transmit water is moderately high to high (0.57 to 1.98 in/hr). The depth to water table is more than 80 inches and both the frequency of flooding and ponding are none.

Proposed Alternative - The proposed project aims to reconfigure material available on site and would have a short and long-term beneficial impact to soils on site.

No Action - Disrupted flows to downstream reaches impacts water quality and the lack of vegetation would continue to induce sediment laden runoff to downstream reaches, steep unstable slopes would continue to generate sediment, and the project area would remain a public eye sore and safety hazard. The site will continue to provide little to no habitat for wildlife and aquatic organisms and have an overall adverse impact to geology and soil quality, stability and moisture.

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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.

Montana Ground Water Information Center (GWIC) website indicates depth to groundwater at two locations at or near the proposed site is 110-120 total depth with 35-40 static water level. Project area is in the bedrock aquifer where recharge is primarily fueled by precipitation.

Project activities are within the Lake Helena Watershed TMDL Planning area, watershed 8 digit HUC 10030101. Grizzly Creek is a small intermittent stream that flows high during spring snowmelt, then steadily decreases through the summer months, in some years becoming dry. The past few years the stream has flowed year-round. There are no Helena Valley Irrigation District (HVID) irrigation systems or canals in project area.

Proposed Alternative - Proposed project is expected to have a short and long-term, local and regional beneficial impact by reestablishing surface and ground water connection and function. There is a potential adverse short-term, local, direct impact to water quality during construction activities if soils being moved enter Grizzly Gulch. Water quality should be restored once the regrading is completed.

No Action - In its current state, the placer mine pit intercepts Grizzly Gulch, unnaturally storing streamflow water from the upper reach of the creek. There is no conveyance structure at the downstream end of the project area, consequentially water from the upstream flow is stored throughout the project area. *No Action* will continue to limit wetland and riparian growth and impact water quality and quantity downstream, an overall adverse impact to water quality, quantity, and distribution.

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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.

Helena currently is not in a nonattainment area which is the closest city to the area of concern. Site conditions include large areas of exposed soils prone to dust generation and dispersal.

Proposed Alternative – Potentially adverse direct, short-term impacts to air quality for dust associated with construction activities. If excessive dust is generated, contractors will be

responsible for dust abatement through water application.

No Action – No impact to current air quality, but the exposed soils could have adverse direct, short-term impacts on air quality when disturbed by wind.

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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 Natural Heritage Program information submitted with the application summarizes the land cover systems in the project area. The project area is surrounded by approximately 41% private lands, with the remaining 59% on public lands (MTNHP database). The project area is primarily forest and woodland systems (61%), shrubland, steppe and savanna systems (18%), grassland systems (7%), human land use (7%), recently disturbed or modified systems (3%), and wetland and riparian systems (2%).

The site has an extensive mining history dating back to the 1870s. Mining activities have obliterated Grizzly Creek and disturbed four acres of floodplain. Materials have been displaced and the site contains several deep open pits and unstable embankments. Five mapped Wetland types are located within the project area. The project area is located within or near land classified as freshwater forested/shrub wetland, freshwater pond, and riverine by the National Wetlands Inventory (IPaC report, attached). Vegetation along the project area is mostly grasses, sedges, and brush, with trees in the project area. According to the FWS, no critical habitat exists within the project. The USDA NRCS Web Soil Survey indicates that none of the soil in the project area is classified as soil of Statewide Importance.

Proposed Alternative - Proposed project will restore Grizzly Gulch and create vegetation and wildlife habitats. The proposed project is expected to have short-term adverse impacts on vegetation, as construction activities will remove plants and trees. The revegetation effort in this alternative is substantial because of its importance in successful restoration. The revegetation plan in this alternative includes five different seed mixes for floodplain, streambank, wetland, east facing upland, and west facing upland zones. It also features transplanted willow clumps, streambank willows, and wetland and floodplain containerized plantings. Containerized plantings feature varieties of plant species specifically placed in certain areas of the floodplain. Revegetation in this alternative is relatively low in cost considering how it will set the foundation for wetland and riparian growth, have drastic aesthetic improvements, and improve downstream water quality.

No Action – The site will remain as four acres of disturbed floodplain with deep open pits and instable embankments. Existing vegetation cover will remain the same, which is a potential adverse impact if that vegetation cover is comprised of non-native, invasive species.

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8. TERRESTRIAL, AVIAN AND AQUATIC LIFE AND HABITATS:
Consider substantial habitat values and use of the area by wildlife, birds or fish. Identify direct, indirect, and cumulative effects to fish and wildlife.

Project location is not identified as a priority area for terrestrial or aquatic conservations efforts within the Montana State Wildlife Action Plan (SWAP). The project does not fall within an Executive Order – General/Priority habitat area for sage grouse (Montana Sage Grouse Habitat Conservation Plan web mapping tool). According to the FWS, no critical habitat exists within the project area.

Riverine and wetland systems exist near the eastern extent of the project area. Though the project area does not appear to be impacting crucial and/or critical habitat areas, there are 56 Species of Concern (24 observed, 32 potential) listed for Lewis and Clark County that may occur in the project area in a broad range of taxa, including bats, birds, reptiles, amphibians, fish, insects, and plants.

Proposed Alternative - Proposed project will restore Grizzly Gulch and create vegetation and wildlife habitats, an overall beneficial impact for terrestrial, avian, and aquatic life and habitats.

No Action - The site will remain as four acres of disturbed floodplain with deep open pits and instable embankments.

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9. UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES:
Consider any federally listed threatened or endangered species or habitat identified in the project area. Determine effects to wetlands. Consider Sensitive Species or Species of special concern. Identify direct, indirect, and cumulative effects to these species and their habitat.

The MTNHP database for wetland and riparian mapping, identified less than 6 acres in the Custom Area of Interest as Palustrine (unconsolidated bottom, aquatic bed or emergent) and Riparian lotic. As mentioned in the previous section, there are 56 species of concern listed as potentially using the project area and surrounding lands as viable habitat (MTNHP database). Records from the MTNHP indicate the project area there are 24 species of concern in and around the project area including: Westslope Cutthroat Trout (*Oncorhynchus clarkii lewisi*), Bald Eagle (*Haliaeetus leucocephalus*), Evening Grosbeak (*Coccothraustes verspertinus*), Clark's Nutcracker (*Nucifraga columbiana*), Golden Eagle (*Aquila chrysaetos*), Flammulated Owl (*Psiloscops flammeolus*), Green-tailed Towhee (*Pipilo chlorurus*), Pileated Woodpecker (*Dryocopus pileatus*), Brown Creeper (*Certhia americana*), Spotted Bat (*Euderma maculatum*), Silver-haired Bat (*Lasionycterus noctivagans*), and Black-tailed Prairie Dog (*Cynomys ludovicianus*; see MTNHP report attached). Important animal habitat includes non-cave bat roosts. DNRC also utilized the U.S. Fish and Wildlife Service's Information for Planning and Consultation (IPaC) online database to assess what federally listed species and their critical habitats exists within the project area. IPaC listed four endangered or candidate species present within the project area, and seven migratory bird species: Canada Lynx (*Lynx canadensis*), North American Wolverine (*Gulo gulo luscus*), Monarch Butterfly (*Danaus plexippus*), Grizzly Bear (*Ursus arctos horribilis*), Bald Eagle, Golden Eagle, Cassin's Finch (*Carpodacus cassinii*), Evening Grosbeak, Lesser Yellowlegs (*Tringa flavipes*), Olive-sided Flycatcher (*Contopus cooperi*), and Rufous Hummingbird (*Selasphorus rufus*; IPaC report). The seven bird species are protected under the Migratory Bird Treaty Act, and the Bald and Golden Eagles are also protected under the Montana Bald Eagle Management Plan, Bald and Golden Eagle Protection Act, and Lacey Act.

The National Wetlands Inventory (NWI) website was used to determine whether any wetlands were present within the lands adjacent to the project location (map included at the end of this EA). This search indicated that 5 types of wetlands are present within and adjacent to the project area. There is one type of freshwater forested/shrub wetland, two type of freshwater pond habitats, and two riverine habitats. The Freshwater Forested/Shrub Wetlands include all nontidal wetlands dominated by trees, shrubs, persistent emergents, or emergent mosses or lichens. The Freshwater Ponds include deepwater habitats where vegetation grows principally on or below the surface of the water. The Riverine habitats are generally deepwater habitats contained within a channel, permanently flooded, with intermittent and seasonally flooded channels.

Proposed Alternative – Potentially direct, negligible, short-term, local, non-recurring impacts to unique, endangered, fragile, or limited environmental resources during construction activities. The proposed project will restore Grizzly Gulch and create vegetation and wildlife habitats, an overall beneficial impact.

No Action - The unique, endangered, or fragile environmental resources in the project area may be adversely impacted by the no action alternative.

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10. HISTORICAL AND ARCHAEOLOGICAL SITES:

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

The project area is primarily within previously developed areas, mining areas, and previously disturbed areas with no known archeological resources in the area.

Proposed Alternative – There are no historic properties or archaeological resources that have been identified in the project area. If previously unknown cultural or paleontological materials are identified during project related activities, the DNRC grant manager will be notified, and 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 site has an extensive mining history dating back to the 1870s. Mining activities have obliterated Grizzly Creek and disturbed four acres of floodplain. Materials have been displaced and the site contains several deep open pits and unstable embankments.

Proposed Alternative – The proposed project will have direct, short-term adverse impacts on the aesthetics immediately around the project area during construction. Some nuisance noise and visual impairment will be expected during construction activities, and the contractors will be required to follow any local regulations or ordinances pertaining to the operation of machinery, perform all construction activities during daylight hours when possible, and to minimize nuisances. The proposed project will have lasting, long-term beneficial impacts on visual aesthetics of the property.

No Action – No impact to aesthetics and no nuisances.

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

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

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

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

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.

Grizzly Gulch Placer Mine Reclamation, Lewis and Clark County Water Quality Protection District, Reclamation and Development Grants Program Application, June 1, 2020.

IV. IMPACTS ON THE HUMAN POPULATION

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

14. HUMAN HEALTH AND SAFETY:
Identify any health and safety risks posed by the project.

Grizzly Gulch is a recreation corridor for cyclists, walkers, and joggers in the Helena valley. In its current state, the project area is a hazard and an eye sore for pedestrian and vehicular traffic. Reclaiming the mining-impacted area and establishing user access areas in the reclaimed area will benefit all users of the Grizzly Gulch corridor.

Proposed Alternative – The proposed Grizzly Gulch Placer Mine Reclamation Project will have an overall beneficial impact by providing safe access through the property for hikers and mountain bikers and will stabilize the side slopes from Grizzly Gulch Drive and add guardrails.

No Action - Potentially adverse impact to human health and safety if culverts under Grizzly Gulch Drive fail or if steep side slopes undercut the road.

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

Work will occur just outside of the limits of the City of Helena, in Lewis and Clark County, Montana. There are currently no industrial, commercial, or agricultural activities within the proposed project area.

Proposed Alternative - The goal of the proposed Grizzly Gulch Placer Mine Reclamation Project is to restore Grizzly Creek to a functioning stream with surface and groundwater connection to a floodplain and riparian area; as well as to improve the safety of the public that uses Grizzly Gulch Drive. There is no expected impact to industrial, commercial, and agricultural activities.

No Action - The long-term impacts will continue to limit wetland and riparian growth and impact

water quality and quantity downstream.

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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 project is located outside the city limits of Helena, the largest city of Lewis and Clark County, Montana. The population for Lewis and Clark County was 72,223 in 2020, with 33,120 people residing in Helena (Montana Department of Commerce: Census and Economic Information Center). The project focuses on restoration of Grizzly Creek to a functioning stream. The project will improve water quality and quantity downstream and improve the safety of the public along Grizzly Gulch Drive.

Proposed Alternative - Potential short-term beneficial impact through construction jobs that will be created with this project. Construction crews are expected to support local businesses during the construction of necessary infrastructure. The increased demand for food, lodging, equipment, and supplies resulting from the project will have an overall beneficial impact on the local economy.

No Action - No impact to quantity and 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.

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

Proposed Alternative & No Action – No impact to local and state tax base and tax revenues.

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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

No additional demands for government services will be required from the project.

Proposed Alternative & No Action – No changes to existing 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.

The project area complies with locally adopted environmental plans and goals.

Proposed Alternative – The project area complies with locally adopted environmental plans and goals.

No Action – Will not impact locally adopted 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.

Grizzly Gulch Drive provides public access points for hiking and mountain biking recreational opportunities for the public. There is currently no public access to the proposed project site.

Proposed Alternative – The proposed alternative will have a long-term, local beneficial impact by constructing a pedestrian trail through the restored floodplain. The trail will depart Grizzly Gulch Drive along the north and south extents of the project area. The trail is proposed to allow public access to the restored floodplain and provide separation of pedestrian traffic from the narrow corridor of Grizzly Gulch Drive. The singletrack trail will be constructed on compacted earthen material and have an overall primitive character. The trail will include a stream access site located on the south end of the project area. The intent with the pedestrian access site is to designate a location that is stabilized where the public can enjoy the stream flowing over a larger rock drop.

The trail could also present an opportunity for education and outreach. The history of the site could be featured, along with a summary of the DNRC RDG Program and the natural processes within streams, wetlands, and floodplain that improve water quality and provide important habitat.

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

21. DENSITY AND DISTRIBUTION OF POPULATION AND HOUSING:
Estimate population changes and additional housing the project would require. Identify direct, indirect, and cumulative effects to population and housing.

There are existing residential structures adjacent to the project area.

Proposed Alternative & No Action – No changes to the density and distribution of population and housing.

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

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

Proposed Alternative – No impact to social structures and mores is anticipated from the project activities.

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

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

No unique natural features, historic properties, or cultural/archeological resources are located

within the project limits.

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

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

---

24. OTHER APPROPRIATE SOCIAL AND ECONOMIC CIRCUMSTANCES:

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

The project focuses on restoration of Grizzly Creek to a functioning stream. The project will improve water quality and quantity downstream and improve the safety of the public along Grizzly Gulch Drive.

Proposed Alternative - The proposed project will create safe public access on the constructed trail system, and overall beneficial impact.

No Action – No impact to social and economic circumstances.

---

25. DRINKING WATER AND/OR CLEAN WATER

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

The limited number of residential properties adjacent to the proposed project are serviced by private drinking water wells and septic systems.

Proposed Alternative & No Action – No changes to existing drinking water and/or clean water Systems.

---

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.

According to the Small Area Income and Poverty Estimates (SAIPE) from the 2020 census, the city of Helena has a poverty rate of 9.4%, with a median household income of $59,712.

Proposed Alternative – Disproportionate adverse human health or environmental impacts relative to minority and low-income populations is not expected. The proposed project is not related to placing lower income households in areas where environmental degradation had occurred.

No Action – No impact to environmental justice.

EA Prepared By:	Name: Samantha Treu	Date: 05/24/2023
	Title: MEPA/NEPA Coordinator	Email: samantha.treu@mt.gov

V. FINDING

27. ALTERNATIVE SELECTED:

Alternative 4 – PARTIAL SITE RESTORATION
This alternative was designed to accomplish the goals and objectives under a reduced level of effort than the full site restoration alternative. This alternative reconstructs the floodplain profile using only material available on the site. The downstream floodplain grade was established at the natural valley profile. This allows flows to leave the site at the natural grade. The grade through the site is dependent upon the available material. Under the full site restoration alternative, material is imported to bring the floodplain surface to the natural valley slope, allowing a seamless tie-in to the upstream channel. The partial site restoration alternative establishes the floodplain surface as steep as the material on site allows.

Under this alternative, the upstream culvert through Grizzly Gulch Drive will be replaced. The new culvert will extend through Grizzly Gulch Drive to an outlet on the new floodplain surface. Because there is insufficient material to achieve the natural valley slope, the floodplain is flatter than in the natural condition and the culvert drops substantial elevation. The culvert outlet will require a stilling basin to dissipate energy before entering the constructed channel.

This alternative includes construction of a pedestrian trail through the restored floodplain. The trail will depart Grizzly Gulch Drive along the north and south extents of the project area. The trail is proposed to allow public access to the restored floodplain and provide separation of pedestrian traffic from the narrow corridor of Grizzly Gulch Drive. The singletrack trail will be constructed on compacted earthen material and have an overall primitive character. The trail will include a stream access site located on the south end of the project area. The intent with the pedestrian access site is to designate a location that is stabilized where the public can enjoy the stream flowing over a larger rock drop.

28. SIGNIFICANCE OF POTENTIAL IMPACTS:

Water Quality, Quantity and Distribution
There is a potential adverse short-term, local, direct impact to water quality during construction activities if soils being moved enter Grizzly Gulch. Water quality should be restored once the regrading is completed.

Air Quality
Potentially adverse direct, short-term impacts to air quality for dust associated with construction activities. If excessive dust is generated, contractors will be responsible for dust abatement through water application.

Vegetation Cover, Quantity and Quality
The proposed project is expected to have short-term adverse impacts on vegetation, as

construction activities will remove plants and trees. The revegetation effort in this alternative is substantial because of its importance in successful restoration. The revegetation plan in this alternative includes five different seed mixes for floodplain, streambank, wetland, east facing upland, and west facing upland zones. It also features transplanted willow clumps, streambank willows, and wetland and floodplain containerized plantings. Containerized plantings feature varieties of plant species specifically placed in certain areas of the floodplain. Revegetation in this alternative is relatively low in cost considering how it will set the foundation for wetland and riparian growth, have drastic aesthetic improvements, and improve downstream water quality.

Unique, Endangered, Fragile or Limited Environmental Resources

Potentially direct, negligible, short-term, local, non-recurring impacts to unique, endangered, fragile, or limited environmental resources during construction activities.

Aesthetics

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

---

29. NEED FOR FURTHER ENVIRONMENTAL ANALYSIS:

THIS IS THE FINAL IMPACT ASSESSMENT.

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

EA Approved By:	**Name:** Mark W Bostrom **Title:** Division Administrator	
Signature: DocuSigned by: Mark W Bostrom BF7A1C30B2AF4DE...	**Date**: 7/3/2023 | 9:35:06 AM MDT	

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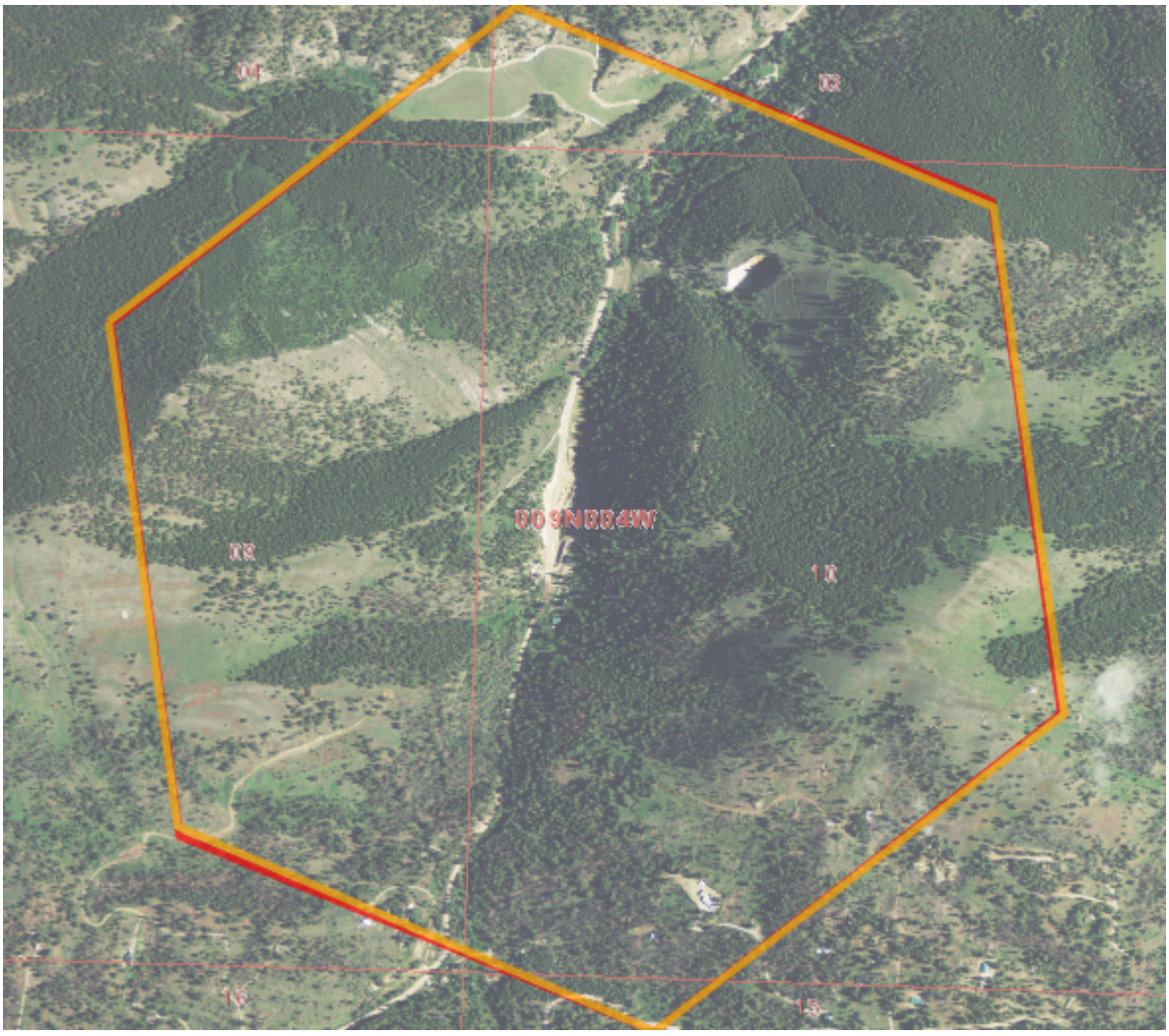
NATURAL HERITAGE PROGRAM mtnhp.org
1201 11th Ave ▫ P.O. Box 201800 ▫ Helena, MT 59620-1800 ▫ fax 406-444-0266 ▫ phone 406-444-3989

Environmental Summary

Latitude	Longitude
46.54194	-112.08897
46.56033	-112.11213

Summarized by:
Grizzly Gulch
(Custom Area of Interest)



Suggested Citation
Montana Natural Heritage Program. Environmental Summary Report.
for Latitude 46.54194 to 46.56033 and Longitude -112.08897 to -112.11213. Retrieved on 5/25/2023.

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.

MONTANA STATE LIBRARY NATURAL HERITAGE PROGRAM

NATURESERVE

Table of Contents

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.**

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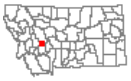
Model Icons	Habitat Icons	Range Icons	Num Obs
N Suitable (native range)	C Common	Y Native / Year-round	Count of obs with 'good precision' (<=1000m)
O Optimal Suitability	O Occasional	S Summer	+ indicates additional 'poor precision' obs (1001m-10,000m)
M Moderate Suitability		W Winter	
L Low Suitability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



Latitude	Longitude
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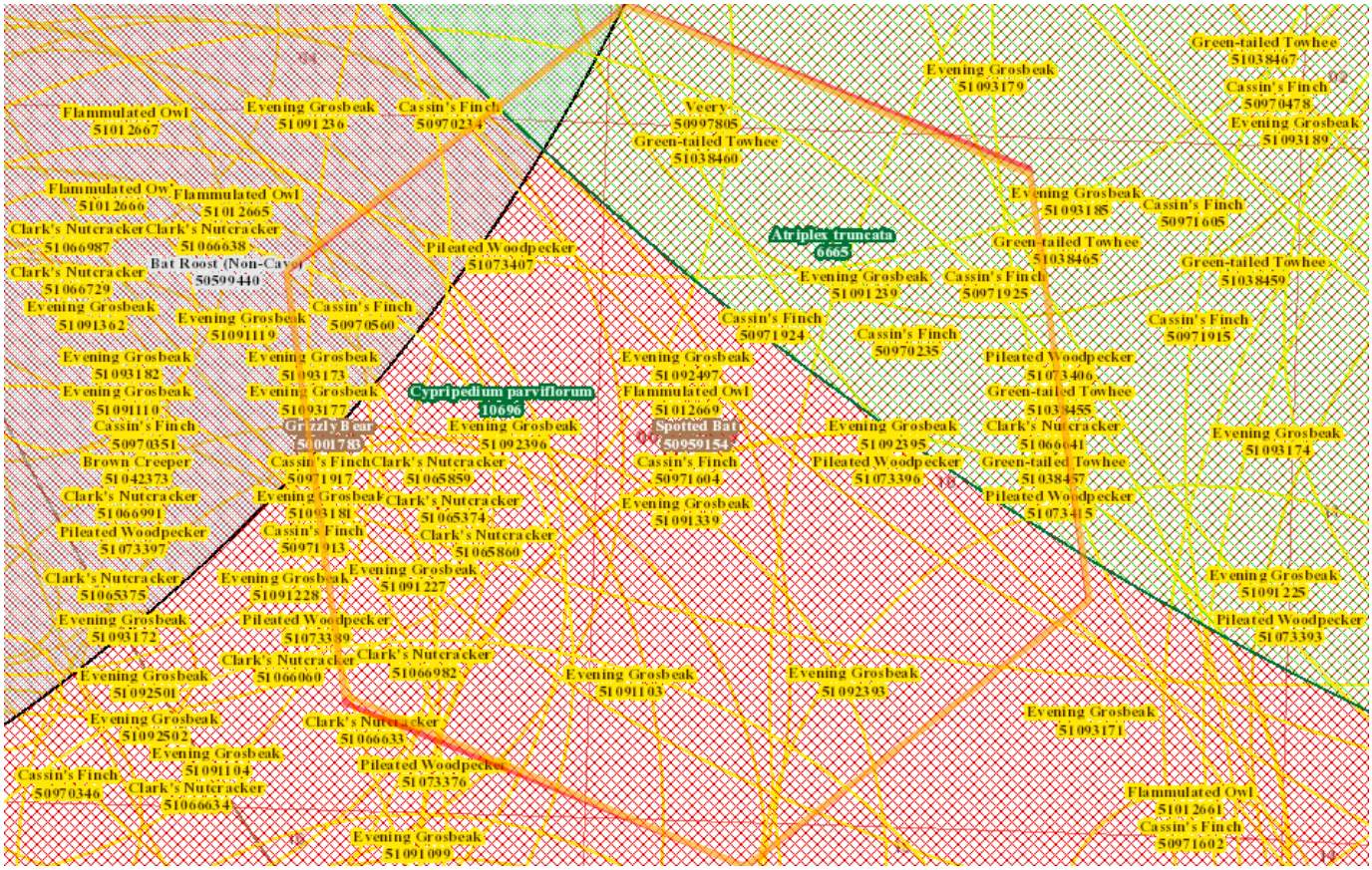
Native Species

Summarized by: **Grizzly Gulch** *(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 - Cassin's Finch *(Haemorhous cassinii)* SOC		11	+		Y	

View in Field Guide **View Predicted Models** **View Range Maps**
Species of Concern - Native Species Global: **G5** State: **S3** USFWS: **MBTA; BCC10** FWP SWAP: **SGCN3** PIF: **3**
Delineation Criteria Observations with evidence of breeding activity buffered by a minimum distance of 300 meters in order to be conservative about encompassing the courtship and foraging distance from nesting areas and otherwise buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. (Last Updated: Dec 28, 2022)
Predicted Models: M 100% Moderate (inductive)

B - Clark's Nutcracker *(Nucifraga columbiana)* SOC		13	7		Y	

View in Field Guide **View Predicted Models** **View Range Maps**
Species of Concern - Native Species Global: **G5** State: **S3** USFWS: **MBTA** USFS: **Species of Conservation Concern in Forests (FLAT)** FWP SWAP: **SGCN3** PIF: **3**
Delineation Criteria Observations with direct evidence of breeding activity or indirect evidence of breeding activity between early March and mid-July within forested habitats containing Whitebark Pine (Pinus albicaulis), Limber Pine (Pinus flexilis), or Ponderosa Pine (Pinus ponderosa). Observations are buffered by a minimum distance of 1,000 meters in order to encompass the spring/summer breeding territory size reported for the species or the locational uncertainty of the observation to a maximum distance of 10,000 meters. (Last Updated: Jan 12, 2023)
Predicted Models: M 100% Moderate (inductive)

B - Evening Grosbeak *(Coccothraustes vespertinus)* SOC		24	10		Y	WM

View in Field Guide **View Predicted Models** **View Range Maps**
Species of Concern - Native Species Global: **G5** State: **S3** USFWS: **MBTA; BCC10** FWP SWAP: **SGCN3**
Delineation Criteria Confirmed breeding area based on the presence of a nest, chicks, or territorial adults during the breeding season. Point observation location is buffered by a minimum distance of 1,000 meters in order to encompass the maximum foraging distance from nests reported for the species and otherwise is buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. (Last Updated: May 23, 2023)
Predicted Models: M 100% Moderate (inductive)

B - Pileated Woodpecker *(Dryocopus pileatus)* SOC		7	1		Y	

View in Field Guide **View Predicted Models** **View Range Maps**
Species of Concern - Native Species Global: **G5** State: **S3** USFWS: **MBTA** FWP SWAP: **SGCN3** PIF: **2**
Delineation Criteria Observations with evidence of breeding activity buffered by a minimum distance of 1,500 meters in order to be conservative about encompassing home ranges and otherwise buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. (Last Updated: Jan 13, 2023)
Predicted Models: M 100% Moderate (inductive)

B - Flammulated Owl *(Psiloscops flammeolus)* SOC

Species of Concern - Native Species Global: **G4** State: **S3B** USFWS: **MBTA; BCC10** USFS: **Sensitive - Known in Forests (BD, BRT, KOOT, LOLO)** **Species of Conservation Concern in Forests (FLAT, HLC)** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **1**

Delineation Criteria Confirmed breeding area based on the presence of a nest, chicks, or territorial adults during the breeding season. Point observation location is buffered by a minimum distance of 300 meters in order to encompass the maximum breeding territory size reported for the species and otherwise is buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. (Last Updated: Dec 30, 2022)

Predicted Models: M 100% Moderate (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**

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 125 meters in order to encompass the breeding 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: Jan 04, 2023)

Predicted Models: M 100% Moderate (inductive)

M - Grizzly Bear *(Ursus arctos)* SOC

View in Field Guide View Predicted Models View Range Maps

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

Delineation Criteria Species Occurrence polygons represent areas delineated by the U.S. Fish and Wildlife Service (USFWS) that encompass both home ranges and potential transitory movements based on verified sightings. Within these areas, the USFWS wants project proponents to consider whether the species â€œmay be presentâ€ when evaluating the potential impacts of a project and to work with the USFWS to develop and implement best management practices to minimize or eliminate project effects on the species. (Last Updated: Mar 22, 2023)

Predicted Models: L 100% Low (inductive)

B - Brown Creeper *(Certhia americana)* SOC

View in Field Guide View Predicted Models View Range Maps

Species of Concern - Native Species Global: **G5** State: **S3** USFWS: **MBTA** FWP SWAP: **SGCN3** PIF: **1**

Delineation Criteria Observations with evidence of breeding activity buffered by a minimum distance of 300 meters in order to be conservative about encompassing home ranges and otherwise buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. (Last Updated: Jan 04, 2023)

Predicted Models: L 100% Low (inductive)

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

View in Field Guide View Predicted Models View Range Maps

Potential Species of Concern - Native Species Global: **G5** State: **S3S4** USFS: **Sensitive - Known in Forests (KOOT, LOLO)** **Sensitive - Suspected in Forests (BRT)** **Species of Conservation Concern in Forests (CG, HLC)**

Predicted Models: L 100% Low (inductive)

M - Spotted Bat *(Euderma maculatum)* 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)** BLM: **SENSITIVE** FWP SWAP: **SGCN3, SGIN**

Delineation Criteria Confirmed area of occupancy based on the documented presence (mistnet captures, definitively identified acoustic recordings, and definitively identified roosting individuals) of adults or juveniles. Point observation location is buffered by a distance of 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)

Predicted Models: L 100% Low (inductive)

B - Veery *(Catharus fuscescens)* SOC

View in Field Guide View Predicted Models View Range Maps

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

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

Predicted Models: L 100% Low (inductive)

V - Atriplex truncata *(Wedge-leaf Saltbush)* SOC

View in Field Guide View Range Maps

Species of Concern - Native Species Global: **G5** State: **S3** Plant Threat Score: **Unknown**

Delineation Criteria Individual occurrences are generally based upon a discretely mapped area provided by an observer and are not separated by any pre-defined distance. Individual clusters of plants mapped at fine spatial scales (separated by less than approximately 25-50 meters) may be grouped together into one occurrence if they are not separated by distinct areas of habitat or terrain features. Point observations are buffered to encompass any locational uncertainty associated with the observation. (Last Updated: Jan 20, 2023)

O - Bat Roost (Non-Cave) *(Bat Roost (Non-Cave))* IAH

View in Field Guide

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

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

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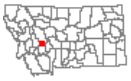
Model Icons
- N Suitable (native range)
- O Optimal Suitability
- M Moderate Suitability
- L Low Suitability
- I Suitable (introduced range)

Habitat Icons
- C Common
- O Occasional

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

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



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Native Species

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

Other Observed Species

	USFWS Sec7	# Obs	Predicted Model	Range
B - Great Gray Owl *(Strix nebulosa)* SOC		+		Y
View in Field Guide **View Predicted Models** **View Range Maps** Species of Concern - Native Species Global: **G5** State: **S3** USFWS: **MBTA** BLM: **SENSITIVE** FWP SWAP: **SGCN3, SGIN** PIF: **3** **Predicted Models:** M 100% Moderate (inductive)				
B - Northern Goshawk *(Accipiter gentilis)* SOC		+		Y WM
View in Field Guide **View Predicted Models** **View Range Maps** Species of Concern - Native Species Global: **G5** State: **S3** USFWS: **MBTA** FWP SWAP: **SGCN3** PIF: **2** **Predicted Models:** M 100% Moderate (inductive)				
M - Silver-haired Bat *(Lasionycteris noctivagans)* PSOC		1		Y
View in Field Guide **View Predicted Models** **View Range Maps** Potential Species of Concern - Native Species Global: **G3G4** State: **S4** **Predicted Models:** L 100% Low (inductive)				
B - Rufous Hummingbird *(Selasphorus rufus)* PSOC		+		S M
View in Field Guide **View Predicted Models** **View Range Maps** Potential Species of Concern - Native Species Global: **G4** State: **S4B** USFWS: **MBTA; BCC10** PIF: **3** **Predicted Models:** L 100% Low (inductive)				
M - Black-tailed Prairie Dog *(Cynomys ludovicianus)* SOC		+	Not Assessed	Y
View in Field Guide **View Range Maps** Species of Concern - Native Species Global: **G4** State: **S3** BLM: **SENSITIVE** FWP SWAP: **SGCN3**				
B - Bald Eagle *(Haliaeetus leucocephalus)* SSS		+	Not Assessed	Y
View in Field Guide **View Range Maps** Special Status Species - Native Species Global: **G5** State: **S4** USFWS: **BGEPA; MBTA** USFS: **Sensitive - Known in Forests (BD, BRT, KOOT, LOLO)** BLM: **SENSITIVE** PIF: **2**				
B - Black-backed Woodpecker *(Picoides arcticus)* SOC		+	Not Assessed	Y
View in Field Guide **View Range Maps** Species of Concern - Native Species Global: **G5** State: **S3** USFWS: **MBTA** USFS: **Sensitive - Known in Forests (BD, BRT, KOOT, LOLO)** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **1**				
B - Pinyon Jay *(Gymnorhinus cyanocephalus)* SOC		+	Not Assessed	Y
View in Field Guide **View Range Maps** Species of Concern - Native Species Global: **G3** State: **S3** USFWS: **MBTA; BCC10; BCC17** FWP SWAP: **SGCN3**				
F - Westslope Cutthroat Trout *(Oncorhynchus clarkii lewisi)* SOC		+	Not Assessed	Y
View in Field Guide **View Range Maps** Species of Concern - Native/Non-native Species - (depends on location or taxa) Global: **G5T4** State: **S2** USFS: **Sensitive - Known in Forests (BD, BRT, KOOT, LOLO)** **Species of Conservation Concern in Forests (CG, HLC)** BLM: **SENSITIVE** FWP SWAP: **SGCN2**				
I - Agapetus montanus *(An Agapetus Caddisfly)* PSOC		+	Not Assessed	Y
View in Field Guide **View Range Maps** Potential Species of Concern - Native Species Global: **G3** State: **S3**				
B - Red-headed Woodpecker *(Melanerpes erythrocephalus)* SOC		+	Not Assessed	
View in Field Guide Species of Concern - Native Species Global: **G5** State: **S3B** USFWS: **MBTA; BCC11; BCC17** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **2**				

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

Habitat Icons
- Common
- Occasional

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

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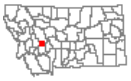

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Other Potential Species

	USFWS Sec7	Predicted Model	Range
M - Canada Lynx *(Lynx canadensis)* SOC	7		Y

View in Field Guide | View Predicted Models | View Range Maps
Species of Concern - Native Species Global: **G5** State: **S3** USFWS: **LT; CH** BLM: **THREATENED** FWP SWAP: **SGCN3**
Predicted Models: M 100% Moderate (inductive)

M - Fringed Myotis *(Myotis thysanodes)* SOC

View in Field Guide | View Predicted Models | View Range Maps
Species of Concern - Native Species Global: **G4** State: **S3** BLM: **SENSITIVE** FWP SWAP: **SGCN3**
Predicted Models: M 100% Moderate (inductive)

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

View in Field Guide | View Predicted Models | View Range Maps
Species of Concern - Native Species Global: **G4** State: **S3** USFS: **Sensitive - Known in Forests (BD, BRT, KOOT, LOLO)** BLM: **SENSITIVE** FWP SWAP: **SGCN3**
Predicted Models: M 100% Moderate (inductive)

M - Western Pygmy Shrew *(Sorex eximius)* SOC

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

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

View in Field Guide | View Predicted Models | View Range Maps
Species of Concern - Native Species Global: **G2G3** State: **S1**
Predicted Models: M 100% Moderate (inductive)

V - Erigeron linearis *(Linear-leaf Fleabane)* SOC

View in Field Guide | View Predicted Models | View Range Maps
Species of Concern - Native Species Global: **G5** State: **S2** Plant Threat Score: **Low** CCVI: **Less Vulnerable**
Predicted Models: M 100% Moderate (inductive)

V - Oxytropis lagopus var. conjugans *(Hare's-foot Locoweed)* PSOC

View in Field Guide | View Predicted Models | View Range Maps
Potential Species of Concern - Native Species Global: **G4G5T3T4** State: **S3S4**
Predicted Models: M 100% Moderate (inductive)

V - Physaria klausii *(Divide Bladderpod)* SOC

View in Field Guide | View Predicted Models | View Range Maps
Species of Concern - Native Species Global: **G3** State: **S3** Plant Threat Score: **Low** CCVI: **Moderately Vulnerable**
Predicted Models: M 100% Moderate (inductive)

M - Little Brown Myotis *(Myotis lucifugus)* SOC

View in Field Guide | View Predicted Models | View Range Maps
Species of Concern - Native Species Global: **G3G4** State: **S3** FWP SWAP: **SGCN3**
Predicted Models: L 100% Low (inductive)

M - Long-eared Myotis *(Myotis evotis)* SOC

View in Field Guide | View Predicted Models | View Range Maps
Species of Concern - Native Species Global: **G5** State: **S3**
Predicted Models: L 100% Low (inductive)

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

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

M - North American Porcupine *(Erethizon dorsatum)* PSOC

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

M - Western Spotted Skunk *(Spilogale gracilis)* PSOC

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

M - Wolverine *(Gulo gulo)* SOC

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: L 100% Low (inductive)

B - Boreal Owl *(Aegolius funereus)* PSOC

View in Field Guide View Predicted Models View Range Maps

Potential Species of Concern - Native Species Global: **G5** State: **S3S4** USFWS: **MBTA** FWP SWAP: **SGIN** PIF: **3**

Predicted Models: L 100% Low (inductive)

B - Golden Eagle *(Aquila chrysaetos)* SOC

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 100% Low (inductive)

B - Pacific Wren *(Troglodytes pacificus)* SOC

View in Field Guide View Predicted Models View Range Maps

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

Predicted Models: L 100% Low (inductive)

B - Western Screech-Owl *(Megascops kennicottii)* PSOC

View in Field Guide View Predicted Models View Range Maps

Potential Species of Concern - Native Species Global: **G4G5** State: **S3S4** USFWS: **MBTA** FWP SWAP: **SGIN** PIF: **3**

Predicted Models: L 100% Low (inductive)

I - Rhyacophila betteni *(A Caddisfly)* SSS

View in Field Guide View Predicted Models View Range Maps

Special Status Species - Native Species Global: **G2G4** State: **S3S4**

Predicted Models: L 100% Low (inductive)

V - Ageratina occidentalis *(Western Joepye-weed)* SOC

View in Field Guide View Predicted Models View Range Maps

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

Species of Concern - Native Species Global: **G4** State: **S2** **Sensitive - Suspected in Forests (BD, KOOT, LOLO)** Plant Threat Score: **Unknown** CCVI: **Less Vulnerable**

Predicted Models: L 100% Low (inductive)

V - Astragalus convallarius *(Lesser Rushy Milkvetch)* SOC

View in Field Guide View Predicted Models View Range Maps

Species of Concern - Native Species Global: **G5** State: **S3** USFS: **Species of Conservation Concern in Forests (HLC)** Plant Threat Score: **Medium - Low**
CCVI: **Moderately Vulnerable**

Predicted Models: L 100% Low (inductive)

V - Draba densifolia *(Dense-leaf Draba)* SOC

View in Field Guide View Predicted Models View Range Maps

Species of Concern - Native Species Global: **G5** State: **S2** USFS: **Species of Conservation Concern in Forests (CG, HLC)** Plant Threat Score: **Low**
CCVI: **Moderately Vulnerable**

Predicted Models: L 100% Low (inductive)

V - Epipactis gigantea *(Giant Helleborine)* SOC

View in Field Guide View Predicted Models View Range Maps

USFS: **Sensitive - Known in Forests (BD, LOLO)**
Sensitive - Suspected in Forests (BRT, KOOT)

Species of Concern - Native Species Global: **G4** State: **S2S3** **Species of Conservation Concern in Forests (FLAT, HLC)** Plant Threat Score: **Low**
CCVI: **Moderately Vulnerable**

Predicted Models: L 100% Low (inductive)

V - Mimulus floribundus *(Floriferous Monkeyflower)* SOC

View in Field Guide View Predicted Models View Range Maps

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

Predicted Models: L 100% Low (inductive)

V - Polygonum austiniae *(Austin's Knotweed)* PSOC

View in Field Guide View Predicted Models View Range Maps

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

Potential Species of Concern - Native Species Global: **G5T4** State: **S3S4** **Species of Conservation Concern in Forests (HLC)**

Predicted Models: L 100% Low (inductive)

V - Stipa lettermanii *(Letterman's Needlegrass)* SOC

View in Field Guide View Predicted Models View Range Maps

Species of Concern - Native Species Global: **G5** State: **S1S3** USFS: **Species of Conservation Concern in Forests (HLC)** Plant Threat Score: **No Known Threats**

Predicted Models: L 100% Low (inductive)

V - Utricularia intermedia *(Flatleaf Bladderwort)* SOC

View in Field Guide View Predicted Models View Range Maps

Species of Concern - Native Species Global: **G5** State: **S2** USFS: **Sensitive - Known in Forests (KOOT)** Plant Threat Score: **No Known Threats**

Predicted Models: L 100% Low (inductive)

M - Hoary Bat *(Lasiurus cinereus)* SOC

View in Field Guide View Predicted Models View Range Maps

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

Predicted Models: L 100% Low (inductive)

B - Broad-tailed Hummingbird *(Selasphorus platycercus)* PSOC

View in Field Guide View Predicted Models View Range Maps

Potential Species of Concern - Native Species Global: **G5** State: **S4B** USFWS: **MBTA; BCC10** FWP SWAP: **SGIN**

Predicted Models: L 100% Low (inductive)

B - Common Poorwill *(Phalaenoptilus nuttallii)* **PSOC**

Potential Species of Concern - Native Species Global: **G5** State: **S4B** USFWS: **MBTA** FWP SWAP: **SGIN** PIF: **3**

Predicted Models: L 100% Low (inductive)

B - Ovenbird *(Seiurus aurocapilla)* **PSOC**

View in Field Guide View Predicted Models View Range Maps

Potential Species of Concern - Native Species Global: **G5** State: **S4B** USFWS: **MBTA** PIF: **3**

Predicted Models: L 100% Low (inductive)

B - Sprague's Pipit *(Anthus spragueii)* **SOC** 7 Not Assessed

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**

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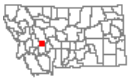

Latitude	Longitude
46.54194	-112.08897
46.56033	-112.11213

Structured Surveys

Summarized by: **Grizzly Gulch** *(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.

M-Bat Acoustic *(Bat Acoustic Survey)*	**Survey Count**: 1	**Obs Count**: 2	**Recent Survey**: 1994

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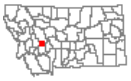

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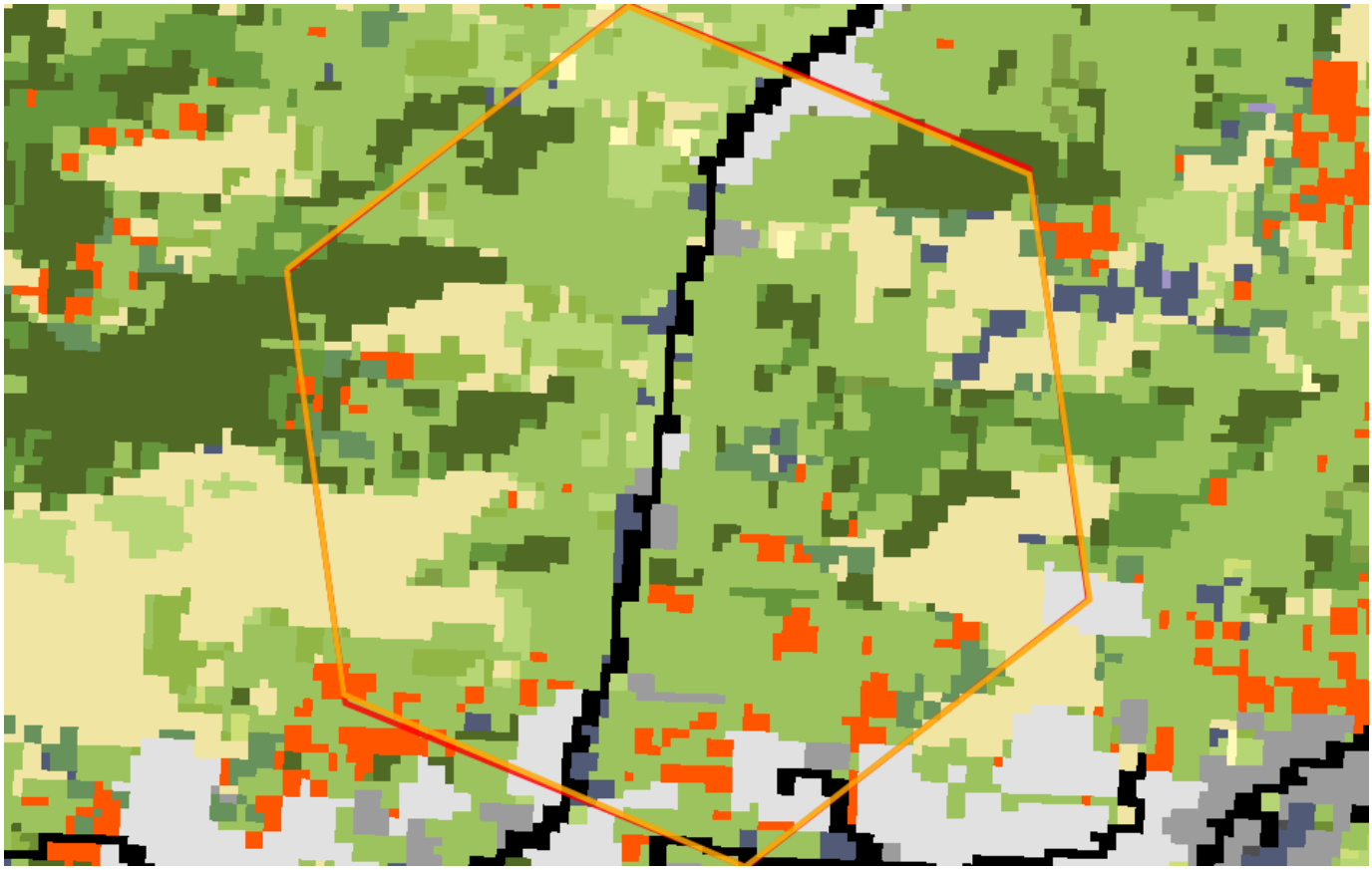
46.56033	-112.11213

Land Cover

Summarized by: **Grizzly Gulch** *(Custom Area of Interest)*



42% (*268 Acres*)

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

Rocky Mountain Ponderosa Pine Woodland and Savanna

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

16% (*103 Acres*)

Shrubland, Steppe and Savanna Systems
Sagebrush Steppe

Montane Sagebrush Steppe

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

12% (*77 Acres*)

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

Rocky Mountain Montane Douglas-fir Forest and Woodland

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

7% (*43 Acres*)

Grassland Systems
Montane Grassland

Rocky Mountain Lower Montane, Foothill, and Valley Grassland

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

4% (*27 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.

4% (*25 Acres*)

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

Rocky Mountain Lodgepole Pine Forest

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

No Image

3% (*22 Acres*)

Recently Disturbed or Modified
Insect-Killed Forest

Insect-Killed Forest

No Image

3% (*19 Acres*)

Human Land Use
Developed

Other Roads

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

3% (*17 Acres*)

Rocky Mountain Foothill Limber Pine - Juniper Woodland

This ecological system occurs in foothill and lower montane zones in the northern Rocky Mountains and island mountain ranges of Montana and on escarpments extending out to the western Great Plains grasslands. Elevation ranges from 1,219 to 2,286 meters (4,000-7,500 feet), occasionally higher in southwestern Montana. At higher elevations, it is limited to sites with thin soils on rock outcrops. Some of the most ecologically interesting examples occur along and within the mountains of the Rocky Mountain Front where it occurs most commonly on west and north facing aspects. At lower elevations, it can occur on all aspects and on relatively level terrain. Fire is infrequent and spotty because rocky substrates inhibit growth of the continuous canopy that would be needed to spread. This system occurs on sites that are characterized by extreme winter weather and droughty summer conditions. It is typically dominated by limber pine (*Pinus flexilis*) or Rocky Mountain juniper (*Juniperus scopulorum*). This systemis usually found below continuous forests of Douglas-fir (*Pseudotsuga menziesii*), or rarely, ponderosa pine (*Pinus ponderosa*) or lodgepole pine (*Pinus contorta*) in the foothills. Rocky Mountain juniper stands often occur in complex transitional zones or grow on exposed or severe sites within other forest systems. These juniper stands can exhibit a savanna-like character in southwestern Montana. In the system as a whole, because sites are so marginal for tree growth, limber pine mortality from abiotic and biotic stresses may be high. East of the Continental Divide, limber pine can occur at the upper tree line, with whitebark pine (*Pinus albicaulis*) in Glacier National Park and the Sweetgrass Hills. The climtate characteristic of these systems is marked by a relatively small amount of precipitation, with the wettest months during the growing season, very low humidity, and wide annual and diurnal temperature ranges. Winter conditions may be very cold but relatively dry, and often include rapid fluctuations in temperature associated with chinook winds. In Montana, limber pine and Rocky Mountain juniper stands are found mainly on calcareous substrates. Soils have a high rock component (generally over 50% cover) and are coarse- to fine-textured, often gravelly. Slopes are moderately steep to steep.

No Image

2% (*15 Acres*)

Shrubland, Steppe and Savanna Systems
Deciduous Shrubland

Rocky Mountain Montane-Foothill Deciduous Shrubland

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

2% (*13 Acres*)

Wetland and Riparian Systems
Floodplain and Riparian

Northern Rocky Mountain Lower Montane Riparian Woodland and Shrubland

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

Additional Limited Land Cover

1% (*7 Acres*) Low Intensity Residential

<1% (*2 Acres*) Big Sagebrush Steppe

<1% (*1 Acres*) Rocky Mountain Subalpine Mesic Spruce-Fir Forest and Woodland

<1% (*1 Acres*) Rocky Mountain Subalpine Dry-Mesic Spruce-Fir Forest and Woodland

<1% (*1 Acres*) Rocky Mountain Subalpine-Montane Mesic Meadow

<1% (*0 Acres*) Aspen Forest and Woodland

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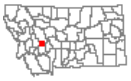

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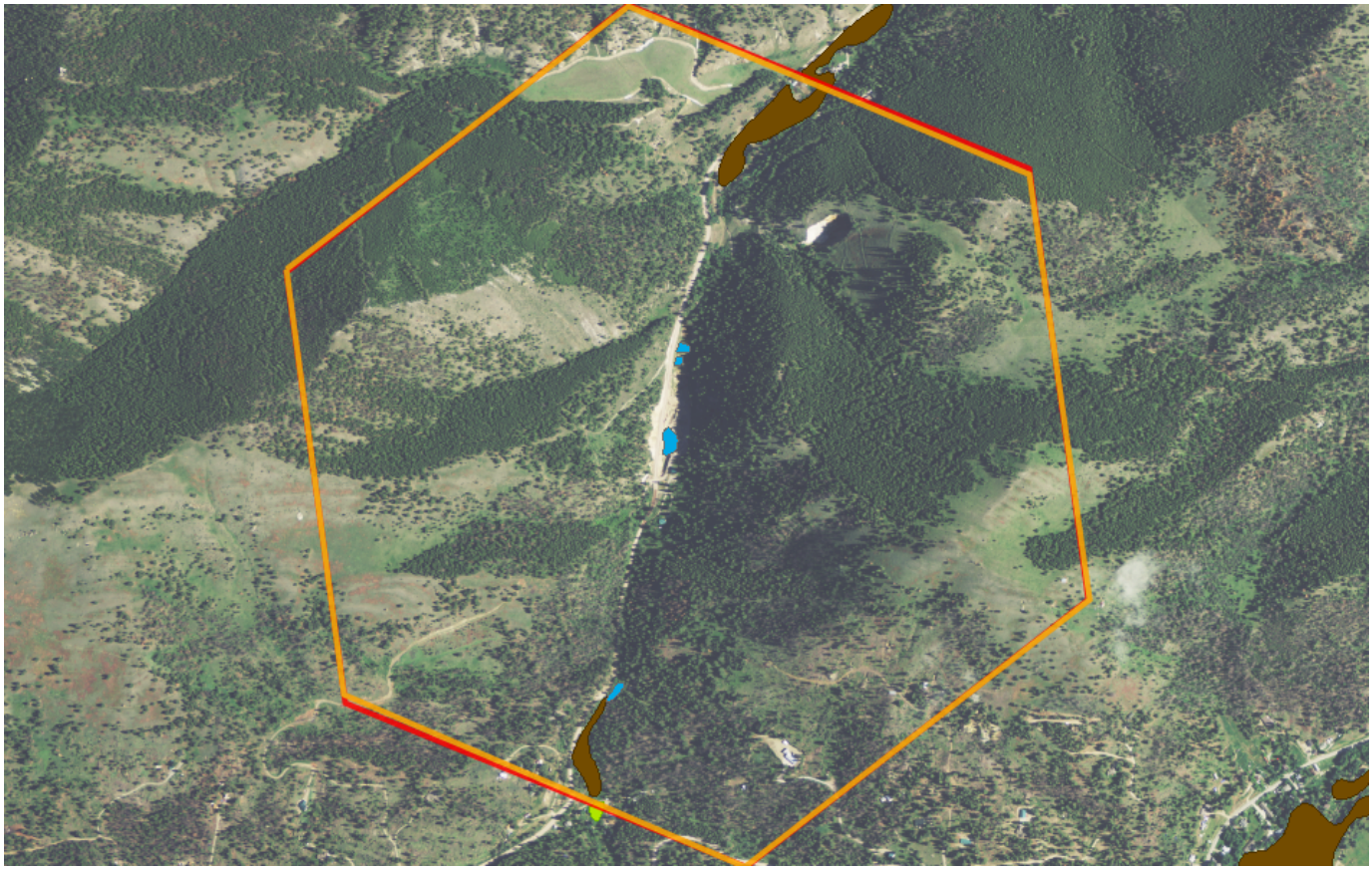
46.54194	-112.08897
46.56033	-112.11213

Wetland and Riparian

Summarized by: **Grizzly Gulch** *(Custom Area of Interest)*



Wetland and Riparian Mapping

Explain

P - Palustrine

UB - Unconsolidated Bottom

F - Semipermanently Flooded — 1 Acres
x - Excavated — **1 Acres** **PUBFx**

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

AB - Aquatic Bed

G - Intermittently Exposed — <1 Acres
h - Diked/Impounded — **<1 Acres** **PABGh**

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

EM - Emergent

A - Temporarily Flooded — <1 Acres
h - Diked/Impounded — **<1 Acres** **PEMAh**

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

Rp - Riparian

1 - Lotic

FO - Forested
(no modifier) — **6 Acres** **Rp1FO**

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

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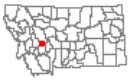

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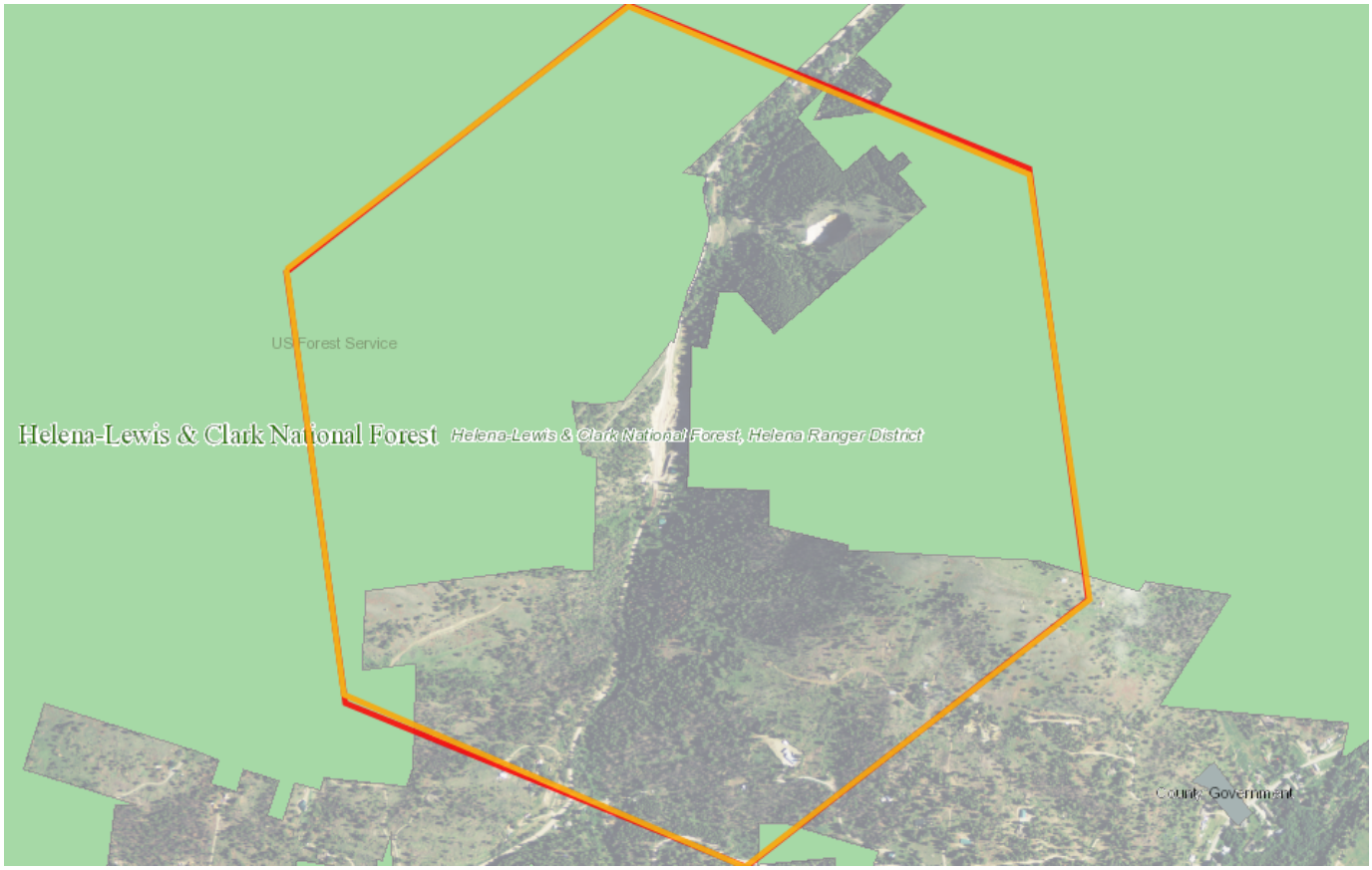
Land Management

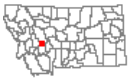
Summarized by: **Grizzly Gulch** *(Custom Area of Interest)*



Land Management Summary *Explain*

	Ownership	Tribal	Easements	Other Boundaries (possible overlap)
Public Lands	**377 Acres (59%)**			
Federal	**377 Acres (59%)**			
US Forest Service	**377 Acres (59%)**			
USFS Owned	**377 Acres (59%)**			
USFS Ranger Districts				**639 Acres**
Helena-Lewis & Clark National Forest, Helena Ranger District				639 Acres
USFS National Forest Boundaries				**639 Acres**
Helena-Lewis & Clark National Forest				639 Acres
Private Lands or Unknown Ownership	**262 Acres (41%)**			

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



Latitude	Longitude
46.54194	-112.08897
46.56033	-112.11213

Biological Reports

Summarized by: **Grizzly Gulch** *(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

No Biological Reports were found in the selected area

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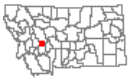
Model Icons
- N Suitable (native range)
- O Optimal Suitability
- M Moderate Suitability
- L Low Suitability
- I Suitable (introduced range)

Habitat Icons
- C Common
- O Occasional

Range Icons
- N Non-native

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



Latitude	Longitude
46.54194	-112.08897
46.56033	-112.11213

Invasive and Pest Species

Summarized by: **Grizzly Gulch** *(Custom Area of Interest)*

	# Obs	Predicted Model	Range
Aquatic Invasive Species			
V - Nymphaea odorata *(American Water-lily)* AIS			N
View in Field Guide · View Predicted Models · View Range Maps			
Aquatic Invasive Species - Non-native Species Global: **G5** State: **SNA**			
Predicted Models: I 100% Suitable (introduced range) (deductive)			
Noxious Weeds: Priority 1A			
V - Isatis tinctoria *(Dyer's Woad)* N1A			N
View in Field Guide · View Predicted Models · View Range Maps			
Noxious Weed: Priority 1A - Non-native Species Global: **GNR** State: **SNA**			
Predicted Models: L 100% Low (inductive)			
Noxious Weeds: Priority 1B			
V - Polygonum cuspidatum *(Japanese Knotweed)* N1B			N
View in Field Guide · View Predicted Models · View Range Maps			
Noxious Weed: Priority 1B - Non-native Species Global: **GNRTNR** State: **SNA**			
Predicted Models: M 100% Moderate (inductive)			
V - Echium vulgare *(Blueweed)* N1B			N
View in Field Guide · View Predicted Models · View Range Maps			
Noxious Weed: Priority 1B - Non-native Species Global: **GNR** State: **SNA**			
Predicted Models: L 100% Low (inductive)			
Noxious Weeds: Priority 2A			
V - Rhamnus cathartica *(Common Buckthorn)* N2A			N
View in Field Guide · View Predicted Models · View Range Maps			
Noxious Weed: Priority 2A - Non-native Species Global: **GNR** State: **SNA**			
Predicted Models: M 100% Moderate (inductive)			
V - Hieracium aurantiacum *(Orange Hawkweed)* N2A	1		N
View in Field Guide · View Predicted Models · View Range Maps			
Noxious Weed: Priority 2A - Non-native Species Global: **GNR** State: **SNA**			
Predicted Models: L 100% Low (inductive)			
V - Hieracium caespitosum *(Meadow Hawkweed)* N2A			N
View in Field Guide · View Predicted Models · View Range Maps			
Noxious Weed: Priority 2A - Non-native Species Global: **GNR** State: **SNA**			
Predicted Models: L 100% Low (inductive)			
V - Hieracium praealtum *(Kingdevil Hawkweed)* N2A			N
View in Field Guide · View Predicted Models · View Range Maps			
Noxious Weed: Priority 2A - Non-native Species Global: **GNR** State: **SNA**			
Predicted Models: L 100% Low (inductive)			
V - Ranunculus acris *(Tall Buttercup)* N2A			N
View in Field Guide · View Predicted Models · View Range Maps			
Noxious Weed: Priority 2A - Non-native Species Global: **G5** State: **SNA**			
Predicted Models: L 100% Low (inductive)			
V - Ventenata dubia *(Ventenata)* N2A			N
View in Field Guide · View Predicted Models · View Range Maps			
Noxious Weed: Priority 2A - Non-native Species Global: **GNR** State: **SNA**			
Predicted Models: L 100% Low (inductive)			
Noxious Weeds: Priority 2B			
V - Berteroa incana *(Hoary False-alyssum)* N2B	1		N
View in Field Guide · View Predicted Models · View Range Maps			
Noxious Weed: Priority 2B - Non-native Species Global: **GNR** State: **SNA**			
Predicted Models: M 100% Moderate (inductive)			
V - Centaurea stoebe *(Spotted Knapweed)* N2B	12		N
View in Field Guide · View Predicted Models · View Range Maps			
Noxious Weed: Priority 2B - Non-native Species Global: **GNR** State: **SNA**			
Predicted Models: M 100% Moderate (inductive)			
V - Cynoglossum officinale *(Common Hound's-tongue)* N2B	1		N
View in Field Guide · View Predicted Models · View Range Maps			
Noxious Weed: Priority 2B - Non-native Species Global: **GNR** State: **SNA**			
Predicted Models: M 100% Moderate (inductive)			
V - Linaria dalmatica *(Dalmatian Toadflax)* N2B	6		N
View in Field Guide · View Predicted Models · View Range Maps			
Noxious Weed: Priority 2B - Non-native Species Global: **G5** State: **SNA**			
Predicted Models: M 100% Moderate (inductive)			

V - Linaria vulgaris *(Yellow Toadflax)* N2B

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

Predicted Models: M 100% Moderate (inductive)

V - Centaurea diffusa *(Diffuse Knapweed)* N2B 1

View in Field Guide View Predicted Models View Range Maps

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

Predicted Models: L 100% Low (inductive)

V - Cirsium arvense *(Canada Thistle)* N2B 2

View in Field Guide View Predicted Models View Range Maps

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

Predicted Models: L 100% Low (inductive)

V - Euphorbia virgata *(Leafy Spurge)* N2B 7

View in Field Guide View Predicted Models View Range Maps

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

Predicted Models: L 100% Low (inductive)

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

View in Field Guide View Predicted Models View Range Maps

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

Predicted Models: L 100% Low (inductive)

V - Lepidium draba *(Whitetop)* N2B

View in Field Guide View Predicted Models View Range Maps

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

Predicted Models: L 100% Low (inductive)

V - Leucanthemum vulgare *(Oxeye Daisy)* N2B

View in Field Guide View Predicted Models View Range Maps

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

Predicted Models: L 100% Low (inductive)

V - Potentilla recta *(Sulphur Cinquefoil)* N2B

View in Field Guide View Predicted Models View Range Maps

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

Predicted Models: L 100% Low (inductive)

V - Tanacetum vulgare *(Common Tansy)* N2B 1

View in Field Guide View Predicted Models View Range Maps

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

Predicted Models: L 100% Low (inductive)

Regulated Weeds: Priority 3

V - Bromus tectorum *(Cheatgrass)* R3

View in Field Guide View Predicted Models View Range Maps

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

Predicted Models: L 100% Low (inductive)

Biocontrol Species

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

View in Field Guide View Predicted Models View Range Maps

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

Predicted Models: M 100% Moderate (inductive)

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

View in Field Guide View Predicted Models View Range Maps

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

Predicted Models: L 100% Low (inductive)

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

View in Field Guide View Predicted Models View Range Maps

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

Predicted Models: L 100% Low (inductive)

I - Cyphocleonus achates *(Knapweed Root Weevil)* BIOCNTRL

View in Field Guide View Predicted Models View Range Maps

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

Predicted Models: L 100% Low (inductive)

I - Mecinus janthinus *(Yellow Toadflax Stem-boring Weevil)* BIOCNTRL

View in Field Guide View Predicted Models View Range Maps

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

Predicted Models: L 100% Low (inductive)

Introduction to Montana Natural Heritage Program

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

Introduction

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

Vision

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

Core Values

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

Confidentiality

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

Information Managed

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

Data Use Terms and Conditions

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

Suggested Contacts for Natural Resource Management Agencies

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

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

Montana Fish, Wildlife, and Parks

Fish Species	Zachary Shattuck zshattuck@mt.gov (406) 444-1231 or Eric Roberts eroberts@mt.gov (406) 444-5334
American Bison Black-footed Ferret Black-tailed Prairie Dog Bald Eagle Golden Eagle Common Loon Least Tern Piping Plover Whooping Crane	Kristian Smucker KSmucker@mt.gov (406) 444-5209
Grizzly Bear Greater Sage Grouse Trumpeter Swan Big Game Upland Game Birds Furbearers	Brian Wakeling brian.wakeling@mt.gov (406) 444-3940
Managed Terrestrial Game Data	Cara Whalen– MFWP Data Analyst cara.whalen@mt.gov (406) 444-3759
Fisheries Data and Nongame Animal Data	Ryan Alger – MFWP Data Analyst ryan.alger@mt.gov (406) 444-5365
Wildlife and Fisheries Scientific Collector's Permits	https://fwp.mt.gov/buyandapply/commercialwildlifeandscientificpermits/scientific Kristina Smucker for Wildlife ksmucker@mt.gov (406) 444-5209 Dave Schmetterling for Fisheries dschmetterling@mt.gov (406) 542-5514
Fish and Wildlife Recommendations for Subdivision Development	Charlie Sperry csperry@mt.gov (406) 444-3888 See https://fwp.mt.gov/conservation/living-with-wildlife/subdivision-recommendations
Regional Contacts  	Region 1 (Kalispell) (406) 752-5501 fwprg12@mt.gov Region 2 (Missoula) (406) 542-5500 fwprg22@mt.gov Region 3 (Bozeman) (406) 577-7900 fwprg3@mt.gov Region 4 (Great Falls) (406) 454-5840 fwprg42@mt.gov Region 5 (Billings) (406) 247-2940 fwprg52@mt.gov Region 6 (Glasgow) (406) 228-3700 fwprg62@mt.gov Region 7 (Miles City) (406) 234-0900 fwprg72@mt.gov

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

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

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

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

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

Bureau of Land Management

Montana Field Office Contacts:

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

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

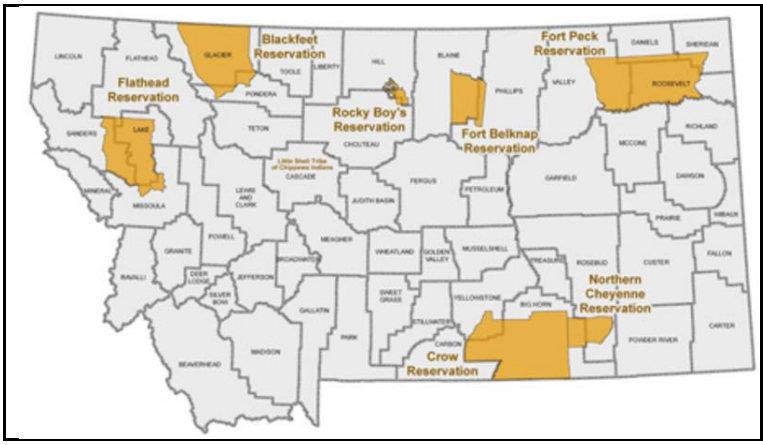
United States Environmental Protection Agency
Environmental information, notices, permitting, and contacts https://www.epa.gov/mt
Gateway to state resource locators https://www.envcap.org/srl/index.php

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

United States Forest Service

Regional Office – Missoula, Montana Contacts			
Wildlife Program Leader	Tammy Fletcher	tammy.fletcher2@usda.gov	(406) 329-3086
Wildlife Ecologist	Cara Staab	cara.staab@usda.gov	(406) 329-3677
Aquatic Ecologist	Justin Jimenez	justin.jimenez@usda.gov	(435) 370-6830
TES Program	Lydia Allen	lydia.allen@usda.gov	(406) 329-3558
Interagency Grizzly Bear Coordinator	Scott Jackson	scott.jackson@usda.gov	(406) 329-3664
Regional Botanist	Amanda Hendrix	amanda.hendrix@usda.gov	(651) 447-3016
Regional Vegetation Ecologist	Mary Manning	marry.manning@usda.gov	(406) 329-3304
Invasive Species Program Manager	Michelle Cox	michelle.cox2@usda.gov	(406) 329-3669

Tribal Nations



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

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

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

Invasive Species Management Contacts and Information

Aquatic Invasive Species

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

Noxious Weeds

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

Introduction to Native Species

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

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

Observations

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

Species Occurrences

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

Plant Species Occurrences

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

Animal Species Occurrences

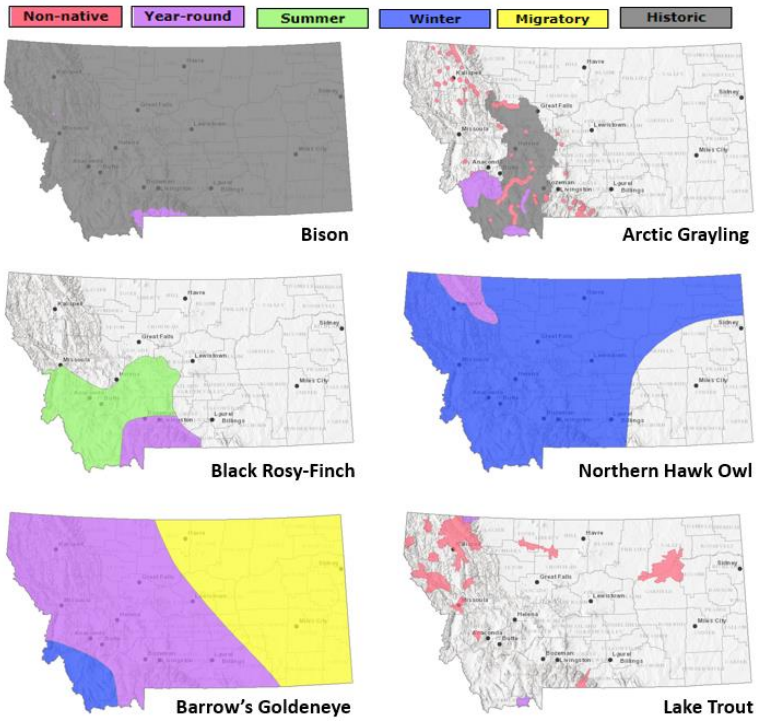
The location of a verified observation or specimen record typically known or assumed to represent a breeding population or a portion of a breeding population. Animal SO's are generally: (1) buffers of terrestrial point observations based on documented species' home range sizes; (2) buffers of stream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

Other Occurrence Polygons

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

Geographic Range Polygons

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



Predicted Suitable Habitat Models

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

Associated Habitats

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

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

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

Introduction to Land Cover

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

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

Literature Cited

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

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

Introduction to Wetland and Riparian

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

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

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

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

Literature Cited

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

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

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

Introduction to Land Management

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

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

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

Public Lands
Conservation Easements
Private Conservation Lands
Managed Areas

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

Introduction to Invasive and Pest Species

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

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

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

Additional Information Resources

- MTNHP Staff Contact Information
- Montana Field Guide
- MTNHP Species of Concern Report - Animals and Plants
- MTNHP Species Status Codes - Explanation
- MTNHP Predicted Suitable Habitat Models (for select Animals and Plants)
- MTNHP Request Information page
- Montana Cadastral
- Montana Code Annotated
- Montana Fisheries Information System
- Montana Fish, Wildlife, and Parks Subdivision Recommendations
- Montana GIS Data Layers
- Montana GIS Data Bundler
- Montana Greater Sage-Grouse Project Submittal Site
- Montana Ground Water Information Center
- Montana Index of Environmental Permits, 21st Edition (2018)
- Montana Environmental Policy Act (MEPA)
- Montana Environmental Policy Act Analysis Resource List
- Laws, Treaties, Regulations, and Agreements on Animals and Plants
- Montana Spatial Data Infrastructure Layers
- Montana State Historic Preservation Office Review and Compliance
- Montana Stream Permitting: a guide for conservation district supervisors and others
- Montana Water Information System
- Montana Web Map Services
- National Environmental Policy Act
- Penalties for Misuse of Fish and Wildlife Location Data (MCA 87-6-222)
- U.S. Fish and Wildlife Service Information for Planning and Consultation (Section 7 Consultation)
- Web Soil Survey Tool

IPaC resource list

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

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

Location

Lewis and Clark County, Montana

Local office

Montana Ecological Services Field Office

(406) 449-5225
(406) 449-5339

585 Shephard Way, Suite 1

Helena, MT 59601-6287

Endangered species

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

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

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

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

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

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

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

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1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).

2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

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

Mammals

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

Insects

NAME	STATUS
Monarch Butterfly Danaus plexippus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9743	Candidate

Critical habitats

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

There are no critical habitats at this location.

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

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

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1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern https://www.fws.gov/program/migratory-birds/species
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON

Bald Eagle Haliaeetus leucocephalus This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Jan 1 to Aug 31
Cassin's Finch Carpodacus cassinii This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9462	Breeds May 15 to Jul 15
Evening Grosbeak Coccothraustes vespertinus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 15 to Aug 10
Golden Eagle Aquila chrysaetos This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds Jan 1 to Aug 31
Lesser Yellowlegs Tringa flavipes This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Olive-sided Flycatcher Contopus cooperi This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3914	Breeds May 20 to Aug 31
Rufous Hummingbird selasphorus rufus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8002	Breeds Apr 15 to Jul 15

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and

understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (▪)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

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

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

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

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

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

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

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

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

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

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

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

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

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

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

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

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

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

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

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

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

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

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

Facilities

National Wildlife Refuge lands

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

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

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

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

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

This location overlaps the following wetlands:

FRESHWATER FORESTED/SHRUB WETLAND

PSSA

FRESHWATER POND

PUBFx

PABFh

RIVERINE

R4SBC

R5UBH

A full description for each wetland code can be found at the National Wetlands Inventory website

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

Data limitations

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

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

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

Data exclusions

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

Data precautions

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

EPA NEPAssist

Grizzly Gulch

Map

Geographic coordinates:

POLYGON
(46.543642,-112.107312,46.548070,-112.110874,46.554444,-112.109458,46.559638,-112.102592,46.559107,-112.094009,46.558812,-112.093107,46.558753,-112.093107,46.558517,-112.093022,46.558251,-112.092936,46.558015,-112.092807,46.557750,-112.092592,46.553707,-112.091305,46.547952,-112.092893,46.547922,-112.092893,46.547774,-112.093150,46.547715,-112.093236,46.547627,-112.093451,46.547184,-112.094309,46.546800,-112.094867,46.546387,-112.095468,46.546033,-112.096197,46.543406,-112.099802,46.543642,-112.107312)

with buffer 0 miles

Note: The information in the following reports is based on publicly available databases and web services. The National Report uses nationally available datasets and the State Reports use datasets available through the EPA Regions. Click on the hyperlinked question to view the data source and associated metadata.

National Report

Project Area	0.79 sq mi
Within an Ozone 8-hr (1997 standard) Non-Attainment/Maintenance Area?	no
Within an Ozone 8-hr (2008 standard) Non-Attainment/Maintenance Area?	no
Within a Lead (2008 standard) Non-Attainment/Maintenance Area?	no
Within a SO2 1-hr (2010 standard) Non-Attainment/Maintenance Area?	no
Within a PM2.5 24hr (2006 standard) Non-Attainment/Maintenance Area?	no
Within a PM2.5 Annual (1997 standard) Non-Attainment/Maintenance Area?	no
Within a PM2.5 Annual (2012 standard) Non-Attainment/Maintenance Area?	no
Within a PM10 (1987 standard) Non-Attainment/Maintenance Area?	no
Within a Federal Land?	yes
Within an impaired stream?	no
Within an impaired waterbody?	no
Within a waterbody?	no
Within a stream?	yes
Within an NWI wetland?	click here *May take several minutes*
Within a Brownfields site?	no
Within a Superfund site?	no
Within a Toxic Release Inventory (TRI) site?	no
Within a water discharger (NPDES)?	no
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?	no
Within the service area of an In-Lieu-Fee Program?	yes
Within a Public Property Boundary of the Formerly Used Defense Sites?	no
Within a Munitions Response Site?	no
Within an Essential Fish Habitat (EFH)?	no
Within a Habitat Area of Particular Concern (HAPC)?	no
Within an EFH Area Protected from Fishing (EFHA)?	no
Within a Bureau of Land Management Area of Critical Environmental Concern?	no
Within an ESA-designated Critical Habitat Area per U.S. Fish & Wildlife Service?	no
Within an ESA-designated Critical Habitat river, stream or water feature per U.S. Fish & Wildlife Service?	no

Save to Excel | Save as PDF

Montana Report

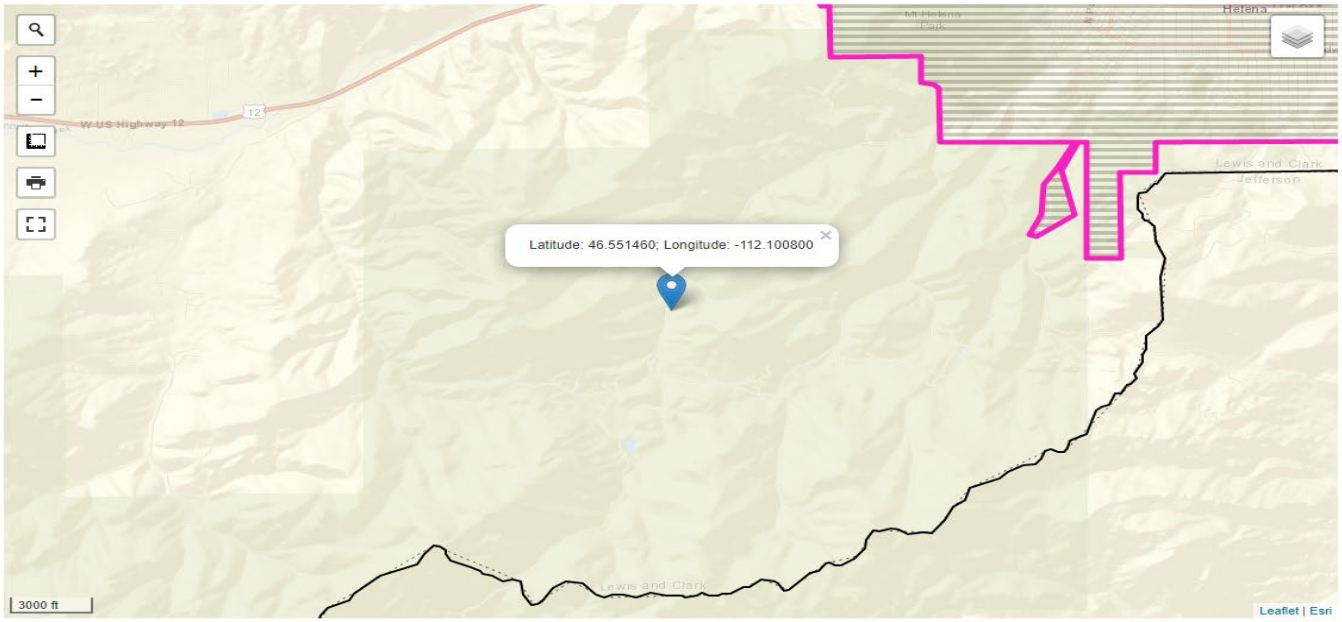
Demographic Reports

USFWS IPaC Report

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.



MONTANA SAGE GROUSE HABITAT CONSERVATION PROGRAM
1539 ELEVENTH AVE. HELENA, MT 59601 | SAGEGROUSE@MT.GOV | 406-444-6340