



WATER
PROTECTION
BUREAU

Agency Use

Permit No.:

Date Rec'd

Amount Rec'd

Check No.

Rec'd By

FORM
NOI-NMP
CAFO

Notice of Intent (NOI) and Nutrient Management Plan (NMP)
Concentrated Animal Feeding Operation General Permit
MTG010000

This application form is comprised of the **NOI (Sections 1 – 5)** and the **NMP (Sections 6 – 10)**. Before completing the NOI-NMP form, Concentrated Animal Feeding Operation (CAFO) operators must read the CAFO General Permit. CAFO operators are also advised to read the attached NOI-NMP instructions before completing this form. You must print or type legibly; forms that are not legible, not complete, or unsigned will be rejected. You must maintain a copy of the completed NOI-NMP form for your records.

CAFO Status and Fee

Permit Authorization Number: M T G 0 1 0 _ _ _

Select Appropriate Fee:

☒ New Application: \$1200
☐ Renewal Application: \$600
☐ Permit Modification: \$600

Sections 1 through 5 consist of the NOI. The application form is to be completed by the owner or operator of a Concentrated Animal Feeding Operation (CAFO).

Section 1 – Facility/Site Information

Facility Name Kinsey Cattle Company

Location (Physical address or Directions) 1777 Kinsey Road

Nearest City or Town Miles City

Zip Code, County 59301, Custer County

Facility Latitude, Longitude 46° 30' 21.7218" N, -105° 45' 53.9136" W

Date facility began operation TBD - Anticipated start date of October, 2025

Status of Applicant ☐ Federal ☐ State ☐ No ☒ Private ☐ Other _____

Located on Tribal Lands? ☒ No ☐ Yes (If yes, obtain the permit through EPA, not DEQ)

Continue to Page 2

Section 2 – Representatives

2.1 Applicant (Owner/Operator)

The owner/operator assumes all liability for site discharges and compliance with the terms and conditions of the permit. The signatory/responsible official must meet certification requirements listed in the Certification Section at this end of this form.

Owner/Operator Formal Name Wyatt Lesh and Amy Lesh
Mailing Address 1777 Kinsey Road
City, State, Zip Code Miles City, MT, 59301
Signatory/Responsible Official Name Wyatt Lesh Title Owner
Contact Information Phone 406-852-4098 (Wyatt) Email wyatt@leshandcompany.com

2.2 Authorized Representative

amylesh96@outlook.com

For future reports (including NetDMR) to be signed by anyone other than the signatory/responsible official, a duly authorized individual(s) or position must be identified. If one is not designated, then all reports must be signed by the signatory until such designation is made in writing [ARM 17.30.1232(2)].

Select Appropriate Box:

- ☐ No authorized representative for this permit is designated at this time (continue to Section 3)
☒ I designate the following duly authorized representative for this permit (provide the information below):

Authorized Representative Information:

Authorized Representative Name Neal E. Fehringer Title Consulting Agronomist
Company Name Fehringer Agricultural Consulting, Inc.
Mailing Address 7033 US Hwy 312
City, State, Zip Code Billings, MT 59105-5090
Contact Information Phone 406-860-3647 Email nealf@vikingcable.net

Section 3 – Business Description

3.1 SIC Codes and NAICS Codes

Provide at least one Standard Industrial Classification (SIC) code and one North American Industry Classification System (NAICS) code which best reflects the products or services provided by the CAFO.

SIC Code	Description
(1) <u>211</u>	<u>Beef Cattle Feedlots</u>
(2)	
(3)	
(4)	

SIC Code Examples:

211 Beef Cattle Feedlots
212 Beef Cattle, Except Feedlots
213 Hogs
214 Sheep and Goats
241 Dairy Farms
251 Broiler, Fryer and Roaster Chickens
252 Chicken Eggs
253 Turkeys and Turkey Eggs
254 Poultry Hatcheries
259 Poultry and Eggs, not elsewhere classified (Ducks)
272 Horses and other Equines

NAICS Code	Description
(1) <u>121112</u>	<u>Cattle Feedlots</u>
(2) <u>112111</u>	<u>Beef Cattle Ranching and Farming</u>
(3)	
(4)	

NAICS Code Examples:

112112 Cattle Feedlots
112111 Beef Cattle Ranching and Farming
11221 Hog and Pig Farming
11240 Sheep Farming
11212 Dairy Cattle and Milk Production
11232 Broilers and other Meat-Type Chickens
11234 Chicken Egg Production
11233 Turkey Production
11234 Poultry Hatcheries
112390 Other Poultry Production
112920 Horses and other Equine Production

3.2 Facility or Operation Description

Provide a brief description of the nature of the facility (feedlot, stockyard, sale barn, etc.)

Cattle feedlot.

3.3 Existing or Pending Permits, Certification, or Approvals

- ☒ None ☐ RCRA _____
- ☐ MPDES _____ ☐ Other _____
- ☐ PSD (Air Emissions) _____ ☐ Other _____
- ☐ 404 Permit (Dredge and Fill) _____

Section 4 – Outfalls

4.1 Receiving Water

For each outfall, provide the latitude and longitude (to the nearest decimal degree) and the name of the receiving water. If the receiving water/drainage is unnamed, indicate the closest named drainage it flows into (i.e., “unnamed tributary to Clear Creek”). Attach additional sheets if necessary for more outfalls. This section must not be left blank, and “N/A” is not acceptable.

Outfall	Latitude	Longitude	Name of Receiving Water
001	46.50333333	105.77194444	Unnamed tributary to Sunday Creek

Section 5 – Characteristics

5.1 Impaired Waters 303(d)

Identify whether the receiving water is impaired for nutrients. Check the Clean Water Act Information Center database at <https://deq.mt.gov/water/resources> to determine if the receiving water is impaired for nutrients (total nitrogen and/or total phosphorus).

- ☒ The receiving water is impaired for nutrients
- ☐ The receiving water is NOT impaired for nutrients

Continue to Page 4

5.2 Animal Confinement

Report the maximum number of each type of animal confined at any one time in open confinement and/or housed under a roof.

Animal type	Number in Open Confinement	Number Housed Under Roof
Mature Dairy Cows		
Veal Calves	1500	
Cattle including dairy Heifers		
Swine 55 lbs. or over		
Swine 55 lbs. or under		
Horses		
Sheep or Lambs		
Turkeys		
Chicken broilers –includes juveniles		
Chicken layers –includes juveniles		
Ducks		
Other Specify:		
Other Specify:		

5.3 Rain Gage Location

Identify the nearest gage station or onsite rain gage. Provide either the Station ID of the gage or a latitude and longitude.

Station ID KMLS - Frank Wiley Field Airport OR

Latitude, Longitude 46.42806*N, 105.88639*W

5.4 Containment Structures

Were the containment structures built after February 2006?

- ☒ Yes. Skip the following 3 questions and continue to the table below.
☐ No. Complete the questions and table below.

Do the livestock waste control facilities have 10 feet of separation between the pond bottom and any bedrock formations?

☐ Yes ☐ No

Do the waste containment structures have 4 feet of separation from the pond bottom to any ground water?

☐ Yes ☐ No

Do the livestock waste control facilities comply with the applicable well setbacks?

☐ Yes ☐ No

Continue to Page 5

Identify the type of containment/storage, the total capacity with units, and the number of days of storage in each:

Type of Containment/Storage	Total Capacity	Units (gallons or tons)	Days of Storage
Anaerobic Lagoon			
Storage Pond #1	31,500 cu ft	235,636 gals	180
Storage Pond #2	28,0000 cu ft	209,454 gals	180
Storage Pond #3			
Storage Pond #4			
Storage Pond #5			
Above Ground Storage Tank #1			
Above Ground Storage Tank #2			
Above Ground Storage Tank #3			
Underfloor Pits			
Below Ground Storage Tank			
Roofed Storage Shed			
Concrete Pad			
Impervious Soil Pad			
Other Specify:			
Other Specify:			

5.5 Sage Grouse Habitat

Visit the Montana Sage Grouse Habitat Conservation Program (Program) website at <https://sagegrouse.mt.gov/> to determine if the proposed operation is located in designated sage grouse core, general, or connectivity habitat.

- ☒ Yes. Submit an application to the Program and **attach the required consultation letter**. Letter attached, pages 21-25.
- ☐ No. No additional information is required.

5.6 New Source/Operation

Is this a new source and/or operation? New sources must obtain analyses from the Montana Natural Heritage Program (MTNHP) and Montana State Historic Preservation Office (SHPO) demonstrating possible impacts to wildlife and cultural resources, respectively.

- ☒ Yes. Attach project review analyses from MTNHP and SHPO.
- ☐ No. No additional information is required

Continue to Page 6

MTNHP attached, pages 26-65.
SHPO attached, pages 66-69.

Sections 6 through 10 consist of the Nutrient Management Plan (NMP). These sections are intended to help CAFO operators develop a site-specific NMP required by the CAFO General Permit. Your NMP must be kept at the operation. Attach additional pages as necessary, indicating the corresponding section number on this NMP form.

Section 6 – NMP Minimum Elements

Facility Photos and Maps

- Facilities must attach photos and maps depicting the following:
- The production area that shows the locations of all animal confinement structures described in the **Animal Type, Storage Location, and Generation Rates Table**. Map attached, Page 20.
 - The flow direction of storm water and wastewater for all animal confinement structures described in the **Animal Type, Storage Location, and Generation Rates Table**. Map attached, page 20.
 - Manure and wastewater handling and storage areas
 - Raw material handling and storage areas
 - Storage and disposal areas of chemicals or other contaminants handled on site Pour-on product(s) will be stored in shop storage room. Approximate location shown on map on page 19.
 - All land application areas (include topography and soil types)
 - Environmentally sensitive areas (sinkholes, wells, drinking water sources, tile drain outlets, etc.) for the production area
 - Illustrate the facility/activity boundaries, receiving water, and major drainage patterns
 - Identify the specific location of the production area and the land application area(s)
- ☒ I have attached photos and maps (aerial and topographic) that meet the above requirements.

6.1 Ensure Adequate Storage Capacity

Complete the table below: Be sure to identify each type of animal confined at this facility. This could include animals of a given species, weight class, or housed for a specific purpose.

Livestock Statistics and Manure, Litter, and Process Wastewater Generation Rates					
Animal Type	Waste Storage Location	Maximum Number of Animals at Any Time	Number of Days/Year on Site	Annual manure, litter, and process wastewater production	
				Dry (tons/yr)	Liquid (gallons/yr)
1. Calves	Retention ponds		180		1.05 MG
2. Calves	Pens		180	1,002	
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					

Kinsey Feeders

2025-26 Estimated Manure Production

<u>Animal Group</u>	<u>No.</u>	<u>Ave</u> <u>Wt.</u>	<u>Days</u> <u>Fed</u>	----- Manure -----			<u>Est.</u> <u>Tons</u>
				<u>cu. ft.</u> <u>per day</u>	<u>Excreted</u> <u>Moist, %</u>	<u>Spread</u> <u>Moist, %</u>	
Calves	<u>1,500</u>	650	180	1.11	92	25	1,002
TOTAL	<u>1,500</u>						

TOTAL ESTIMATED SPREADABLE MANURE PRODUCED 1,002

Manure production estimated by using figures from Table 1: Daily Manure Production, as excreted, on pages 12 & 13 in Montana DEQ Circular 9.

Methods for estimating animal manure, litter, and process wastewater production

Describe the methods used for estimating animal manure, litter, and process wastewater production: Include all formulas, factors, references to tables, and other resources used to calculate manure, litter, and wastewater production. Be sure to account for soiled bedding materials.

See attached estimated manure production sheet.

Manure handling:

Identify manure, litter, and process wastewater handling at the CAFO. Mark all that apply:

- | | |
|--|--|
| ☒ Stored in pens | ☐ Direct pipe to liquid impoundment |
| ☐ Stored on stacking pad | ☐ Stored under floor pit |
| ☐ Composting on site | ☐ Separator |
| ☐ Other _____ | |

Frequency of manure removal from confinement areas:

- | | |
|--|--------------------------------------|
| ☐ Bi-annually | ☐ As needed |
| ☒ Annually | ☐ Other _____ |

Is the manure, litter, or process wastewater temporarily stored in any location other than the production area?

- ☒ No.
- ☐ Yes. Explain how and where _____

Is dry manure and/or litter stored on an impervious surface?

- ☒ No.
- ☐ Yes. Describe the type and characteristics of this surface _____

Waste control structures:

Provide the 24-hr-25-yr storm event at your facility location. Refer to the map provided in the instructions.

2.8 in/hr

Provide the annual precipitation during critical winter storage period (180 days from mid-October to mid-April)

2.43 in

Provide the area within clean water diversions. This is the area that is inside the BMPs used for clean water diversions and is used to calculate volume required to hold the 24-hr-25-yr storm event and the volume of your critical storage period.

12 acres

Check all the surface types within the clean water diversion area and provide the coverage in acres or ft². Be sure to circle the correct units.

- ☒ Dirt 12 acres or ft² (circle correct unit)
- ☐ Concrete _____ acres or ft² (circle correct unit)
- ☐ Paved _____ acres
- ☐ Under roof _____ acres or ft² (circle correct unit) – check if runoff is not part of clean water BMPs
- ☒ Gravel 2 acres or ft² (circle correct unit)
- ☒ Pasture 1 acres or ft² (circle correct unit)
- ☐ Other _____ acres or ft² (circle one)



Use the Table below to identify and describe all production area waste control structures for the production area of each animal type identified in the table “Livestock Statistics and Manure, Litter, and Process Wastewater Generation Rates” above (Section 6.1). Waste control structures may include but are not limited to: manure lagoons, manure ponds, evaporation ponds, wastewater retention ponds, contaminated runoff retention ponds, settling basins, underground storage tanks, underfloor pits, manure solids stacking pads, vegetative treatment strips, composting facilities, and dry stack facilities. Berms, dikes, concrete curbs, ditches, and waste transfer pipelines are also waste control structures and must be listed, though some of the requested measurements may not apply.

Production Area Waste Control Structures Description				
Production area Waste Control Structure (For Corresponding Animal Type Identified in Table Above)	Volume (gal if liquid) (ft³ if dry)	Number of days of storage	Winter storage depth (ft)	The 24hr-25 yr storm event depth (ft)
1. Retention Pond #1	235,656 gals	180	1.6	2
2. Retention Pond #2	209,454 gals	180	1.6	2
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				

6.2 Mortality Management

Check the box that describes how mortalities are disposed of at this CAFO.

- ☒ Burial
 ☐ Landfill
- ☐ Composted
 ☐ Contractor removal
- ☐ Incineration
 ☐ Other _____

Provide the location where mortalities are disposed of, if part of the production area:

See "X" on topo map of approximate location of burial pit.

6.3 Clean Water Diversion Practices

Check all that apply for how clean water is diverted from the production area.

- ☒ Ditches
 ☒ Site grading
- ☒ Earthen berms
 ☒ Gutters and spouts
- ☒ Culverts
 ☐ Other _____

6.4 Prohibiting Animals and Wastes from Direct Contact with State Waters

Check all that apply for how animals and wastes are prohibited from direct contact with state waters.

- | | |
|---|--|
| ☒ Fencing | ☐ Inside building |
| ☐ Wall | ☐ Other _____ |

6.5 Chemicals and Contaminants

List all major chemicals or other contaminants handled on site as part of your CAFO operation, including, but not limited to: pesticides, herbicides, animal dips, disinfectants, etc. Specify the method of disposal and location stored for each contaminant. Ensure a corresponding map has been attached, as required in Section 6, Facility Photos and Maps.

Ivomec, Clean-up, and/or Dectomax will be stored in the shop storage room once it is built. The products will up and the container disposed of in a trash receptacle.

6.6 Conservation Practices

Check all temporary, permanent, and structural BMPs which will be used to control runoff of pollutants from the facility's **production area**. Be sure to include them on the map described above in Section 6. If BMPs are not installed, include a schedule for implementation of each of the following measures. Provide details and specifications to supplement the BMP descriptions. Attach additional sheets if necessary.

- | | |
|--|--|
| ☒ Ditches | ☒ Site grading |
| ☒ Earthen berms | ☒ Gutters and spouts |
| ☒ Culverts and pipes | ☐ Covered Pens |
| ☐ Buffers | ☐ Other _____ |

6.7 Sampling and Analysis Procedures for Manure, Litter, Process Wastewater, and Soil

Representative samples of manure, litter, and process wastewater must be analyzed a minimum of once per year for total nitrogen and total phosphorus. Results should be reported in lbs/ton for solids and lbs/1000 gal for liquids. Results will be used to determine rates for manure, litter, and process wastewater. Indicate your method for sampling. Be sure to provide a description if you select "other."

- ☒ Sample collection will occur according to CAFO General Permit Section II.D.
- ☐ Other _____

Continue to Page 10

Section 7 – NMP Land Application

Identify whether manure will be land applied to land that is owned, rented, or leased by the owner or operator of the facility.

- ☐ No. Explain how animal waste will be managed by the operation, including protocol for transfers of manure, litter, and process wastewater. Skip to Section 10.

☒ Yes. Continue below.

7.1 Land Application Photos and Maps

Facilities that land apply must attach photos/maps clearly identify the following items. If an item is not applicable, check the box "None."

- Individual field boundaries for all planned land application areas **Maps attached.**
- A name, number, letter or other means of identifying each individual land application field
- The soil type(s) present and their locations within the individual land application field(s) **Soil surveys attached.**
- The location of any downgradient surface waters **Sunday Creek location to feedlot is shown on topo map. Yellowstone River is shown on field maps.**
- The specific manure/waste handling or nutrient management restrictions associated with each land application field i.e. setbacks **See setback areas on field maps to create at least 100 feet from manure application to Yellowstone River on Mathison: E and Hagemeister: S.**
- Buffers and setbacks around state surface waters, well heads, etc.
- Any downgradient open tile line intake structures
 - ☒ None. Not included on map
- Any downgradient sinkholes
 - ☒ None. Not included on map
- Any downgradient agricultural well heads
 - ☒ None. Not included on map
- All conduits to surface waters
- All temporary, permanent, and structural BMPs used to control runoff of pollutants from the land application area

☐ I have attached photos and maps of the site where manure is to be applied.

7.2 Protocols to Land Apply Manure, Litter, or Process Wastewater

Check all temporary, permanent, and structural BMPs which will be used to control runoff of pollutants from the CAFO's **land application area**. If not already in use, include a schedule for implementation of each of these measures. You may supplement this description by attaching details and specifications.

- | | | |
|--|---|--|
| ☒ Buffers | Currently perennial grass between fields and river. | ☒ Conservation tillage |
| ☐ Constructed wetlands | | ☐ Grass Filter |
| ☒ ~~Information field~~ | | ☒ Residue Management |
| ☒ Setbacks (100' manure app setback at time of application.) | | ☐ Terrance |
| ☐ Other | | |

7.3 Soil Phosphorus Sampling and Analysis

Representative **soil** (composite) samples from the top 6 inches layer of soil for each field where manure will be applied must be analyzed for phosphorus content at least once every five years. Analyses will be conducted by a qualified laboratory, using the Olsen P test. Results will be reported in parts per million (ppm) and will be used in determining application rates for manure, litter, and process wastewater.

- ☒ Sample collection will occur according to Part II.D of the CAFO General Permit.
- ☐ Other (describe) _____

7.4 Soil Nitrogen Sampling and Analysis

Representative composite soil samples for total nitrogen and nitrate must be collected for each field where manure will be applied. Composite samples for total nitrogen must be collected from a soil depth of 0 to 6 inches and must be analyzed annually. Composite samples for nitrate must be collected from a soil depth of 6 to 24 inches and must be analyzed annually. All samples must be analyzed according to method code 4H2a1-3 in NRCS Soil Survey Laboratory Methods Manual, Soil Survey Investigation Report No. 42. Results must be reported as mg/kg total nitrogen and pounds per acre.

☒ Sample collection will occur according to Part II.D of the CAFO General Permit.

☐ Other _____

Fall 2024 soil samples attached.

Continue to Page 12

Section 8. NMP Application Rates

The applicant has 2 ways in which to report how manure or process wastewater application rates can be reported to DEQ. Select one:

- ☐ **Linear Approach.** Expresses rates of application as pounds of nitrogen and phosphorus. Complete Section 8.1, then continue to Section 9. See page 8 of the NOI-NMP Instructions for guidance on the Linear Approach.
- ☒ **Narrative Rate Approach.** Expresses a narrative rate of application that results in the amount, in tons or gallons, of manure, litter, and process wastewater to be land applied. Complete Section 8.2, then continue to section 9. See page 9 of the NOI-NMP Instructions for guidance on the Narrative Rate Approach.

8.1 Linear Approach

Expresses rates of application as pounds of nitrogen and phosphorus. CAFOs selecting the linear approach to address rates of application must include in the NMP submitted to the Department the following information for each crop, field, and year covered by the NMP:

1. The maximum application rate (pounds/acre/year of nitrogen and phosphorus) from manure, litter, and process wastewater.
2. The outcome of the field-specific assessment of the potential for phosphorus transport from each field. The Department does not have an N transport risk assessment, therefore the NMP must document any basis for assuming that nitrogen will be fully used by crops. The CAFO must specify any conservation practices used in calculating the risk rating.
3. The crops to be planted or any other uses of a field such as pasture or fallow fields.
4. The realistic annual yield goal for each crop or use identified for each field.
5. The nitrogen and phosphorus recommendations from Department acceptable sources for each crop or use identified for each field.
6. Credits for all residual nitrogen in each field that will be plant available.
7. Consideration of multi-year phosphorus application. For any field where nutrients are applied at a rate based on the crop phosphorus requirement, the NMP must account for single-year nutrient applications that supply more than the crop's annual phosphorus requirement.
8. All other additions of plant available nitrogen and phosphorus (i.e., from sources other than manure, litter, or process wastewater or credits for residual nitrogen).
9. The form and source of manure, litter, and process wastewater to be land-applied.
10. The timing and method of land application. The NMP also must include storage capacities needed to ensure adequate storage that accommodates the timing indicated.
11. The methodology that will be used to account for the amount of nitrogen and phosphorus in the manure, litter, and wastewater to be applied.
12. Any other factors necessary to determine the maximum application rate identified in accordance with this Linear Approach.

Continue to Page 13

13. Complete the Nutrient Budget Worksheet, below, for the crop grown on each field for each year to which manure or process wastewater is, or may be, applied. A copy of each Nutrient Budget Worksheet will be maintained on site, and a copy will be submitted to the Department.

Nutrient Budget Worksheet

Field identification:		Year:	Crop:		
Expected Crop Yield:					
Phosphorus index results or Phosphorus application from soil test:					
Method of Land Application:					
When will application occur:					
Nutrient Budget			Nitrogen-based Application	Phosphorus-based Application	Source of information
1		Crop Nutrient Needs, lbs/acre	270		MSU Fertilizer Guide
2	(-)	Credits from previous legume crops, or soil test lbs/acre			
3	(-)	Residuals from past manure production lbs/acre-only if no new soil test			
4	(-)	Nutrients supplied by commercial fertilizer and Biosolids, lbs/acre			
5	(-)	Nutrients supplied in irrigation water, lbs/acre			
6		= Additional Nutrients Needed, lbs/acre			
7		Total Nitrogen and Phosphorus in manure, lbs/ton or lbs/1000 gal (from manure test)			
8	(×)	Nutrient Availability factor, for Phosphorus based application use 1.0			
9		= Available Nutrients in Manure, lbs/ton or lbs/1000 gal			
10		Additional Nutrients needed, lbs/acre (calculated above)			
11	(÷)	Available Nutrients in Manure, lbs/ton or lbs/1000 gal (calculated above)			
12		= Manure Application Rate, tons/acre or 1000 gal/acre			

End of Linear Approach. Continue to Section 9

8.2 Narrative Approach

Expresses a narrative rate of application that results in the amount, in tons or gallons, of manure, litter, and process wastewater to be land applied. CAFOs selecting the narrative rate approach to address rates of application must include in the NMP submitted to the Department the following information for each crop, field, and year covered by the NMP:

1. The maximum amounts of nitrogen and phosphorus that will be derived from all sources of nutrients (pounds/acre for each crop and field). 10 tons of manure will be surface applied per acre to approximately 100 acres each fall after crop harvest and tilled into the soil. Total nitrogen estimated to be in 10 tons of manure is 200 units of nitrogen and 45 of P. However, it is estimated that 50% of the nitrogen will be available to the crop the next growing season with 50% of the remaining 50% (25% of the total) will be available to crop the second growing season. The amount of commercial fertilizer to be applied will be determined by annual soil tests. Before manure is applied, an analysis will be made to determine nutrients in their manure.
2. The outcome of the field-specific assessment of the potential for nitrogen and phosphorus transport from each field. The Department does not have an N transport risk assessment, therefore the NMP must document any basis for assuming that nitrogen will be fully used by crops. The CAFO must specify any conservation practices used in calculating the risk rating.
Annual soil tests will help with loss of nitrogen from the field. The fields that the manure will be applied are irrigated by pivot, which substantially reduces the chance of nitrates leaching out of the profile. In addition, this operation employs Fehringer Agricultural Consulting to monitor the crops on a weekly basis, which includes determining soil moisture to a depth of 3 feet and irrigation scheduling to further reduce leaching of nutrients.
3. The crops to be planted in each field or any other uses of a field such as pasture or fallow fields, including alternative crops if applicable. Any alternative crops included in the NMP must be listed by field, in addition to the crops identified in the planned crop rotation for that field.
Continuous corn grown for silage is planned at this time in all 4 fields. Winter wheat, triticale, or rye for grazing maybe planted after corn silage harvest. Hay barley followed by hay millet may also be raised.
4. The realistic annual yield goal for each crop or use identified for each field for each year, including any alternative crops identified.
Projected corn silage yield is 30 tons per acre. Winter wheat will be grazed so hard to project yield. Yields for hay barley and millet would 3-4 tons per acre.
5. The nitrogen and phosphorus recommendations from Department acceptable sources for each crop or use identified for each field, including any alternative crops identified.
Nitrogen, phosphorus, potassium, sulfur, and micronutrient amounts per acre will be determined by annual soil tests and usin Fertilizer Guideline booklet. If hay millet is cropped behind hay barley, 50 units of nitrogen will be applied prior to seeding mi
6. The methodology (including formulas, sources of data, protocols for making determination, etc.) and actual data that will be used to account for: (1) the results of soil tests, (2) credits for all nitrogen in the field that will be plant-available, (3) the amount of nitrogen and phosphorus in the manure, litter, and process wastewater to be applied, (4) consideration of multi-year phosphorus application (for any field where nutrients are applied at a rate based on the crop phosphorus requirement, the methodology must account for single-year nutrient applications that supply more than the crop's annual phosphorus requirement), (5) all other additions of plant available nitrogen and phosphorus to the field (i.e., from sources other than manure, litter, or process wastewater or credits for residual nitrogen), (6) timing and method of land application, and (7) volatilization of nitrogen and mineralization of organic nitrogen.
Fall 2024 soil tests from these 4 fields are attached. No manure was applied prior to 2025 crops. Since this is a new operation, no m analysis exists. First manure to be applied could be fall 2026. An analysis will be performed prior to application. Soil test with sampl of 0-6" & 6-24" will be taken. Amount of commercial fertilizer N & P will be determined by test data and referencing the MSU Ferti for 30 T/ac corn silage. Commercial P will be banded with the seed. Nitrogen will be surface applied and incorporated preplant. Nu hay barley will be broadcast applied preplant and incorporated. Nitrogen for hay millet will be surface applied and millet planted n
7. Any other factors necessary to determine the amounts of nitrogen and phosphorus to be applied in accordance with the Narrative Rate Approach.
P rate will be determined by annual soil tests. Nitrogen release during the second year following manure application will be 25% of the total N in the manure. With over 200 acres of land available for manure application, manure will most likely spread to any one field every other year. Commercial fertilizer N will be figured once manure and soil test results are known. There will not be any other forms of P applied.
8. NMPs using the Narrative Rate Approach must also include the following projections, which will not be used by the permitting authority in establishing site-specific permit terms:
 - Planned crop rotations for each field for the period of permit coverage.
 - Projected amount of manure, litter, or process wastewater to be applied.
 - Projected credits for all nitrogen in the field that will be plant available.
 - Consideration of multi-year phosphorus application.
 - Accounting for other additions of plant available nitrogen and phosphorus to the field.
 - The predicted form, source, and method of application of manure, litter, and process wastewater for each crop.

Section 9 – NMP Phosphorus

Phosphorus Risk Assessment: The permittee shall assess the risk of phosphorus contamination of state waters. An assessment shall be conducted for each field, under the control of the operator, to which manure, litter or process wastewater will or may be applied. If a new field is added in the future, then the permittee must submit a revised (modified) NMP. The permittee has the option of using Method A or Method B (below) to complete the assessment, unless the receiving water is impaired for nutrients, then you must use method B below for phosphorus risk assessment. Copies of all tables and calculations used to complete the assessments, as well as the results of the assessments, shall be submitted to the Department and copies shall be maintained onsite at the facility and available for Departmental review. The results of the assessments shall be used to determine the appropriate basis for land application of wastes from the facility.

Indicate which method will be used to determine phosphorus application:

☒ **Method A** – Representative Soil Sample. Complete Section 9.1, then continue to Section 10.

☐ **Method B** – Phosphorus Index. Complete Section 9.2, then continue to Section 10.

9.1 Method A – Representative Soil Sample

Obtain one or more representative soil sample(s) from the field per [ARM 17.30.1334](#)

Have the sample analyzed for phosphorus by a qualified lab. The “Olsen P test” must be used for the analysis, and the result must be reported in parts per million (ppm). Using the results of the Olsen P test, determine application basis according to the Table below.

Olsen P Soil Test Results (ppm)	Application Basis
<25.0	Nitrogen Needs of Crop
25.1 - 100.0	Phosphorus Needs of Crop
100.0 – 150.0	Phosphorus Needs up to Crop Removal Rate
>150.0	No Application allowed

Olsen P Test Result: See below. ppm

Mathiason East: 2 ppm

Mathiason West: 4 ppm

Hagemeister North: 5 ppm

Hagemeister South: 2 ppm

End of Method A. Continue to Section 10

Results from fall 2024 soil sampling.

9.2 Method B – Phosphorus Index

Complete a phosphorus Index according to the crop grown on each field. Complete the Phosphorus Index Worksheet below to calculate phosphorus index. For information on filling out specific sections of this table, please refer to the method as described in NRCS Agronomy Technical Note MT-77.

Appendix A: Phosphorus Index Worksheet (Complete for each field and crop)								
Field: Hagemeister: North			Crop: Hay Millet			Year: 2025		
Field Category Factor	None (0)	Low (1)	Medium (2)	High (4)	Very High (8)	Risk Value (0,1,2,4,8)	Weight Factor	Weight Risk
Soil Erosion	NA	<5 tons/as/yr	5-10 ton/ac/yr	10-15 tons/ac/yr	QA> 10 for erodible soils	1	X 1.5	1.5
Furrow Irrigation Erosion	N/A	Tail water recovery, QS>6 very erodible soils, or QS>10 other soils	QS> for erosion resistant soil	QS> for erodible soils	QA>6 for very erodible soils	0	X 1.5	0
Sprinkler Irrigation Erosion	All fields 0-3% slope, all sandy fields or field evaluation indicates little or no runoff large spray on silts 3-8%	Medium spray on silty soils 3-15% slopes, large spray on silty soils 8-15% slope, low spray on silt soils 3-8% large spray on clay soil 3-15% slope	Medium spray on clay soils 3-8% slopes, large spray on clay soils >15% slope, medium spray on silt soil >15% slope	Medium spray on clay soils >8% slope, low spray on clay soil 3-8% slope, low spray on silty soils >15% slopes	Low spray on clay soils >8% slopes	0	X 1.5	0
Runoff Class	Negligible	Very Low or Low	Medium	High	Very High	1	X 0.5	0.5
Olson Soil Test P	-----	<20 ppm	20-40 ppm	40-80 ppm	>80 ppm	1	X 0.5	0.5
Commercial P Fertilizer Application Method	None Applied	Placed with Planter or injection deeper than 2 inches	Incorporated <3 months prior to planting or surface applied during growing season	Incorporated >3 months before crop or surface applied <3 months before crop emerges	Surface applied to pasture or >3 months before crop emerges	1	X 1.0	1.0
Commercial P Fertilizer Application Rate	None Applied	<30 lbs/ac P205	31-90 lbs/ac P205	91-150 lbs/ac P205	>150 lbs/ac P205	1	X 1.0	1.0
Organic P Source Application Method	None Applied	Injected deeper than 2 inches	Incorporated <3 months prior to planting or surface applied during growing season	Incorporated >3 months before crop or surface applied <3 months before crop.	Surface applied to pasture or >3 months before crop emerges	0	X 1.0	0.0
Organic P Source Application Rate	None Applied	<30 lbs/ac P205	31-90 lbs/ac P205	91-150 lbs/ac P205	>150 lbs/ac P205	0	X 1.0	0.0
Distance to Concentrated Surface Water Flow	>1,000 feet	200-1,000 feet, or functioning grass waterways in concentrated surface water	100-200 feet	<100 feet	0 feet or application are directly into concentrated surface water flow areas.	0	X 1.0	0.0
Total Phosphorus Index Value:								4.5

Using the calculated Total Phosphorus Index Value, assign the overall site/field vulnerability to phosphorus loss according to the table below.

Total Phosphorus Index Value	Site Vulnerability to Phosphorus Loss
<11	Low
11-21	Medium
22-43	High
>43	Very High

Using the calculated Site Vulnerability to Phosphorus Loss, determine the appropriate application basis according to the table below.

Site Vulnerability to Phosphorus Loss	Application Basis
Low	Nitrogen Needs
Medium	Phosphorus Needs
High	Phosphorus Need Up to Crop Removal
Very High	Phosphorus Crop Removal or No Application

Phosphorus Index Value: Hagemeister N: 4.5; Hagemeister S: 8.5; Mathison E: 8.5; Mathison W: 8.5

Section 10 – NMP Guidance

Land Application Equipment Calibration

Describe the type of equipment used to land apply wastes and the calibration procedures:

Manure spreader will be used. It will be calibrated by laying down a tarp, making a pass with the spreader applying the manure. The application width and length will be measured to determine the square footage. the amount of manure applied will be determined by weighing what was applied to the tarp and converting it to tons per acre.

Implementation, Operation, Maintenance and Recordkeeping

The permittee is required to develop protocols for implementation of the NMP, proper operation and maintenance of the livestock waste control facilities, and recordkeeping as described in Part 2 of the permit.

Have protocols been developed for the operation? ☐ Yes ☒ No

The documents below are maintained:

Implementation of the NMP:	☐ Yes ☒ No
Facility operation and maintenance:	☐ Yes ☒ No
Recordkeeping and reporting	☐ Yes ☒ No
Sample collection and analysis	☐ Yes ☒ No
Manure transfer	☐ Yes ☒ No

If your answer to any of the above question is no, provide explanation:

We are building a new feedlot, therefore have no previous data to go off of. Nutrient plans are being developed.

Provide date and location of most recent documentation:

Date: N/A

Location: Documents will be kept in shop office once the permit is granted and the shop is built.

NOI-NMP Certification

The NOI Form certification must be completed by the applicant (owner/operator) responsible for the authorization as identified in Section C. Certification of this NOI is certification that the applicant will comply with the applicable terms of the CAFO General Permit.

Permittee Information: This form must be completed, signed, and certified as follows:

- For a corporation, by a principal officer of at least the level of vice president;
- For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or
- For a municipality, state, federal, or other public facility, by either a principal executive officer or ranking elected official.

All Permittees Must Complete the Following Certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information; including the possibility of fine and imprisonment for knowing violations. [75-5-633, MCA].

Certification of this form indicates conformance with the CAFO General Permit.

Name (Type or Print)

Wyatt Lesh

Title (Type or Print)

Owner

Phone Number

406-852-4098

Signature

Wyatt Lesh

Date Signed

10-20-2025

DEQ will not process this form until all the requested information is supplied, and the appropriate fees are paid.

Return this NOI-NMP-CAFO Form and the applicable fee payment to:

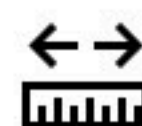
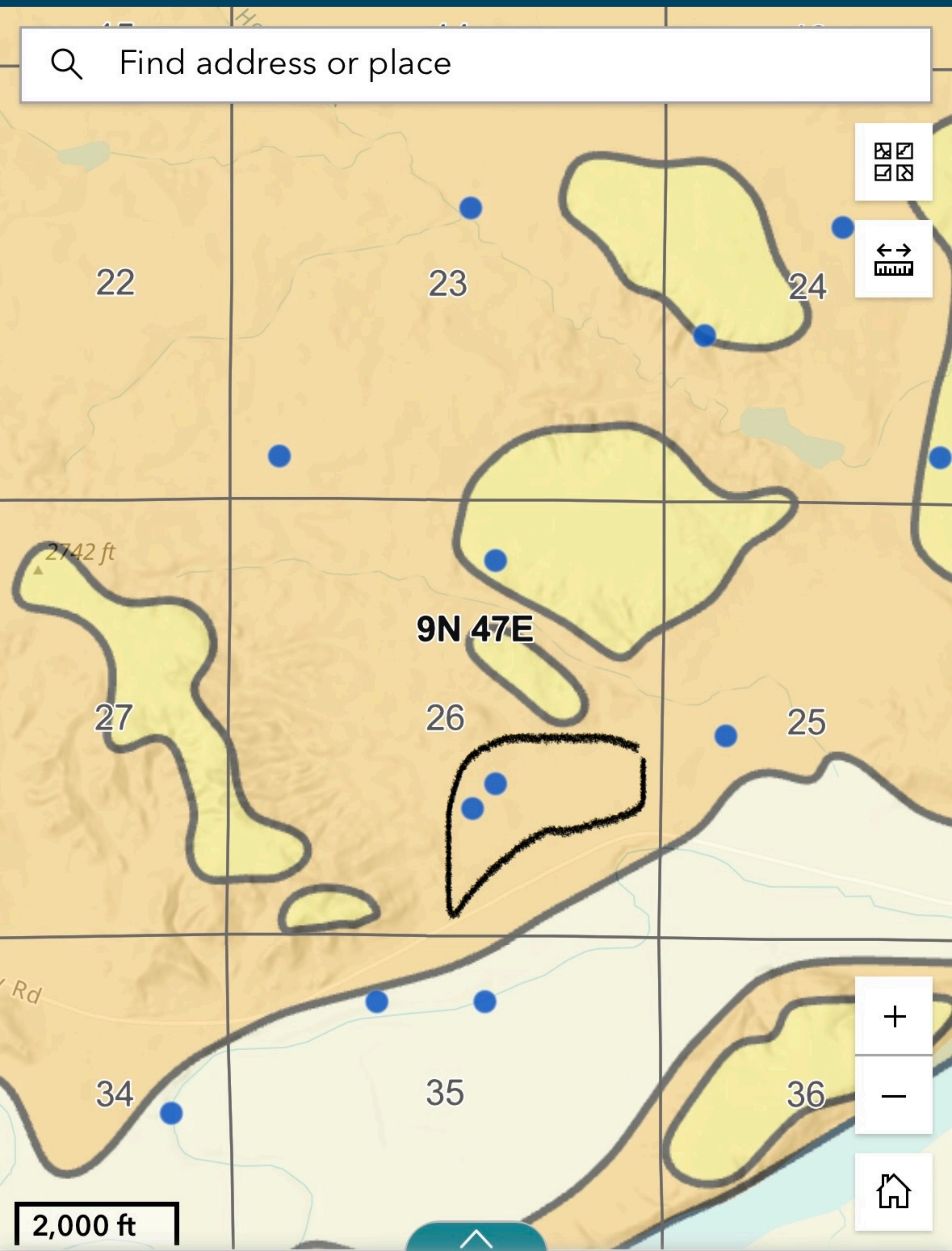
Department of Environmental Quality
Water Protection Bureau
PO Box 200901
Helena, MT 59620-0901
(406) 444-5546



Groundwater Monitoring



Find address or place



MONTANA WELL LOG REPORT

Other Options

This well log reports the activities of a licensed Montana well driller, serves as the official record of work done within the borehole and casing, and describes the amount of water encountered. This report is compiled electronically from the contents of the Ground Water Information Center (GWIC) database for this site. Acquiring water rights is the well owner's responsibility and is NOT accomplished by the filing of this report.

[Return to menu](#)
[Plot this site in State Library Digital Atlas](#)
[Plot this site in Google Maps](#)
[View scanned well log \(2/12/2026 4:02:32 PM\)](#)

Site Name: LESH, WYATT
GWIC Id: 340905

Section 1: Well Owner(s)

1) LESH, WYATT (MAIL)
1777 KINSEY RD
MILES CITY MT 59301 [05/07/2025]

Section 2: Location

Township	Range	Section	Quarter Sections
09N	47E	26	NW¼ SE¼
County	Geocode	Parcel	
CUSTER			
Latitude	Longitude	Geomethod	Datum
46.5037734112	-105.773043727	TRS-SEC	NAD83
Ground Surface Altitude	Ground Surface Method	Datum	Date
Addition	Block	Lot	

Section 3: Proposed Use of Water
STOCKWATER (1)

Section 4: Type of Work
Drilling Method: ROTARY
Status: NEW WELL

Section 5: Well Completion Date
Date well completed: Wednesday, May 7, 2025

Section 6: Well Construction Details

Borehole dimensions

From	To	Diameter
0	27	9
27	180	6

Casing

From	To	Diameter	Wall Thickness	Pressure Rating	Joint	Type
-1.5	27	6	0.25		WELDED	STEEL
10	180	4		220.0	SPLINE	PVC

Completion (Perf/Screen)

From	To	Diameter	# of Openings	Size of Openings	Description
140	180	4	40	.025 X 4	FACTORY SLOTTED

Annular Space (Seal/Grout/Packer)

From	To	Description	Cont. Fed?
0	27	BENTONITE	
110	125	BENTONITE	
125	180	10/20 SAND	

Section 7: Well Test Data

Total Depth: 180
Static Water Level: 70
Water Temperature:

Air Test *

30 gpm with drill stem set at 160 feet for 1 hours.
Time of recovery 0.05 hours.
Recovery water level 70 feet.
Pumping water level feet.

** During the well test the discharge rate shall be as uniform as possible. This rate may or may not be the sustainable yield of the well. Sustainable yield does not include the reservoir of the well casing.*

Section 8: Remarks

Section 9: Well Log

Geologic Source

Unassigned

From	To	Description
0	5	BROWN SANDY SHALE
5	16	HEAVY GRAVEL
16	20	SANDY CLAY
20	26	HEAVY GRAVEL
26	44	BROWN CLAY
44	50	GREY CLAY
50	51	COAL
51	58	GREY SHALE
58	69	GREY SANDY SHALE
69	71	ROCK
71	108	GREY SHALE
108	110	ROCK
110	138	GREY SHALE
138	178	GREY SAND
178	180	GREY SHALE

Driller Certification

All work performed and reported in this well log is in compliance with the Montana well construction standards. This report is true to the best of my knowledge.

Name: MICHAEL HIGGINS
Company: HIGGINS DRILLING COMPANY
License No: WWC-12
Date Completed: 5/7/2025

MONTANA WELL LOG REPORT

Other Options

[Go to GWIC website](#)
[Plot this site in State Library Digital Atlas](#)
[Plot this site in Google Maps](#)
[View scanned well log \(2/13/2023 12:23:27 PM\)](#)

This well log reports the activities of a licensed Montana well driller, serves as the official record of work done within the borehole and casing, and describes the amount of water encountered. This report is compiled electronically from the contents of the Ground Water Information Center (GWIC) database for this site. Acquiring water rights is the well owner's responsibility and is NOT accomplished by the filing of this report.

Site Name: SQUATTERS KNOB LLC
GWIC Id: 324502

Section 7: Well Test Data

Total Depth: 180
Static Water Level: 71
Water Temperature:

Section 1: Well Owner(s)
1) SQUATTERS KNOB LLC (MAIL)
P.O. BOX 1231
MILES CITY MT 59301 [11/01/2022]

Section 2: Location

Township	Range	Section	Quarter Sections
09N	47E	26	NW¼ SE¼
County	Geocode	Parcel	
CUSTER			
Latitude	Longitude	Geomethod	Datum
46.50295	-105.774133333333	NAV-GPS	WGS84
Ground Surface Altitude	Ground Surface Method	Datum	Date
Addition	Block	Lot	

20 gpm with drill stem set at 120 feet for 1 hours.
Time of recovery 0.07 hours.
Recovery water level 71 feet.
Pumping water level feet.

** During the well test the discharge rate shall be as uniform as possible. This rate may or may not be the sustainable yield of the well. Sustainable yield does not include the reservoir of the well casing.*

Section 3: Proposed Use of Water
STOCKWATER (1)

Section 4: Type of Work
Drilling Method: ROTARY
Status: NEW WELL

Section 5: Well Completion Date
Date well completed: Tuesday, November 1, 2022

Section 6: Well Construction Details

Borehole dimensions

From	To	Diameter
0	32	9
32	180	6

Casing

From	To	Diameter	Wall Thickness	Pressure Rating	Joint	Type
-1.5	32	6	0.25		WELDED	STEEL
10	180	4		220.00		PVC

Completion (Perf/Screen)

From	To	Diameter	# of Openings	Size of Openings	Description
140	180	4		.025	SCREEN-CONTINUOUS-PVC

Annular Space (Seal/Grout/Packer)

From	To	Description	Cont. Fed?
0	32	BENTONITE	
120	140	BENTONITE	
125	180	10/20 SILICA SAND	

Section 8: Remarks

Section 9: Well Log
Geologic Source
211FHHC - FOX HILLS-HELL CREEK AQUIFER

From	To	Description
0	7	BROWN SANDY SHALE
7	12	HEAVY GRAVEL
12	28	BROWN SAND
28	35	BROWN CLAY
35	44	BROWN SANDSTONE
44	46	COAL
46	51	GRAY SHALE
51	60	GRAY SAND
60	87	GRAY SHALE
87	89	ROCK
89	124	GRAY SHALE
124	135	DARK GRAY SHALE
135	137	HARD ROCK
137	154	BLUE AND GRAY SAND
154	157	HARD GRAY SANDROCK

Driller Certification

All work performed and reported in this well log is in compliance with the Montana well construction standards. This report is true to the best of my knowledge.

Name: MICHAEL HIGGINS
Company: HIGGINS DRILLING COMPANY
License No: WWC-12
Date Completed: 11/1/2022

Site Name: SQUATTERS KNOB LLC
GWIC Id: 324502

Additional Lithology Records

From	To	Description
157	180	BLUE AND GRAY SAND

MAPS & ARIAL PHOTOS

Kinsey Cattle Company

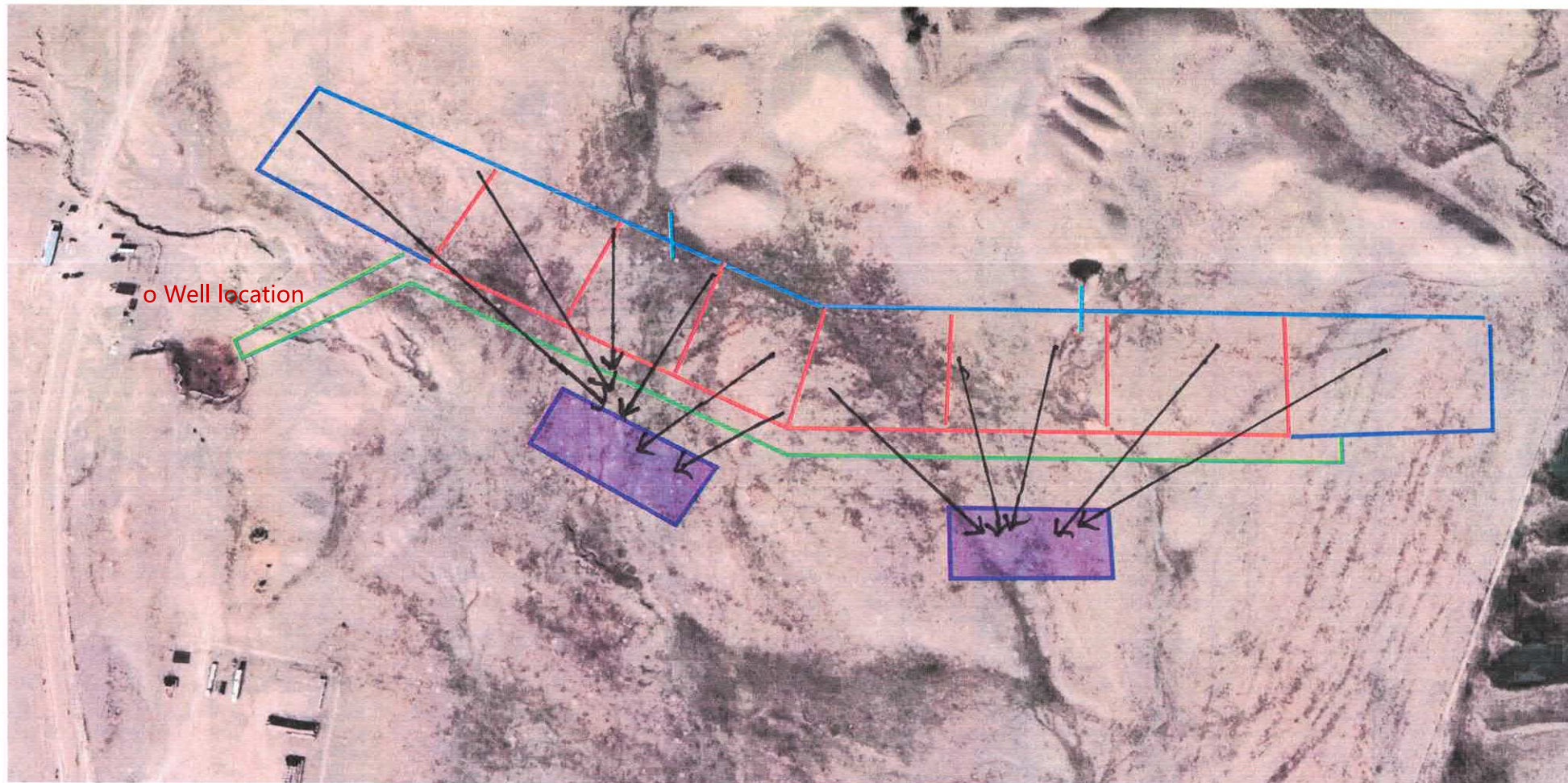
- Legend:**
- 14' Drovers Alley
 - 150 Hd Pen
 - 300 Hd Pen
 - 2250 ft Bunkline
 - Culvert
 - Retention Pond



Kinsey Cattle Company

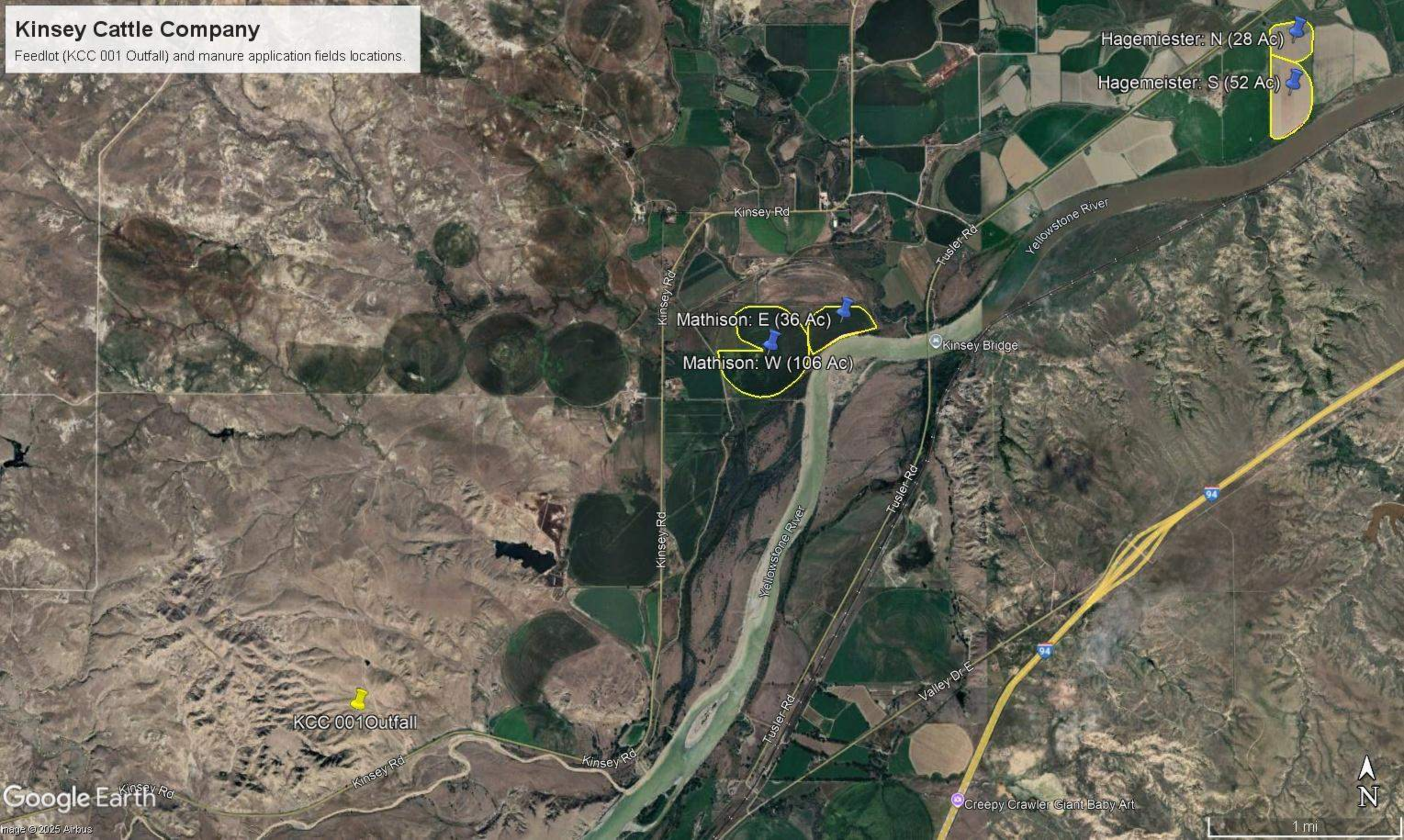
Legend:

- 14' Drovers Alley
- 150 Hd Pen
- 300 Hd Pen
- 2250 ft Bunkline
- Culvert
- Retention Pond



10/14/25

Kinsey Cattle Company
Feedlot (KCC 001 Outfall) and manure application fields locations.



Hagemeister: N (28 Ac)

Hagemeister: S (52 Ac)

Mathison: E (36 Ac)

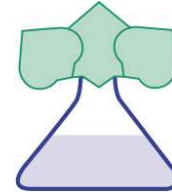
Mathison: W (106 Ac)

KCC 001 Outfall

American Agricultural Laboratory, Inc.

40050
NEAL FEHRINGER
FEHRINGER AG CONSULTING
7033 HIGHWAY 312
BILLINGS MT 59105 5090

700 West D Street / PO Box 370 / McCook, Nebraska 69001
Office: 308-345-3670 / FAX: 308-345-7880
www.AmAgLab.com



NAME : ~~XXXX~~ Lesh

DATE RECEIVED: 11/29/2024

DATE REPORTED: 12/03/2024

SOIL TEST RESULTS

LAB NUMBER	FIELD IDENTIFICATION	SAMPLE IDENTIFICATION	Depth Inches	pH		EL	SOLUBLE SALTS mod. SP mmhos/cm	OM LOI %	NITRATE-N (FIA)		PHOSPHORUS				
				1 : 1 Soil	Buffer Woodruff				ppm	lbs/A	P1 ppm	Bicarb ppm	P2 ppm	M2 ppm	M3 ppm
4049882	MATHISON	WEST	0-6	7.9		H	0.86	2.0	6.5	12		4			
4049883	MATHISON	WEST	6-24						2.7	15					
4049884	MATHISON	EAST	0-6	8.0		H	1.12	1.9	8.8	16		2			
4049885	MATHISON	EAST	6-24						6.0	32					

LAB NUMBER	SULFATE-S Ca-P ppm	NH4OAc (Exchangeable)				DTPA				BORON Sorbitol ppm	EST. CATION EXCHANGE CAPACITY (CEC) me/100g	% SATURATION					
		K ppm	Ca ppm	Mg ppm	Na ppm	Zn ppm	Fe ppm	Mn ppm	Cu ppm			BASE	H	Ca	Mg	K	Na
4049882	25	118	2480	465	120	1.5	11.6	0.9	0.9		17.1	100	0	72	23	2	3
4049883	115																
4049884	24	110	2300	403	120	1.1	9.3	1.0	0.8		15.7	100	0	74	21	2	3
4049885	15																

LAB NUMBER	SOLUBLE (SAT. EXT.)			SODIUM ADSORPTION RATIO (SAR)	EXCH. SODIUM PERCENT (ESP)	GYPSUM REQ T/A	PARTICLE SIZE ANALYSIS				CHLORIDE		EXCH. NH4-N		ALUMINUM ppm	TOTAL N %
	Ca me/L	Mg me/L	Na me/L				SAND %	SILT %	CLAY %	SOIL TEXTURE	ppm	lbs/A	ppm	lbs/A		
4049882																
4049883																
4049884																
4049885																

SUGGESTED FERTILIZER RECOMMENDATIONS

LAB NUMBER	FIELD IDENTIFICATION	SAMPLE IDENTIFICATION	CROP TO BE GROWN	YIELD GOAL	N	P2O5	K2O	S	Zn	MgO	Fe	Mn	Cu	B	Cl	LIME REC 60% ECCE T/A
4049882	MATHISON	WEST								lbs/A						
4049884	MATHISON	EAST														

Approved By: Kevin Grooms

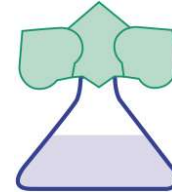
Analysis By: American Agricultural Lab

Recommendations By: American Agricultural Lab

American Agricultural Laboratory, Inc.

40050
NEAL FEHRINGER
FEHRINGER AG CONSULTING
7033 HIGHWAY 312
BILLINGS MT 59105 5090

700 West D Street / PO Box 370 / McCook, Nebraska 69001
Office: 308-345-3670 / FAX: 308-345-7880
www.AmAgLab.com



NAME : ~~XXXX~~ Lesh

DATE RECEIVED: 11/29/2024

DATE REPORTED: 12/03/2024

SOIL TEST RESULTS

LAB NUMBER	FIELD IDENTIFICATION	SAMPLE IDENTIFICATION	Depth Inches	pH		EL	SOLUBLE SALTS mod. SP mmhos/cm	OM LOI %	NITRATE-N (FIA)		PHOSPHORUS				
				1 : 1 Soil	Buffer Woodruff				ppm	lbs/A	P1 ppm	Bicarb ppm	P2 ppm	M2 ppm	M3 ppm
4049886	HAGEMEISTER	NORTH	0-6	7.7		H	2.08	3.1	41.7	75			5		
4049887	HAGEMEISTER	NORTH	6-24						11.4	62					
4049888	HAGEMEISTER	SOUTH	0-6	7.9		H	1.06	1.6	31.1	56			2		
4049889	HAGEMEISTER	SOUTH	6-24						2.6	14					

LAB NUMBER	SULFATE-S Ca-P ppm	NH4OAc (Exchangeable)				DTPA				BORON Sorbitol ppm	EST. CATION EXCHANGE CAPACITY (CEC) me/100g	% SATURATION					
		K ppm	Ca ppm	Mg ppm	Na ppm	Zn ppm	Fe ppm	Mn ppm	Cu ppm			BASE	H	Ca	Mg	K	Na
4049886	32	262	4370	1000	195	1.1	14.6	2.5	1.9		31.7	100	0	69	26	2	3
4049887	170																
4049888	13	123	2660	437	80	0.7	7.3	1.5	0.8		17.6	100	0	75	21	2	2
4049889	52																

LAB NUMBER	SOLUBLE (SAT. EXT.)			SODIUM ADSORPTION RATIO (SAR)	EXCH. SODIUM PERCENT (ESP)	GYPSUM REQ T/A	PARTICLE SIZE ANALYSIS				CHLORIDE		EXCH. NH4-N		ALUMINUM ppm	TOTAL N %
	Ca me/L	Mg me/L	Na me/L				SAND %	SILT %	CLAY %	SOIL TEXTURE	ppm	lbs/A	ppm	lbs/A		
4049886																
4049887																
4049888																
4049889																

SUGGESTED FERTILIZER RECOMMENDATIONS

LAB NUMBER	FIELD IDENTIFICATION	SAMPLE IDENTIFICATION	CROP TO BE GROWN	YIELD GOAL	N	P2O5	K2O	S	Zn	MgO	Fe	Mn	Cu	B	Cl	LIME REC 60% ECCE T/A
4049886	HAGEMEISTER	NORTH														
4049888	HAGEMEISTER	SOUTH														

Approved By: Kevin Grooms

Analysis By: American Agricultural Lab

Recommendations By: American Agricultural Lab

MONTANA SAGE GROUSE LETTER

MONTANA SAGE GROUSE HABITAT CONSERVATION PROGRAM



GREG GIANFORTE, GOVERNOR

1539 ELEVENTH AVENUE

STATE OF MONTANA

PHONE: (406) 444-0554
FAX: (406) 444-6721

PO BOX 201601
HELENA, MONTANA 59620-1601

Project No. 6891
Governor's Executive Orders 12-2015 and 21-2015
Kinsey Cattle Company Feedlot

Amy Lesh
Kinsey Cattle Company
177 Kinsey Road
Miles City, Montana 59301

May 22, 2025

Dear Ms. Lesh,

The Montana Sage Grouse Habitat Conservation Program received a request for consultation and review of your project or proposed activity on May 19, 2025. Additional information necessary for Program review was received on May 21, 2025. Based on the information provided, this Project is located within General Habitat for sage grouse.

Executive Orders 12-2015 and 21-2015 set forth Montana's Sage Grouse Conservation Strategy. Montana's goal is to maintain viable sage grouse populations and conserve habitat so that Montana maintains flexibility to manage our own lands, our wildlife, and our economy and ensure that a listing under the federal Endangered Species Act is not warranted in the future.

The Program has completed its review, including:

Project Description:

Project Type: Agriculture - Land

Project Disturbance: 12.10 Acre Livestock Area; 0.42 Mile-Long Access Road

Construction Timeframe: June 16, 2025 to August 4, 2025; Temporary (<1 Year)

Operations Timeframe: October 6, 2025; Permanent (>25 Years)

Project Location:

Legal: Township 9 North, Range 47 East, Section 26

County: Custer

Ownership: Private



Hosted by the Montana Department of Natural Resources and Conservation
Director's Office: (406) 444-2074



Project Description and Executive Orders 12-2015 and 21-2015 Consistency:

The Kinsey Cattle Company Feedlot Project proposes to construct a feed lot on private property in General Habitat for sage grouse.

The Kinsey Cattle Company proposes to construct a feed lot approximately six miles northeast of Miles City, Montana in Custer County. See Figure 1 (Kinsey Cattle Company Feedlot Project and Lek Location Map). The Kinsey Cattle company is applying for a Concentrated Animal Feeding Operation General Permit from the Montana Department of Environmental Quality.

To implement this Project, the Kinsey Cattle Company will install metal pipe corrals, a new water supply well, and three retention ponds. Equipment required to complete this project includes a skid steer with post pounder, a welder, excavator, a concrete truck, and a bulldozer and/or scraper. The new access road will be constructed to provide access to the feed lot.

Based on the information you provided; your Project is not within two miles of a lek in General Habitat. See Figure 1 (Kinsey Cattle Company Feedlot Project and Lek Location Map).

Discussion:

The Kinsey Cattle Company Feedlot Project proposes to construct a feed lot on private property in General Habitat for sage grouse. The entire Project is located on private land, and part of an existing cattle ranching operation.

The Project is within General Habitat for sage grouse; however, this Project is further than two miles from a lek. The nearest lek is approximately 5.7 miles southwest of the Project location. Therefore, the Project will be consistent with Executive Order 12- 2015 (EO). Furthermore, existing animal husbandry practices is recognized in both Attachments F and G of the EO, respectively, and generally exempt.

Program Recommendations:

The State of Montana appreciates and welcomes the opportunity to collaborate with BLM to implement Executive Orders 12-2015 and 21-2015 and the BLM land use plans, respectively. We have a shared goal to conserve sage grouse and the habitats upon which they depend, consistent with the “all lands, all hands, all threats” approach.

The following stipulations are taken from Montana Executive Order 12-2015. These stipulations are designed to maintain existing levels of suitable sage grouse habitat by managing uses and activities in sage grouse habitat to ensure the maintenance of sage grouse abundance and distribution in Montana. Development should be designed and managed to maintain populations and sage grouse habitats.



- Reclamation should re-establish native grasses, forbs, and/or shrubs during interim and final reclamation. The goal of reclamation is to achieve cover, species composition, and life form diversity commensurate with the surrounding plant community or desired ecological condition to the benefit of sage grouse and replace or enhance sage grouse habitat to the degree that environmental conditions allow.
- Weed management is required within General Habitat for sage grouse. Reclamation of disturbed areas must include control of noxious weeds and invasive plant species, including cheatgrass (*Bromus tectorum*) and Japanese brome (*Bromus japonicas*).

Your activities are consistent with the Montana Sage Grouse Conservation Strategy. Your proposed project or activity may need to obtain additional permits or authorization from other Montana state agencies or possibly federal agencies. They are very likely to request a copy of this consultation letter, so please retain it for your records.

If the location or boundaries of your proposed project or activity change in the future, or if new activities are proposed within one of the designated sage grouse habitat areas, please visit <https://sagegrouse.mt.gov/> and submit the new information.

Thanks for your interest in sage grouse and your commitment to taking the steps necessary to ensure Montana's Sage Grouse Conservation Strategy is successful.

Sincerely,



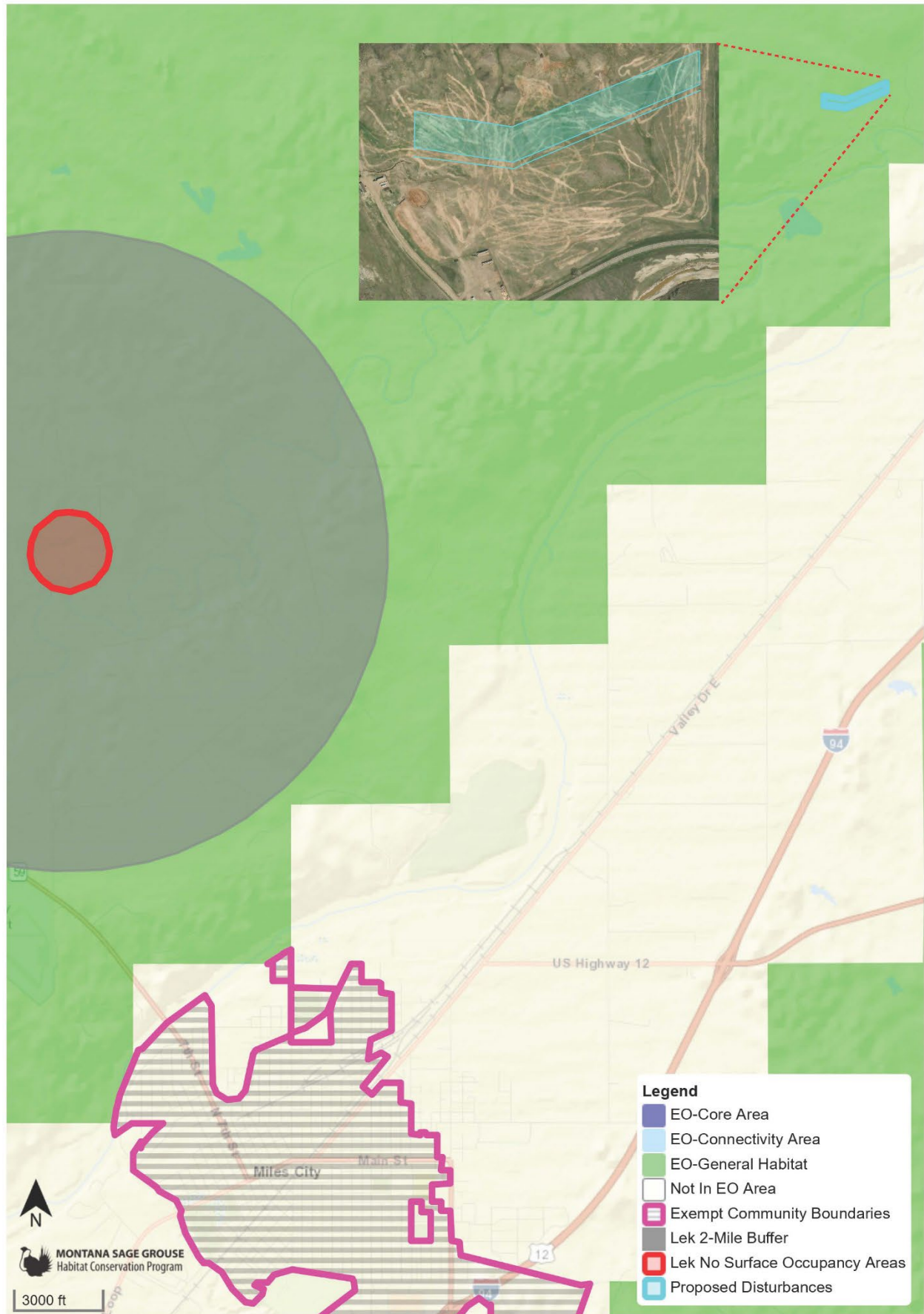
Therese Hartman
Montana Sage Grouse Habitat Conservation Program Manager

Attachments:

1. Figure 1. Kinsey Cattle Company Feedlot Project and Lek Location Map



6891_Kinsey Cattle Company Feedlot Project and Lek Location



MTNHP EVALUATION



PO Box 201800 • 1201 11th Avenue • Helena, MT 59620-1800 • fax 406.444.0266 • tel 406.444.5363 • <https://mtnhp.org>

January 31, 2025

Amy Lesh
1777 Kinsey Rd
Miles City, MT 59301

Dear Amy Lesh,

Thank you for your request for Natural Heritage information for the Kinsey Cattle Company Feedlot, within Section 26, Township 09N, Range 47E, in Custer County. Included with this letter is an Environmental Summary report PDF and a companion Excel workbook summarizing information managed in the Montana Natural Heritage Program's (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 (organized efforts following 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. The PDF report contains introductory materials and limitations associated with the use of each of these data types, a list of additional information resources, data use terms and conditions, and suggested contacts. The Excel workbook contains worksheets for each data type that can be easily sorted to summarize particular information needs. In addition to these materials, we have included a compilation of one page snapshots containing general description, habitat, spatial and temporal distribution, and conservation status information for each species listed in the species occurrence, other observed species, and other potential species sections of the Environmental Summary report. These three field guide compilations are excerpted from the full accounts found on the Montana Field Guide <https://fieldguide.mt.gov> for general reference use and, if desired, as appendices to environmental review documents.

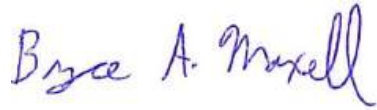
Please keep in mind the following when using and interpreting the enclosed information:

- (1) This information is intended for distribution or use only within your department, agency, or business. Please see the Data Use Terms and Conditions in the Environmental Summary report PDF for additional guidelines.

- (2) Our minimum search area for standard information requests consists of the requested area buffered by an additional mile in order to capture records that may be immediately adjacent to the requested area. Please let us know if a buffer greater than 1 mile would be of use to your efforts.
- (3) Additional information on animal, plant, and lichen species and ecological systems in Montana is available on the Montana Field Guide at <https://fieldguide.mt.gov/>
- (4) In addition to the information you receive from us, we encourage you to contact state, federal, and tribal resource management agencies in the area where your project is located (see Environmental Summary report PDF).

I hope the enclosed information is helpful to you. Please feel free to contact me at the phone or email address below if you have any questions, require additional information, or have suggestions for how we could improve our information resources.

Sincerely,



Bryce A. Maxell
Montana Natural Heritage Program
(406) 444-3989
bmaxell@mt.gov



MONTANA STATE LIBRARY

NATURAL HERITAGE PROGRAM

mtnhp.org

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Latitude	Longitude
46.48403	-105.74096
46.52742	-105.80972

Summarized by:
009N047E026
(Buffered PLSS Section)



Suggested Citation

Montana Natural Heritage Program. Environmental Summary Report.
for Latitude 46.48403 to 46.52742 and Longitude -105.74096 to -105.80972. Retrieved on 1/31/2025.

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



Environmental Summary

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Introduction to Environmental Summary Report

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

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

Legend

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



Latitude 46.48403
Longitude -105.74096
46.52742 -105.80972

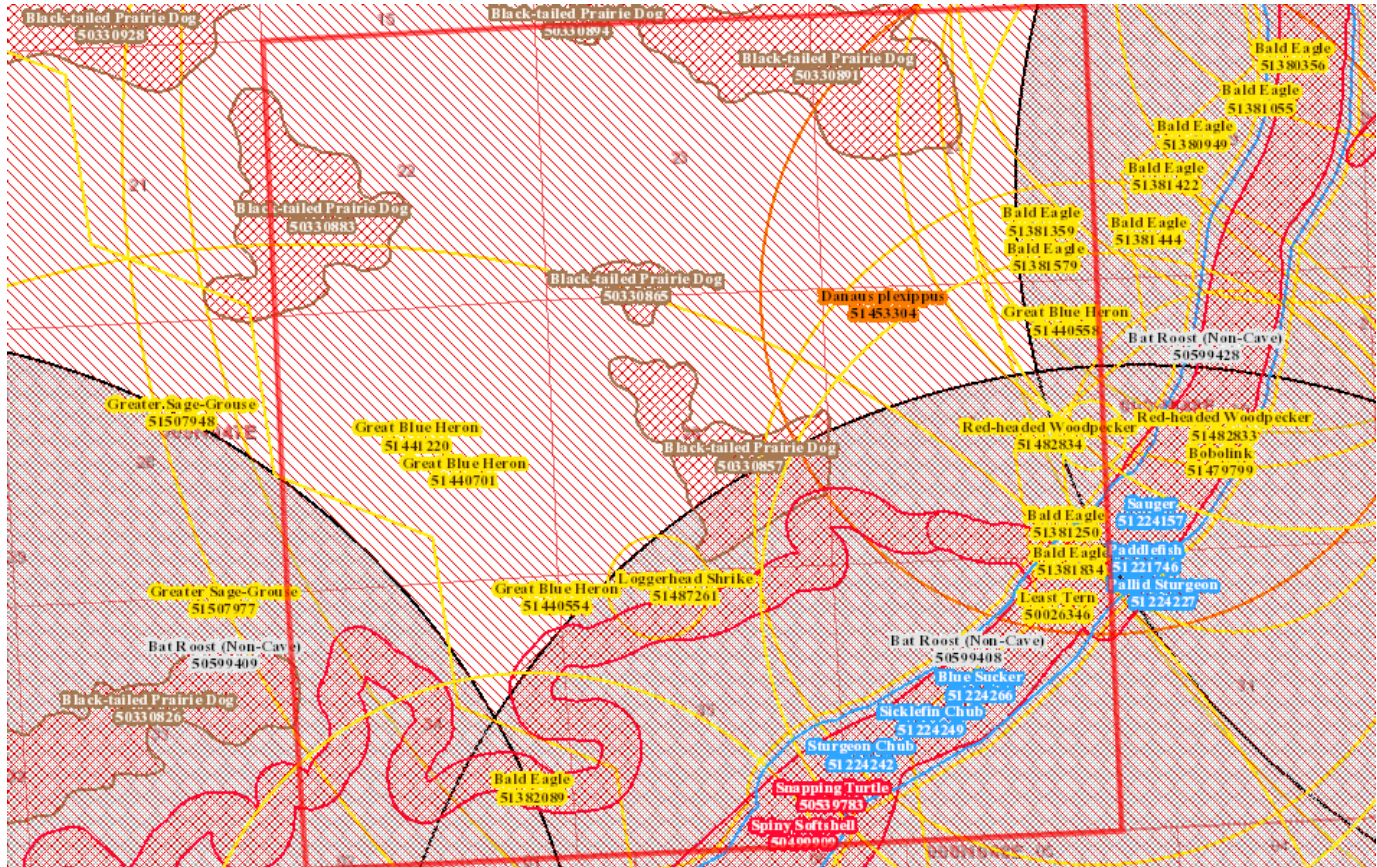
Native Species

Summarized by:

009N047E034,009N047E023,009N047E026,009N047E035,009N047E027,009N047E024,009N047E036,009N047E025,009N047E026 (Buffered PLSS Section)

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	# SO	# Obs	Predicted Model	Range
F - Blue Sucker (<i>Cycoreptus elongatus</i>) SOC	Sec7	1			
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G3G4 State: S2S3 FWP SWAP: SGCN2-3 Delineation Criteria Stream reaches where the species presence has been confirmed through direct capture or where they are believed to be present based on the professional judgement of a fisheries biologist due to confirmed presence in adjacent areas. In order to reflect the importance of adjacent terrestrial habitats to survival, stream reaches are buffered 100 meters into the terrestrial habitat based on PACFISH/INFISH Riparian Conservation Area standards. (Last Updated: Mar 18, 2024) Predicted Models: 30% Suitable (native range) (deductive)					
F - Paddlefish (<i>Polyodon spathula</i>) SOC		1			
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G4 State: S2 BLM: SENSITIVE FWP SWAP: SGCN2 Delineation Criteria Stream reaches where the species presence has been confirmed through direct capture or where they are believed to be present based on the professional judgement of a fisheries biologist due to confirmed presence in adjacent areas. In order to reflect the importance of adjacent terrestrial habitats to survival, stream reaches are buffered 100 meters into the terrestrial habitat based on PACFISH/INFISH Riparian Conservation Area standards. (Last Updated: Mar 18, 2024) Predicted Models: 30% Suitable (native range) (deductive)					
F - Pallid Sturgeon (<i>Scaphirhynchus albus</i>) SOC		7	1		
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G2 State: S1 USFWS: LE BLM: ENDANGERED FWP SWAP: SGCN1 Delineation Criteria Stream reaches where the species presence has been confirmed through direct capture or where they are believed to be present based on the professional judgement of a fisheries biologist due to confirmed presence in adjacent areas. In order to reflect the importance of adjacent terrestrial habitats to survival, stream reaches are buffered 100 meters into the terrestrial habitat based on PACFISH/INFISH Riparian Conservation Area standards. (Last Updated: Mar 18, 2024) Predicted Models: 30% Suitable (native range) (deductive)					

F - Sauger (<i>Sander canadensis</i>)	SOC	1			
View in Field Guide View Predicted Models View Range Maps					
Species of Concern - Native Species Global: G5 State: S2 BLM: SENSITIVE FWP SWAP: SGCN2					
Delineation Criteria Stream reaches and standing water bodies where the species presence has been confirmed through direct capture or where they are believed to be present based on the professional judgement of a fisheries biologist due to confirmed presence in adjacent areas. In order to reflect the importance of adjacent terrestrial habitats to survival, stream reaches are buffered 100 meters, standing water bodies greater than 1 acre are buffered 50 meters, and standing water bodies less than 1 acre are buffered 30 meters into the terrestrial habitat based on PACFISH/INFISH Riparian Conservation Area standards. (Last Updated: Mar 14, 2024)					
Predicted Models: 30% Suitable (native range) (deductive)					
F - Sicklefin Chub (<i>Macrhybopsis meeki</i>)	SOC	1			
View in Field Guide View Predicted Models View Range Maps					
Species of Concern - Native Species Global: G3 State: S1 FWP SWAP: SGCN1					
Delineation Criteria Stream reaches where the species presence has been confirmed through direct capture or where they are believed to be present based on the professional judgement of a fisheries biologist due to confirmed presence in adjacent areas. In order to reflect the importance of adjacent terrestrial habitats to survival, stream reaches are buffered 100 meters into the terrestrial habitat based on PACFISH/INFISH Riparian Conservation Area standards. (Last Updated: Mar 18, 2024)					
Predicted Models: 30% Suitable (native range) (deductive)					
F - Sturgeon Chub (<i>Macrhybopsis gelida</i>)	SOC	1	1		
View in Field Guide View Predicted Models View Range Maps					
Species of Concern - Native Species Global: G3 State: S2S3 BLM: SENSITIVE FWP SWAP: SGCN2-3					
Delineation Criteria Stream reaches where the species presence has been confirmed through direct capture or where they are believed to be present based on the professional judgement of a fisheries biologist due to confirmed presence in adjacent areas. In order to reflect the importance of adjacent terrestrial habitats to survival, stream reaches are buffered 100 meters into the terrestrial habitat based on PACFISH/INFISH Riparian Conservation Area standards. (Last Updated: Mar 18, 2024)					
Predicted Models: 30% Suitable (native range) (deductive)					
R - Snapping Turtle (<i>Chelydra serpentina</i>)	SOC	1			
View in Field Guide View Predicted Models View Range Maps					
Species of Concern - Native/Non-native Species - (depends on location or taxa) Global: G4G5 State: S3 BLM: SENSITIVE FWP SWAP: SGCN3, SGIN					
Delineation Criteria Stream reaches and standing water bodies within the species native range where their presence has been confirmed through direct capture or observation or where they are believed to be present based on the professional judgement of a biologist due to confirmed presence in adjacent areas. Occupied stream reaches are buffered up and downstream and into adjoining streams by 6,000 meters to encompass maximum reported annual travel distance. In order to reflect the importance of adjacent terrestrial habitats to survival, stream reaches and standing water bodies are buffered 100 meters into the terrestrial habitat based on PACFISH/INFISH Riparian Conservation Area standards. (Last Updated: Dec 18, 2024)					
Predicted Models: 9% Optimal (inductive), 51% Moderate (inductive), 40% Low (inductive)					
B - Great Blue Heron (<i>Ardea herodias</i>)	SOC	4	7		
View in Field Guide View Predicted Models View Range Maps					
Species of Concern - Native Species Global: G5 State: S3 USFWS: MBTA FWP SWAP: SGCN3					
Delineation Criteria Confirmed nesting area buffered by a minimum distance of 6,500 meters in order to be conservative about encompassing the areas commonly used for foraging near the breeding colony. If the locational uncertainty associated with the observation is greater than 5,000 meters, the observation is not valid for creation of a species occurrence. (Last Updated: Nov 12, 2024)					
Predicted Models: 9% Optimal (inductive), 40% Moderate (inductive), 51% Low (inductive)					
B - Bald Eagle (<i>Haliaeetus leucocephalus</i>)	SSS	8	16		
View in Field Guide View Predicted Models View Range Maps					
Special Status Species - Native Species Global: G5 State: S4 USFWS: BGEPA; MBTA USFS: Sensitive - Known in Forests (LOLO) BLM: SENSITIVE PIF: 2					
Delineation Criteria Confirmed nesting area buffered by a minimum distance of 2,000 meters in order to be conservative about encompassing the breeding territory and area commonly used for renesting. Only nesting observations with a locational uncertainty of 1,000 meters or less will be used to delineate a nesting area. (Last Updated: Sep 09, 2024)					
Predicted Models: 9% Optimal (inductive), 30% Moderate (inductive), 58% Low (inductive)					
R - Spiny Softshell (<i>Apalone spinifera</i>)	SOC	1	1		
View in Field Guide View Predicted Models View Range Maps					
Species of Concern - Native Species Global: G5 State: S3 BLM: SENSITIVE FWP SWAP: SGCN3					
Delineation Criteria Stream reaches and impounded streams within the species' native range where the species naturally occurs and their presence has been confirmed through direct capture or where they are believed to be present based on the professional judgement of a biologist due to confirmed presence in adjacent areas. In order to reflect the importance of adjacent terrestrial habitats to survival, stream reaches are buffered 100 meters and impounded streams 50 meters into the terrestrial habitat based on PACFISH/INFISH Riparian Conservation Area standards. (Last Updated: Dec 18, 2024)					
Predicted Models: 6% Optimal (inductive), 13% Moderate (inductive), 41% Low (inductive)					
I - Danaus plexippus (<i>Monarch</i>)	SOC	1	1		
View in Field Guide View Predicted Models View Range Maps					
Species of Concern - Native Species Global: G4 State: S2S3 USFWS: P USFS: Sensitive - Migratory in Forests (BD, BRT, KOOT)					
Delineation Criteria Confirmed breeding area based on the presence of a resident animal of any age/stage. Point observation location is buffered by a minimum distance of 2,000 meters in order to encompass documented travel distances of some butterfly species as well as adjacent habitat likely to support other individuals and otherwise is buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. (Last Updated: Dec 18, 2024)					
Predicted Models: 3% Optimal (inductive), 35% Moderate (inductive), 62% Low (inductive)					
M - Black-tailed Prairie Dog (<i>Cynomys ludovicianus</i>)	SOC	6	4		
View in Field Guide View Predicted Models View Range Maps					
Species of Concern - Native Species Global: G4 State: S3 BLM: SENSITIVE FWP SWAP: SGCN3					
Delineation Criteria Areas with recent evidence of activity (i.e. burrow entrances) visible on recent National Agricultural Imagery Program (NAIP) aerial color photographic imagery that are within a distance of 200 meters of definitive observations buffered by the locational uncertainty of less than or equal to 1,000 meters. (Last Updated: Jul 03, 2019)					
Predicted Models: 58% Moderate (inductive), 42% Low (inductive)					
B - Greater Sage-Grouse (<i>Centrocercus urophasianus</i>)	SOC	2			
View in Field Guide View Predicted Models View Range Maps					
USFS: Sensitive - Known in Forests (BD) Species of Concern - Native Species Global: G3G4 State: S2 Species of Conservation Concern in Forests (CG) BLM: SENSITIVE FWP SWAP: SGCN2 PIF: 1					
Delineation Criteria Confirmed breeding area based on the presence of a nest, chicks, juveniles, or adults on a lek. Point observations are mapped in the center of a one-square mile hexagon to protect the exact locations of leks. The outer edges of this hexagon are then buffered by a distance of 6,400 meters in order to encompass a body of research indicating that females typically nest within this distance of a lek and that lek numbers are negatively impacted by fossil fuel drilling activities within this distance of a lek. If the locational uncertainty associated with the observation is greater than 5,000 meters, the observation is not valid for creation of a species occurrence. All of the one-square mile hexagons intersecting this buffered area are presented as the Species Occurrence record. (Last Updated: Jan 10, 2025)					
Predicted Models: 46% Moderate (inductive), 51% Low (inductive)					

B - Bobolink (<i>Dolichonyx oryzivorus</i>) SOC	1	1		S M
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G5 State: S3B USFWS: MBTA; BCC10; BCC11; BCC17 FWP SWAP: SGCN3 PIF: 3 Delineation Criteria Confirmed breeding area based on the presence of a nest, chicks, or territorial adults during the breeding season. Point observation location is buffered by a minimum distance of 150 meters in order to conservatively encompass male territory size reported for the species and otherwise is buffered by the locational uncertainty associated with the observation up to a maximum distance of 5,000 meters. (Last Updated: Dec 20, 2024) Predicted Models: 10% Moderate (inductive), 42% Low (inductive)				
B - Least Tern (<i>Sterna antillarum</i>) SOC	7	1		S M
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G4 State: S2B USFWS: DM; MBTA BLM: SENSITIVE FWP SWAP: SGCN1, SGIN PIF: 1 Delineation Criteria Stream reaches with confirmed breeding based on the presence of a nest, chicks, or territorial adults during the breeding season. Point observation location is believed to occur due to confirmed effort in adjacent areas. In order to reflect the importance of adjacent terrestrial habitats in the maintenance of natural flood plain dynamics which the species depends on, stream reaches are buffered 100 meters into the terrestrial habitat based on PACFISH/INFISH Riparian Conservation Area standards. (Last Updated: Jan 03, 2022) Predicted Models: 9% Moderate (inductive), 24% Low (inductive)				
B - Red-headed Woodpecker (<i>Melanerpes erythrocephalus</i>) SOC	2	3		S M
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G5 State: S3B USFWS: MBTA; BCC11; BCC17 BLM: SENSITIVE FWP SWAP: SGCN3 PIF: 2 Delineation Criteria Confirmed breeding area based on the presence of a nest, chicks, or territorial adults during the breeding season. Point observation location is buffered by a minimum distance of 165 meters in order to encompass the maximum breeding territory size reported for the species and otherwise is buffered by the locational uncertainty associated with the observation up to a maximum distance of 5,000 meters. (Last Updated: Dec 24, 2024) Predicted Models: 8% Moderate (inductive), 92% Low (inductive)				
B - Loggerhead Shrike (<i>Lanius ludovicianus</i>) SOC	1	1		S M
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G4 State: S3B USFWS: MBTA BLM: SENSITIVE FWP SWAP: SGCN3 PIF: 2 Delineation Criteria Confirmed breeding area based on the presence of a nest, chicks, or territorial adults during the breeding season. Point observation location is buffered by a minimum distance of 300 meters in order to encompass the maximum breeding territory size reported for the species in Alberta and Idaho and otherwise is buffered by the locational uncertainty associated with the observation up to a maximum distance of 5,000 meters. (Last Updated: Dec 26, 2024) Predicted Models: 3% Moderate (inductive), 92% Low (inductive)				
O - Bat Roost (Non-Cave) (<i>Bat Roost (Non-Cave)</i>) IAH	3			Not Assessed
View in Field Guide Important Animal Habitat - Native Species Global: GNR State: SNR Delineation Criteria Confirmed area of occupancy based on the documented presence of adults or juveniles of any bat species at non-cave natural roost sites (e.g. rock outcrops, trees), below ground human created roost sites (e.g. mines), and above ground human created roost sites (e.g., bridges, buildings). Point observation locations are buffered by a distance of 4,500 meters in order to encompass the 95% confidence interval for nightly foraging distance reported for Townsend’s Big-eared Bat (a resident Montana bat Species of Concern) and otherwise by the locational uncertainty associated with the observation up to a maximum distance of 5,000 meters. (Last Updated: Oct 22, 2019)				

Legend

Model Icons

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

Habitat Icons

- Common
- Occasional

Range Icons

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

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



Latitude 46.48403
Longitude -105.74096
46.52742 -105.80972

Native Species

Summarized by:

009N047E034,009N047E023,009N047E026,009N047E035,009N047E027,009N047E024,009N047E036,009N047E025,009N047E037 (Buffered PLSS Section)

Filtered by:

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

Other Observed Species

	USFWS Sec7	# Obs	Predicted Model	Range
F - Plains Minnow (<i>Hybognathus placitus</i>) PSOC		11		
View in Field Guide View Predicted Models View Range Maps Potential Species of Concern - Native Species Global: G4 State: S4 Predicted Models: 47% Suitable (native range) (deductive)				
F - Burbot (<i>Lota lota</i>) PSOC		1		
View in Field Guide View Predicted Models View Range Maps Potential Species of Concern - Native Species Global: G5 State: S4 Predicted Models: 30% Suitable (native range) (deductive)				
F - Creek Chub (<i>Semotilus atromaculatus</i>) PSOC		1		
View in Field Guide View Predicted Models View Range Maps Potential Species of Concern - Native/Non-native Species - (depends on location or taxa) Global: G5 State: S4 Predicted Models: 30% Suitable (native range) (deductive)				
B - Eastern Screech-Owl (<i>Megascops asio</i>) PSOC		3		
View in Field Guide View Predicted Models View Range Maps Potential Species of Concern - Native Species Global: G5 State: S3S4 USFWS: MBTA PIF: 3 Predicted Models: 20% Optimal (inductive), 40% Moderate (inductive), 40% Low (inductive)				
B - Sharp-tailed Grouse (<i>Tympanuchus phasianellus</i>) SOC		1		
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G5 State: S3S4 FWP SWAP: SGCN1 PIF: 2 Predicted Models: 95% Moderate (inductive), 5% Low (inductive)				
B - American White Pelican (<i>Pelecanus erythrorhynchos</i>) SOC		6		
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G4 State: S3B USFWS: MBTA FWP SWAP: SGCN3 PIF: 3 Predicted Models: 25% Moderate (inductive), 75% Low (inductive)				
B - Chimney Swift (<i>Chaetura pelagica</i>) PSOC		1		
View in Field Guide View Predicted Models View Range Maps Potential Species of Concern - Native Species Global: G4G5 State: S3S4B USFWS: MBTA; BCC11 FWP SWAP: SGIN PIF: 3 Predicted Models: 20% Moderate (inductive), 69% Low (inductive)				
B - Dickcissel (<i>Spiza americana</i>) PSOC		1		
View in Field Guide View Predicted Models View Range Maps Potential Species of Concern - Native Species Global: G5 State: S4B USFWS: MBTA Predicted Models: 10% Moderate (inductive), 39% Low (inductive)				
B - Brewer's Sparrow (<i>Spizella breweri</i>) SOC		3		
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G5 State: S3B USFWS: MBTA BLM: SENSITIVE FWP SWAP: SGCN3 PIF: 2 Predicted Models: 3% Moderate (inductive), 97% Low (inductive)				
B - Black-and-white Warbler (<i>Mniotilta varia</i>) PSOC		1		
View in Field Guide View Predicted Models View Range Maps Potential Species of Concern - Native Species Global: G5 State: S4B USFWS: MBTA Predicted Models: 88% Low (inductive)				
B - American Goshawk (<i>Accipiter atricapillus</i>) SOC		1	Not Assessed	
View in Field Guide View Range Maps Species of Concern - Native Species Global: G5 State: S3 USFWS: MBTA FWP SWAP: SGCN3 PIF: 2				
B - Alder Flycatcher (<i>Empidonax alnorum</i>) SOC		1	Not Assessed	
View in Field Guide View Range Maps Species of Concern - Native Species Global: G5 State: S3B USFWS: MBTA FWP SWAP: SGCN3				

	B - Tennessee Warbler (<i>Leiothlypis peregrina</i>) PSOC	1	Not Assessed	
View in Field Guide View Range Maps Potential Species of Concern - Native Species Global: G5 State: S3S4B USFWS: MBTA				
	B - Trumpeter Swan (<i>Cygnus buccinator</i>) SOC	1	Not Assessed	
View in Field Guide View Range Maps Species of Concern - Native Species Global: G4 State: S3 USFWS: MBTA BLM: SENSITIVE FWP SWAP: SGCN3 PIF: 1				

Legend

Model Icons

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

Habitat Icons

- Common
- Occasional

Range Icons

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

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

Summarized by:

009N047E034,009N047E023,009N047E026,009N047E035,009N047E027,009N047E024,009N047E036,009N047E025,009N047E037 (Buffered PLSS Section)

Filtered by:

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

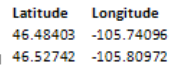
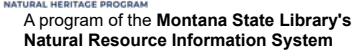
Other Potential Species

	USFWS Sec7	Predicted Model	Range
F - Brassy Minnow (<i>Hybognathus hankinsoni</i>) PSOC			
View in Field Guide View Predicted Models View Range Maps Potential Species of Concern - Native Species Global: G5 State: S4 Predicted Models: 30% Suitable (native range) (deductive)			
B - Yellow-billed Cuckoo (<i>Coccyzus americanus</i>) SOC			
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G5 State: S3B USFWS: PS: LT; MBTA BLM: THREATENED FWP SWAP: SGCN3, SGIN PIF: 2 Predicted Models: 11% Optimal (inductive), 89% Moderate (inductive)			
V - Dalea enneandra (<i>Nine-anther prairie clover</i>) SOC			
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G5 State: S2S3 Plant Threat Score: No Known Threats Predicted Models: 11% Optimal (inductive), 86% Moderate (inductive), 2% Low (inductive)			
B - Black-billed Cuckoo (<i>Coccyzus erythrophthalmus</i>) SOC			
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G5 State: S3B USFWS: MBTA; BCC11; BCC17 BLM: SENSITIVE FWP SWAP: SGCN3, SGIN PIF: 2 Predicted Models: 3% Optimal (inductive), 24% Moderate (inductive), 52% Low (inductive)			
M - Merriam's Shrew (<i>Sorex merriami</i>) SOC			
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G4 State: S3 FWP SWAP: SGCN3 Predicted Models: 82% Moderate (inductive), 18% Low (inductive)			
V - Psilocarphus brevissimus (<i>Dwarf woolly-heads</i>) SOC			
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G4 State: S2S3 Plant Threat Score: No Known Threats Predicted Models: 79% Moderate (inductive), 21% Low (inductive)			
M - Dwarf Shrew (<i>Sorex nanus</i>) SOC			
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G4 State: S2S3 FWP SWAP: SGCN2-3 Predicted Models: 77% Moderate (inductive), 23% Low (inductive)			
V - Pediomelum hypogaeum var. hypogaeum (<i>Little Indian Breadroot</i>) PSOC			
View in Field Guide View Predicted Models View Range Maps Potential Species of Concern - Native Species Global: G5T4 State: S3S4 Predicted Models: 73% Moderate (inductive), 19% Low (inductive)			
V - Cyperus schweinitzii (<i>Schweinitz's Flatsedge</i>) SOC			
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G5 State: S2 Plant Threat Score: Low Predicted Models: 70% Moderate (inductive), 27% Low (inductive)			
B - Common Poorwill (<i>Phalaenoptilus nuttallii</i>) PSOC			
View in Field Guide View Predicted Models View Range Maps Potential Species of Concern - Native Species Global: G5 State: S4B USFWS: MBTA FWP SWAP: SGIN PIF: 3 Predicted Models: 66% Moderate (inductive), 34% Low (inductive)			
A - Great Plains Toad (<i>Anaxyrus cognatus</i>) SOC			
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G5 State: S3 BLM: SENSITIVE FWP SWAP: SGCN2 Predicted Models: 58% Moderate (inductive), 42% Low (inductive)			
V - Chenopodium subglabrum (<i>Smooth Goosefoot</i>) SOC			
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G3G4 State: S2 Plant Threat Score: Unknown CCVI: Highly Vulnerable Predicted Models: 53% Moderate (inductive), 44% Low (inductive)			

R - Western Milksnake (<i>Lampropeltis gentilis</i>) SOC View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G5 State: S2 BLM: SENSITIVE FWP SWAP: SGCN2 Predicted Models: 47% Moderate (inductive), 53% Low (inductive)
M - North American Porcupine (<i>Erethizon dorsatum</i>) 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: 38% Moderate (inductive), 62% Low (inductive)
B - Eastern Bluebird (<i>Sialia sialis</i>) PSOC View in Field Guide View Predicted Models View Range Maps Potential Species of Concern - Native Species Global: G5 State: S4B USFWS: MBTA Predicted Models: 36% Moderate (inductive), 62% Low (inductive)
R - Plains Hog-nosed Snake (<i>Heterodon nasicus</i>) SOC View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G5 State: S2 BLM: SENSITIVE FWP SWAP: SGCN2, SGIN Predicted Models: 35% Moderate (inductive), 65% Low (inductive)
B - Burrowing Owl (<i>Athene cunicularia</i>) SOC View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G4 State: S3B USFWS: MBTA; BCC17 BLM: SENSITIVE FWP SWAP: SGCN3 PIF: 1 Predicted Models: 35% Moderate (inductive), 65% Low (inductive)
M - Townsend's Big-eared Bat (<i>Corynorhinus townsendii</i>) SOC View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G4 State: S3 USFS: Sensitive - Known in Forests (LOLO) BLM: SENSITIVE FWP SWAP: SGCN3 Predicted Models: 30% Moderate (inductive), 29% Low (inductive)
M - Little Brown Myotis (<i>Myotis lucifugus</i>) SOC View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G3G4 State: S2S3 USFS: Sensitive - Known in Forests (BD, BRT, KOOT) FWP SWAP: SGCN3 Predicted Models: 28% Moderate (inductive), 72% Low (inductive)
A - Northern Leopard Frog (<i>Lithobates pipiens</i>) SOC View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G5 State: S3S4 USFS: Sensitive - Suspected in Forests (KOOT, LOLO) BLM: SENSITIVE FWP SWAP: SGCN1 Predicted Models: 28% Moderate (inductive), 72% Low (inductive)
M - Northern Hoary Bat (<i>Lasiurus cinereus</i>) SOC View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G3G4 State: S3B BLM: SENSITIVE FWP SWAP: SGCN3 Predicted Models: 25% Moderate (inductive), 75% Low (inductive)
M - Fringed Myotis (<i>Myotis thysanodes</i>) 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: 25% Moderate (inductive), 54% Low (inductive)
V - Senecio integerrimus var. scribneri (<i>Scribner's Ragwort</i>) SOC View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G5T2T3 State: S2S3 Plant Threat Score: No Known Threats CCVI: Less Vulnerable Predicted Models: 22% Moderate (inductive), 53% Low (inductive)
R - Greater Short-horned Lizard (<i>Phrynosoma hernandesi</i>) SOC View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G5 State: S3 BLM: SENSITIVE FWP SWAP: SGCN3, SGIN Predicted Models: 20% Moderate (inductive), 80% Low (inductive)
M - Eastern Red Bat (<i>Lasiurus borealis</i>) SOC View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G3G4 State: S3B BLM: SENSITIVE Predicted Models: 17% Moderate (inductive), 50% Low (inductive)
M - Long-eared Myotis (<i>Myotis evotis</i>) SOC View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G5 State: S3 Predicted Models: 14% Moderate (inductive), 86% Low (inductive)
B - Plumbeous Vireo (<i>Vireo plumbeus</i>) PSOC View in Field Guide View Predicted Models View Range Maps Potential Species of Concern - Native Species Global: G5 State: S3S4B USFWS: MBTA PIF: 3 Predicted Models: 14% Moderate (inductive), 57% Low (inductive)
M - Silver-haired Bat (<i>Lasionycteris noctivagans</i>) PSOC View in Field Guide View Predicted Models View Range Maps Potential Species of Concern - Native Species Global: G3G4 State: S3 Predicted Models: 3% Moderate (inductive), 97% Low (inductive)

B - American Bittern<i>(Botaurus lentiginosus)</i> SOC
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G5 State: S3B USFWS: MBTA BLM: SENSITIVE FWP SWAP: SGCN3 PIF: 3 Predicted Models: M 3% Moderate (inductive), L 97% Low (inductive)
B - Ovenbird<i>(Seiurus aurocapilla)</i> 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: M 3% Moderate (inductive), L 30% Low (inductive)
B - Golden Eagle<i>(Aquila chrysaetos)</i> 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: M 1% Moderate (inductive), L 97% Low (inductive)
B - Pinyon Jay<i>(Gymnorhinus cyanocephalus)</i> SOC
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G3 State: S3 USFWS: MBTA; BCC10; BCC17 FWP SWAP: SGCN3 Predicted Models: M 1% Moderate (inductive), L 87% Low (inductive)
M - Spotted Bat<i>(Euderma maculatum)</i> SOC
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G4 State: S4 BLM: SENSITIVE FWP SWAP: SGCN3, SGIN Predicted Models: L 100% Low (inductive)
B - Long-billed Curlew<i>(Numenius americanus)</i> SOC
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G4 State: S3B USFWS: MBTA; BCC11 BLM: SENSITIVE FWP SWAP: SGCN3 PIF: 2 Predicted Models: L 100% Low (inductive)
B - Sage Thrasher<i>(Oreoscoptes montanus)</i> SOC
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G4 State: S3B USFWS: MBTA BLM: SENSITIVE FWP SWAP: SGCN3 PIF: 3 Predicted Models: L 88% Low (inductive)
B - Whooping Crane<i>(Grus americana)</i> SOC
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G1 State: S1M USFWS: LE; MBTA BLM: ENDANGERED FWP SWAP: SGCN1 Predicted Models: L 78% Low (inductive)
M - Preble's Shrew<i>(Sorex preblei)</i> SOC
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G4 State: S3 FWP SWAP: SGCN3 Predicted Models: L 73% Low (inductive)
V - Physaria ludoviciana<i>(Silver Bladderpod)</i> SOC
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G5 State: S2S3 Plant Threat Score: No Known Threats Predicted Models: L 69% Low (inductive)
V - Elodea bifoliata<i>(Long-sheath Waterweed)</i> SOC
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G4G5 State: S2? Plant Threat Score: No Known Threats Predicted Models: L 68% Low (inductive)
B - Chestnut-collared Longspur<i>(Calcarius ornatus)</i> SOC
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G5 State: S2B USFWS: MBTA; BCC11; BCC17 BLM: SENSITIVE FWP SWAP: SGCN2 PIF: 2 Predicted Models: L 68% Low (inductive)
B - Sprague's Pipit<i>(Anthus spragueii)</i> SOC
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G3G4 State: S3B USFWS: MBTA; BCC11; BCC17 BLM: SENSITIVE FWP SWAP: SGCN3 PIF: 1 Predicted Models: L 68% Low (inductive)
B - Baird's Sparrow<i>(Centronyx bairdii)</i> SOC
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G4 State: S3B USFWS: MBTA; BCC11; BCC17 BLM: SENSITIVE FWP SWAP: SGCN3 PIF: 1 Predicted Models: L 66% Low (inductive)
M - Swift Fox<i>(Vulpes velox)</i> SOC
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G3 State: S3 BLM: SENSITIVE FWP SWAP: SGCN3 Predicted Models: L 63% Low (inductive)
M - Prairie Shrew<i>(Sorex haydeni)</i> PSOC
View in Field Guide View Predicted Models View Range Maps Potential Species of Concern - Native Species Global: G5 State: S3S4 Predicted Models: L 53% Low (inductive)

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Summarized by:
009N047E034,009N047E023,009N047E026,009N047E035,009N047E027,009N047E024,009N047E036,009N047E025,009N047E033
(Buffered PLSS Section)

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

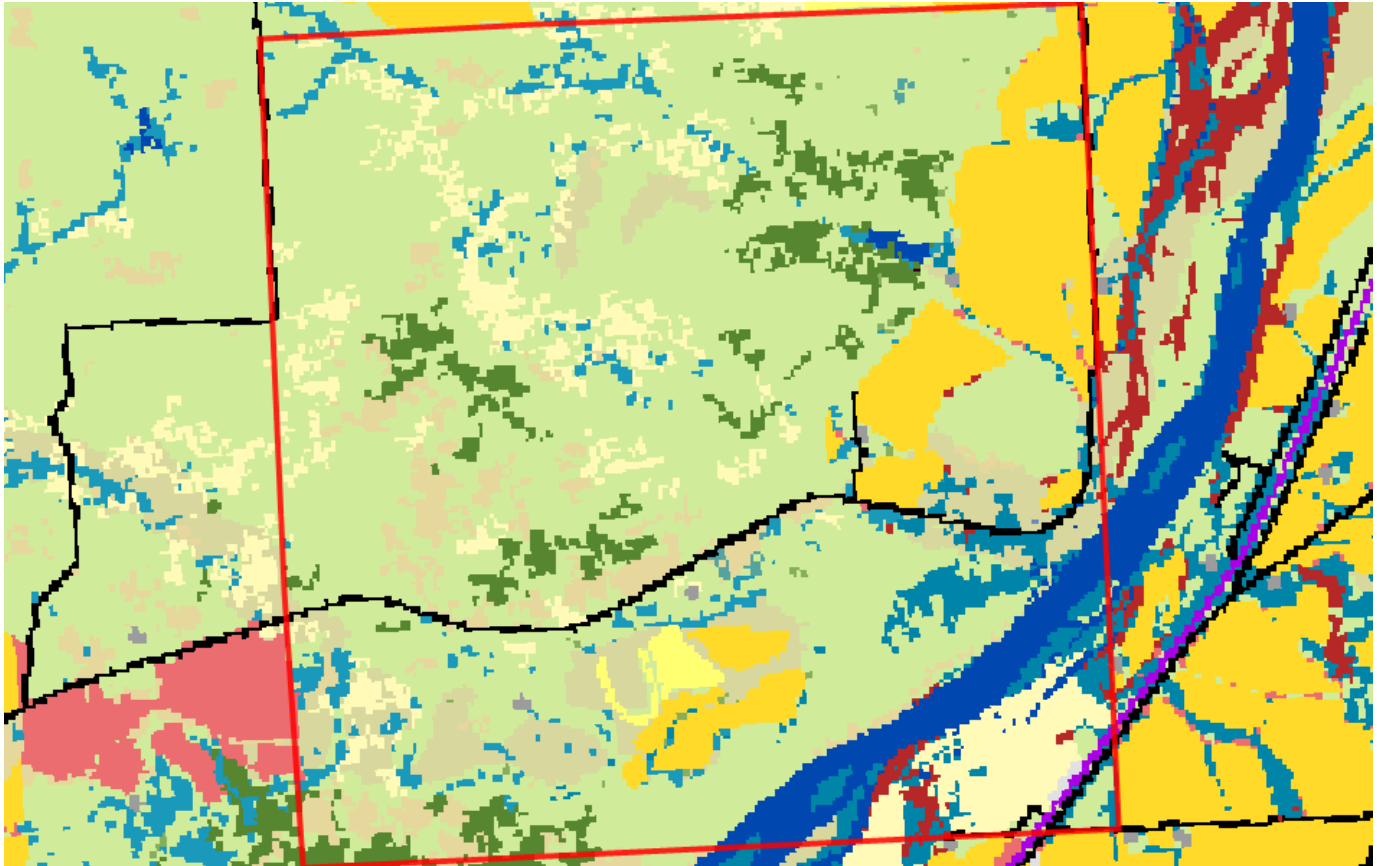
Within the report area you have requested, structured surveys are summarized by the number of each type of structured survey protocol that has been conducted, the number of species detections/observations resulting from these surveys, and the most recent year a survey has been conducted.

B-Bald Eagle Nest <i>(Bald Eagle Nest Survey)</i>	Survey Count: 10	Obs Count: 9	Recent Survey: 2024
B-Piping Plover/Least Tern VES <i>(Piping Plover and Least Tern Surveys)</i>	Survey Count: 3	Obs Count:	Recent Survey: 2012
E-Eastern Heath Snail <i>(Eastern Heath Snail Survey)</i>	Survey Count: 1	Obs Count:	Recent Survey: 2012
E-Noxious Weed, Road-based <i>(Noxious Weed Road-based Visual Surveys)</i>	Survey Count: 7	Obs Count: 12	Recent Survey: 2003
E-Visual Aquatic Invasives <i>(Visual Encounter Surveys for Aquatic Invasives on Shorelines or Underwater)</i>	Survey Count: 8	Obs Count:	Recent Survey: 2012
F-Fish Other Survey <i>(Fish Other Survey (FWP Survey Type))</i>	Survey Count: 3	Obs Count: 9	Recent Survey: 2005
F-Fish Trapping/Netting <i>(Fish Trapping or Netting Surveys)</i>	Survey Count: 6	Obs Count: 95	Recent Survey: 2011
M-Prairie Dog Flight <i>(Prairie Dog Town Flight Survey)</i>	Survey Count: 4	Obs Count: 2	Recent Survey: 2011
M-Prairie Dog Ground <i>(Prairie Dog Town Ground Survey)</i>	Survey Count: 2	Obs Count: 2	Recent Survey: 2010
P-AIM Terrestrial Plot <i>(BLM AIM Terrestrial Survey Plot)</i>	Survey Count: 1	Obs Count: 59	Recent Survey: 2020
P-Algal scraping <i>(Algal Scraping)</i>	Survey Count: 1	Obs Count: 53	Recent Survey: 2004

Land Cover

Summarized by:

009N047E034,009N047E023,009N047E026,009N047E035,009N047E027,009N047E024,009N047E036,009N047E025,009N047E026
(Buffered PLSS Section)



Grassland Systems Lowland/Prairie Grassland

Great Plains Mixedgrass Prairie

56% (3,219 Acres)

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



Human Land Use Agriculture

Cultivated Crops

9% (517 Acres)

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



8% (439 Acres)

Shrubland, Steppe and Savanna Systems Sagebrush Steppe

Big Sagebrush Steppe

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



6% (363 Acres)

Grassland Systems Lowland/Prairie Grassland

Great Plains Sand Prairie

The sand prairies constitute a very unique system within the western Great Plains. The unifying and controlling feature for this system is that coarse-textured soils predominate and the dominant grasses are well-adapted to this condition. In the northwestern portion of the system's range, stand size corresponds to the area of exposed caprock sandstone, and small patches predominate, but larger patches are found embedded in the encompassing Great Plains Mixed Grass Prairie, and usually occupy higher positions in local landscapes where former caprock formations have eroded into more subdued and planar topography. In most of eastern Montana, substrates supporting this system have weathered in place from sandstone caprock. Soils can be relatively thin or deep due to varying amounts of downslope movement of weathered sands. Needle and thread (*Hesperostipa comata*) is the dominant grass species. Other frequent species include little bluestem (*Schizachyrium scoparium*), often occurring with threadleaf sedge (*Carex filifolia*) and dominating both sandy sites and actively eroding sites. Prairie sandreed (*Calamovilfa longifolia*), sand bluestem (*Andropogon hallii*) and big bluestem (*Andropogon gerardii*) are sporadically distributed and found generally on the coarsest-textured sands. Other graminoids include bluebunch wheatgrass (*Pseudoroegneria spicata*), sun sedge (*Carex inops* ssp. *heliophila*), and purple threeawn (*Aristida purpurea*). Characteristic forbs differ by occurrence, but species of scurf pea (*Psoraleidum* species) and Indian breadroot (*Pediometrum*) species are common. Communities of silver sage (*Artemisia cana* ssp. *cana*) or skunkbush sumac (*Rhus trilobata*) can occur within this system. Wind erosion, fire and grazing constitute the other major dynamic processes that can influence this system.



5% (267 Acres)

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

Great Plains Ponderosa Pine Woodland and Savanna

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



4% (244 Acres)

Sparse and Barren Systems Bluff, Badland and Dune

Great Plains Badlands

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



3% (188 Acres)

Wetland and Riparian Systems Open Water

Open Water

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



3% (186 Acres)

Wetland and Riparian Systems Floodplain and Riparian

Great Plains Floodplain

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

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



3% (156 Acres)

Wetland and Riparian Systems

Floodplain and Riparian

Great Plains Riparian

This system is associated with perennial to intermittent or ephemeral streams throughout the northwestern Great Plains. In Montana, it occurs along smaller tributaries of the Yellowstone and Missouri rivers, as well as tributaries to the large floodplain rivers that feed them (e.g. the Milk, Marias, Musselshell, Powder, Clark's Fork Yellowstone, Tongue, etc). In areas adjacent to the mountain ranges of central and southeastern Montana, and near the Rocky Mountain Front, it grades into Rocky Mountain Lower Montane-Foothill Riparian Woodland and Shrubland systems. This system is found on alluvial soils in highly variable landscape settings, from confined, deep cut ravines to wide, braided streambeds. Channel migration occurs in less-confined areas, but within a more narrow range than would occur in broad, alluvial floodplains. Typically, the rivers are wadeable by mid-summer.

The primary inputs of water to these systems include groundwater discharge, overland flow, and subsurface interflow from the adjacent upland. Flooding is the key ecosystem process, creating suitable sites for seed dispersal and seedling establishment, and controlling vegetation succession. Communities within this system range from riparian forests and shrublands to tallgrass wet meadows and gravel/sand flats. Dominant species are similar to those found in the Great Plains Floodplain System. In the western part of the system's range in Montana, the dominant overstory species is black cottonwood (*Populus balsamifera ssp. trichocarpa*) with narrowleaf cottonwood (*Populus angustifolia*) and Plains cottonwood (*Populus deltoides*) occurring as co-dominants in the riparian/floodplain interface near the mountains. Further east, narrowleaf cottonwood and Plains cottonwood become dominant. In wetter systems, the understory is typically willow (*Salix spp.*) and redosier dogwood (*Cornus stolonifera*) with graminoids such as western wheatgrass (*Pascopyrum smithii*) and forbs like American licorice (*Glycyrrhiza lepidota*). In areas where the channel is incised, the understory may be dominated by big sagebrush (*Artemisia tridentata*) or silver sagebrush (*Artemisia cana*). Like floodplain systems, riparian systems are often subjected to overgrazing and/or agriculture and can be heavily degraded, with salt cedar (*Tamarix ramosissima*) and Russian olive (*Eleagnus angustifolia*) replacing native woody vegetation and regrowth. Groundwater depletion and lack of fire have resulted in additional species changes.

No Image

2% (90 Acres)

Human Land Use

Developed

Other Roads

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

Additional Limited Land Cover

1% (36 Acres)  [Pasture/Hay](#)

<1% (29 Acres)  [Introduced Riparian and Wetland Vegetation](#)

<1% (11 Acres)  [Introduced Upland Vegetation - Annual and Biennial Forbland](#)

<1% (9 Acres)  [Great Plains Wooded Draw and Ravine](#)

<1% (8 Acres)  [Railroad](#)

<1% (7 Acres)  [Low Intensity Residential](#)

<1% (7 Acres)  [Greasewood Flat](#)

<1% (4 Acres)  [Developed, Open Space](#)

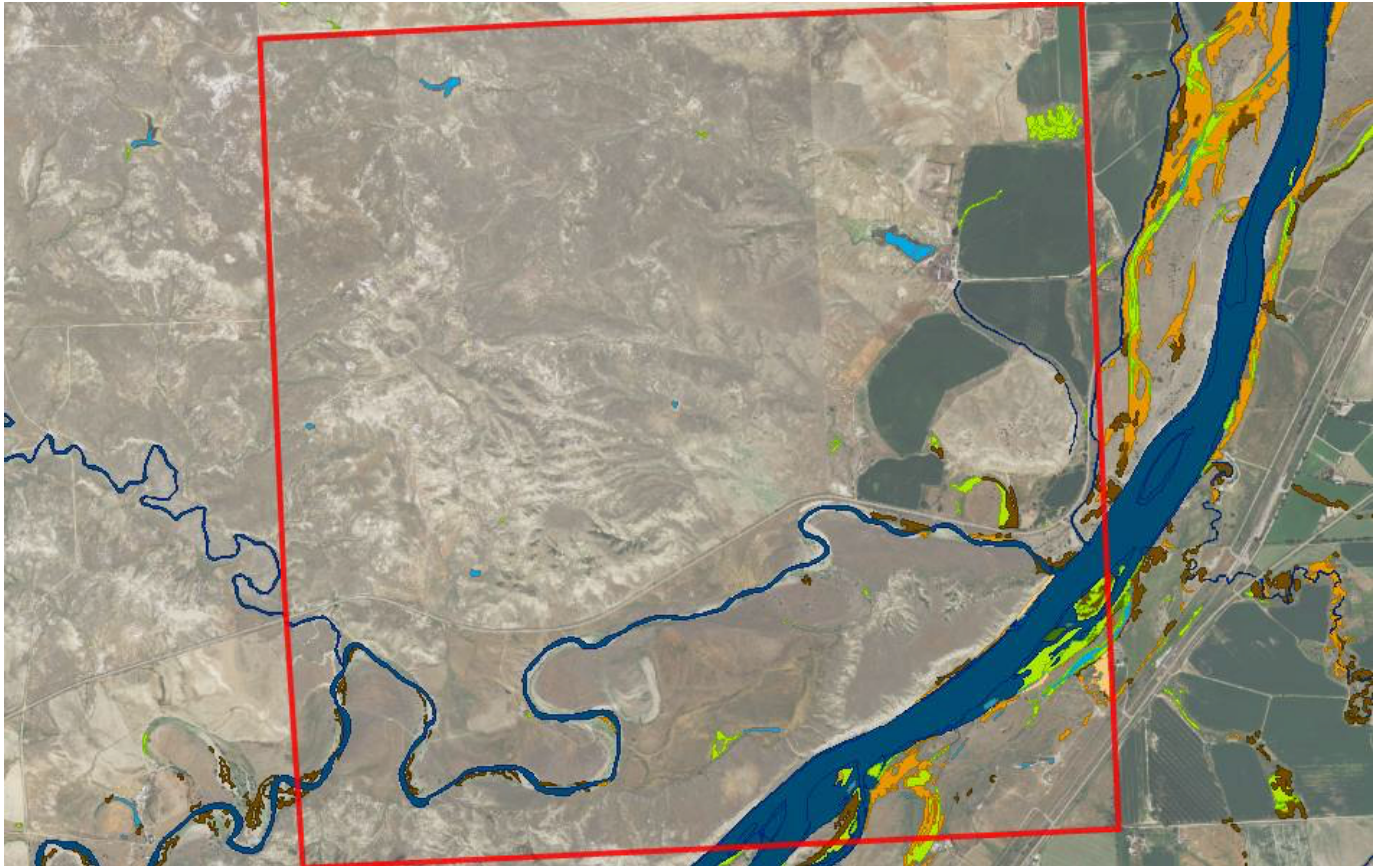
<1% (0 Acres)  [Emergent Marsh](#)

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

Wetland and Riparian

Summarized by:

009N047E034,009N047E023,009N047E026,009N047E035,009N047E027,009N047E024,009N047E036,009N047E025,009N047E037
(Buffered PLSS Section)



Wetland and Riparian Mapping

P - Palustrine

■ AB - Aquatic Bed	
F - Semipermanently Flooded	10 Acres
(no modifier)	7 Acres PABF
h - Diked/Impounded	3 Acres PABFh

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

■ US - Unconsolidated Shore	
A - Temporarily Flooded	<1 Acres
h - Diked/Impounded	<1 Acres PUSAh
C - Seasonally Flooded	6 Acres
h - Diked/Impounded	6 Acres PUSCh

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

■ EM - Emergent	
A - Temporarily Flooded	33 Acres
(no modifier)	32 Acres PEMA
f - Farmed	1 Acres PEMAf
h - Diked/Impounded	<1 Acres PEMAh
C - Seasonally Flooded	14 Acres
(no modifier)	14 Acres PEMC
h - Diked/Impounded	<1 Acres PEMCh
x - Excavated	<1 Acres PEMCx

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

■ SS - Scrub-Shrub	
A - Temporarily Flooded	2 Acres
(no modifier)	2 Acres PSSA

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

R - Riverine (Rivers)

2 - Lower Perennial

■ UB - Unconsolidated Bottom
--

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

F - Semipermanently Flooded		56 Acres	Stream channels where the substrate is at least 25% mud, silt or other fine particles.
(no modifier)	54 Acres	R2UBF	
x - Excavated	2 Acres	R2UBFx	
H - Permanently Flooded		126 Acres	
(no modifier)	126 Acres	R2UBH	
US - Unconsolidated Shore			
A - Temporarily Flooded		31 Acres	R - Riverine (Rivers), 2 - Lower Perennial, US - Unconsolidated Shore <i>Shorelines with less than 75% areal cover of stones, boulders, or bedrock and less than 30% vegetation cover. The area is also irregularly exposed due to seasonal or irregular flooding and subsequent drying.</i>
(no modifier)	31 Acres	R2USA	
C - Seasonally Flooded		25 Acres	
(no modifier)	25 Acres	R2USC	
4 - Intermittent			
SB - Stream Bed			R - Riverine (Rivers), 4 - Intermittent, SB - Stream Bed <i>Active channel that contains periodic water flow.</i>
C - Seasonally Flooded		4 Acres	
(no modifier)	2 Acres	R4SBC	
x - Excavated	2 Acres	R4SBCx	

Rp - Riparian

1 - Lotic

SS - Scrub-Shrub (no modifier)		22 Acres	Rp1SS	Rp - Riparian, 1 - Lotic, SS - Scrub-Shrub <i>This type of riparian area is dominated by woody vegetation that is less than 6 meters (20 feet) tall. Woody vegetation includes tree saplings and trees that are stunted due to environmental conditions.</i>
FO - Forested (no modifier)		29 Acres	Rp1FO	
EM - Emergent (no modifier)		7 Acres	Rp1EM	

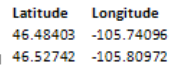
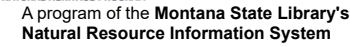
Land Management

Summarized by:
009N047E034,009N047E023,009N047E026,009N047E035,009N047E027,009N047E024,009N047E036,009N047E025,009N047E026
(Buffered PLSS Section)



Land Management Summary			
	Ownership	Tribal	Easements
Public Lands	836 Acres (14%)		
Federal	522 Acres (9%)		
US Bureau of Land Management	522 Acres (9%)		
BLM Owned	522 Acres (9%)		
State	314 Acres (5%)		
Montana State Trust Lands	314 Acres (5%)		
MT State Trust Owned	314 Acres (5%)		
Private Lands or Unknown Ownership	4,943 Acres (86%)		

Other Boundaries
(possible overlap)



Summarized by:

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

- Montana Piping Plover Recovery Committee. 1997. 1995 Surveys for piping plover (*Charadrius melodus*) and Least tern (*Sterna antillarum*) in Montana. Unpublished report. 112 p. plus appendix.
- Tobalske, Claudine and Linda Vance. 2017. **Predicting the distribution of Russian Olive stands in eastern Montana valley bottoms using NAIP imagery**. Report to the US EPA. Montana Natural Heritage Program. Helena, MT. 40pp.
- U.S. Fish and Wildlife Service. 1993. **Status report on sturgeon chub (*Macrhybopsis gelida*) a candidate endangered species**. Bismark, ND: U.S. fish and Wildlife Service, Ecological Services. 58 p.

Legend

Model Icons

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

Habitat Icons

-  Common
-  Occasional

Range Icons

-  Non-native

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



Latitude
46.48403
46.52742

Longitude
-105.74096
-105.80972

Invasive and Pest Species

Summarized by:

009N047E034,009N047E023,009N047E026,009N047E035,009N047E027,009N047E024,009N047E036,009N047E025,009N047E037 (Buffered PLSS Section)

Aquatic Invasive Species

# Obs	Predicted Model	Range
4		
V - Myriophyllum spicatum (<i>Eurasian Water-milfoil</i>) N2A/AIS		
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 2A - Aquatic Invasive Species - Non-native Species Global: GNR State: SNA Predicted Models:  6% Optimal (inductive),  8% Moderate (inductive),  46% Low (inductive)		
V - Nymphaea odorata (<i>American Water-lily</i>) AIS		
View in Field Guide View Predicted Models View Range Maps Aquatic Invasive Species - Non-native Species Global: G5 State: SNA Predicted Models:  100% Suitable (introduced range) (deductive)		
F - Common Carp (<i>Cyprinus carpio</i>) AIS		
View in Field Guide View Predicted Models View Range Maps Aquatic Invasive Species - Non-native Species Global: G5 State: SNA Predicted Models:  47% Suitable (introduced range) (deductive)		

Noxious Weeds: Priority 1A

V - Centaurea solstitialis (<i>Yellow Starthistle</i>) N1A		
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 1A - Non-native Species Global: GNR State: SNA Predicted Models:  38% Moderate (inductive),  17% Low (inductive)		
V - Isatis tinctoria (<i>Dyer's Woad</i>) N1A		
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 1A - Non-native Species Global: GNR State: SNA Predicted Models:  8% Moderate (inductive),  92% Low (inductive)		
V - Phragmites australis ssp. australis (<i>European Common Reed</i>) N1A		
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 1A - Non-native Species Global: G5T5 State: SNA Predicted Models:  49% Low (inductive)		

Noxious Weeds: Priority 1B

V - Lythrum salicaria (<i>Purple Loosestrife</i>) N1B		
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 1B - Non-native Species Global: G5 State: SNA Predicted Models:  10% Moderate (inductive),  49% Low (inductive)		
V - Cytisus scoparius (<i>Scotch Broom</i>) N1B		
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 1B - Non-native Species Global: GNR State: SNA Predicted Models:  86% Low (inductive)		
V - Polygonum x bohemicum (<i>Bohemian Knotweed</i>) N1B		
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 1B - Non-native Species Global: GNA State: SNA Predicted Models:  47% Low (inductive)		

Noxious Weeds: Priority 2A

V - Myriophyllum spicatum (<i>Eurasian Water-milfoil</i>) N2A/AIS		
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 2A - Aquatic Invasive Species - Non-native Species Global: GNR State: SNA Predicted Models:  6% Optimal (inductive),  8% Moderate (inductive),  46% Low (inductive)		
V - Hieracium piloselloides (<i>Tall Hawkweed</i>) N2A		
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 2A - Non-native Species Global: GNR State: SNA Predicted Models:  17% Moderate (inductive)		
V - Hieracium praealtum (<i>Kingdevil Hawkweed</i>) N2A		
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 2A - Non-native Species Global: GNR State: SNA Predicted Models:  6% Moderate (inductive),  41% Low (inductive)		

V - <i>Ventenata dubia</i> (<i>Ventenata</i>) N2A	7			
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 2A - Non-native Species Global: GNR State: SNA Predicted Models: 50% Low (inductive)				

Noxious Weeds: Priority 2B

V - <i>Tamarix ramosissima</i> (<i>Salt Cedar</i>) 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: 25% Optimal (inductive), 35% Moderate (inductive), 40% Low (inductive)				
V - <i>Convolvulus arvensis</i> (<i>Field Bindweed</i>) 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: 8% Optimal (inductive), 30% Moderate (inductive), 62% Low (inductive)				
V - <i>Euphorbia virgata</i> (<i>Leafy Spurge</i>) N2B				
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 2B - Non-native Species Global: GNR State: SNA Predicted Models: 60% Moderate (inductive), 40% Low (inductive)				
V - <i>Acroptilon repens</i> (<i>Russian Knapweed</i>) N2B				
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 2B - Non-native Species Global: GNR State: SNA Predicted Models: 43% Moderate (inductive), 24% Low (inductive)				
V - <i>Cirsium arvense</i> (<i>Canada Thistle</i>) N2B	5			
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 2B - Non-native Species Global: G5 State: SNA Predicted Models: 28% Moderate (inductive), 72% Low (inductive)				
V - <i>Centaurea diffusa</i> (<i>Diffuse Knapweed</i>) N2B				
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 2B - Non-native Species Global: GNR State: SNA Predicted Models: 25% Moderate (inductive), 75% Low (inductive)				
V - <i>Centaurea stoebe</i> (<i>Spotted Knapweed</i>) N2B				
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 2B - Non-native Species Global: GNR State: SNA Predicted Models: 8% Moderate (inductive), 52% Low (inductive)				
V - <i>Cynoglossum officinale</i> (<i>Common Hound's-tongue</i>) N2B				
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 2B - Non-native Species Global: GNR State: SNA Predicted Models: 3% Moderate (inductive), 25% Low (inductive)				
V - <i>Lepidium draba</i> (<i>Whitetop</i>) N2B				
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 2B - Non-native Species Global: GNR State: SNA Predicted Models: 38% Low (inductive)				
V - <i>Tanacetum vulgare</i> (<i>Common Tansy</i>) N2B				
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 2B - Non-native Species Global: GNR State: SNA Predicted Models: 22% Low (inductive)				

Regulated Weeds: Priority 3

V - <i>Elaeagnus angustifolia</i> (<i>Russian Olive</i>) R3	5			
View in Field Guide View Predicted Models View Range Maps Regulated Weed: Priority 3 - Non-native Species Global: GNR State: SNA Predicted Models: 17% Optimal (inductive), 32% Moderate (inductive), 51% Low (inductive)				
V - <i>Bromus tectorum</i> (<i>Cheatgrass</i>) R3	1			
View in Field Guide View Predicted Models View Range Maps Regulated Weed: Priority 3 - Non-native Species Global: GNR State: SNA Predicted Models: 92% Low (inductive)				

Biocontrol Species

I - <i>Aphthona lacertosa</i> (<i>Brown-legged Leafy Spurge Flea Beetle</i>) BIOCNTRL				
View in Field Guide View Predicted Models View Range Maps Biocontrol Species - Non-native Species Global: GNR State: SNA Predicted Models: 88% Moderate (inductive), 12% Low (inductive)				

I - Oberea erythrocephala <i>(Red-headed Leafy Spurge Stem Borer)</i> BIOCNTL	
View in Field Guide View Predicted Models View Range Maps Biocontrol Species - Non-native Species Global: GNR State: SNA Predicted Models: 82% Moderate (inductive), 18% Low (inductive)	
I - Mecinus janthiniformis <i>(Dalmatian Toadflax Stem-boring Weevil)</i> BIOCNTL	
View in Field Guide View Predicted Models View Range Maps Biocontrol Species - Non-native Species Global: GNR State: SNA Predicted Models: 51% Moderate (inductive), 49% Low (inductive)	
I - Aphthona nigricutis <i>(Black Dot Leafy Spurge Flea Beetle)</i> BIOCNTL	
View in Field Guide View Predicted Models View Range Maps Biocontrol Species - Non-native Species Global: GNR State: SNA Predicted Models: 44% Moderate (inductive), 45% Low (inductive)	

Introduction to Montana Natural Heritage Program



PO Box 201800 • 1201 11th Avenue • Helena, MT 59620-1800 • fax 406.444.0266 • phone 406.444.3989 • 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	Kristina Smucker KSmucker@mt.gov (406) 444-5209
Grizzly Bear Greater Sage Grouse Trumpeter Swan Big Game Upland Game Birds Furbearers	Brian Wakeling brian.wakeling@mt.gov (406) 444-3940
Managed Terrestrial Game Data	Adam Messer – MFWP GIS Coordinator amesser@mt.gov (406) 444-0095
Fisheries Data and Nongame Animal Data	Adam Messer – MFWP GIS Coordinator amesser@mt.gov (406) 444-0095
Wildlife and Fisheries Scientific Collector's Permits	https://fwp.mt.gov/buyandapply/commercialwildlifeandscientificpermits/scientific Kristina Smucker for Wildlife ksmucker@mt.gov (406) 444-5209 Dave Schmetterling for Fisheries dschmetterling@mt.gov (406) 542-5514
Fish and Wildlife Recommendations for Subdivision Development	Stevie Burton stevie.burton@mt.gov (406) 594-7354 See https://fwp.mt.gov/conservation/living-with-wildlife/subdivision-recommendations
Regional Contacts 	Region 1 (Kalispell) (406) 752-5501 fwprg12@mt.gov Region 2 (Missoula) (406) 542-5500 fwprg22@mt.gov Region 3 (Bozeman) (406) 577-7900 fwprg3@mt.gov Region 4 (Great Falls) (406) 454-5840 fwprg42@mt.gov Region 5 (Billings) (406) 247-2940 fwprg52@mt.gov Region 6 (Glasgow) (406) 228-3700 fwprg62@mt.gov Region 7 (Miles City) (406) 234-0900 fwprg72@mt.gov

Montana Department of Agriculture

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

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

Montana Department of Environmental Quality

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

Opencut Mining Web Mapping Application for review of opencut mining applications

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

Montana Department of Natural Resources and Conservation

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

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

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

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

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

Bureau of Land Management

Montana Field Office Contacts:



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

United States Army Corps of Engineers

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

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

United States Environmental Protection Agency

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

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

United States Fish and Wildlife Service

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

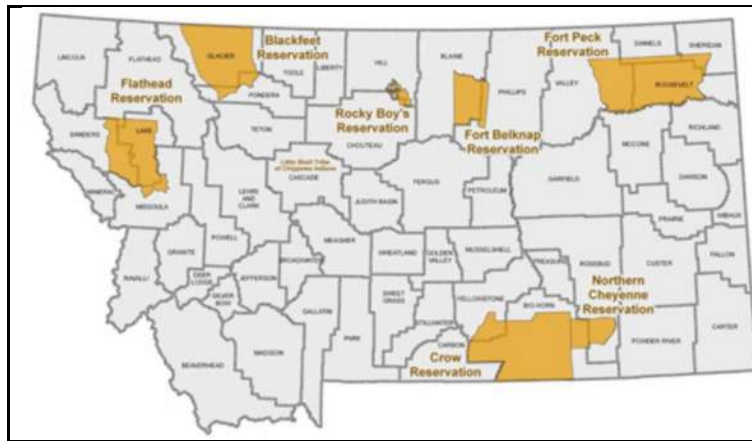
Montana Ecological Services Field Office: <https://www.fws.gov/office/montana-ecological-services> (406) 449-5225

United States Forest Service

Regional Office – Missoula, Montana Contacts

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

Tribal Nations



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

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

[Blackfeet Tribe - Blackfeet Reservation](#)

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

[Crow Tribe – Crow Reservation](#)

[Little Shell Chippewa Tribe](#)

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

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

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

[Alberta Conservation Information Management System](#)

[British Columbia Conservation Data Centre](#)

[Idaho Natural Heritage Program](#)

[North Dakota Natural Heritage Program](#)

[Saskatchewan Conservation Data Centre](#)

[South Dakota Natural Heritage Program](#)

[Wyoming Natural Diversity Database](#)

Invasive Species Management Contacts and Information

Aquatic Invasive Species

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

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

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

[Western Montana Conservation Commission](#)

Noxious Weeds

[Montana Weed Control Association Contacts Webpage](#)

[Montana Biological Weed Control Coordination Project](#)

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

[Montana Weed Control Association](#)

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

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

[Integrated Noxious Weed Management after Wildfires](#)

[Fire Management and Invasive Plants](#)

Introduction to Native Species

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

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

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

Observations

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

Species Occurrences

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

Plant Species Occurrences

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

Animal Species Occurrences

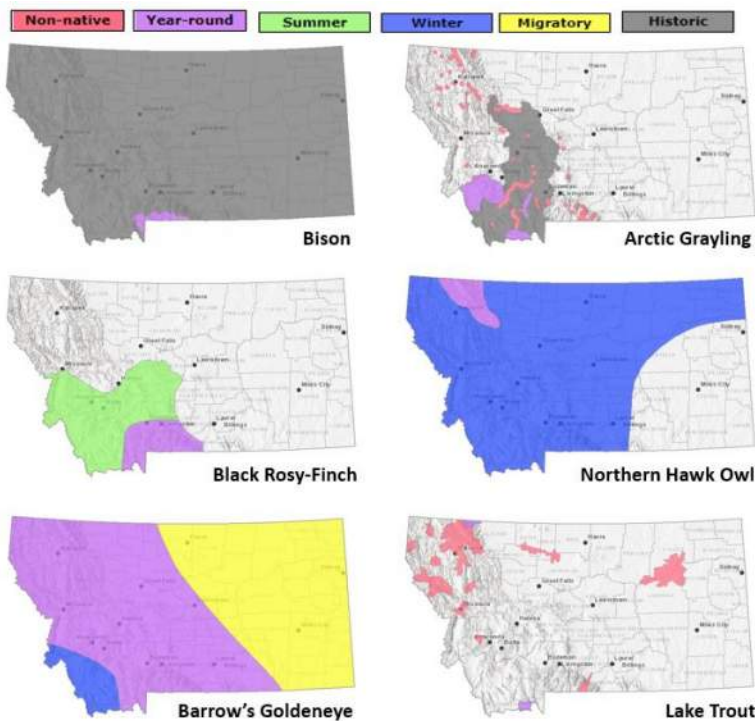
The location of a verified observation or specimen record typically known or assumed to represent a breeding population or a portion of a breeding population. Animal SO's are generally: (1) buffers of terrestrial point observations based on documented species' home range sizes; (2) buffers of stream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

Other Occurrence Polygons

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

Geographic Range Polygons

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



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

Predicted Suitable Habitat Models

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

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

Associated Habitats

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

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

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

Introduction to Land Cover

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

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

Literature Cited

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

Introduction to Wetland and Riparian

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

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

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

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

Literature Cited

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

Introduction to Land Management

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

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

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

[Public Lands](#)

[Conservation Easements](#)

[Private Conservation Lands](#)

[Managed Areas](#)

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

Introduction to Invasive and Pest Species

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

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

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

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

Additional Information Resources

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

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

[MTNHP Staff Contact Information](#)

[Montana Field Guide](#)

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

[MTNHP Species Status Codes - Explanation](#)

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

[MTNHP Request Information page](#)

[Montana Cadastral](#)

[Montana Code Annotated](#)

[Montana Fisheries Information System](#)

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

[Montana Forestry Best Management Practices](#)

[Montana GIS Data Layers](#)

[Montana GIS Data Bundler](#)

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

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

[Montana Ground Water Information Center](#)

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

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

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

[Montana Native Plant Conservation Strategy](#)

[Montana Spatial Data Infrastructure Layers](#)

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

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

[Montana Water Information System](#)

[Montana Web Map Services](#)

[National Environmental Policy Act](#)

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

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

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

[Web Soil Survey Tool](#)

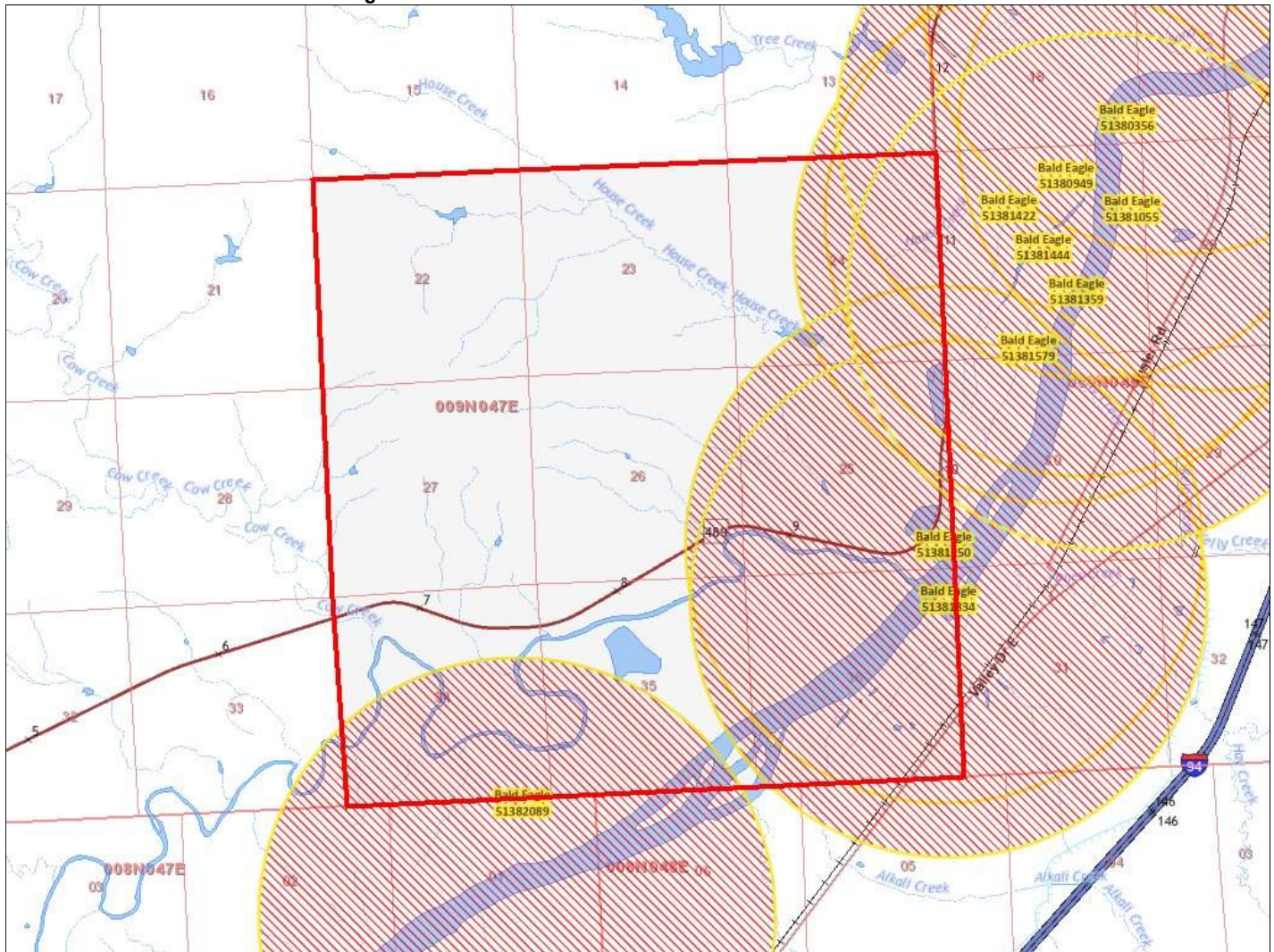
[Xerces Society for Invertebrate Conservation Resources](#)



Montana SOC Occurrences Report

SOC Occurrences for Birds = Bald Eagle

Report generated 1/31/2025 11:07:59 AM



☒ Birds - Bald Eagle (*Haliaeetus leucocephalus*)

SO Count: 10 Obs Count: 26 Earliest Obs: 1995 Recent Obs: 2024

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

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

Delineation Criteria

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

Last Updated
Sep 09, 2024

SO ID	Acres	Obs Count	Earliest Obs	Recent Obs
SO ID: 51380356	Acres: 3,105	Obs Count: 1	Earliest Obs: 2015	Recent Obs: 2015
SO ID: 51380949	Acres: 3,095	Obs Count: 9	Earliest Obs: 1995	Recent Obs: 2005
SO ID: 51381055	Acres: 3,105	Obs Count: 3	Earliest Obs: 2020	Recent Obs: 2024
SO ID: 51381250	Acres: 3,105	Obs Count: 2	Earliest Obs: 2006	Recent Obs: 2007
SO ID: 51381359	Acres: 3,105	Obs Count: 1	Earliest Obs: 2021	Recent Obs: 2021
SO ID: 51381422	Acres: 3,105	Obs Count: 1	Earliest Obs: 1998	Recent Obs: 1998
SO ID: 51381444	Acres: 3,105	Obs Count: 1	Earliest Obs: 2017	Recent Obs: 2017
SO ID: 51381579	Acres: 3,105	Obs Count: 1	Earliest Obs: 2024	Recent Obs: 2024
SO ID: 51381834	Acres: 3,105	Obs Count: 6	Earliest Obs: 2008	Recent Obs: 2024
SO ID: 51382089	Acres: 3,105	Obs Count: 1	Earliest Obs: 2021	Recent Obs: 2021

Citation for this report:

Montana SOC Occurrences Report
SOC Occurrences for Birds = Bald Eagle
Within Lat/Long: (46.47097,-105.66828) to (46.54039,-105.88230)
Natural Heritage Map Viewer. Montana Natural Heritage Program.
Retrieved on January 31, 2025, from <https://mtnhp.org/MapView/SORreport.aspx>

SHPO EVALUATION



LIBRARY & ARCHIVES
MUSEUM
OUTREACH & EDUCATION
PUBLICATIONS
STATE HISTORIC PRESERVATION OFFICE

May 21, 2025

Amy Lesh
Kinsey Cattle Company
1777 Kinsey Road
Miles City MT 59301

RE: KINSEY CATTLE COMPANY FEEDLOT & 3 RETENTION PONDS, CUSTER COUNTY. SHPO Project #: 20250519009

Dear Amy:

I have conducted a cultural resource file search for the above-cited project located in Section 26, T9N R47E. According to our records there have been a few previously recorded sites within the designated search locales. In addition to the sites there have been a few previously conducted cultural resource inventories done in the areas. I've attached a list of the sites and reports. If you would like any further information regarding the sites or reports, you may contact me at the number listed below.

It is SHPO's position that any structure over fifty years of age is considered historic and is potentially eligible for listing on the National Register of Historic Places. If any structures are within the Area of Potential Effect, and are over fifty years old, we would recommend that they be recorded, and a determination of their eligibility be made prior to any disturbance taking place.

Based on the previously recorded archaeological sites within the near vicinity, the lack of previous inventory and the ground disturbance required by this undertaking we feel that this project has the potential to impact cultural properties. We, therefore, recommend that a cultural resource inventory be conducted in order to determine whether or not sites exist and if they will be impacted.

If you have any further questions or comments, you may contact me at (406) 444-7767 or by e-mail at dmurdo@mt.gov. I have attached an invoice for the file search. Thank you for consulting with us.

Sincerely,

Damon Murdo
Cultural Records Manager
State Historic Preservation Office



STATE HISTORIC PRESERVATION OFFICE Montana Cultural Resource Database

Report Township,Range,Section Results

Report Date:5/21/2025

Township:9 N Range:47 E Section: 26

BLOOM MARY

1/26/1987 KINSEY GRAVEL PROSPECTING

Report Document Number: CR 2 2278 Agency Document Number: 1604

Township:9 N Range:47 E Section: 26

HUBBELL WILLIAM

7/12/2005 CULTURAL RESOURCE INVENTORY OF THE KERRY WELL IN CUSTER COUNTY, MONTANA

Report Document Number: CR 2 28639 Agency Document Number: BLM #MT-020-05-469



STATE HISTORIC PRESERVATION OFFICE Montana Cultural Resource Database

Township, Range, Section Report

Report Date:5/21/2025

Site #	Twp	Rng	Sec	Qs	Site Type 1	Site Type 2	Time Period	Owner	NR Status
24CR0660	9N	47E	26	NE	Precontact Lithic Material Concentration		No Indication of Time	BLM	Undetermined*
24CR1667	9N	47E	26	Comb	Historic Road		1920-1930	MDOT	Ineligible